DEPARTMENT OF THE ARMY
HEADQUARTERS, 88TH REGIONAL SUPPORT COMMAND
60 SOUTH O STREET
FORT MCCOY, WISCONSIN 54656

REPLY TO
ATTENTION OF

September 28, 2012

Directorate of Public Works

[redacted]

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Superfund
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Thank you for allowing us to collect samples at your home as part of our efforts to find out whether contamination from the former Hanley Area of the St. Louis Ordnance Plant is impacting the neighboring area. We want to keep you informed of our findings, as well as future plans regarding our work to determine the extent of any contamination related to that facility.

Enclosed is a report summarizing the results of the samples collected in June 2012 by a contractor for the 88th Regional Support Command (RSC).

Samples collected from your residence included indoor and outdoor air, as well as soil vapors from beneath the basement floor slab. This sampling was done to see whether contamination from a process called vapor intrusion is affecting indoor air quality in your residence. Vapor intrusion occurs when vapors from volatile chemicals in groundwater or subsurface soil move through the soil and enter nearby buildings.

Samples were analyzed for the presence of chemicals known as volatile organic compounds (VOCs). Those are the contaminants from the former Hanley Area that could potentially result in vapor intrusion. VOC vapors also can result from indoor household products, such as cleaning supplies, and outdoor chemical sources, such as automobile emissions.

In addition to collecting samples, the contractor used a portable instrument known as a HAPSITE to measure indoor air concentrations of VOCs. These measurements were taken at drains and cracks in the floor and places where underground utilities enter the basement, which are places where detections from vapor intrusions might be found. HAPSITE measurements also were taken near suspected indoor chemical sources of VOCs to determine if they might be a source of VOC vapors.

VOC concentrations detected in the samples and HAPSITE measurements were compared to risk-based levels for those contaminants developed using U.S. Environmental Protection Agency (EPA) methods. Risk-based levels are those the EPA considers protective of human health based on lifetime exposure. As noted in the enclosed report, several VOC concentrations detected in indoor air exceeded these levels. These detections were compared against concentrations of the same chemicals in outdoor air, subslab soil gas, and groundwater to help determine if the detections were the result of vapor intrusion or if indoor household products or outdoor chemicals might be the source of the VOCs found in the indoor air.

The following Appendices are
available only on CD

Appendix A

The enclosed report evaluates possible sources of each indoor air chemical measured above the screening level. It also compares June 2012 results with those from sampling performed in May and December 2011 to analyze if and how the chemical concentrations are changing over time.

Based on sampling performed in May 2011, December 2011, and June 2012, contamination from the former Hanley Area does not appear to be contributing to vapor intrusion at your residence. This conclusion is based on the following observations:

- Most indoor air samples that had detections of VOCs above risk-based levels appear to be related to indoor or outdoor chemical sources.

- In some instances, indoor air VOC detections exceeded risk-based screening levels and the VOC source was not identified. For these chemicals, vapor intrusion does not appear to be the source because the chemicals in the indoor air are either not detected in groundwater, or indoor air concentrations of the chemicals are higher than those in subslab soil gas when they would be lower if vapor intrusion was the source.

- Subslab soil gas samples collected between May 2011 and June 2012 show fluctuations in the detected concentrations of some chemicals. Indoor air concentration over the same time period remained stable, indicating that the subslab soil gas chemicals do not appear to be affecting indoor air quality.

Based on the investigation findings described above, the Army does not believe that further sampling inside your residence is needed. However, in the coming months, the Army will perform a vapor intrusion investigation at the former Hanley Area and along Stratford Avenue. If that investigation indicates a potential connection between the former Hanley Area and the chemicals detected at the residence, the Army will contact you with a request to perform additional sampling. The Army will keep you informed about the ongoing vapor intrusion investigation related to the former Hanley Area.

We appreciate your cooperation and patience through the sampling process. If you have any questions regarding this letter or the enclosed report, please feel free to call contact Mr. Barry McFarland at (316) 681-1759, extension 1419, or Ms. Josephine Newton-Lund at (816) 389-3912, or by email at barry.mcfarland@usar.army.mil or Josephine.M.Newton-lund@usace.army.mil.

Sincerely,

David L. Moore
Chief, Public Works- Environmental Division

STATEMENT OF TECHNICAL REVIEW

Performance Work Statement for
Environmental Remediation Services at the Former Hanley Area
St. Louis Ordnance Plant, Missouri

June 2012 Vapor Intrusion Assessment at Private Property 1, St. Louis, Missouri

The Conti/CH2M HILL Team has completed the technical review of the submittal of the final report described above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures and material used in analyses; the appropriateness of data used and level of data obtained; and reasonableness of the results including whether the product meets the customer's needs consistent with the law and existing USACE policy.

Technical Reviewer	Signature	Date of Review
Susanne Borchert	S. Borchert	9/27/2012

Quality Control System Manager (for QCP) or Project Manager	ITR Leader
Jeff Dulgarian	Susanne Borchert
Signature	Signature

June 2012 Vapor Intrusion Assessment at Private Property 1, St. Louis, Missouri

PREPARED FOR: U.S. Army Corps of Engineers–Kansas City District

PREPARED BY: CH2M HILL

DATE: September 28, 2012

This memorandum presents the objectives, methods, and findings of a vapor intrusion (VI) assessment performed at Private Property 1 (PP-1) in St. Louis, Missouri, on June 5 and 6, 2012. The assessment consisted of groundwater, subslab soil gas, indoor air, and ambient (outdoor) air sampling in accordance with the following work plans:

- *Vapor Intrusion Assessment Work Plan Addendum—Revision 1, Former Hanley Area, St. Louis Ordnance Plant, St. Louis Missouri* (CH2M HILL 2011a)
- *Final Remedial Investigation* [RI] *Work Plan, Former Hanley Area, St. Louis Ordnance Plant, St. Louis Missouri* (CH2M HILL 2008)

In a technical memorandum dated April 20, 2012, the Army recommended using a portable gas chromatograph/mass spectrometer (GC/MS) field instrument (HAPSITE) at PP-1 to investigate potential background vapor sources or VI entry points (CH2M HILL 2012). That investigation was completed as part of this VI assessment. The work described in this memorandum was the third VI assessment performed at PP-1. The first, conducted in May 2011, is discussed in the *May 2011 Vapor Intrusion Assessment at Private Property PP-1, St. Louis, Missouri* technical memorandum (CH2M HILL 2011b). The second, conducted in December 2011, is discussed in the *December 2011 Vapor Intrusion Assessment at Private Property 1, St. Louis, Missouri* technical memorandum (CH2M HILL 2012).

The work was performed as part of the Defense Environmental Restoration Program under Contract Number W912DQ-05-D-0002, Task Order Number 0007.

1. Introduction

In consultation with the Missouri Department of Natural Resources (MDNR) and U.S. Environmental Protection Agency (USEPA), and with input from the public, the U.S. Army selected a preferred alternative for addressing contamination at the St. Louis Ordnance Plant, former Hanley Area. The preferred alternative was presented in a proposed plan (CH2M HILL 2010a) that was submitted for public comment in November 2010.

During development of a decision document, the project stakeholders agreed to divide the former Hanley Area into two operable units (OUs):

- OU-1: Actions Addressing Contaminated Soil, Powder Well Sediment, and Groundwater Concerns
- OU-2: Actions Addressing the VI Pathway

In September 2011, a decision document for OU-1 was finalized, signed by the Army Environmental Command, and endorsed by MDNR and USEPA (CH2M HILL 2011c). Remedial actions to address OU-1 were conducted between February and May 2012 and consisted of onsite groundwater treatment and offsite disposal of excavated soil and powder well sediment.

As part of OU-2 and to assess the VI pathway, the Army is collecting groundwater, subslab soil gas, indoor air, and outdoor air from select residential properties north of the former Hanley Area (Figure 1). PP-1 was selected for a VI assessment based on concentrations of volatile organic compounds (VOCs) in groundwater, its proximity to the former Hanley Area, and previous VI assessment findings at PP-1 and at adjacent properties. The samples will help assess potential migration of contaminated vapors from groundwater to indoor air. The OU-2 sampling effort was triggered by concentrations of VOCs detected in groundwater following the RI performed in 2008. Groundwater

concentrations of VOCs were characterized during the RI and a post-RI groundwater sampling event in August 2010. Figure 2 shows the VOC concentrations in groundwater that exceeded VI risk-based screening levels that were established in the *Final Feasibility Study Report, St. Louis Ordnance Plant, Former Hanley Area* (CH2M HILL 2010b). A VI assessment is warranted when chemicals in groundwater are detected at concentrations above the screening levels that are presented in Figure 2.

The presence of 1,2-dichloroethane (1,2-DCA) in monitoring well MW-107 in August 2010 triggered a VI assessment at PP-1. The well, which is within 50 feet south of PP-1, contained 1,2-DCA at a concentration of 23 micrograms per liter (µg/L). The analytical result exceeded the federal maximum contaminant level (MCL) of 5 µg/L which was selected as a screening level for 1,2-DCA in the feasibility study (CH2M HILL 2010b).

In May 2011, a VI assessment was conducted at PP-1. It consisted of a chemical inventory and sampling of groundwater, subslab soil gas, indoor air, and outdoor air. The findings are presented in *May 2011 Vapor Intrusion Assessment at Private Property PP-1* technical memorandum (CH2M HILL 2011b). Samples were analyzed for VOCs, and results were compared to risk-based screening levels. Several chemicals were detected at concentrations above screening levels in indoor air and subslab soil gas. A review of multiple lines of evidence suggested that the indoor air exceedances were due to background indoor or outdoor VOC sources. However, the potential that contamination from the former Hanley Area may have contributed to VI at PP-1 could not conclusively be ruled out, and a second VI assessment was recommended during the winter to assess concentration changes over time.

In December 2011, a second VI assessment was conducted at PP-1, similar to the May 2011 assessment. The findings are presented in the *December 2011 Vapor Intrusion Assessment at Private Property 1* technical memorandum (CH2M HILL 2012). As in May 2011, several chemicals were detected at concentrations above screening levels in indoor air and subslab soil gas. Subslab soil gas concentrations in December were 100 times greater for tetrachloroethene (PCE) and 400 times greater for trichloroethene (TCE) than in May 2011. However, these concentrations did not affect indoor air quality, based on similar indoor air concentrations of PCE and TCE detected in May and December 2011. To further understand the possible contribution of VI at PP-1, a third VI assessment was recommended. The use of a HAPSITE, a portable GC/MS field instrument, was recommended for the third VI assessment to attempt to locate possible sources of VOCs detected in indoor air.

2. Objective

The objective of the VI assessment was to obtain information to determine if contamination from the former Hanley Area may be contributing to VI at PP-1.

3. Description of Residence

[redacted]

[redacted]

[redacted]

4. Methods

4.1 Pre-assessment Site Visit

Before the first VI assessment at PP-1, CH2M HILL conducted a site visit on February 9, 2011, to obtain information on the residence and to select sampling locations. Findings from the pre-assessment site visit are provided in *May 2011 Vapor Intrusion Assessment at Private Property PP-1, St. Louis, Missouri* technical memorandum. During the June 2012 VI assessment, the property owner stated that flooding in the basement occurred during a storm between the December 2011 and the June 2012 VI assessments. During large storms, runoff on the north side of the residence enters the basement through the bottom of the basement door. Floor cleaner and bleach were used to clean the basement floor following the storm.

During the February 2011 site visit, CH2M HILL determined the location of the subslab soil gas sample that would be installed and collected in the lowest level of the residence, within the utility room. The indoor air sample location was determined for the basement of the residence, immediately outside of the utility room. The resident approved the proposed locations. The same sample locations were used during the May 2011, December 2011, and June 2012 VI assessments.

4.2 HAPSITE Investigation

During the June 2012 VI assessment, CH2M HILL used a HAPSITE SMART (Model No. 930-281-G1) to assess possible indoor sources and VI entry points (e.g., floor drains, cracks, and utility penetrations) of VOCs at PP-1. Because the HAPSITE did not detect elevated VOC concentrations at the pre-selected sample locations, the investigation was conducted with the HAPSITE instrument in quantitation mode (refer to Section 4.2.1 for HAPSITE operating modes).

4.2.1 Overview of HAPSITE Technology. A HAPSITE is a portable GC/MS capable of providing quantitative data for VOC analysis. During operation, a sample is introduced into the HAPSITE through a probe attached to a heated transfer line. A small interior pump draws the sample though the heated transfer line into a sample concentrator. The concentrator increases the instrument's sensitivity by increasing the compound mass collected over a given time interval. The time interval, which is essential to HAPSITE operation, is referred to as the fill time. This fill time is adjusted when producing initial calibration curves for the compounds of interest and when sample dilution is required. Instrument calibration is discussed in Section 4.2.2. A fill time of 5 minutes was used during the VI assessment.

Initial setup of the HAPSITE requires developing a temperature program for GC operation and establishing temperature setpoints for the various instrumental zones such as the oven, the membrane, the non-evaporable getter vacuum pump, and the probe. Generally, temperatures are established following the manufacturer suggested guidelines and are often set before use. However, temperatures are sometimes adjusted, depending on the volatile or semivolatile nature of the compounds to be analyzed. At PP-1, a previously developed method was used that contained the site-specific chemicals of concern (COCs; Section 4.2.2).

The HAPSITE operates in two modes: survey and quantitation. In survey mode, the sample is introduced directly into the MS. This mode is typically used to select sampling locations based on detection of VOCs. Survey mode cannot determine chemical identity or concentrations, only their presence. Once a sample point is preselected or determined as a suitable candidate point for survey mode, the unit is switched to quantitation mode, whereby the user can identify specific VOCs and their concentrations. For the PP-1 VI assessment, the HAPSITE data are considered suitable for screening purposes; that is, to assess the presence or absence of VOCs emanating from potential indoor sources. If the HAPSITE indicated significant VOC sources, the Army would consider additional fixed-base laboratory sampling to confirm the HAPSITE results.

4.2.2 HAPSITE Calibration. Before calibrating the HAPSITE, a method blank of nitrogen gas was analyzed to ensure instrument cleanliness. Following the analysis of the method blank, the HAPSITE was calibrated using two separate working standards containing the site COCs at known concentrations of 0.5 part per billion by volume (ppbv) and 5.0 ppbv. The two standards were previously constructed by diluting a 1,000 ppbv stock standard into

2 separate SUMMA canisters. The stock standard contains 62 individual VOCs, each with a known concentration of 1,000 ppbv. Thirteen of the 62 VOCs were requested to be target analytes, based on the site COCs.

The Applied Sciences Laboratory in Corvallis, Oregon, prepared the two working standards before mobilization into the field. Each standard was analyzed with the same instrumental parameters as those used to analyze the samples. Using the two data points obtained for each COC from the analysis of each working standard, calibration curves for each COC were constructed using an average response factor fit. Following calibration, three verification standards (0.1, 1.0, and 5.0 ppbv) were analyzed to estimate accuracy over the range of the calibration curve. The analysis of the 0.1 ppbv standard also was used to ensure that a reporting limit of 0.1 ppbv could be obtained with an adequate signal-to-noise ratio.

The list of calibrated compounds included the following site COCs:

- Benzene
- Carbon tetrachloride
- Chloroform
- 1,2-Dichloroethane (1,2-DCA)
- cis-1,2-Dichloroethene (cis-1,2-DCE)
- trans-1,2-Dichloroethene (trans-1,2-DCE)
- Methylene chloride
- Naphthalene
- PCE
- TCE
- 1,1,2-Trichloroethane (1,1,2-TCA)
- 1,1,2,2-Tetrachloroethane (1,1,2,2-TeCA)
- Vinyl chloride

The percent relative standard deviation criterion for calibration (less than 40 percent) was met for the COCs, except for naphthalene. After inspection of the three post-calibration verification standards for the compound, it was determined that the results for naphthalene may be in error by ± 50 percent (50 to 150 percent). As such, final sample results for this compound were estimated to be within this given range of concentrations.

4.2.3 HAPSITE Sampling Locations

On June 5, 2012, CH2M HILL performed the HAPSITE investigation at PP-1 by collecting samples at eight locations within the residence. Most of the samples were collected in the basement, where VI entry points were more likely to be encountered. The following locations were sampled:

- Main floor, center of kitchen
- Basement, co-located with indoor air sample IA-1 by stairwell
- Basement, center of salon area
- Basement, closet containing gas meter utility on east exterior wall
- Basement, direct sampling of floor drain in utility room
- Basement, center of utility room with floor drain
- Basement, under stairwell, behind access panel near indoor air sample IA-01
- Basement, HVAC room

Areas such as floor drains and utility penetrations were targeted during the HAPSITE investigation. Samples also were collected from central locations in various rooms inside the residence (kitchen, salon area, gas meter closet, utility room, HVAC room) to assess the distribution of indoor concentrations associated with chemicals observed in the residence.

The HAPSITE was operated in quantitation mode, identifying and quantifying VOCs at each sample location. HAPSITE operation using survey mode was not performed because of time constraints and because none of the COCs were detected at elevated concentrations, except naphthalene which was found at comparable concentrations throughout the residence. HAPSITE investigation results are discussed in Section 5.3.

4.3 Subslab Soil Gas Sampling

CH2M HILL initiated subslab soil gas sampling activities on June 5, 2012. The subslab soil gas sample location was identical to the one used in May and December 2011: the utility room near the northeast corner of the basement, 4.5 feet west of the floor drain and 10 feet south of the north exterior wall (Figure 3). The semipermanent subslab

soil gas probe installed in the floor during the December 2011 VI assessment was used during the June 2012 assessment. As noted in *December 2011 Vapor Intrusion Assessment at Private Property 1, St. Louis, Missouri* technical memorandum, the concrete slab was observed to be ¾ inch thick at the sample location.

On June 5, 2012, the subslab soil gas sample probe installed in the utility room was purged, and 6-liter SUMMA canisters (including one field duplicate) were deployed for 24-hour sample collection. Before the subslab sample location was purged, the integrity of the seal was visually inspected for signs of cracks and shrinkage. No visible defect in the seal was noted. The floor drain near the subslab sample probe was inspected to confirm the presence of water. An interview with the property owner indicated that the basement had flooded between the December 2011 and the June 2012 VI assessments. The floor had been cleaned with floor cleaner and bleach.

CH2M HILL conducted a leak check of the subslab soil gas sample location before purging and sampling activities. Leak check procedures were performed in accordance with the standard operating procedure provided in the work plan addendum. A calibrated photoionization detector equipped with a 10.6 electron-volt lamp was used to sample the Tedlar bag for total VOCs. No helium was detected within the purged subslab soil gas, demonstrating that the soil gas probe passed the helium leak test. A total VOC reading of 0.1 part per million was detected in the Tedlar bag.

A 6-liter, individually certified SUMMA canister was used to collect the subslab soil gas sample. For quality assurance (QA) purposes, a field duplicate was collected from the subslab soil gas sample location. The initial canister vacuums (-29 inches of mercury in each canister) were recorded using a standard pressure gauge before the canisters were deployed for sample collection. The canisters were opened on June 5 and remained open for roughly 24 hours. A flow controller set for 3.75 milliliters per minute allowed the canisters to fill over a period of 24 hours.

On June 6, 2012, CH2M HILL returned to the residence and closed the sample port on the subslab soil gas SUMMA canisters. CH2M HILL arrived at the residence within 24 hours of opening the canister to ensure that it had not reached atmospheric pressure before closing the valve. Final vacuum was measured at -5 inches of mercury in the subslab soil gas canister and -25 inches of mercury in the field duplicate canister using a standard pressure gauge. The laboratory confirmed a vacuum of -26.5 inches of mercury in the field duplicate canister and attributed it to damage to the flow controller during transit before sample collection. A small sample volume was collected in the field duplicate canister, but it is not known at what point in time or for how long the canister collected the sample (i.e., sample collected over the entire 24-hour sample period at a very low flow rate or sample collected over a very short period during the sample period).

Attachment 1 provides photographs of the sampling setup and canister placements. Table 1 provides sampling details including canister vacuums measured before and after sampling.

4.4 Indoor Air and Outdoor Air Sampling

On June 5, 2012, CH2M HILL deployed sample canisters for indoor air and outdoor air sampling. To collect the indoor air sample, a 6-liter, individually certified SUMMA canister was placed on top of a clean, overturned 5-gallon bucket in the southwest corner of the basement, roughly 10 feet from the utility room entrance where household chemicals are stored (Figure 3). The intake was roughly 3 feet above the floor. The initial canister vacuum (-28 inches of mercury) was recorded using a standard pressure gauge before the canister was deployed for sample collection. To collect an outdoor air sample, CH2M HILL deployed a 6-liter, individually certified SUMMA canister outside the residence, within 4 inches of the east wall at the northeast corner. The initial canister vacuum (-29 inches of mercury) was recorded using a standard pressure gauge before the canister was deployed for sample collection. The canisters were kept open for 24 hours using a flow controller set for 3.75 milliliters per minute, which allowed the canisters to fill over a 24-hour period.

On June 6, 2012, CH2M HILL returned to the residence and closed the sample ports on the indoor air and outdoor air canisters. CH2M HILL arrived at the residence within 24 hours of opening the canisters to ensure that they had not reached atmospheric pressure before closing the valves. The final vacuum was measured at -1 inch of mercury using a standard pressure gauge in the indoor air canisters. The final vacuum was measured at -13 inches of mercury in the outdoor air canister using the same standard vacuum gauge. Photographs of the sampling setup and canister placements are presented in Attachment 1. Table 1 provides sampling details including canister vacuums measured before and after sampling.

4.5 Groundwater Sampling

On June 6, 2012, monitoring well MW-107 was purged and sampled for VOC analysis using the groundwater low-flow purging and sampling techniques presented in standard operating procedures L*ow-Flow Groundwater Sampling* and *Water Sample Collection for Volatile Organic Compounds* in the RI work plan. The low-flow purging and sampling procedure includes techniques for low-recovery wells. A field duplicate sample was collected from MW-107 during the June 2012 sampling event. MW-107 was purged using a peristaltic pump with disposable tubing. Attachment 2 presents the groundwater quality parameters collected during purging activities. Purged groundwater was transferred into a 55-gallon drum (approved by the U.S. Department of Transportation) at the former Hanley Area for characterization and subsequent disposal.

4.6 Laboratory Analyses

The groundwater sample collected at MW-107 was analyzed for VOCs using method SW 846 8260B. Sample containers were shipped to PEL, a Division of Spectrum Analytical, Inc., in Tampa, Florida, for analysis of the following VOCs specified in the work plan addendum:

- Benzene
- Carbon tetrachloride
- Chloroform
- 1,2-DCA
- cis-1,2-DCE
- trans-1,2-DCE
- Methylene chloride
- Naphthalene
- PCE
- TCE
- 1,1,2-TCA
- 1,1,1,2-Tetrachloroethane (1,1,1,2-TeCA)
- 1,1,2,2-TeCA
- Vinyl chloride

Subslab soil gas, indoor air, and outdoor air samples were analyzed for VOCs by method TO-15, Selective Ion Mode. The VOC reporting list comprised the compounds listed above except for 1,1,1,2-TeCA, which is not reported in the TO-15 analyte list. As discussed in the work plan addendum, the omission of 1,1,1,2-TeCA in the reporting list is not considered a data gap because the chemical has not been detected in any offsite groundwater samples. The detectable presence of 1,1,1,2-TeCA is limited only to MW-111, located within the site boundaries of the former Hanley Area (Figure 1). The air canisters were shipped to Applied Science Laboratories for analysis.

The vacuum in each canister was measured using a standard vacuum gauge before and after sampling to verify that a sufficient sample volume was collected for laboratory analysis. Once the laboratory received the canisters, the vacuum in each canister was measured before analysis. As shown in Table 1, slightly different canister vacuums were measured in the field after sampling and at the laboratory before analysis. The laboratory measurements are considered more accurate, based on the quality of the fixed-based laboratory versus field pressure gauges. The differences between the field and laboratory measurements shown in Table 1 are relatively small, indicating that the field pressure gauges were sufficiently representative. Sample leakage during transit does not appear to have occurred, based on the initial and final pressure measurements. With the exception of the subslab soil gas field duplicate canister, sufficient sample volume considered to be representative of the 24-hour sample period was present in each canister for the VOC analysis. A small sample volume was collected in the field duplicate canister, but it is not known at what point in time or for how long the canister collected the sample (i.e., sample collected over the entire 24-hour sample period at a very low flow rate or sample collected over a very short period during the sample period). Therefore, the sample is not considered representative of the 24-hour sample period.

5. Findings

5.1 Chemical Inventory

A chemical inventory was conducted during the May 2011, December 2011, and June 2012 VI assessments to record the various chemicals and quantity stored within the residence. This information was collected to identify possible indoor sources of VOCs. According to the property owner, the chemical inventory had not changed between the December 2011 and June 2012 VI assessments, and was verified by referencing the December 2011 inventory sheet. Table 2 summarizes the chemicals observed during the chemical inventory conducted in June 2012. Attachment 3 contains the completed inspection form.

Chemicals inventoried in June 2012 were similar to those observed in May and December 2011. Various chemicals are used and stored in the basement, including paints, thinners, detergents, bleaches, and beauty products. In the utility room, a can of degreaser was found to contain both PCE and TCE. Several types of beauty products were identified in the hair salon during the inventory. The beauty products included shampoos, hair straighteners, astringents, and hair coloring agents. Many of these products can release VOCs into indoor air, thereby affecting indoor air sampling results.

Although VI guidance documents (USEPA 2002, Interstate Technology & Regulatory Council 2007, and Department of Defense 2009) state that known background indoor VOC sources should be removed from the residence at least 24 hours before sampling, it was not possible to complete this action for practical reasons. Chemical products used in the hair salon that may contain VOCs could not be removed without interrupting business operations. Removing all known or potential background indoor air sources of VOCs before sampling helps to minimize background contributions, but often it is not feasible or possible.

5.2 Other Field Observations

Several surficial cracks were noted in the concrete floor of the unfinished utility room in May 2011, December 2011, and June 2012. The nearest surficial crack extended within 6 inches of the subslab sampling location (see photograph in Attachment 2). The cracks did not appear to extend through the entire floor slab. No water damage or mold was noted in the basement of the residence during the pre-assessment site visit or the VI assessment.

5.3 HAPSITE Investigation Findings

Table 3 lists the eight HAPSITE sampling locations and Table 4 the HAPSITE data associated with them. Results of the HAPSITE investigation indicated the presence of cis-1,2-DCE, methylene chloride, and naphthalene in indoor air. Concentrations of cis-1,2-DCE and methylene chloride were observed at several areas that were investigated with the HAPSITE, but were detected below indoor air screening levels. The HAPSITE reporting limits for select nondetect VOCs exceeded the indoor air screening levels (Table 4); however, this did not reduce the usefulness of the tool since (1) it was used to screen for potentially significant indoor background sources of VOCs (that is, those present at concentrations above HAPSITE reporting limits), and (2) the SUMMA canister reporting limits were below screening levels. Naphthalene was detected above the indoor air screening level at all the locations investigated with the HAPSITE. Upon entry into the basement of PP-1 during the June 2012 VI assessment, the CH2M HILL field team and an MDNR representative detected a scent of “mothballs.” Naphthalene, once a common component in mothballs, is discussed further in Section 5.5.7. Naphthalene is also present in several of the chemical products observed during the chemical inventory (Table 2).

5.4 Analytical Results

In March 2012, USEPA released a VI screening level (VISL) calculator that provides recommended screening levels in evaluating the VI pathway. The calculator was used to develop recommended screening levels for groundwater based on an attenuation factor of 0.001 for groundwater-to-indoor air, an excess lifetime cancer risk of 1×10^{-6}, and a hazard quotient of 1.0 for noncarcinogens. Based on the VISL calculator output, the groundwater screening levels were modified to those listed below:

- Benzene—1.4 µg/L
- Carbon tetrachloride—0.36 µg/L
- Chloroform—0.71 µg/L
- 1,2-DCA —1.9 µg/L
- cis-1,2-DCE—380 µg/L[1]
- trans-1,2-DCE—380 µg/L
- Methylene chloride—720 µg/L
- Naphthalene—4 µg/L
- PCE—13 µg/L
- TCE—1.1 µg/L
- 1,1,2-TCA—4.5 µg/L
- 1,1,1,2-TeCA—3.2 µg/L
- 1,1,2,2-TeCA—2.8 µg/L
- Vinyl chloride—0.14 µg/L

[1] *trans*-1,2-DCE is used as a surrogate for cis-1,2-DCE, as no inhalation toxicity information is available for cis-1,2-DCE.

Table 5 presents May 2011, December 2011, and June 2012 VI assessment groundwater sampling results for MW-107 and were compared to the March 2012 VISLs (USEPA 2012a). Figure 4 presents VOCs detected above the VISLs in groundwater at MW-107 from April 2007 through June 2012. Table 6 lists the results for the indoor air, outdoor air, and subslab soil gas samples at PP-1 in May 2011, December 2011, and June 2012.

Indoor and subslab soil gas concentration were compared against conservative risk-based screening levels. With input from MDNR, indoor air and subslab soil gas screening levels were developed from the following sources of information.

- Indoor Air
  - May 2012 USEPA Regional Screening Levels (RSLs; USEPA 2012b) for Residential Air. The PCE RSL was revised to 9.4 micrograms per cubic meter (µg/m^3) for indoor air, based on the final toxicity information posted on the USEPA Integrated Risk Information System (IRIS) on February 10, 2012.
  - Tier 1 risk-based target levels (RBTLs) (Indoor Air) for residential land use and soil type 3 (clayey) presented in the Missouri Risk-based Corrective Action (MRBCA) technical guidance (MDNR 2006). Observations from the 2008 VI assessment indicate that clay is the predominant soil type in the properties north of the former Hanley Area.
- Subslab Soil Gas
  - USEPA RSLs (USEPA 2012b) for Residential Air were adjusted using the USEPA (2002 and 2008) default subslab soil-gas-to-indoor air attenuation factor of 0.1. The PCE RSL for subslab soil gas was revised to 94 µg/m^3, based on the final toxicity information posted on the USEPA IRIS on February 10, 2012.
  - Tier 1 RBTLs (Soil Vapor—Indoor Inhalation of Vapor Emissions) for residential land use and soil type 3 (clayey) presented in the MRBCA technical guidance (MDNR 2006).

A USEPA RSL does not exist for *cis*-1,2-DCE. For this reason, *trans*-1,2-DCE was used as a surrogate for this chemical.

Outdoor air concentrations were not compared against screening criteria. Outdoor air data are used for comparison with indoor air concentrations to determine if the measured indoor air concentrations are due to outdoor air infiltration.

The attached Data Quality Evaluation Report (Attachment 4) contains an assessment of data quality.

5.5 Screening Approach

As shown in Table 6, the following chemicals exceeded screening levels at least once in indoor air in May 2011, December 2011, or June 2012:

- 1,1,2,2-TeCA
- 1,1,2-TCA
- 1,2-DCA
- Benzene
- Carbon tetrachloride
- Chloroform
- Naphthalene
- PCE

The following chemicals exceeded screening levels at least once in subslab soil gas in May 2011, December 2011, or June 2012:

- Carbon tetrachloride
- Naphthalene
- PCE
- TCE
- Vinyl chloride

To assess possible sources of indoor air and subslab soil gas concentrations detected above screening levels, the following lines of evidence were considered:

- Comparison of chemical concentrations in indoor air samples and subslab samples. Similar or higher concentrations detected in indoor compared with subslab samples provide evidence of an indoor or outdoor background source.
- Comparison of chemical concentrations in indoor air and outdoor air samples. Similar indoor and outdoor air levels indicate outdoor air is the primary source of the measured indoor concentrations.
- Evaluation of chemical sources identified inside the home.
- Evaluation of chemicals detected in groundwater. The absence in groundwater of a VOC detected in subslab or indoor air samples provides suggestive evidence that groundwater is not the source.

Using the lines of evidence described above, each exceeding chemical was evaluated to assess its potential sources. The concentrations detected in June 2012 were compared against those detected in May and December 2011 to assess temporal changes.

5.5.1 1,1,2,2-Tetrachloroethane. In June 2012, 1,1,2,2-TeCA was detected at an estimated concentration of 0.56 µg/m^3 in indoor air, exceeding the screening level of 0.042 µg/m^3. In subslab soil gas, 1,1,2,2-TeCA was detected at an estimated concentration of 0.06 µg/m^3, below the screening level of 0.42 µg/m^3. It was not measured above the method detection limit in outdoor air.

The higher concentration of 1,1,2,2-TeCA in indoor air than in subslab soil gas, and its absence in outdoor air, provide evidence that 1,1,2,2-TeCA is originating from an indoor chemical source. Subslab soil gas concentrations of 1,1,2,2-TeCA did not exceed the screening level during any of the VI assessments performed in May 2011, December 2011, and March 2012. These lines of evidence indicate that 1,1,2,2-TeCA is not contributing to VI at PP-1.

5.5.2 1,1,2-Trichloroethane. In June 2012, 1,1,2-TCA was detected at an estimated concentration of 0.17 µg/m^3 in indoor air, similar (one significant digit) to the screening level of 0.15 µg/m^3. It was not detected in subslab soil gas or outdoor air in June 2012. Indoor air concentrations in May 2011, December 2011, and June 2012 were comparable—within an order of magnitude. The presence of 1,1,2-TCA in indoor air and absence in subslab soil gas and outdoor air suggest that 1,1,2-TCA measured in June 2012 originated from an indoor chemical source. Subslab soil gas concentrations of 1,1,2-TCA did not exceed the screening level during any of the VI assessments. These lines of evidence indicate that 1,1,2-TCA is not contributing to VI at PP-1.

5.5.3 1,2-Dichloroethane. In June 2012, 1,2-DCA was detected at an estimated concentration of 0.098 µg/m^3 in indoor air, which is similar (< 1.1 times) to the screening level of 0.094 µg/m^3. It was detected at an estimated concentration of 0.03 µg/m^3, below the screening level of 0.94 µg/m^3, in subslab soil gas in June 2012. 1,2-DCA was detected at an estimated concentration of 0.056 µg/m^3 in outdoor air. Indoor air concentrations in May 2011, December 2011, and June 2012 were comparable (within an order of magnitude). Although 1,2-DCA in groundwater has historically exceeded its VISL of 1.9 µg/L in nearby MW-107 (Table 5), it was not detected above the laboratory reporting limit of 0.5 µg/L in June 2012. The higher concentrations in indoor air versus subslab soil gas provide evidence that the measured indoor air concentrations are not due to VI.

During the VI assessments in May 2011, December 2011, and May 2012, indoor and outdoor air concentrations of 1,2-DCA were within an order of magnitude of each other, suggesting that 1,2-DCA may be originating from an outdoor source. Subslab soil gas concentrations of 1,2,-DCA did not exceed the screening level during any of the VI assessments. These lines of evidence indicate that 1,2-DCA is not contributing to VI at PP-1.

5.5.4 Benzene. In June 2012, benzene was not detected in indoor air at concentrations above the method detection limit; however, the method detection limit was slightly higher (0.67 µg/m^3) than the screening level of 0.31 µg/m^3. It was measured at 0.26 µg/m^3, below the screening level of 3.1 µg/m^3, in subslab soil gas. Benzene was measured at 0.53 µg/m^3 in outdoor air. Indoor air concentrations in May 2011, December 2011, and June 2012 were comparable (within an order of magnitude). Benzene concentrations in indoor and outdoor air also were comparable (within an order of magnitude) in May 2011, December 2011, and June 2012.

The presence of benzene at similar concentrations in indoor and outdoor air suggests that benzene is originating from an outdoor source. Subslab soil gas concentrations of benzene did not exceed the screening level during the VI assessments. Similar or higher concentrations in indoor air versus subslab soil gas samples provides supporting evidence of an aboveground source of benzene. These lines of evidence indicate benzene is not contributing to VI at PP-1.

5.5.5 Carbon Tetrachloride. In June 2012, carbon tetrachloride was detected at an indoor air concentration of 0.58 µg/m^3, which is similar (1.4 times) to the screening level of 0.41 µg/m^3. In subslab soil gas, it was detected at an estimated concentration of 0.47 µg/m^3, below the screening level of 4.1 µg/m^3.

In subslab soil gas, variable concentrations of carbon tetrachloride were observed in May 2011 (4.2 µg/m^3 [estimated]), December 2011 (0.68 µg/m^3), and June 2012 (0.47 µg/m^3). The May 2011 concentration slightly exceeded the screening level of 4.1 µg/m^3, whereas the December 2011 and June 2012 concentrations fell below the screening level. VI studies at other sites, such as those published in *Observed Spatial and Temporal Distributions of CVOCs at Colorado and New York Vapor Intrusion Sites* (Folkes et al. 2009), indicate that measured indoor air and subslab soil gas concentrations can vary over time. An analysis of VI sampling results compiled by the USEPA (2012c) from more than 40 sites across the United States indicates that subslab concentrations can vary temporally by more than one order of magnitude. The subslab soil gas concentration observed at PP-1 fall within this range of variability.

Despite variability in subslab soil gas of less than one order of magnitude, carbon tetrachloride in indoor air was measured at very consistent concentrations of 0.56 µg/m^3 (May 2011), 0.59 µg/m^3 (December 2011), and 0.58 µg/m^3 (June 2012). These stable concentrations indicate that carbon tetrachloride in subslab soil gas is not affecting concentrations measured in indoor air. Outdoor air concentrations of carbon tetrachloride (0.6 µg/m^3 in May 2011, 0.63 µg/m^3 in December 2011, and 0.51 µg/m^3 in June 2012) were comparable to indoor air concentrations, suggesting that carbon tetrachloride is originating from an outdoor source.

In groundwater at MW-107, carbon tetrachloride was measured at concentrations below the VISL in May 2011, December 2011, and June 2012. Based on groundwater concentrations below its VISL, its low subslab soil gas concentrations in December 2011 and June 2012, and its similar concentrations in indoor and outdoor air, carbon tetrachloride does not appear to be contributing to VI at PP-1.

5.5.6 Chloroform. In June 2012, chloroform was detected at an indoor air concentration of 1.4 µg/m^3, exceeding its screening level of 0.11 µg/m^3. In subslab soil gas, it was detected at an estimated concentration of 0.31 µg/m^3, below the screening level of 1.1 µg/m^3. The higher concentration in indoor air versus subslab soil gas provides evidence that the measured indoor air concentration is not attributable to VI. In outdoor air, chloroform was measured at an estimated concentration of 0.089 µg/m^3. Chloroform in groundwater at MW-107 was not detected above its VISL.

The indoor air concentrations of chloroform in May 2011, December 2011, and June 2012 were comparable (within an order of magnitude). During each VI assessment, chloroform concentrations in outdoor air were less than indoor air concentrations, and chloroform was not measured above the screening level in subslab soil gas. These lines of evidence indicate chloroform appears to originate from an indoor source and is not contributing to VI at PP-1.

5.5.7 Naphthalene. In June 2012, naphthalene was detected at an indoor air concentration of 66 µg/m^3, exceeding its screening level of 0.072 µg/m^3. In subslab soil gas, it was detected at a concentration of 4.7 µg/m^3, exceeding the screening level of 0.72 µg/m^3. Naphthalene was measured at 2.1 µg/m^3 in outdoor air. Naphthalene was not detected in groundwater at MW-107.

Indoor air concentrations measured in May 2011, December 2011, and June 2012 were comparable (within an order of magnitude). Naphthalene concentrations in outdoor air were less than indoor air concentrations observed during the VI assessments. Although naphthalene exceeded the screening level in subslab soil gas in June 2012, it was an order of magnitude higher in indoor air. During the VI assessment and during previous site visits, the field team observed the scent of mothballs throughout the residence. Mothballs are a potential source of naphthalene of the measured concentration in the indoor air sample and the June 2012 HAPSITE readings (Section 5.3). Naphthalene is also present in several chemical products observed during the chemical inventory (Table 2).

Indoor air concentrations of naphthalene were one to two orders of magnitudes greater than the concentrations detected in subslab soil gas in May 2011, December 2011, and June 2012. This suggests an indoor chemical source. Similar to carbon tetrachloride (Section 5.5.5), concentrations of naphthalene in subslab soil gas have been variable during the three VI assessments, ranging from less than 0.94 µg/m^3 to 4.7 µg/m^3. This variability falls within the range observed in other VI studies (USEPA 2012c). Naphthalene was not detected in groundwater at MW-107 during the May 2011, December 2011, and June 2012 VI assessments.

Because the indoor air concentrations of naphthalene have been at least one order of magnitude higher than in subslab soil gas, and based on the observed scent of mothballs, the other indoor chemical sources inside the residence, and the absence of naphthalene in groundwater over three monitoring events, naphthalene appears to originate from an indoor source and is not contributing to VI at PP-1.

5.5.8 Tetrachloroethene. In June 2012, PCE was measured at an indoor air concentration of 0.87 µg/m^3, below the screening level of 9.4 µg/m^3. It was detected in subslab soil gas at a concentration of 1.0 µg/m^3, below the screening level of 94 µg/m^3. PCE was measured at an estimated concentration of 0.11 µg/m^3 in outdoor air. The May 2011, December 2011, and June 2012, indoor air concentrations of PCE were comparable (within an order of magnitude).

PCE has not exceeded the screening level of 9.4 µg/m^3 during the VI assessments performed in May 2011, December 2011, and June 2012. PCE originally was identified as exceeding the screening level in May 2011, when the PCE screening level was 0.41 µg/m^3. The screening level was adjusted when the USEPA RSL was raised from 0.41 to 9.4 µg/m^3, based on the final toxicity information posted on the USEPA IRIS on February 10, 2012.

Subslab soil gas concentrations of PCE were detected below the method detection limit of 0.93 µg/m^3 in May 2011, at an estimated concentration of 110 µg/m^3 in December 2011, and at 1.0 µg/m^3 in May 2012. The May 2011 concentration slightly exceeded the screening level of 94 µg/m^3. VI studies at other sites, such as those published in *Observed Spatial and Temporal Distributions of CVOCs at Colorado and New York Vapor Intrusion Sites* (Folkes et al. 2009), indicate that measured indoor air and subslab soil gas concentrations can vary over time. This variability also falls within the range observed in other VI studies (USEPA 2012c). Despite the variable subslab soil gas concentrations of PCE, indoor air concentrations of PCE have been similar—0.88 µg/m^3 in May 2011, 0.53 µg/m^3 in December 2011, and 0.87 µg/m^3 in June 2012. This indicates that subslab concentrations of PCE have not contributed to VI at PP-1. Further, because PCE in indoor air has not exceeded the screening level of 4.3 µg/m^3 during three VI assessments, potential future VI of PCE at PP-1 is not a concern.

5.5.9 Trichloroethene. In June 2012, TCE was measured at an indoor air concentration of 0.71 µg/m^3, slightly above the screening level of 0.43 µg/m^3. In subslab soil gas, it was detected at a concentration of 0.52 µg/m^3, below the screening level of 4.3 µg/m^3. The higher concentration in indoor air versus subslab soil gas provides evidence that the measured indoor air concentration is not due to VI. TCE was not detected above the method detection limit of 0.11 µg/m^3 in outdoor air. TCE was not detected above its screening level in groundwater at MW-107.

TCE concentrations in outdoor air were lower than indoor air concentrations observed during the VI assessments.

Subslab concentrations of TCE were below the method detection limit of 0.91 µg/m^3 in May 2011, 210 µg/m^3 in December 2011, and 0.52 µg/m^3 in June 2012. The May 2011 concentration exceeded the screening level of 4.3 µg/m^3. The variability of TCE in subslab soil gas falls within the range observed in other VI studies (USEPA 2012c). Despite the variable subslab soil gas concentrations of TCE, indoor air concentrations of TCE have been similar—0.28 µg/m^3 in May 2011, 0.27 µg/m^3 in December 2011, and 0.71 µg/m^3 in June 2012. Indoor air quality has not been affected by elevated subslab soil gas concentrations, as indicated by a December 2011 subslab soil gas concentration of 210 µg/m^3 and an indoor air concentration detected below the screening level of 0.27 µg/m^3. A comparison between subslab soil gas and indoor air concentrations indicates that subslab concentrations of TCE have not contributed to VI at PP-1.

5.5.10 Vinyl Chloride. In June 2012, vinyl chloride was not detected in indoor air, subslab soil gas, outdoor air, or groundwater. The only detection of vinyl chloride at PP-1 in any sample occurred in December 2011, when the subslab soil gas concentration of 1.8 µg/m^3 was similar to the screening level of 1.6 µg/m^3. Subslab soil gas concentrations were in below 0.43 µg/m^3 in May 2011 and 0.001 µg/m^3 in June 2012. The variability of vinyl

chloride in subslab soil gas falls within the range observed in other VI studies (USEPA 2012c). Indoor air quality has not been affected by subslab soil gas concentrations, as indicated by a December 2011 subslab soil gas concentration of 1.8 µg/m^3 and a nondetectable indoor air concentration. Comparison of subslab soil gas and indoor air concentrations indicates that subslab concentrations of vinyl chloride have not contributed to VI at PP-1.

6. Conclusions

Based on VI assessments performed in May 2011, December 2011, and June 2012, contamination from the former Hanley Area does not appear to be contributing to VI at PP-1. This conclusion is based on the following lines of evidence:

- Concentrations of 1,1,2,2-TeCA, 1,1,2-TCA, 1,2-DCA, benzene, carbon tetrachloride, chloroform, and naphthalene appear to originate from an indoor or outdoor source, rather than from VI of subslab soil gas.
- Sources of the other chemicals (PCE, TCE, and vinyl chloride) are unknown, but indoor air concentrations of PCE were below the screening level, and vinyl chloride was not detected in indoor air. TCE (0.71 µg/m^3) slightly exceeded the indoor air screening level in May 2012, but the corresponding subslab soil gas concentration was lower (0.52 µg/m^3), suggesting that the exceeding indoor air concentration was not attributable to VI.
- Although variable concentrations of carbon tetrachloride, naphthalene, PCE, TCE, and vinyl chloride were observed in subslab soil gas between May 2011 and June 2012, the variability was consistent with published long-term VI studies (Folkes et al. 2009; USEPA 2012c). Based on stable indoor air concentrations measured during 3 VI assessments conducted over a 13-month period, the variable subslab soil gas concentrations have not affected indoor air quality.
- With the exception of 1,2-DCA, no chemicals exceeded VISLs in groundwater at monitoring well MW-107. 1,2-DCA in groundwater at MW-107 was not detected above the VISL in June 2012.

Given that some variability is expected in subslab soil gas concentrations, and based on the stable indoor air concentrations observed between May 2011 and June 2012, further rounds of VI sampling in the near-term are unlikely to change the conclusions presented in this technical memorandum. For this reason, further near-term VI monitoring at PP-1 is not warranted.

As noted, the Army is performing an OU-2 investigation in the residential neighborhood north of the former Hanley Area. That investigation will evaluate the possible migration of VOCs from groundwater from the former Hanley Area to subslab soil gas beneath homes north (downgradient) of Stratford Avenue. If the investigation indicates a potential connection between the former Hanley Area and subslab soil gas beneath PP-1, the Army will consider additional VI monitoring at PP-1 at that time.

7. References

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Tables

TABLE 1

Indoor Air, Ambient Air, and Subslab Soil Gas Sampling Details

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

Sample Location	Canister ID	Purge Start Date and Time	Purge End Date and Time	Sampling Start Date and Time	Sampling End Date and Time	Medium Sampled	Initial Canister Vacuum (in. Hg)	Purge Vacuum (in. Hg)	Final Canister Vacuum Measured in Field After Sampling (in. Hg)	Final Canister Vacuum Measured at Laboratory (in. Hg)
PP-1-IA-01	6L25155	not applicable	not applicable	060512/1002	060612/0815	Indoor air	-28	NA	-1	-1.8
PP-1-AA-01	6L26359	not applicable	not applicable	060512/1004	060612/0820	Ambient air	-29	NA	-13	-14.9
PP-1-SG-01	6L25635	060512/0904	060512/0914	060512/1003	060612/0814	Soil gas	-29	0	-5	-7.3
PP-1-SG-01-FD	6L2599A	060512/0904	060512/0914	060512/1003	060612/0814	Soil gas	-29	0	-25	-26.5

Note: Analysis method was TO-15 Selective Ion Mode.

in. Hg = inches of mercury

TABLE 2

Chemical Inventory

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

Household Name	Amount (Number and Size of Containers)	Chemical Present	Location
Febreze Air Effects	One 9.7-ounce	Ethanol	Utility room
ScotchGard Spray	One 10-ounce	Ethyl alcohol, isobutane, telomer with ethylbenzene	Utility room
OxiClean Max Force Stain Remover Spray	One 12-ounce	Propylene glycol	Utility room
Max 5000 Window and Door Caulk	One 10-ounce	Unknown	Utility room
Pine-Sol	One 28-ounce	Isopropyl alcohol, sodium petroleum sulfonate	Utility room
Mop & Glo Triple Action	One 32-ounce	Ethanol	Utility room
Premium Décor Satin Paint	Two 0.5-pint	Naphtha, petroleum, heavy alkylate	Utility room
EasyCare Satin Paint	One 1-gallon	Naphtha, petroleum, heavy alkylate	Utility room
E-Z Kare Paint	One 37.5-ounce	Naphtha, petroleum, heavy alkylate	Utility room
Kilz Odorless Oil-Based Primer	One 1-pint	Hydrotreated heavy naphtha, petroleum, polystyrene resins	Utility room
Kilz Odorless Latex Primer	One 1-quart	Hydrotreated heavy naphtha, petroleum, polystyrene resins	Utility room
Rustoleum - Reflective Finish Spray Paint	One 12-ounce	Liquified petroleum gas, acetone, toluene, mineral spirits, aliphatic hydrocarbon	Utility room
Rustoleum - Gloss Protective Enamel Spray	One 12-ounce	Liquified petroleum gas, acetone, ethylbenzene, xylene, mineral spirits,n-butyl acetate	Utility room
American Accents Spray Paint	Two 12-ounce canisters	Liquified petroleum gas, acetone, toluene, mineral spirits, aliphatic hydrocarbon	Utility room
CRC Heavy Duty Degreaser Spray	One 15-ounce	Tetrachloroethene, trichcloroethene	Utility room
Moore Mild Multi-Purpose Bowl and Porcelain Cleaner	One <10-ounce	Alkyl dimethyl benzyl ammonium chloride, alkyl dimethylethylbenzyl ammonium chloride, phosphoric acid	Utility room
Lamplight Farms Lamp Oil	One 32-ounce bottle	Medium aliphatic solvent naphtha	Utility room
Sherwin Williams Porch and Floor Enamel	One 4-quart	Titanium dioxide, zinc oxide	Utility room
True Value Semi-Gloss Enamel	One 1-pint	Unknown	Utility room
Maintenance One Non-Buff Floor Finish	One 1-gallon	Tributoxyethanol, diethylene glycol mono ethyl ether, zinc ammonium compound	Utility room
ERA Ultra	Two 100- and 170-ounce	Ethanol, ethanolamine, anionic and nonioinic surfactants,	Utility room
Walgreens Bleach	One 3-quart	Sodium hypochlorite	Utility room
Fire Extinguisher	One unknown quantity	Unknown	Utility room
Woolite Complete	One 50-ounce	Alcohols, benzenesulfonic acid, alkyl ethers, fatty acids	Utility room
Krylon 18K Gold Plate Spray	One 8-ounce	Acetone, propane, butane, toluene	Utility room
Oops! Paint Remover	One 1-pint	Monochlorotoluene, xylene, VM&P naphtha	Utility room
Bleach/Water Spray	One < 10-ounce	Sodium hypochlorite	Hair salon

TABLE 2

Chemical Inventory

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

Household Name	Amount (Number and Size of Containers)	Chemical Present	Location
Shampoo	10 to 20 16- to 32-ounce	Several brands/types	Hair salon
Conditioner	5 to 10 16- to 32-ounce	Several brands/types	Hair salon
Febreze Air Effects	One 9.7-ounce	Ethanol	Hair salon
Doo Gro Leave-In Gro Treatment	One unknown quantity	Cationic conditioners	Hair salon
Doo Gro Hair Polish Shine Mist	One 8-ounce	Cyclomethicone, dimethicone, isohexadecane	Hair salon
Fluff Shampoo - Regular Detangler	One 4 pound 8-ounce	Unknown	Hair salon
Proclaim Professional Care Neutrilizing Shampoo	One 1-gallon	Unknown	Hair salon
Proclaim Cholesterol	One unknown quantity	Unknown	Hair salon
Sea Breeze Astringent Skin and Scalp	One 1-quart	Salicylic acid, benzoic acid, glycerin, camphor, sodium benzoate, methyl propanediol	Hair salon
Shiny Silver Ultra Shine and Spray	One 4-ounce	Unknown	Hair salon
Roux Fanci-Full Hair Rinse	One 15.2-ounce	Benzyl alcohol, hexylene glycol, hydroxyethylcellulose, stearalkonium chloride	Hair salon
D.O.C. Eyeglass Cleaner	One unknown quantity	Unknown	Hair salon
Soft Sheen Soft Holding Spritz	One 8-ounce	Unknown	Hair salon
Salon Pro Carrot Oil Formula Hair Food	One 4-ounce	Unknown	Hair salon
Nutresse Hair Stop Break	One 8-ounce	Unknown	Hair salon
Folicure Hair Spray	One 8-ounce	Unknown	Hair salon
Dudley's Q+ Crème Press	One 14-ounce	Unknown	Hair salon
ApHogee Keratin and Green Tea Restructurer	One 6-ounce	Unknown	Hair salon
Nature's Shine Organic Root Stimulator	One 6-ounce	Unknown	Hair salon
TCB Bone Strait Conditioner and Blow Dry Lotion	One 32-ounce	Unknown	Hair salon
Pantresse Vitamin Normalizer	One unknown quantity	Unknown	Hair salon
Clairol Beautiful #2RV Burgandy Brown	One 3-ounce	Unknown	Hair salon
Ampro Pro Styl Marcel Wax	One 12-ounce	No hazardous components	Hair salon
Fantasia Frizz Buster Serum	One unknown quantity	Unknown	Hair salon
Isoplus Pressing Oil	One 6-ounce	Unknown	Hair salon
Beyond the Zone Protein Cocktail	One 8-ounce	Unknown	Hair salon
Faultless Regular and Heavy Starch	Three 22-ounce	Butane, propoane, modified corn starch, sodium lauroyl sarcosinate	Outside the utility room
Krylon Workable Fixatif Spray	One 11-ounce	Propane, butane, 2-propanol, 2-butoeythanol, acetone, 1-methoxy-2-propanol acetate	Outside the utility room

TABLE 3

HAPSITE GC/MS Sample Locations

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

File ID	Location ID	Matrix	Description
001	XB1-0605	Quality control	N2 blank.
002	CV1-0605	Quality control	Calibration verification.
003	CV2-0605	Quality control	Calibration verification.
004	HS-1	Indoor air	[redacted]
005	HS-2	Indoor air	
006	HS-3	Indoor air	
007	HS-4	Indoor air	
008	HS-5	Indoor air	
009	HS-6	Indoor air	
010	HS-7	Indoor air	
011	HS-8	Indoor air	
012	CV3-0605	Quality control	
013	CV4-0605	Quality control	Calibration verification.

HS = HAPSITE sampling point

TABLE 4

HAPSITE GC/MS Indoor Air Sample Locations

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

Analyte	Indoor Air Screening Level [a]	Molecular Weight	Location>> PP-HS-1 Upstairs. Center of Kitchen	PP-HS-2 Downstairs. Colocated with IA-1 by stairwell	PP-HS-3 Downstairs. Center of salon area	PP-HS-4 Downstairs. Closet containing gasmeter utility on east wall	PP-HS-5 Downstairs. Direct sampling of floor drain in utility room	PP-HS-6 Downstairs. Center of utility room with floor drain	PP-HS-7 Downstairs. Under stairwell, behing access panel near IA-1	PP-HS-8 Downstairs. HVAC utility room
1,1,2,2-Tetrachloroethane	0.042	167.85	*<0.70*	*<0.70*	*<0.70*	*<0.70*	*<0.70*	*<0.70*	*<0.70*	*<0.70*
1,1,2-Trichloroethane	0.15	133.40	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*
1,2-Dichloroethane (1,2-DCA)	0.094	98.96	*<0.41*	*<0.41*	*<0.41*	*<0.41*	*<0.41*	*<0.41*	*<0.41*	*<0.41*
Benzene	0.31	78.11	*<0.32*	*<0.32*	*<0.32*	*<0.32*	*<0.32*	*<0.32*	*<0.32*	*<0.32*
Carbon tetrachloride	0.41	153.82	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*	*<0.64*
Chloroform	0.11	119.38	*<0.50*	*<0.50*	*<0.50*	*<0.58*	*<0.50*	*<0.58*	*<0.56*	*<0.52*
cis-1,2-Dichloroethene	63[b]	96.95	**0.48**	**0.57**	**0.45**	<0.40	<0.40	<0.40	**0.45**	<0.42
Methylene chloride	54.5[c]	84.93	<0.35	**0.50**	**0.42**	**0.47**	<0.35	<0.35	<0.35	<0.35
Naphthalene	0.072	128.17	**6.50**	**28.75**	**21.89**	**23.24**	**12.32**	**16.98**	**17.94**	**23.76**
Tetrachloroethene (PCE)	4.27	165.83	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.71
trans-1,2-Dichlorethene	63	96.95	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Trichloroethene (TCE)	0.43	131.29	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*	*<0.55*
Vinyl chloride	0.16	62.50	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*	*<0.26*

Note: **Bold indicates the analyte was detected above the method detection limit.**

Bold and shading indicates the result was detected and exceeded screening criteria.

Italicized values represent nondetected chemicals with a method detection limit that exceeded the screening level.

All units in micrograms per cubic meter.

[a] U.S. Environmental Protection Agency Residential Screening Level for Resident Air, unless otherwise noted. Subslab soil gas screening levels adjusted using the USEPA (2002 and 2008) default subslab soil-gas-to-indoor air attenuation factor of 0.1.

[b] A USEPA RSL does not exist for cis-1,2-dichloroethene. For this reason, trans-1,2-dichloroethene was used as a surrogate for this chemical.

[c] Tier 1 Risk-Based Target Level ([RBTL] Indoor Air) for residential land use presented in the Missouri Risk-Based Corrective Action technical guidance (MDNR 2006).

< - Analyte was not detected above the method detection limit.

TABLE 5

Chemicals Detected in Groundwater at MW-107

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

Analyte	Screening Level	MW-107-052311	MW-107-052311FD	MW-107-121911	MW-107-121911FD	MW-107-060612	MW-107-060612FD
	Sample Date>>	5/23/2011	5/23/2011	12/19/2011	12/19/2011	6/6/2012	6/6/2012
SW8260B (µg/L)							
1,1,1,2-Tetrachloroethane	3.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	2.8	1 UJ	**1 R**	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	4.5	1.1 U	1.1 U	1.1 U	1.1 U	1 U	1 U
1,2-Dichloroethane (1,2-DCA)	1.9	**13.9**	**14.4**	**9.8**	**10.6**	0.5 U	0.5 U
Benzene	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	0.36	*1 U*	*1 U*	*1 U*	*1 U*	0.5 U	0.5 U
Chloroform	0.71	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis -1,2-Dichloroethene	380[a]	**0.68**	**0.7 J**	**0.71**	**0.71**	**0.74**	**0.76**
Methylene chloride	720	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	4	5 U	**5 R**	5 U	5 U	5 UJ	5 UJ
Tetrachloroethene (PCE)	13	1.1 UJ	*1.1 U*	*1.1 U*	**0.24 J**	0.5 U	0.5 U
trans -1,2-Dichloroethene	380	0.5 U	0.5 U	0.5 U	0.5 U	0.66 U	0.66 U
Trichloroethene (TCE)	1.1	**0.4 J**	**0.44 J**	**0.58**	**0.7**	**0.6**	**0.62**
Vinyl chloride	0.14	1 U	1 U	1 U	1 U	1 U	1 U

Note: Screening levels were calculated using the March 2012 U.S. Environmental Protection Agency Vapor Intrusion Screening Level calculator. The calculator was used to develop recommended screening levels for groundwater based on an attenuation factor of 0.001 for groundwater-to-indoor air, an excess lifetime cancer risk of 1×10^{-6}, and a hazard quotient of 1.0 for noncarcinogens.

Bold indicates the analyte was detected

Shading indicates the analyte exceeded screening criteria

[a] trans-1,2-DCE is used as a surrogate for cis-1,2-DCE, as no inhalation toxicity information is available for cis-1,2-DCE.

J = The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.

R = The sample results are rejected due to the inability to analyze the sample and meet the quality control criteria. The presence or absence of the analyte cannot be verified.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was below the reported sample quantitation limit. However, the reported value is approximate.

All units in micrograms per liter.

TABLE 6

Summary of Chemicals Detected in Indoor Air, Ambient Air, and Subslab Soil Gas Samples

Vapor Intrusion Assessment, Private Property PP-1, St. Louis, Missouri

	Location>>	PP-1-IA-01	PP-1-IA-01-FD	PP-01-IA-01	PP-1-IA-01	PP-1-AA-01	PP-01-AA-01	PP-1-AA-01		PP-1-SG-01	PP-1-SG-01	PP-1-SG-01-FD	PP-1-SG-01	PP-1-SG-01-FD
	Sample Date>>	5/25/2011	5/25/2011	12/13/2011	6/5/2012	5/25/2011	12/13/2011	6/5/2012		5/25/2011	12/13/2011	12/13/2011	6/5/2012	6/5/2012
Analyte	Indoor/Ambient Air Screening Level [a]	Indoor Air	Indoor Air	Indoor Air	Indoor Air	Outdoor Air	Outdoor Air	Outdoor Air	Subslab Soil Gas Screening Level [a]	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
1,1,2,2-Tetrachloroethane	0.042	0.0085 U	0.014 U	**0.025 J**	**0.56 J**	0.007 U	**0.053 J**	0.040 U	0.42	***3.0 U***	**0.25 J**	**0.25 J**	**0.060 J**	0.17 UJ
1,1,2-Trichloroethane	0.15	0.003 U	0.005 U	0.019 U	**0.17 J**	0.003 U	**0.058 J**	0.032 U	1.5	1.3 U	**1.1 J**	**0.88 J**	0.021 U	0.14 UJ
1,2-Dichloroethane (1,2-DCA)	0.094	**0.11 J**	**0.092 J**	**0.094 J**	**0.098 J**	**0.08 J**	**0.130**	**0.056 J**	0.94	0.67 U	0.14 U	0.14 U	**0.034 J**	**0.21 J**
Benzene	0.31	**0.91**	**1.1**	**1.3**	***0.67 U***	**0.87**	**1.3**	**0.53**	3.1	0.49 U	**0.57 J**	**0.54 J**	**0.26**	1.3 U
Carbon tetrachloride	0.41	**0.59**	**0.70**	**0.56**	**0.58**	**0.6**	**0.63**	**0.51**	4.1	**4.2 J**	**0.68 J**	**0.65 J**	**0.47**	**0.42 J**
Chloroform	0.11	**2.1**	**2.4**	**0.68**	**1.4**	**0.15 J**	**0.20**	**0.089 J**	1.1	***2.3 U***	**0.41 J**	**0.60 J**	**0.31**	0.22 U
cis-1,2-Dichloroethene	63[b]	0.025 U	0.04 U	**0.10 J**	0.067 U	0.02 U	**0.039 J**	0.046 U	630[b]	0.90 U	**69**	**47**	0.031 U	**1.2 J**
Methylene chloride	54.5[c]	0.026 U	0.042 U	**0.37 J**	0.84 U	**0.40 J**	**0.40 J**	**0.53 J**	960	0.77 U	0.30 U	0.31 U	0.20 U	0.92 U
Naphthalene	0.072	**34**	**39**	**18**	**66**	**0.47**	***0.081 U***	**2.1**	0.72	***0.94 U***	***0.92 U***	***0.93 U***	**4.7**	**3.9 J**
Tetrachloroethene (PCE)	4.27	**0.88**	**0.78**	**0.53**	**0.87**	**0.38**	**0.25**	**0.11 J**	94	0.93 U	**110 J**	**81**	**1.0**	**3.5 J**
trans-1,2-Dichloroethene	63	**0.11 J**	**0.1 J**	**0.081 J**	0.034 U	**0.096 J**	**0.076 J**	0.023 U	630	0.76 U	**1.1 J**	**0.72 J**	0.016 U	0.29 U
Trichloroethene (TCE)	0.43	**0.28**	**0.21 J**	**0.273**	**0.71**	0.004 U	**0.12 J**	0.11 U	4.3	0.91 U	**210**	**190**	**0.52**	**3.1 J**
Vinyl chloride	0.16	0.0014 U	0.002 U	0.0089 U	0.022 U	0.001 U	0.0079 U	0.015 U	1.6	0.43 U	**1.8**	0.091 U	0.0010 U	0.064 UJ

Note: **Bold indicates the analyte was detected above the method detection limit.**

Bold and shading indicates the result was detected and exceeded screening criteria.

Bold and italicized values represent nondetected chemicals with a method detection limit that exceeded the screening level.

May 2011 indoor and ambient air samples analyzed by Method TO-15 SIM and subslab soil gas sample analyzed by Method TO-15 SCAN. December 2011 and June 2012 indoor air, ambient air, and subslab soil gas samples analyzed by Method TO-15 SIM.

All units in micrograms per cubic meter.

[a] U.S. Environmental Protection Agency (USEPA) Residential Screening Level (RSL) for Resident Air, unless otherwise noted. Subslab soil gas screening levels adjusted using the USEPA (2002 and 2008) default subslab soil-gas-to-indoor air attenuation factor of 0.1.

[b] A USEPA RSL does not exist for cis-1,2-dichloroethene. For this reason, trans-1,2-dichloroethene was used as a surrogate for this chemical.

[c] Tier 1 Risk-Based Target Level ([RBTL] Indoor Air) for residential land use presented in the Missouri Risk-Based Corrective Action technical guidance (MDNR 2006).

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

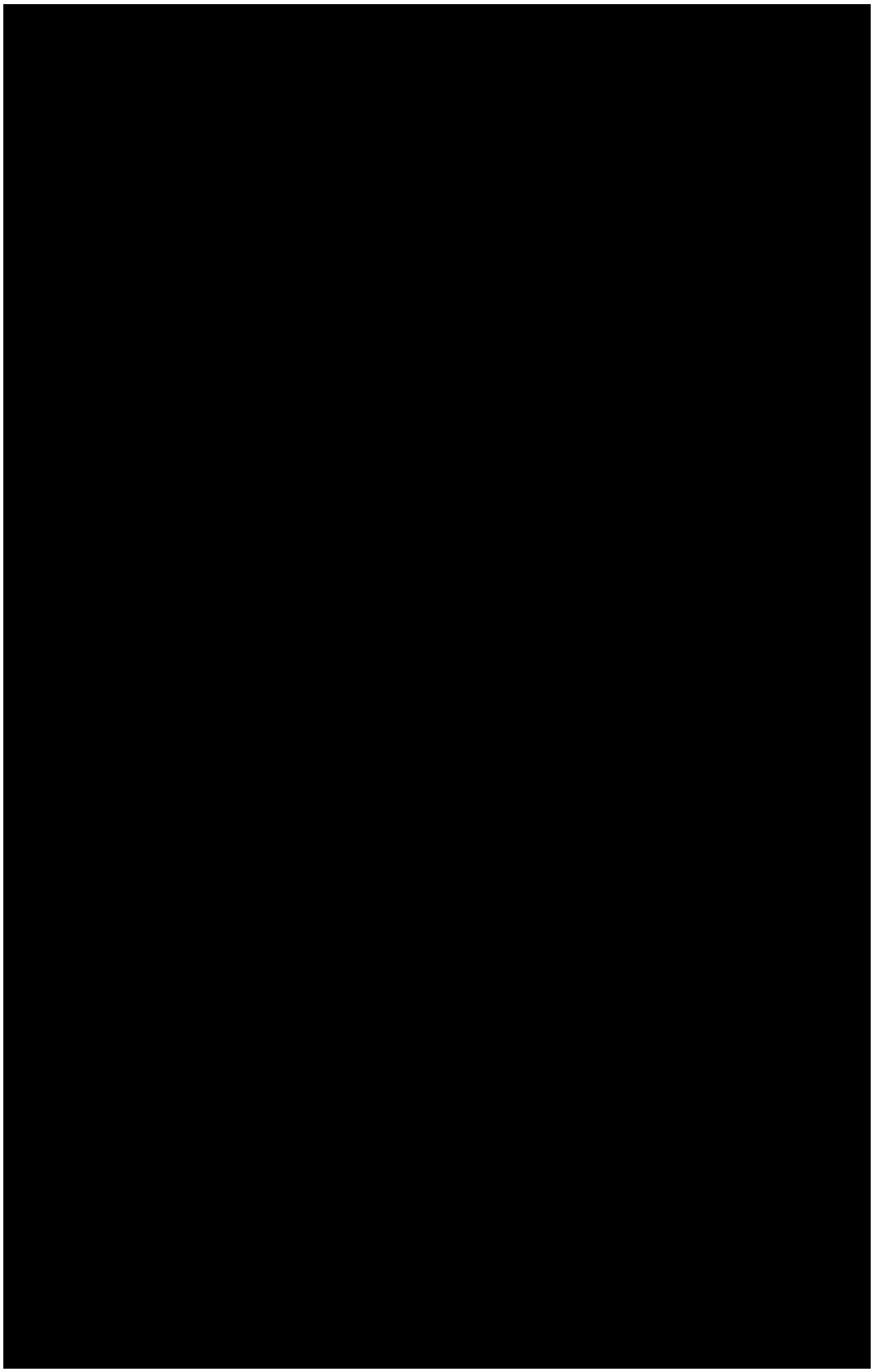
< - Analyte was not detected above the method detection limit.

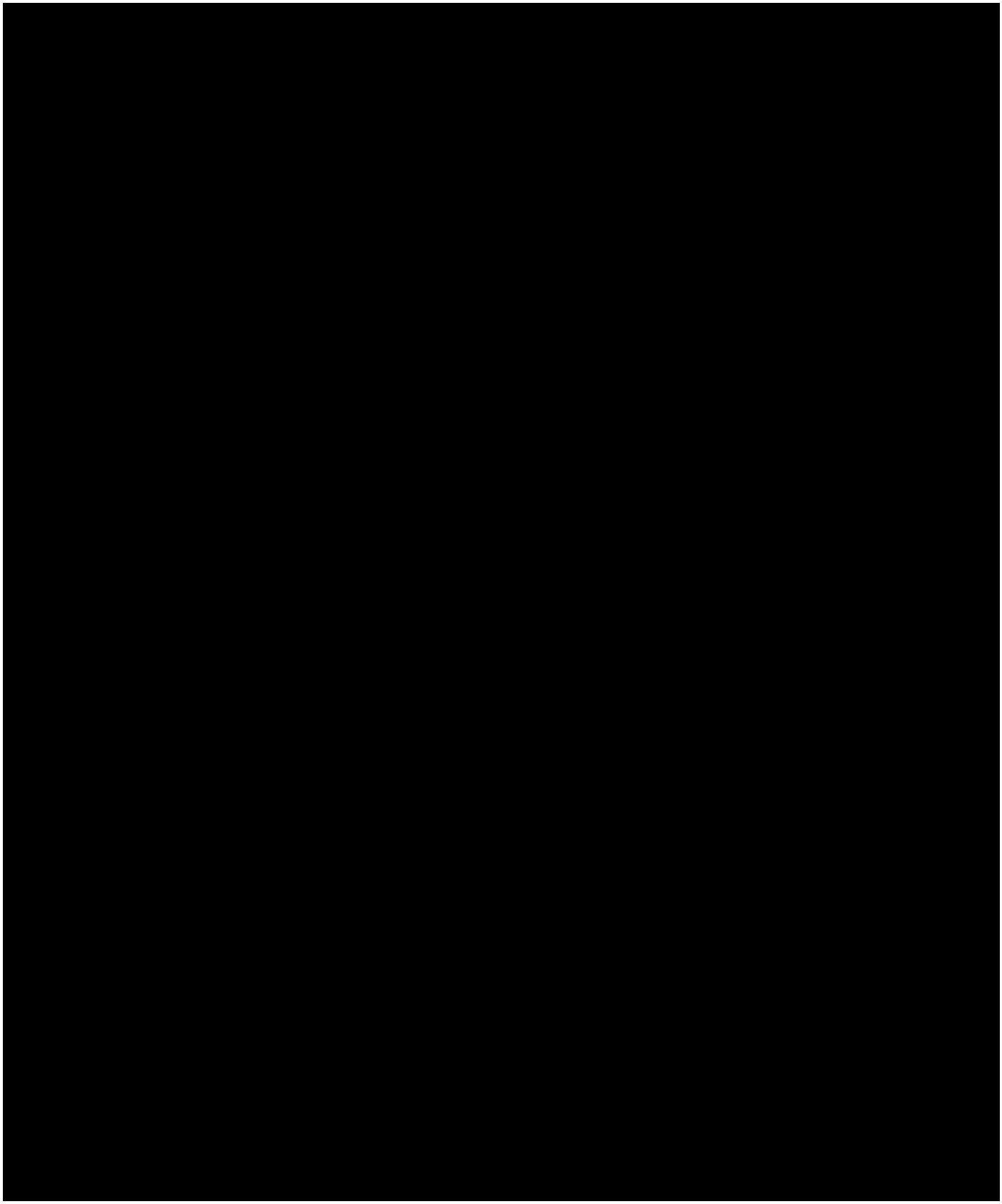
Figures

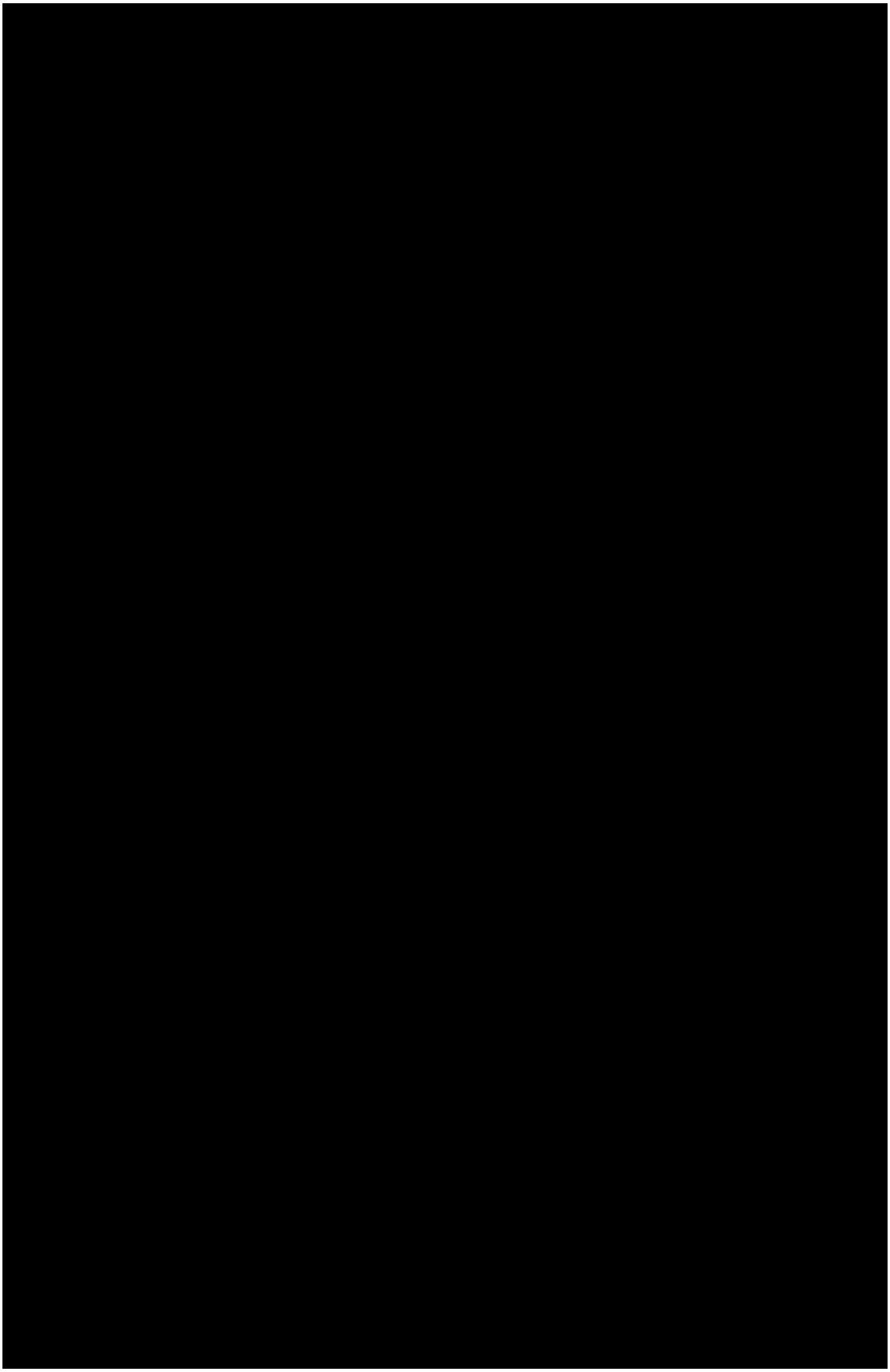
Attachment 1
Investigation Photographs

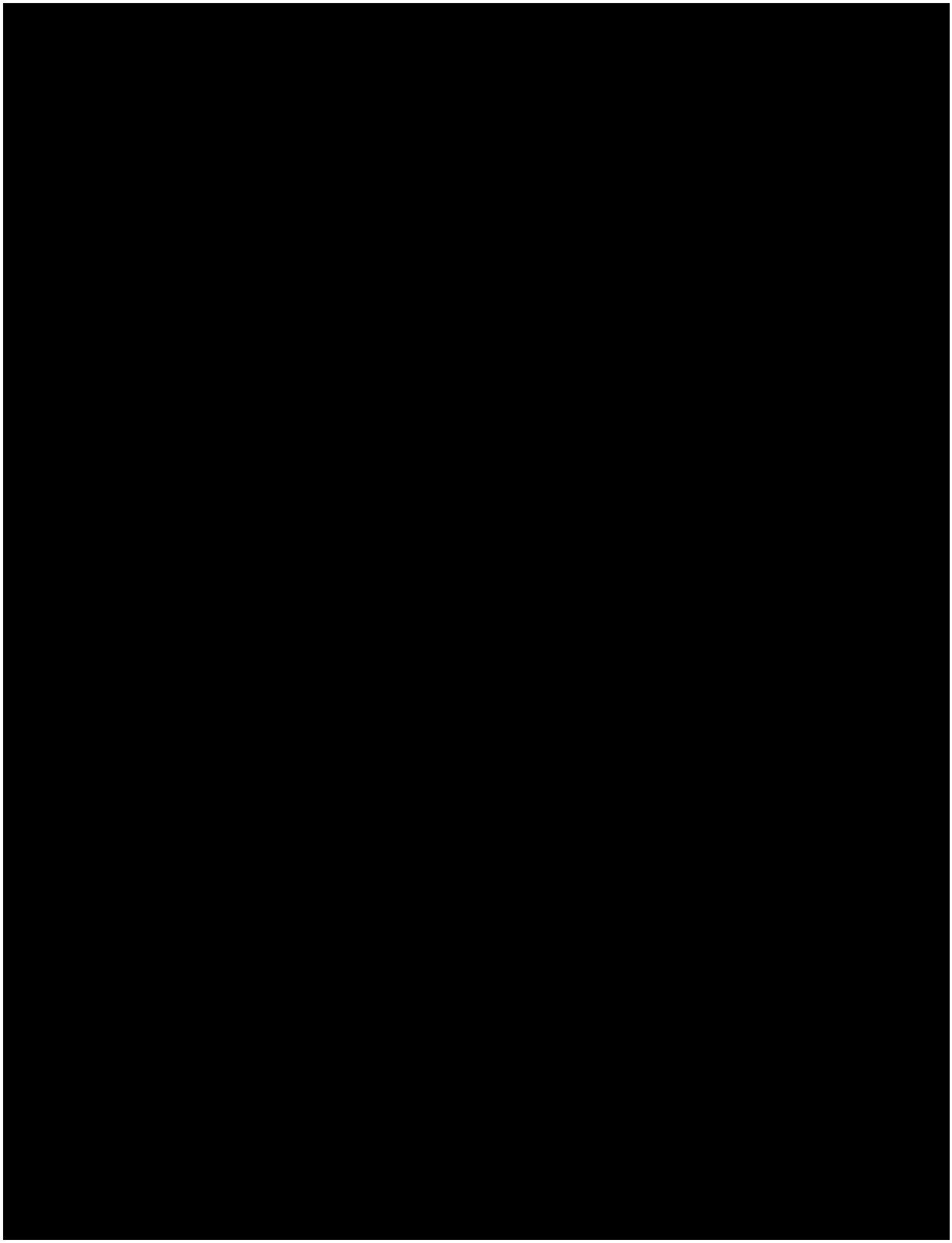
ATTACHMENT 1

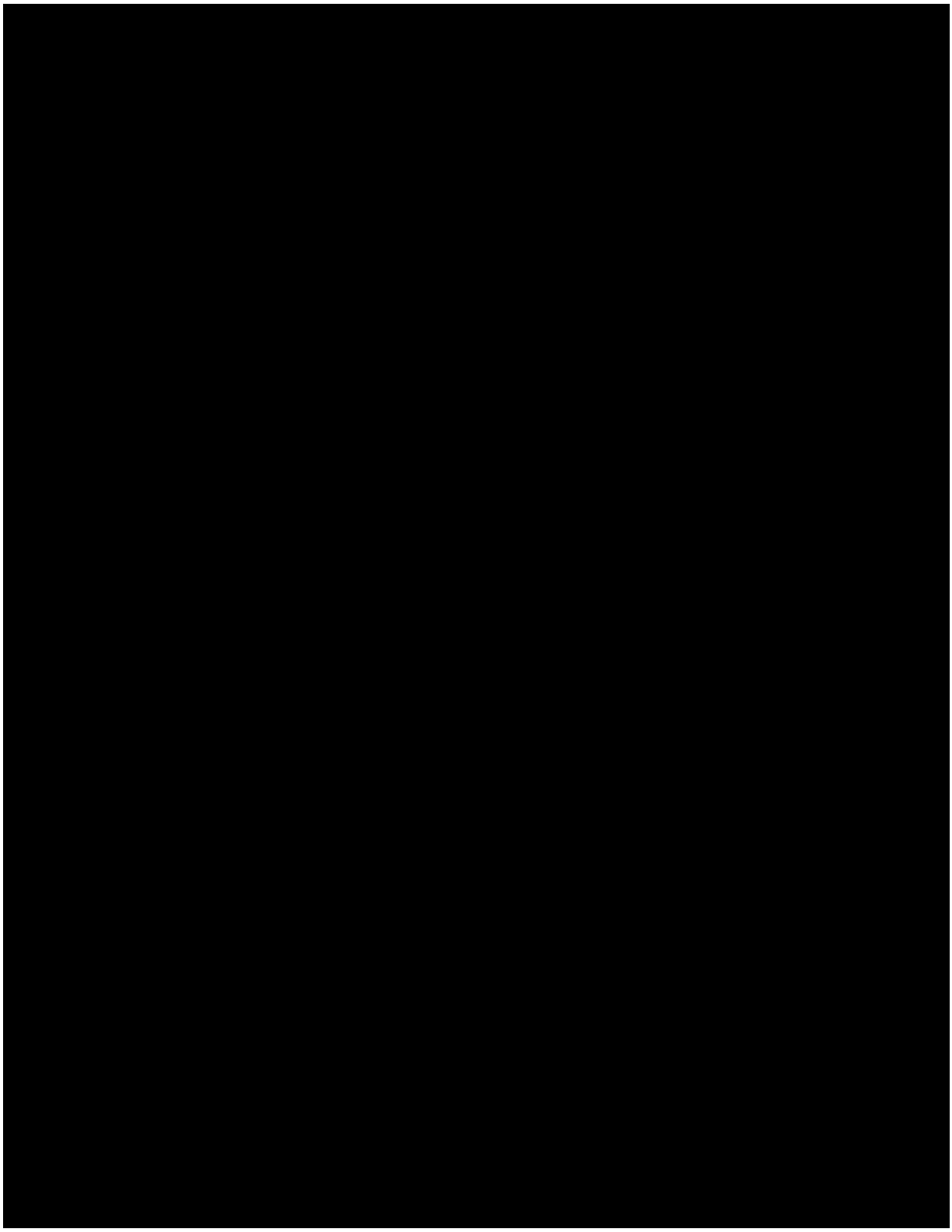
Photograph Log: Private Property PP-1











Attachment 2
Groundwater Monitoring Form

Groundwater Purging and Sampling Form

Project Name: SLOP
Project Number: 364298
Sheet 1 of 1
Sample Source (Well No./Location): MW-107
Date: 06 / 06 / 12
Weather Conditions: 81° & clear
Well Condition: Good
Sample Team: T. Swierczek / G. Roberts
Sample Equipment: Peristaltic pump

Well Stabilization Data

Datum BTOC
Well Depth ~~26~~ 27 (ft) Tubing Depth: 18.50'
Static Water Level 3.74 (ft)
Water Column 22.26 (ft)
Diameter: 2" PVC

Well Volume:
1V = _____ (gal)
3V = _____ (gal)
5V = _____ (gal)
Pumping System Volume _____ (gal)

Time Purging begins (T_0) 1501
Water Level at time T_0 4.12
Time Purging ends (T_1) 1536
Water Level at time T_1 _____

Time	Volume Removed (liters)	pH +/- 0.1	SPCOND.(mS/cm)[1] +/- 20 umho/cm[1]	TEMP.(C) +/- 0.5	Redox (mV) +/- 10 mV	Water level (Ft) < 1.0 ft	D.O. (mg/L) +/- 10%[2]	Turbidity (NTU)	Purge rate (Lpm)	Appearance
1501	ϕ	6.01	0.902	20.80	143.5	4.12	1.38	6.64	0.125	Clear
1506	0.625	5.92	0.879	18.77	138.9	5.09	0.30	6.78	0.150	
1511	1.375	5.78	0.874	18.72	140.6	6.35	ϕ	6.17	0.150	
1516	2.125	5.78	0.870	18.62	139.9	7.32	-0.04	4.71	0.150	
1521	2.875	5.80	0.868	18.69	138.3	8.01	-0.06	4.77	0.150	
1526	3.625	5.81	0.867	18.80	138.0	8.55	-0.07	2.58	0.150	
1531	4.375	5.81	0.869	18.86	138.1	8.96	-0.08	2.22	0.150	
1536	5.125	5.82	0.866	18.83	137.6	9.36	0.02	5.84	0.150	

[1] Specific conductance: +/- □1% of full-scale reading (instrument repeatability) or default +/- □20 µmho/cm
[2] Dissolved oxygen: +/- □0.1 mg/L for values < 1 mg/L, or +/- □10% for values >1 mg/L

Sample Information

Sample ID: MW-107-060612 & ~~MW-70~~ FD-01-060612
Analysis: Select COCs (VOCs)
Date: 06/ 06 / 12
Time: 1538 & 1539 (FD)
Field Filtering: No
Filter Type —
Laboratory: REL
Method of Shipment: FedEx
Remar

Attachment 3
Building Inspection Form

Building Survey - Indoor Air Sampling

Project Information			***Page 1 of 3***
Project Name:	**St. Louis Ordnance Plant**	Project # :	**364298**
Survey Completed By:	**T. Swierczek**	Date:	**06/05/12**
Building Address:	**Private Property PP-1**	Residence ID:	

Resident and Contact Information

Name of Occupant: **Private Owner** Owner / Tenant / Other: **Owner**

Occupant Phone #s: Home: Work: Cell:

Duration at Current Residence: Best Time To Call / Visit:

Number of Building Occupants: Children (list ages): Adults: **1**

(If Rental) Property Owner Name: *Owner Phone #s:* *Home:*

Owner Address: *Work:*

Name of Interviewee for Building Survey: Notes:

Building Construction Characteristics

[redacted]

Building Address: **Private Property PP-1, St. Louis, MO** Date: **06/05/12**

[redacted]

Building Address: **Private Property PP-1, St. Louis, MO** Date: **06/05/12**

Miscellaneous Information Continued:

Have there been any known spills of a chemical immediately outside or inside the building? **NO**

Describe (with location):

Do any of the occupants smoke inside the building? **NO** How often?

Do any of the occupants use solvents at work? **YES** Are their clothes washed at home? **YES**

If so, when - and what rooms? **Laundry detergents and softners in utility room and upstairs/solvents in salon**

Within the last 6 months, has there been any painting or remodeling in the residence? **NO** If so, when

What rooms, and what specifically was done?

Within the last 6 months, has any new carpeting been installed? **NO** Have the carpets or rugs been cleaned? **NO**

If so, when, what rooms, and what cleaners?

Consumer Products Inventory

Check consumer products that are present in the residence.

		Storage Location	Frequency of Usage	Date of Last Use
X	Paint or Wood Finishes (spray or can)	Utility Room	Infrequent	
X	Paint stripper / remover / thinner	Utility Room	Infrequent	
	Solvent cleaners (eg. spray-on oven cleaner)			
X	Metal degreaser / cleaner	Utility Room	Infrequent	
	Gasoline / diesel fuel			
X	Glues or adhesives (super glue, etc)	Main floor	Infrequent	
X	Air fresheners & scented candles	Main floor/Basement	Occasionally	
X	Laundry / carpet spot removers	Main floor	Occasionally	>/YR.
	Pesticides / Insecticides			
X	Nail polish remover (acetone)	Main floor	Infrequent	Years
X	Aerosols (deodorizers, polish, cleaners)	Utility room	Infrequent	Years
X	O her: Lamp oil	Utility room	Infrequent	
	O her:			
	O her:			

Describe any products that are containerized during sampling event:

Refer to full list of chemicals in Table 2 of the VI Assessment technical memorandum.

Provide any additional information that is provided by interviewee:

Flooding of the basement between the December 2011 and June 2012 VI assessments. Floor cleaner and bleach used to clean the basement floor. Flooding occurs from runoff entering through the bottom of the salon door.

Attachment 4
Data Quality Evaluation

Data Quality Evaluation Report

Vapor Intrusion Assessment for Private Property 1 St. Louis Ordnance Plant Former Hanley Area St. Louis, Missouri

Submitted to

U.S. Army Corps of Engineers
Kansas City District

June 2012

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Laboratory Control Samples 4
Internal Standards 4
Canister/Flow Controller Certifications 4

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Overall Assessment **4**

Tables

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2 Verification Findings 3
3 **Normal** and **Field Duplicate** Sample Counts by Matrix and Method 4
4 List of Field Duplicates 4

Appendix

A Laboratory Data Packages

Data Quality Evaluation Report

Introduction

The object of this data quality evaluation report is to assess the quality of analytical results for groundwater, indoor air, ambient (outdoor) air, and subslab soil gas samples collected on June 5–6, 2012, during the vapor intrusion assessment for Private Property No. 1 (PP-1) at the St. Louis Ordnance Plant, former Hanley Area. Individual method requirements and guidelines from the *Final Quality Assurance Project Plan, Former Hanley Area, St. Louis, Missouri* (CH2M HILL 2007), were used as the basis for the assessment.

Analytical Approach

The sampling and analysis objective of the former Hanley Area Vapor Intrusion Assessment for PP-1 was to determine the presence or absence of volatile organic compounds contamination in groundwater and air at the site.

Analytical Data

The data quality evaluation covered one normal groundwater sample, one ambient air normal sample, one indoor air normal sample, one soil gas normal sample, one groundwater field duplicate sample, one soil gas air field duplicate and one trip blank. The data were reported in sample delivery groups 3506280 and L1791. Table 1 lists the samples and collection dates. The air samples were delivered to CH2M HILL's Applied Sciences Laboratory in Corvallis, Oregon, and analyzed by Method TO-15 SIM. The groundwater samples were delivered to Spectrum Analytical, Inc., in Tampa, Florida, and analyzed by Method SW8260B.

TABLE 1
Samples Associated with Data Quality Evaluation
St. Louis Ordnance Plant Vapor Intrusion Assessment Report for PP-1, St. Louis, Missouri

Matrix	Sample ID	QA/QC Type	Sample Date	Sample Delivery Group
AIR	PP01-AA-01-060512	Normal	06/05/2012	L1791
AIR	PP01-IA-01-060512	Normal	06/05/2012	L1791
AIR	PP01-SG-01-060512	Normal	06/05/2012	L1791
AIR	PP01-SG-02-0605-FD	Field duplicate	06/05/2012	L1791
Water	MW-107-60612	Normal	06/06/2012	3506280
Water	FD-01-060612	Field duplicate	06/06/2012	3506280
Water	Trip blank	Trip blank	06/06/2012	3506280

One hundred percent of the data were reviewed and verified in accordance with the quality assurance project plan. The review included the following items:

- The sample delivery group narrative, to identify issues that the laboratory reported in the data deliverable
- A check of sample integrity (chain of custody, preservation, and holding times)
- An evaluation of basic quality control (QC) measurements used to assess the accuracy, precision, and representativeness of data including QC blanks, laboratory control samples (LCS), surrogate recoveries, and field or laboratory duplicate results
- Evaluation of calibration and QC summary results against the project requirements

- Sample results, target compound lists, and detection limits, to verify that project analytical requirements were met
- Verification that corrective actions were initiated, as necessary, based on the data review findings
- Qualification of the data using appropriate qualifier flags, as necessary, to reflect data usability limitations
- Other method-specific QC requirements

Data flags were assigned according to the quality assurance project plan. The flags and the reason for each flag were entered into the electronic database. Multiple flags are routinely applied to specific sample method, matrix, and analyte combinations, but there is only one final flag. The data reported are qualified by a single flag that reflects the most conservative of the applied validation qualifiers. The final flag also includes matrix and blank sample impacts.

The data flags are defined as follows:

J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

R The sample result was rejected because of serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.

U The analyte was analyzed for but was not detected above the reported sample quantitation limit.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Findings

The findings of the data review and verification are summarized below. As noted, flags in the final data tables reflect the most severe verification qualifier. Table 2 lists the verification findings. Appendix A contains the laboratory reports.

Field Sample Completeness

Normal and field duplicate samples were collected and analyzed at the frequencies required.

Holding Times

All holding time criteria were met.

Calibration

All initial and continuing calibration requirements were met.

Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination with one exception. Benzene or methylene chloride, or both, were detected at concentrations less than the reporting limit (RL) in a few method blanks associated with Method TO-15 SIM. The data were qualified as not detected and flagged “U,” when the associated sample concentrations were less than 5 times (10 times for methylene chloride) the concentration detected in the blanks.

Field Blanks

A trip blank was collected and analyzed as required and was free of contamination that would have affected the reported sample results.

TABLE 2
Verification Findings
St. Louis Ordnance Plant Vapor Intrusion Assessment Report for PP-1, St. Louis, Missouri

Matrix	Method	Analyte	Sample ID	Result	Units	Validation Reason	Final Validation Flag
Water	SW8260B	Naphthalene	FD-01-060612	5	µg/L	UJ	LCS < LCL
Water	SW8260B	Naphthalene	MW-107-060612	5	µg/L	UJ	LCS < LCL
Air	TO15 SIM	Trichloroethene (TCE)	PP-1-AA-01-060512	0.113	µg/m^3	U	FlowController < RL
Air	TO15 SIM	Benzene	PP-1-IA-01-060512	0.676	µg/m^3	U	CanCert < RL
Air	TO15 SIM	Methylene chloride	PP-1-IA-01-060512	0.837	µg/m^3	U	LB < RL
Air	TO15 SIM	Methylene chloride	PP-1-SG-01-060512	0.2	µg/m^3	U	LB < RL
Air	TO15 SIM	1,1,2,2-Tetrachloroethane	PP-1-SG-01-060512-FD	1.72	µg/m^3	UJ	CanPressure
Air	TO15 SIM	1,1,2-Trichloroethane	PP-1-SG-01-060512-FD	1.37	µg/m^3	UJ	CanPressure
Air	TO15 SIM	1,2-Dichloroethane	PP-1-SG-01-060512-FD	0.207	µg/m^3	J	CanPressure
Air	TO15 SIM	Benzene	PP-1-SG-01-060512-FD	1.28	µg/m^3	U	LB < RL, CanCert < RL, CanPressure (J)
Air	TO15 SIM	Carbon tetrachloride	PP-1-SG-01-060512-FD	0.417	µg/m^3	J	CanPressure
Air	TO15 SIM	Chloroform	PP-1-SG-01-060512-FD	0.219	µg/m^3	U	FlowController < RL, CanPressure (J)
Air	TO15 SIM	cis-1,2-Dichloroethene	PP-1-SG-01-060512-FD	1.23	µg/m^3	J	CanPressure
Air	TO15 SIM	Methylene chloride	PP-1-SG-01-060512-FD	0.919	µg/m^3	U	LB < RL, CanCert < RL, CanPressure (J)
Air	TO15 SIM	Naphthalene	PP-1-SG-01-060512-FD	3.76	µg/m^3	J	CanPressure
Air	TO15 SIM	Tetrachloroethene (PCE)	PP-1-SG-01-060512-FD	3.46	µg/m^3	J	CanPressure
Air	TO15 SIM	trans-1,2-Dichloroethene	PP-1-SG-01-060512-FD	0.291	µg/m^3	U	FlowController < RL, CanPressure (J)
Air	TO15 SIM	Trichloroethene (TCE)	PP-1-SG-01-060512-FD	3.12	µg/m^3	J	CanPressure
Air	TO15 SIM	Vinyl Chloride	PP-1-SG-01-060512-FD	0.64	µg/m^3	UJ	CanPressure

Verification Reason Code

CanCert < RL	The analyte was detected in the canister at a concentration less than the reporting limit.
CanPressure	The final canister pressure was less than acceptance criteria.
FlowController < RL	The analyte was detected in the flow controller at a concentration less than the reporting limit.
LB < RL	The analyte was detected in the method blank at a concentration less than the reporting limit.
LCS < LCL	The LCS was recovered less than the lower control limits.

Field Duplicates

A field duplicate was collected at the required frequency of one field duplicate for every 10 normal samples collected per matrix. Table 3 presents a comparison of normal and field duplicate sample counts. Table 4 lists the field duplicates and associated parent samples. The relative percent differences between the normal and field duplicate samples met acceptance criteria.

Surrogates

Surrogates were used according to method requirements and all acceptance criteria were met.

TABLE 3
Normal and Field Duplicate Sample Counts by Matrix and Method
St. Louis Ordnance Plant Vapor Intrusion Assessment Report for PP-1, St. Louis, Missouri

Matrix	Method	Normal Sample Count	Field Duplicate Sample Count
Air	TO-15 SIM	3	1
Water	SW8260B	1	1

TABLE 4
List of Field Duplicates
St. Louis Ordnance Plant Vapor Intrusion Assessment Report for PP-1, St. Louis, Missouri

Matrix	Field Duplicate Sample ID	Parent Sample ID
Air	PP01-SG-02-0605-FD	PP01-SG-01-060512
Water	FD-01-060612	MW-107-60612

Laboratory Control Samples

LCS/laboratory control sample duplicates (LCSDs) were analyzed as required and all acceptance criteria were met with one exception> Naphthalene was recovered less than the lower control limit in the LCS associated with Method SW8260B, indicating a possible low bias. The data were qualified as estimated nondetects and flagged “UJ” in the associated samples. The relative percent difference for naphthalene exceeded criteria in the LCS/LCSD associated with Method SW8260B. The result was not qualified because the associated samples did not contain reportable levels of naphthalene.

Internal Standards

Internal standard recovery criteria were met for all samples.

Canister / Flow Controller Certifications

The air and soil gas samples were collected in SUMMA canisters, which were certified clean per project instructions before shipment to the project site. The laboratory was unable to certify all canisters and flow controllers clean to the method detection limit for all target analytes. Low-level detections in the samples are possibly due to contamination in the canisters/flow controllers. The canisters/flow controllers were free of contamination with one exception. Several analytes were detected in canisters or flow controllers at concentrations less than the reporting limit. Data were qualified as not detected and flagged “U” when the sample concentrations were less than 5 times (10 times common lab contaminants) the concentrations detected in the canisters and/or flow controllers.

Sample Collection

Sample PP-1-SG-01-060512-FD was received with a final canister pressure of 91 torr, indicating the sample may not have been collected properly. The data were qualified as estimated detected and nondetected results and flagged “J” and “UJ” in the sample.

Chain of Custody

Each sample was documented in a completed chain of custody and received at the laboratory in good condition.

Overall Assessment

The goal of the assessment was to demonstrate that a sufficient number of representative samples was collected and the resulting analytical data can be used to support the decision-making process. The procedures for assessing

the precision, accuracy, representativeness, completeness, and comparability parameters were based on the approved quality assurance project plan. The findings for the above-defined events are summarized as follows:

- Precision of data was verified through the review of the field data quality indicators that include field duplicates and LCS/LCSD relative percent differences. Precision was acceptable.
- Accuracy of data was verified through the review of the calibration data, LCS/LCSD, internal standards, and surrogate standard recoveries, and the evaluation of the method blank/field blank and canister/flow controller data. Accuracy generally was acceptable with the exception of naphthalene, which was qualified as an estimated not detected result in two samples associated with the SW8260B analysis due to LCS issues. The data associated with sample PP-1-SG-01-060512-FD were qualified as estimated detected and nondetected results because of issues with the SUMMA canister pressure. A few analytes were qualified as not detected because of contamination in the method blank/SUMMA canister or the flow controller. Data users should consider the impact to any qualified result, as it may contain a bias that could affect the decision-making process.
- Representativeness of data was verified through the sample's collection, storage, and the verification of holding time compliance. The laboratory noted no issues related to sample collection or storage of the samples. All data were reported from analyses within the holding time recommended by the U.S. Environmental Protection Agency.
- Comparability of data was verified through the use of standard USEPA analytical procedures and standard units for reporting. Results obtained are comparable to industry standards, in that the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to planned measurements. Valid data are defined as all data that are not rejected for project use. All data were considered valid. The completeness goal of 90 percent was met for all analyte/methods.

Appendix A
Laboratory Data Packages

Date Reported:
14-Jun-12

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

CH2M Hill
727 North First St. STE 400
St. Louis, MO 63102

Project # 3506280
Project: SLOP / 364298.01.SL.VI.VM

Attn: Chris English

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
350628001	MW-107-060612	W	06-Jun-12 15:38	07-Jun-12 7:05
350628002	FD-01-060612	W	06-Jun-12 15:39	07-Jun-12 7:05
350628003	Trip Blank	W	06-Jun-12 0:00	07-Jun-12 7:05

Soil samples are reported on dry weight basis, unless otherwise noted.

Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis.

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet unless noted in the case narrative.

Please contact the laboratory at 813-888-9507 with any questions regarding the data contained in the laboratory report.

Florida	E84207
Texas	T104704408-11
South Carolina	96011001
North Dakota	R-178
California	07253CA
Louisiana	02025
Kansas	E-10385
Arkansas	11-036-1

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2259 Testing

Respectfully Submitted,

Brian Spann
Laboratory Director
Spectrum Analytical, Inc. Florida Division

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EXECUTIVE SUMMARY - Detection Highlights

3506280

SAMPLE ID: FD-01-060612

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
cis-1,2-Dichloroethene	0.760	0.50	UG/L	SW8260B
Trichloroethene	0.620	0.50	UG/L	SW8260B

SAMPLE ID: MW-107-060612

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
cis-1,2-Dichloroethene	0.740	0.50	UG/L	SW8260B
Trichloroethene	0.600	0.50	UG/L	SW8260B

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Organics

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Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

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Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix sp ke (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix sp ke duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

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8260 Volatile Organics

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CASE NARRATIVE
Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3506280

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHODS

SW8260B

IV. PREPARATION

Water samples were prepared by SW846/5030 for EPA8260B volatiles analysis. All aspects of sample preparation proceeded without exception.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met .Please note that:

LCS 060812LCS51D was analyzed with the water samples on 06/08/12. An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met. The following analyte(s) exceeded RPD criteria: Naphthalene at 31.3 % with criteria of (20).No further action was taken, since percent recovery criteria were met.

Samples coded accordingly.

Spectrum Analytical Inc. Lab Reference No./SDG: 3506280

Client: CH2M Hill

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.
Client specified reporting limits were used.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Brian C. Spanh Title: Lab Director

SIGNED: DATE: 06/11/2012

CASE NARRATIVE

Spectrum Analytical Inc. Lab Reference No./SDG: 3506280

Client: CH2M Hill

MANUAL INTEGRATION SUMMARY

The following analytes were manually integrated by the chemist.

No manual integrations detected.

These manual integrations have been reviewed and meet all criteria in accordance with Spectrum Analytical Inc.'s SOP regarding manual integration.

CHEMIST: **DATE: 06/09/2012**

Signature:
Name: Brien C. Spanir Title: Lab Director

SECTION LEADER: **DATE: 06/11/2012**

VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Method: 8260

EPA Sample No	Lab Sample ID
MW-107-060612	350628001
FD-01-060612	350628002
Trip Blank	350628003

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8260 Sample Data

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1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

MW-107-060612

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Matrix: WATER Lab Sample ID: 350628001 Lab File ID 628001.D

Sample wt/vol: 5 Units: ML Date Received: 06/07/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 06/08/12 Time: 1627

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-01-4	Vinyl chloride	1	U	0.18	0.5	1
75-09-2	Methylene chloride	5	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.5	0.66
156-59-2	cis-1,2-Dichloroethene	0.74		0.19	0.5	0.5
67-66-3	Chloroform	0.5	U	0.16	0.2	0.5
56-23-5	Carbon tetrachloride	0.5	U	0.14	0.2	0.5
71-43-2	Benzene	0.5	U	0.17	0.5	0.5
107-06-2	1,2-Dichloroethane	0.5	U	0.15	0.2	0.5
79-01-6	Trichloroethene	0.6		0.19	0.5	0.5
79-00-5	1,1,2-Trichloroethane	1	U	0.2	0.5	1
127-18-4	Tetrachloroethene	0.5	U	0.21	0.5	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.5	U	0.14	0.2	0.5
79-34-5	1,1,2,2-Tetrachloroethane	1	U	0.13	0.2	1
91-20-3	Naphthalene	5	U	0.5	0.5	5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

FD-01-060612

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Matrix: WATER Lab Sample ID: 350628002 Lab File ID 628002.D

Sample wt/vol: 5 Units: ML Date Received: 06/07/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 06/08/12 Time: 1558

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-01-4	Vinyl chloride	1	U	0.18	0.5	1
75-09-2	Methylene chloride	5	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.5	0.66
156-59-2	cis-1,2-Dichloroethene	0.76		0.19	0.5	0.5
67-66-3	Chloroform	0.5	U	0.16	0.2	0.5
56-23-5	Carbon tetrachloride	0.5	U	0.14	0.2	0.5
71-43-2	Benzene	0.5	U	0.17	0.5	0.5
107-06-2	1,2-Dichloroethane	0.5	U	0.15	0.2	0.5
79-01-6	Trichloroethene	0.62		0.19	0.5	0.5
79-00-5	1,1,2-Trichloroethane	1	U	0.2	0.5	1
127-18-4	Tetrachloroethene	0.5	U	0.21	0.5	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.5	U	0.14	0.2	0.5
79-34-5	1,1,2,2-Tetrachloroethane	1	U	0.13	0.2	1
91-20-3	Naphthalene	5	U	0.5	0.5	5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Trip Blank

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Matrix: WATER Lab Sample ID: 350628003 Lab File ID 628003.D

Sample wt/vol: 5 Units: ML Date Received: 06/07/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 06/08/12 Time: 1530

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-01-4	Vinyl chloride	1	U	0.18	0.5	1
75-09-2	Methylene chloride	5	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.5	0.66
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.19	0.5	0.5
67-66-3	Chloroform	0.5	U	0.16	0.2	0.5
56-23-5	Carbon tetrachloride	0.5	U	0.14	0.2	0.5
71-43-2	Benzene	0.5	U	0.17	0.5	0.5
107-06-2	1,2-Dichloroethane	0.5	U	0.15	0.2	0.5
79-01-6	Trichloroethene	0.5	U	0.19	0.5	0.5
79-00-5	1,1,2-Trichloroethane	1	U	0.2	0.5	1
127-18-4	Tetrachloroethene	0.5	U	0.21	0.5	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.5	U	0.14	0.2	0.5
79-34-5	1,1,2,2-Tetrachloroethane	1	U	0.13	0.2	1
91-20-3	Naphthalene	5	U	0.5	0.5	5

8260 QC Summary

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1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

060812BLK52

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

Matrix: WATER Lab Sample ID: 060812BLK52 Lab File ID: BLK52.D

Sample wt/vol: 5 Units: ML Date Received: 06/08/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 06/08/12 Time: 1042

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-01-4	Vinyl chloride	1	U	0.18	0.5	1
75-09-2	Methylene chloride	5	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.5	0.66
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.19	0.5	0.5
67-66-3	Chloroform	0.5	U	0.16	0.2	0.5
56-23-5	Carbon tetrachloride	0.5	U	0.14	0.2	0.5
71-43-2	Benzene	0.5	U	0.17	0.5	0.5
107-06-2	1,2-Dichloroethane	0.5	U	0.15	0.2	0.5
79-01-6	Trichloroethene	0.5	U	0.19	0.5	0.5
79-00-5	1,1,2-Trichloroethane	1	U	0.2	0.5	1
127-18-4	Tetrachloroethene	0.5	U	0.21	0.5	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.5	U	0.14	0.2	0.5
79-34-5	1,1,2,2-Tetrachloroethane	1	U	0.13	0.2	1
91-20-3	Naphthalene	5	U	0.5	0.5	5

4

VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

060812BLK52

Lab Name: Spectrum Analytical, Inc Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

Lab File ID: BLK52.D Lab Sample ID: 060812BLK52

Instrument ID: VMS05 Date Extracted:

Matrix: WATER Date Analyzed: 06/08/12

Level:(low/med) LOW Time Analyzed: 1042

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	060812LCS51	060812LCS51	LCS51.D	06/08/12	0819
2	060812LCS51D	060812LCS51D	LCS51D.D	06/08/12	0847
3	Trip Blank	350628003	628003.D	06/08/12	1530
4	FD-01-060612	350628002	628002.D	06/08/12	1558
5	MW-107-060612	350628001	628001.D	06/08/12	1627

COMMENTS:

Page 1 of 1

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Form IV

2A

WATER VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG NO.: 3506280

Column(1): DB-624 ID: 0.18 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
060812BLK52	103.0	106.0	107.0	102.0			0
060812LCS51	104.0	104.0	99.6	102.0			0
060812LCS51D	106.0	108.0	98.6	105.0			0
FD-01-060612	99.2	100.0	103.0	101.0			0
MW-107-060612	103.0	104.0	106.0	100.0			0
Trip Blank	100.0	102.0	102.0	98.4			0

Control Limits

S1	=	Dibromofluoromethane	85 - 115
S2	=	Toluene-d8	85 - 120
S3	=	4-Bromofluorobenzene	75 - 120
S4	=	1,2-Dichloroethane-d4	70 - 120

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out
Control limit source: (lab/method) METHOD

Form II

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VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Lab File ID: BFB52.D BFB Injection Date: 06/05/12

Instrument ID: VMS05 BFB Injection Time: 0629

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	16.7	
75	30.0 - 60.0% of mass 95	43.2	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	6.8	
173	Less than 2.0% of mass 174	0.3	(0.36)1
174	50.0 - 100.0% of mass 95	82.4	
175	5.0 - 9.0% of mass 174	6.2	(7.48)1
176	Greater than 95.0%, but less than 101.0% of mass 174	79.3	(96.22)1
177	5.0 - 9.0% of mass 176	5.8	(7.28)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1087219	200PPT	200PPT.D	06/05/12	0714
2	STD1087231	500PPT	500PPT.D	06/05/12	0742
3	STD1087218	1PPB	1PPB.D	06/05/12	0810
4	STD1087233	5PPB	5PPB.D	06/05/12	0908
5	STD1087217	10PPB	10PPB.D	06/05/12	0937
6	STD1087220	20PPB	20PPB.D	06/05/12	1006
7	STD1087232	50PPB	50PPB.D	06/05/12	1034
8	STD1087234	60PPB	60PPB.D	06/05/12	1102
9	STD1087235	80PPB	80PPB.D	06/05/12	1131
10	STD1087221	2PPB	2PPBR.D	06/05/12	1319
11	SSC1087236	SEC52	SEC52.D	06/05/12	1449

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Lab File ID: BFB51.D BFB Injection Date: 06/08/12

Instrument ID: VMS05 BFB Injection Time: 0626

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	18.7	
75	30.0 - 60.0% of mass 95	46.7	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	7.2	
173	Less than 2.0% of mass 174	0.3	(0.39)1
174	50.0 - 100.0% of mass 95	80.7	
175	5.0 - 9.0% of mass 174	5.3	(6.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.8	(95.2)1
177	5.0 - 9.0% of mass 176	5.4	(7.05)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1088614	060812CCV52	50CCV52.D	06/08/12	0733
2	060812LCS51	060812LCS51	LCS51.D	06/08/12	0819
3	060812LCS51D	060812LCS51D	LCS51D.D	06/08/12	0847
4	060812BLK52	060812BLK52	BLK52.D	06/08/12	1042
5	Trip Blank	350628003	628003.D	06/08/12	1530
6	FD-01-060612	350628002	628002.D	06/08/12	1558
7	MW-107-060612	350628001	628001.D	06/08/12	1627

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

Lab File ID (Standard): 50PPB.D Date Analyzed: 6/5/2012

Instrument ID: VMS05 Time Analyzed: 10:34

GC Column: DB-624 ID: 0.18 (mm)

Matrix: (soil/water) W Heated Purge: (Y/N) No

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	1050188		5.79	811097		9.01	436748		11.32
	UPPER LIMIT	2100376		6.29	1622194		9.51	873496		11.82
	LOWER LIMIT	525094		5.29	405548.5		8.51	218374		10.82
	EPA SAMPLE NO.									
1	060812LCS51	742332		5.79	603082		9.01	304255		11.32
2	060812LCS51D	703472		5.79	572027		9.01	296675		11.32
3	060812BLK52	777093		5.79	602273		9.01	294318		11.32
4	Trip Blank	748367		5.79	576876		9.01	288054		11.32
5	FD-01-060612	747695		5.79	580066		9.01	280461		11.32
6	MW-107-060612	737066		5.79	578038		9.01	277018		11.32

IS1 = Fluorobenzene

IS2 = Chlorobenzene-d5

IS3 = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100%
of internal standard area.
LOWER LIMIT = -50%
of internal standard area

Column used to flag internal standard area values with an asterisk

140612 1158

FORM VIII

8

VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

GC Column: DB-624 ID: 0.18 (mm) Init. Cal b. Date: 06/05/12

Instrument ID: VMS05

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 4.97 S2 : 7.55

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	S2 RT	#
1	060512BFB52	060512BFB52	BFB52.D	06/05/12	0629				
2	STD1087219	200PPT	200PPT.D	06/05/12	0714				
3	STD1087231	500PPT	500PPT.D	06/05/12	0742				
4	STD1087218	1PPB	1PPB.D	06/05/12	0810				
5	STD1087233	5PPB	5PPB.D	06/05/12	0908	4.97		7.55	
6	STD1087217	10PPB	10PPB.D	06/05/12	0937	4.97		7.55	
7	STD1087220	20PPB	20PPB.D	06/05/12	1006	4.97		7.55	
8	STD1087232	50PPB	50PPB.D	06/05/12	1034	4.97		7.55	
9	STD1087234	60PPB	60PPB.D	06/05/12	1102	4.97		7.55	
10	STD1087235	80PPB	80PPB.D	06/05/12	1131	4.98		7.55	
11	STD1087221	2PPB	2PPBR.D	06/05/12	1319				
12	SSC1087236	SEC52	SEC52.D	06/05/12	1449	4.97		7.55	
13	060812BFB51	060812BFB51	BFB51.D	06/08/12	0626				
14	CCV1088614	060812CCV52	50CCV52.D	06/08/12	0733	4.97		7.55	
15	060812LCS51	060812LCS51	LCS51.D	06/08/12	0819	4.97		7.55	
16	060812LCS51D	060812LCS51D	LCS51D.D	06/08/12	0847	4.97		7.55	
17	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/08/12	0917				
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/08/12	0945				
19	060812BLK52	060812BLK52	BLK52.D	06/08/12	1042	4.97		7.55	
20	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/08/12	1208				
21	Trip Blank	350628003	628003.D	06/08/12	1530	4.97		7.55	
22	FD-01-060612	350628002	628002.D	06/08/12	1558	4.97		7.55	
23	MW-107-060612	350628001	628001.D	06/08/12	1627	4.97		7.55	

			QC LIMITS
S1	=	D bromofluoromethane	(+/- 0.35 MINUTES)
S2	=	Toluene-d8	(+/- 0.35 MINUTES)
S3	=	4-Bromofluorobenzene	(+/- 0.68 MINUTES)
S4	=	1,2-Dichloroethane-d4	(+/- 0.35 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

Page 1 of 1

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

060812LCS51

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Vinyl chloride	20	19.5	97.5			50 - 145
Methylene chloride	20	21.5	108.0			55 - 140
trans-1,2-Dichloroethene	20	20.9	104.0			60 - 140
cis-1,2-Dichloroethene	20	20.6	103.0			70 - 125
Chloroform	20	21.4	107.0			65 - 135
Carbon tetrachloride	20	17.5	87.5			65 - 140
Benzene	20	21.1	106.0			80 - 120
1,2-Dichloroethane	20	21.6	108.0			70 - 130
Trichloroethene	20	20.8	104.0			70 - 125
1,1,2-Trichloroethane	20	20.3	102.0			75 - 125
Tetrachloroethene	20	19.6	98.0			45 - 150
1,1,1,2-Tetrachloroethane	20	19.5	97.5			80 - 130
1,1,2,2-Tetrachloroethane	20	18.6	93.0			65 - 130
Naphthalene	20	14.8	74.0			55 - 140

Spike Recovery: 0 out of 14 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

140612 1158

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

060812LCS51D

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Vinyl chloride	20	19.1	95.5	2.1	20	50 - 145
Methylene chloride	20	21.1	106.0	1.9	20	55 - 140
trans-1,2-Dichloroethene	20	20.7	104.0	1.0	20	60 - 140
cis-1,2-Dichloroethene	20	20.2	101.0	2.0	20	70 - 125
Chloroform	20	21	105.0	1.9	20	65 - 135
Carbon tetrachloride	20	17.1	85.5	2.3	20	65 - 140
Benzene	20	20.9	104.0	1.0	20	80 - 120
1,2-Dichloroethane	20	22.4	112.0	3.6	20	70 - 130
Trichloroethene	20	20.6	103.0	1.0	20	70 - 125
1,1,2-Trichloroethane	20	21.4	107.0	5.3	20	75 - 125
Tetrachloroethene	20	19.5	97.5	0.5	20	45 - 150
1,1,1,2-Tetrachloroethane	20	20	100.0	2.5	20	80 - 130
1,1,2,2-Tetrachloroethane	20	20.3	102.0	8.7	20	65 - 130
Naphthalene	20	20.3	102.0	31.3 *	20	55 - 140

Spike Recovery: 0 out of 14 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

140612 1158

Form III

8260 Standards Data

140612 1158

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Instrument ID: VMS05 Calibration Date Begin: 06/05/12 End: 06/05/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 714 End: 1319

Min RRF for SPCC(#) = 0.3 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF1 =1PPB.D RRF2 =2PPBR.D
RRF5 =5PPB.D RRF10 =10PPB.D RRF20 =20PPB.D

COMPOUND		RRF1	RRF2	RRF5	RRF10	RRF20	$\overline{RRF}$	%RSD OR R^2
Vinyl chloride	*	0.424	0.307	0.413	0.413	0.383		*
Methylene chloride		0.839	0.587	0.526	0.458	0.421		
trans-1,2-Dichloroethene		0.328	0.269	0.324	0.322	0.311		
cis-1,2-Dichloroethene		0.406	0.337	0.364	0.370	0.343		
Chloroform	*	0.577	0.511	0.568	0.559	0.543		*
Carbon tetrachloride		0.233	0.215	0.256	0.294	0.305		
Benzene		1.404	1.149	1.301	1.321	1.276		
1,2-Dichloroethane		0.367	0.344	0.377	0.372	0.352		
Trichloroethene		0.344	0.298	0.337	0.360	0.339		
1,1,2-Trichloroethane		0.264	0.237	0.265	0.268	0.254		
Tetrachloroethene		0.384	0.284	0.368	0.366	0.345		
1,1,1,2-Tetrachloroethane		0.294	0.289	0.307	0.322	0.341		
1,1,2,2-Tetrachloroethane	#	0.976	0.918	0.898	0.891	0.847		#
Naphthalene		1.283	1.299	1.313	1.400	1.273		
==========								
Dibromofluoromethane(SURR)				0.258	0.285	0.284		
Toluene-d8(SURR)				0.987	1.060	1.071		
4-Bromofluorobenzene(SURR)				0.911	0.932	0.920		
1,2-Dichloroethane-d4(SURR)				0.050	0.059	0.058		

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FORM VI

6

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No. SAS No: SDG No.: 3506280

Instrument ID: VMS05 Calibration Date Begin: 06/05/12 End: 06/05/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 714 End: 1319

Min RRF for SPCC(#) = 0.3 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF50 =50PPB.D RRF60 =60PPB.D
RRF80 =80PPB.D RRF0.5 =500PPT.D RRF0.2 =200PPT.D

COMPOUND		RRF50	RRF60	RRF80	RRF0.5	RRF0.2	$\overline{RRF}$	%RSD OR R^2	
Vinyl chloride	*	0.419	0.428	0.433	0.386		0.40055	9.8	*
Methylene chloride		0.425	0.401	0.419			0.50941	0.9989	
trans-1,2-Dichloroethene		0.326	0.315	0.329	0.311		0.31495	5.9	
cis-1,2-Dichloroethene		0.357	0.343	0.358	0.386		0.36262	6.2	
Chloroform	*	0.555	0.538	0.560	0.509	0.559	0.54787	4.2	*
Carbon tetrachloride		0.353	0.353	0.377	0.227		0.29018	0.99746	
Benzene		1.309	1.260	1.298	1.323	1.443	1.30846	6.1	
1,2-Dichloroethane		0.366	0.346	0.365	0.334		0.35799	4.1	
Trichloroethene		0.356	0.343	0.359	0.365		0.34453	5.8	
1,1,2-Trichloroethane		0.264	0.256	0.265			0.2591	3.9	
Tetrachloroethene		0.359	0.359	0.360	0.370		0.35487	8.1	
1,1,1,2-Tetrachloroethane		0.376	0.362	0.380	0.272		0.32705	12.1	
1,1,2,2-Tetrachloroethane	#	0.829	0.842	0.833	0.795	0.791	0.86204	6.7	#
Naphthalene		1.293	1.410	1.436			1.33846	4.9	
==========									
Dibromofluoromethane(SURR)		0.286	0.270	0.277			0.2766	4	
Toluene-d8(SURR)		1.075	1.017	1.047			1.04274	3.3	
4-Bromofluorobenzene(SURR)		0.907	0.887	0.881			0.90616	2.2	
1,2-Dichloroethane-d4(SURR)		0.058	0.053	0.055			0.05553	6.1	

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FORM VI

7SSC

VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

Instrument ID: VMS05 CalibrationDate: 06/05/12 Time: 1449

CCV ID: SSC1087236 Lab File ID: SEC52.D Init. Cal b. Date Begin: 06/05/12 End: 06/05/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.3 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	
Vinyl chloride	*	0.40055	0.39392	1.7	AVRG	*
Methylene chloride		50	47.2	5.6	LINR	
trans-1,2-Dichloroethene		0.31495	0.28173	10.5	AVRG	
cis-1,2-Dichloroethene		0.36262	0.32563	10.2	AVRG	
Chloroform	*	0.54787	0.50528	7.8	AVRG	*
Carbon tetrachloride		50	44.3	11.4	LINR	
Benzene		1.30846	1.198	8.4	AVRG	
1,2-Dichloroethane		0.35799	0.34683	3.1	AVRG	
Trichloroethene		0.34453	0.31817	7.7	AVRG	
1,1,2-Trichloroethane		0.2591	0.25058	3.3	AVRG	
Tetrachloroethene		0.35487	0.323	9.0	AVRG	
1,1,1,2-Tetrachloroethane		0.32705	0.33482	2.4	AVRG	
1,1,2,2-Tetrachloroethane	#	0.86204	0.79348	8.0	AVRG	#
Naphthalene		1.33846	1.244	7.1	AVRG	
==========						
Dibromofluoromethane(SURR)		0.2766	0.27574	0.3	AVRG	
Toluene-d8(SURR)		1.04274	1.008	3.3	AVRG	
4-Bromofluorobenzene(SURR)		0.90616	0.82533	8.9	AVRG	
1,2-Dichloroethane-d4(SURR)		0.05553	0.05657	1.9	AVRG	

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FORM VII

7

VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: SLOP / 364298.01.SL.VI.VM

Lab Code : PEL Case No.: SAS No: SDG No.: 3506280

Instrument ID: VMS05 CalibrationDate: 06/08/12 Time: 0733

CCV ID: CCV1088614 Lab File ID: 50CCV52.D Init. Cal b. Date Begin: 06/05/12 End: 06/05/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.3 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type
Vinyl chloride	*	0.40055	0.3921	2.1	AVRG *
Methylene chloride		50	49.4	1.2	LINR
trans-1,2-Dichloroethene		0.31495	0.31069	1.4	AVRG
cis-1,2-Dichloroethene		0.36262	0.34125	5.9	AVRG
Chloroform	*	0.54787	0.5394	1.5	AVRG *
Carbon tetrachloride		50	42.3	15.4	LINR
Benzene		1.30846	1.278	2.3	AVRG
1,2-Dichloroethane		0.35799	0.36641	2.4	AVRG
Trichloroethene		0.34453	0.33967	1.4	AVRG
1,1,2-Trichloroethane		0.2591	0.25867	0.2	AVRG
Tetrachloroethene		0.35487	0.33878	4.5	AVRG
1,1,1,2-Tetrachloroethane		0.32705	0.32884	0.5	AVRG
1,1,2,2-Tetrachloroethane	#	0.86204	0.78225	9.3	AVRG #
Naphthalene		1.33846	1.171	12.5	AVRG
==========					
Dibromofluoromethane(SURR)		0.2766	0.29599	7.0	AVRG
Toluene-d8(SURR)		1.04274	1.066	2.2	AVRG
4-Bromofluorobenzene(SURR)		0.90616	0.8729	3.7	AVRG
1,2-Dichloroethane-d4(SURR)		0.05553	0.0595	7.1	AVRG

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FORM VII

Chain of Custody Documentation

140612 1158

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 1 35062280

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 175 Metro Center Blvd, Warwick, RI 02886, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: STD
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: CH2M HILL
1034 S. Brentwood Blvd.
Ste. 2300
Richmond Heights, MO 63117
Telephone #: 314-335-3000
Project Mgr. Chris English

Invoice To: Same

P.O. No.: _____ RQN: _____

Project No.: 364298.01.SL.V1.VM
Site Name: St. Louis Ordnance Plant
Location: St. Louis State: MO
Sampler(s): T. Swierczek / G. Roberts

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 2 2 2 2 2 2

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		Benzene, Carbon tetrachloride	Chloroform, 1,2-DCA, cis-1,2-DCE	trans-1,2-DCE, Methylene chloride	Naphthalene, 1,1,2,2-TeCA	1,1,1,2-TeCA	PCE, TCE, 1,1,2-TCA	Vinyl chloride	
-01	MW-107-060612	06/06/12	1538	G	GW	3					X	X	X	X	X	X	X	
-02	FD-01-060612	06/06/12	1539	G	GW	3					X	X	X	X	X	X	X	
-03	Trip Blank	–	–	–	–	2					X	X	X	X	X	X	X	

Containers: # of VOA Vials, # of Amber Glass, # of Clear Glass, # of Plastic

Analyses: Benzene, Carbon tetrachloride; Chloroform, 1,2-DCA, cis-1,2-DCE; trans-1,2-DCE, Methylene chloride; Naphthalene, 1,1,2,2-TeCA; 1,1,1,2-TeCA; PCE, TCE, 1,1,2-TCA; Vinyl chloride

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]		06/06/12	1630	2.2
	[signature]	6-7-12	705	

☐ EDD Format pltd 8260
☐ E-mail to _____

Condition upon receipt:
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

35062280

31

13 x 9 x 9

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1 From

Date 6/6/2012 [redacted]

Sender's Name Glyn Roberts Phone 314 335-3028

Company CH2M Hill

Address 1034 S. Brentwood Dept./Floor/Suite/Room

City St Louis State MO ZIP 63117

2 Your Internal Billing Reference 364298.01.SL.V1.VM / 41500

3 To

Recipient's Name Sample Receiving Phone 813 888-9507

Company Spectrum Analytical

Address 8405 Benjamin Rd Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Tampa State FL ZIP 33634

01 ☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

31 ☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8000 4637 4872

4 Express Package Service *To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. *For packages over 150 lbs., use the new FedEx Express Freight US Airbill.*

Next Business Day

06 ☒ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

49 ☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

03 ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging *Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ **SATURDAY DELIVERY**

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 06 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

1 ☒ Sender — Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

[redacted]

Total Packages 1 Total Weight 12 lbs. Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

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3506280

pH LOG SHEET

WO#: 3506280

Client/Project SLOP

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350628001	8260	W	<	2	(3)		HCL	nlabus 07-Jun-12
350628002	8260	W	<	2	(3)		HCL	nlabus 07-Jun-12
350628003	8260	W	<	2	(2)		HCL	nlabus 07-Jun-12

3506280

Sample Receipt Confirmation Sheet

Client Information

SDG:	3506280	**Level:**	4
Client:	CH2M Hill	**Date Rec'd:**	6/7/2012 7:05:00 AM
Profile:	90933	**Due Date:**	6/21/2012
Project:	Saint Louis Ordnance Plant - DoD - H	**Profile Name:**	SLOP

Sample Verification

Samples/Cooler Secure?	Yes	**COC Present?**	Yes
Temperature of Samples:	2.2C	**All Samples on COC accounted For?**	Yes
Number of Coolers Received:	1	**All Samples Rec'd Intact?**	Yes
Temp Gun ID:	101722663	**Sample Vol. Sufficient For Analysis**	Yes
pH Verified?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
pH WNL?	Yes	**Are All Samples to be Analyzed?**	Yes
Samples Received By:	Fed-Ex	**Correct Sample Containers?**	Yes
Tracking Number:		**COC Comments written on COC?**	Yes
Profile Picked By:	JH	**Samplers Initials on COC?**	Yes
Soil Origin (Domestic/Foreign):		**Sample Date/Time Indicated?**	Yes
Site Location/Project on COC?	Yes	**TAT Requested:**	STD
Client Project # on COC?	Yes	**Client Requests Verbal Results?**	No
Project Mgr. Indicated on COC?	Yes	**Client Requests Faxed Results?**	No
COC relinquished/Dated by Client?	Yes	**Specific Subcontract Indicated?**	No
COC Received/Dated by SA?	Yes	**Written on Outside Lab Board?**	No
Written on Internal COC?	Yes	**Radioactivity Check?**	No
Lab to Conduct ALL Analyses?	Yes		

Comments

Specific tests noted on COC.

LABEL REVIEW _____

PEER REVIEW _____

Client: CH2M Hill

WONo: 3506280 Profile Name: SLOP Profile #: 90933

MATRIX W

Sample #	Bottle	Parameter		Check	Received	Date
01	003	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:19 AM
01	002	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:24 AM
01	001	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:25 AM
01	001	8260	Volatile Organic Compounds	Consumed	Viviane Wenzel	6/9/2012 10:14:07 AM
02	003	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:25 AM
02	002	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:26 AM
02	001	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:26 AM
02	001	8260	Volatile Organic Compounds	Consumed	Viviane Wenzel	6/9/2012 10:13:58 AM
03	002	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:27 AM
03	001	8260	Volatile Organic Compounds	In	Nicole Labus	6/7/2012 9:49:27 AM
03	001	8260	Volatile Organic Compounds	Consumed	Viviane Wenzel	6/9/2012 10:13:53 AM

Addendum

140612 1158

Letter of Acceptance

Customer Name:	CH2M Hill
Date and Time Received:	6/7/2012 7:05:00 AM
Date to be Reported:	6/28/2012
Laboratory Submission Number/SDG:	3506280

Project: SLOP / 364298.01.SL.VI.VM

Samples: The submission consisted of 3 samples, including QC, with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: 8260.

Sample Custody/COC discrepancies:

None.

Notes:

None.

Distribution of Report to:

CH2M Hill
Attn: Chris English
(W): 314-421-0313

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. Spectrum Analytical letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials.

Log-in Report

Level: 4

Total of: 3 analyses on 6 samples (including QC) *11-Jun-12*

Report/SDG #: 3506280

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
MW-107-060612	350628001		W	6/6/2012 3:38:00 PM	6/7/2012 7:05:00 AM

Method		
8260	Volatile Organic Compounds	8260

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
FD-01-060612	350628002		W	6/6/2012 3:39:00 PM	6/7/2012 7:05:00 AM

Method		
8260	Volatile Organic Compounds	8260

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Trip Blank	350628003		W	6/6/2012	6/7/2012 7:05:00 AM

Method		
8260	Volatile Organic Compounds	8260

Appendix

140612 1158

Raw Data Method 8260

IAL 6-5-12 DF 45202

MS Umsos (9260/5030/H2O)(MS060512C) 6/5/12 Auto IS-H2O Pat

Vial	File	Sample ID	Sample ID	Amount	Chem
	BFB51		45536, 45224	50 ng	Per Ver
	BFB52				
	200 ppt	44897, 44979, 46034		200 ppt	
	500 ppt			500 ppt	
	1 ppb			1 ppb	
	2 ppb			2 ppb	
	5 ppb			5 ppb	
	10 ppb			10 ppb	
	20 ppb			20 ppb	
	50 ppb			50 ppb	
	60 ppb			60 ppb	
	80 ppb			80 ppb	
	XCBLK01			SW	
	XCBLK02				
	2 ppb ✓			2 ppb	
	2 ppb r1				
	SEC51	46424, 44990, 46035		50 ppb	
	SEC52				

MKD 6/5/12

50

JAC 6-5-12 DJ-45202

MMS

UMMOS (6266 | 5030 | H2O) (M50606612) 6/5/12 Auto 55-H2O

Qty	Poly	STO #	Sort/IS #	Amount	Client
	DFD551		45536, 45224	50g	PEL
	50CC051	44897, 44979 46034		50µg	
	50CC052			L	
	1C551	44980, 46424 46035		20µg	
	1C551D				
2	3506251C4 (MS)				
1	625105 (SD)				
	BIK51			5ml	
	BIK52				
2	3506251C1				(CAST
2	02				
2	03				
3	627101D (10x)	5ml/50ml			(SHA
1	625201				(CAT
1	02				
2	627501				(UT-AN
2	02				
2	04				
1	628003				(CASIL
1	02				
1	01				
1	627503				(UT-A
	62510 MS			20µg	GL

MMS 6/2/12

VW 6.5.12

STANDARDS LOG

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
36627	8260_IS	RESTEK	A076642	8/1/2015	1.5 ML	9/10/2010	lpelo

25000 UG/ML: 1,4-Dichlorobenzene-d4, Chlorobenzene-d5, Fluorobenzene

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
43779	8260_R2QC	NSI	050410-01	5/31/2013	1.2 ML	11/12/2011	mstephens

10000 UG/ML: 1-Chlorohexane, Benzyl chloride, Bromoethane, Cyclohexane
200000 UG/ML: 3,3-Dimethyl-1-butanol, t-Amyl Alcohol , t-Butyl Formate

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
43780	8260_R1QC	NSI	050551001	5/31/2013	1.2 ML	11/12/2011	mstephens

10000 UG/ML: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromomethane, ethyl tert-butyl ether, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methyl Acetate, Methyl iodide, Methyl tert-butyl ether, Methylcyclohexane, Methylene chloride, m-Xylene, Naphthalene, n-Butylbenzene, n-hexane (C6), n-Propylbenzene, o-Xylene, p-Xylene, sec-Butylbenzene, Styrene, TERT-AMYL METHYL ETHER, tert-Butylbenzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene
20000 UG/ML: 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone, Acetone

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
43781	8260_W1QC	NSI	042810-01	4/30/2013	1.2 ML	11/12/2011	mstephens

200000 UG/ML: 1,4-Dioxane, Isobutyl alcohol
400000 UG/ML: Ethanol

STANDARDS LOG

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44217	1,2,3-TMB_P	CPI	170166	3/6/2014	1.2 ML	12/12/2011	mstephens

10000 MG/L: 1,2,3-Trimethylbenzene

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44380	MethanolP&Tgrade	Burdick & Jackson/	DE997	1/3/2013	500 ML	1/3/2012	vwenzel

: Methanol

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44893	8260_R1CAL	CPI	181338	11/15/2012	1.2 ML	2/6/2012	mstephens

10000 UG/ML: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Dibromochloromethane, Dibromomethane, ethyl tert-butyl ether, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methyl Acetate, Methyl iodide, Methyl tert-butyl ether, Methylcyclohexane, Methylene chloride, m-Xylene, Naphthalene, n-Butylbenzene, n-hexane (C6), n-Propylbenzene, o-Xylene, p-Xylene, sec-Butylbenzene, Styrene, TERT-AMYL METHYL ETHER, tert-Butylbenzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene
20000 UG/ML: 2-Butanone, 2-Hexanone, 4-Methyl-2-pentanone, Acetone

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44894	8260_R3CAL	CPI	181337	11/10/2012	1.2 ML	2/6/2012	mstephens

10000 UG/ML: 1,4-Dichloro-2-butene, Allyl chloride, Ethyl Ether, Ethyl methacrylate, Isopropyl Ether, Methyl methacrylate
100000 UG/ML: Acetonitrile, Cyclohexanone, Methacrylonitrile, Propionitrile, t-Butanol
20000 UG/ML: 2-Nitropropane, Ethyl acetate, Tetrahydrofuran

STANDARDS LOG

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44895	8260_W1CAL	CPI	181226	11/8/2013	1.2 ML	2/6/2012	mstephens

200000 UG/ML: 1,4-Dioxane, Isobutyl alcohol
400000 UG/ML: Ethanol

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44896	8260_R2CAL	CPI	181354	11/10/2012	1.2 ML	2/6/2012	mstephens

10000 UG/ML: 1-Chlorohexane, Benzyl chloride, Bromoethane, Chloroprene, Cyclohexane
200000 UG/ML: 3,3-Dimethyl-1-butanol, t-Amyl Alcohol , t-Butyl Formate

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44897	8260_Main Mix_P			8/6/2012	50 ML	2/6/2012	mstephens

UG/ML: Methanol
100 UG/ML: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichloro-2-butene, 1,4-Dichlorobenzene, 1-Chlorohexane, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, Allyl chloride, Benzene, Benzyl chloride, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloroprene, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Cyclohexane, Dibromochloromethane, Dibromomethane, Ethyl Ether, Ethyl methacrylate, ethyl tert-butyl ether, Ethylbenzene, Hexachlorobutadiene, Isopropyl Ether, Isopropylbenzene, Methyl Acetate, Methyl iodide, Methyl methacrylate, Methyl tert-butyl ether, Methylcyclohexane, Methylene chloride, m-Xylene, Naphthalene, n-Butylbenzene, n-hexane (C6), n-Propylbenzene, o-Xylene, p-Xylene, sec-Butylbenzene, Styrene, TERT-AMYL METHYL ETHER, tert-Butylbenzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene
1000 UG/ML: Acetonitrile, Cyclohexanone, Methacrylonitrile, Propionitrile, t-Butanol
200 UG/ML: 2-Butanone, 2-Hexanone, 2-Nitropropane, 4-Methyl-2-pentanone, Acetone, Ethyl acetate, Tetrahydrofuran
2000 UG/ML: 1,4-Dioxane, 3,3-Dimethyl-1-butanol, Isobutyl alcohol, t-Amyl Alcohol , t-Butyl Formate
4000 UG/ML: Ethanol

COMPOSED OF:

44380: 48 ML 44893: 0.5 ML 44894: 0.5 ML 44895: 0.5 ML 44896: 0.5 ML

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44905	8021_5CAL	CPI	178587	9/11/2013	2.4 ML	2/7/2012	mstephens

2000 MG/L: 1,1,2-Trichloro-1,2,2-trifluoroethane, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride

STANDARDS LOG

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44909	8260_B1CAL	CPI	185132	7/30/2012	2.4 ML	2/7/2012	mstephens

40000 UG/ML: Acrolein, Acrylonitrile

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44913	8021_5QC	NSI	01251204	1/31/2014	2.4 ML	2/7/2012	mstephens

2000 MG/L: 1,1,2-Trichloro-1,2,2-trifluoroethane, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44934	8260_SURR	ULTRA	CG-3959	12/31/2013	1 ML	2/7/2012	mstephens

2505 UG/ML: 1,2-Dichloroethane-d4, 4-Bromofluorobenzene
2506 UG/ML: Toluene-d8
2509 UG/ML: Dibromofluoromethane

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44979	8260_Gases_P			8/10/2012	50 ML	2/10/2012	mstephens

UG/ML: Methanol
50 UG/ML: 1,1,2-Trichloro-1,2,2-trifluoroethane, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride

COMPOSED OF:

44380: 47.5 ML 44905: 1.25 ML

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
44980	8260_Gases_S			8/10/2012	50 ML	2/10/2012	mstephens

UG/ML: Methanol
50 UG/ML: 1,1,2-Trichloro-1,2,2-trifluoroethane, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride

STANDARDS LOG

COMPOSED OF:

44380: 47.5 ML 44913: 1.25 ML

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
45009	MethanolP&Tgrade	Burdick & Jackson/	K43E14	2/15/2015	4E+07 L	2/15/2012	treuter

: Methanol

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
45202	PEL Deionized Water	Feedwater Solutions	030110	2/28/2013	100 L	2/28/2012	treuter

: Water

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
45228	8260_INT_IS			9/1/2012	100 ML	3/1/2012	mstephens

UG/ML: Methanol
250 UG/ML: 1,4-Dichlorobenzene-d4, Chlorobenzene-d5, Fluorobenzene

COMPOSED OF:

36627: 1 ML 44380: 99 ML

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
45229	8260_INT_IS			9/1/2012	10 ML	3/1/2012	mstephens

UG/ML: Methanol
25 UG/ML: 1,4-Dichlorobenzene-d4, Chlorobenzene-d5, Fluorobenzene

COMPOSED OF:

44380: 9 ML 45228: 1 ML

STANDARDS LOG

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
46422	Chloroprene QC	NSI	050510	5/31/2013	2 ML	6/1/2012	mstephens

10000 UG/ML: Chloroprene

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
46423	8260_W2QC	NSI	042710-01	4/30/2013	1.2 ML	6/1/2012	mstephens

10000 UG/ML: 1,4-Dichloro-2-butene, Allyl chloride, Ethyl Ether, Ethyl methacrylate, Isopropyl Ether, Methyl methacrylate
100000 UG/ML: Acetonitrile, Cyclohexanone, Methacrylonitrile, Propionitrile, t-Butanol
20000 UG/ML: 2-Nitropropane, Ethyl acetate, Tetrahydrofuran

Standard ID	Type	Manufacturer	Mfg Lot	Expires	Volume	Created on	Created by
46424	8260_Main Mix_S			12/1/2012	50 ML	6/1/2012	mstephens

UG/ML: Methanol
100 UG/ML: 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichloro-2-butene, 1,4-Dichlorobenzene, 1-Chlorohexane, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, Allyl chloride, Benzene, Benzyl chloride, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloroprene, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Cyclohexane, Dibromochloromethane, Dibromomethane, Ethyl Ether, Ethyl methacrylate, ethyl tert-butyl ether, Ethylbenzene, Hexachlorobutadiene, Isopropyl Ether, Isopropylbenzene, Methyl Acetate, Methyl iodide, Methyl methacrylate, Methyl tert-butyl ether, Methylcyclohexane, Methylene chloride, m-Xylene, Naphthalene, n-Butylbenzene, n-hexane (C6), n-Propylbenzene, o-Xylene, p-Xylene, sec-Butylbenzene, Styrene, TERT-AMYL METHYL ETHER, tert-Butylbenzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene
1000 UG/ML: Acetonitrile, Cyclohexanone, Methacrylonitrile, Propionitrile, t-Butanol
200 UG/ML: 2-Butanone, 2-Hexanone, 2-Nitropropane, 4-Methyl-2-pentanone, Acetone, Ethyl acetate, Tetrahydrofuran
2000 UG/ML: 1,4-Dioxane, 3,3-Dimethyl-1-butanol, Isobutyl alcohol, t-Amyl Alcohol , t-Butyl Formate
4000 UG/ML: Ethanol

COMPOSED OF:

43779: 0.5 ML 43780: 0.5 ML 43781: 0.5 ML 44380: 48 ML 46422: 0.5 ML 46423: 0.5 ML

PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\BFB52.D
Lab Smp Id: 060512BFB52 Client Smp ID: 060512BFB52
Inj Date : 05-JUN-2012 06:29 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 060512BFB52
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1uM film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\BFBE.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 2 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: VOLS11

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
10.186	10.270	-0.084	95	86184			0.00- 100.00	100.00
10.186	10.270	-0.084	50	14378			15.00- 40.00	16.68
10.186	10.270	-0.084	75	37224			30.00- 60.00	43.19
10.186	10.270	-0.084	96	5847			5.00- 9.00	6.78
10.186	10.270	-0.084	173	259			0.00- 2.00	0.36
10.186	10.270	-0.084	174	71000			50.00- 100.00	82.38
10.186	10.270	-0.084	175	5312			5.00- 9.00	7.48
10.186	10.270	-0.084	176	68320			95.00- 101.00	96.23
10.186	10.270	-0.084	177	4971			5.00- 9.00	7.28

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\BFB52.D

Date : 05-JUN-2012 06:29

Client ID: 060512BFB52

Instrument: vms05.i

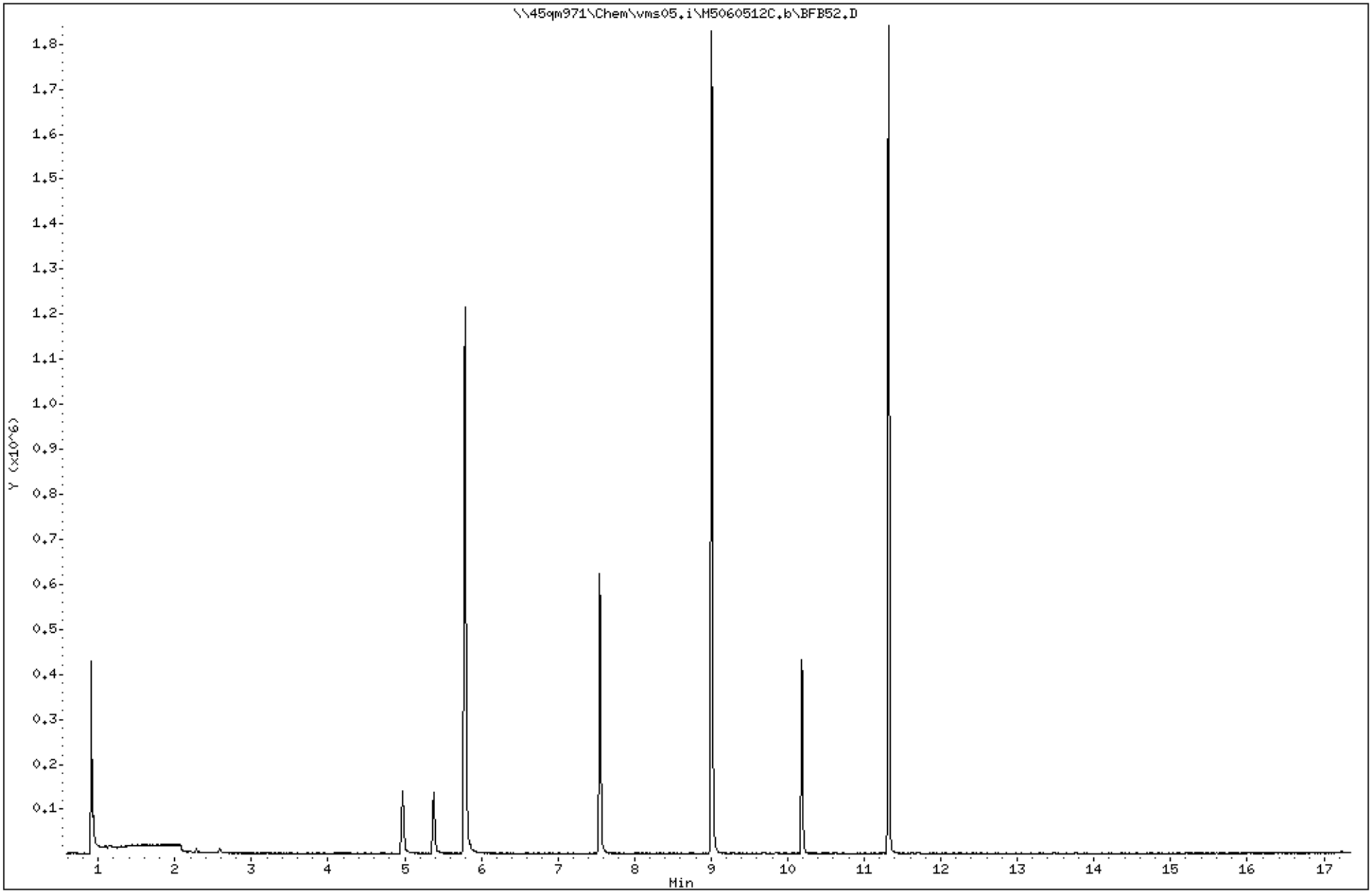
Sample Info: 060512BFB52

Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18



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3506280

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\BFB52.D

Date : 05-JUN-2012 06:29

Client ID: 060512BFB52

Instrument: vms05.i

Sample Info: 060512BFB52

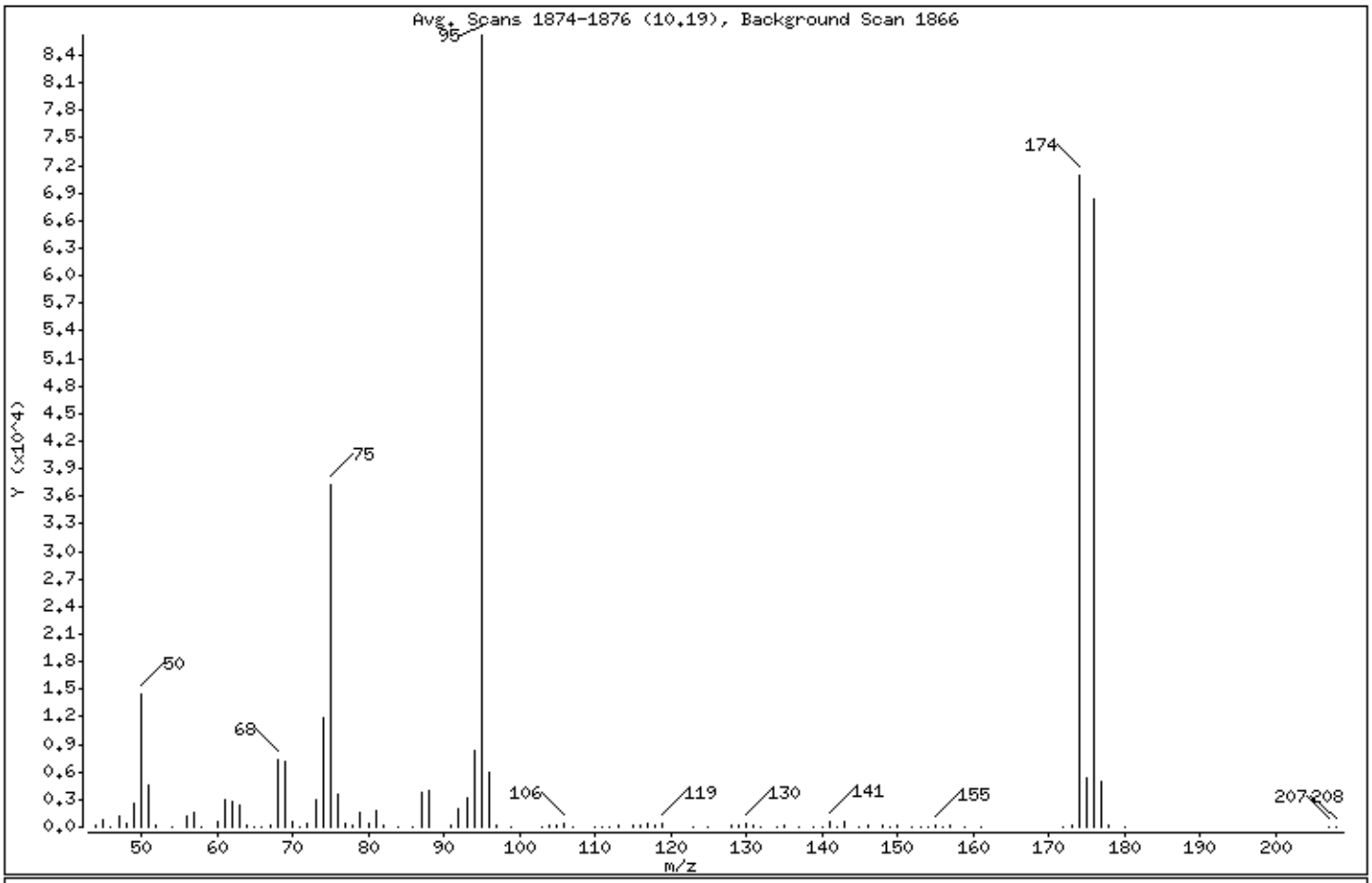
Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.68
75	30.00 - 60.00% of mass 95	43.19
96	5.00 - 9.00% of mass 95	6.78
173	Less than 2.00% of mass 174	0.30 (0.36)
174	50.00 - 100.00% of mass 95	82.38
175	5.00 - 9.00% of mass 174	6.16 (7.48)
176	95.00 - 101.00% of mass 174	79.27 (96.23)
177	5.00 - 9.00% of mass 176	5.77 (7.28)

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\BFB52.D

Date : 05-JUN-2012 06:29

Client ID: 060512BFB52 Instrument: vms05.i

Sample Info: 060512BFB52

Purge Volume: 5.0 Operator: VW

Column phase: DB-624 Column diameter: 0.18

Data File: BFB52.D
Spectrum: Avg. Scans 1874-1876 (10,19), Background Scan 1866
Location of Maximum: 95.00
Number of points: 100

m/z	Y	m/z	Y	m/z	Y	m/z	Y
44.00	131	73.00	3029	107.00	78	146.00	108
45.00	704	74.00	11955	110.00	44	148.00	187
46.00	42	75.00	37224	111.00	72	149.00	19
47.00	1266	76.00	3499	112.00	40	150.00	108
48.00	451	77.00	464	113.00	108	152.00	22
49.00	2671	78.00	151	115.00	111	153.00	45
50.00	14378	79.00	1665	116.00	237	154.00	66
51.00	4562	80.00	485	117.00	401	155.00	169
52.00	284	81.00	1818	118.00	216	156.00	42
54.00	40	82.00	275	119.00	410	157.00	122
56.00	1106	84.00	24	123.00	20	159.00	36
57.00	1600	86.00	99	125.00	20	161.00	48
58.00	26	87.00	3731	128.00	211	172.00	20
60.00	520	88.00	4034	129.00	160	173.00	259
61.00	2969	91.00	192	130.00	314	174.00	71000
62.00	2832	92.00	1990	131.00	134	175.00	5312
63.00	2439	93.00	3239	132.00	17	176.00	68320
64.00	238	94.00	8346	134.00	27	177.00	4971
65.00	35	95.00	86184	135.00	146	178.00	152
66.00	40	96.00	5847	137.00	78	180.00	21
67.00	119	97.00	114	139.00	45	207.00	20
68.00	7282	99.00	35	140.00	36	208.00	21
69.00	7140	103.00	28	141.00	618		
70.00	566	104.00	289	142.00	58		
71.00	40	105.00	145	143.00	603		
72.00	396	106.00	308	145.00	55		

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Data file : \\45qm971\Chem\vms05.i\M5060512C.b\200PPT.D
Lab Smp Id: 200PPT Client Smp ID: 200PPT
Inj Date : 05-JUN-2012 07:14 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 200PPT
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 3 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 2 Xylenes (Total)	100				6027	0.60000	(a)
M 3 Trihalomethanes (Total)	100				5118	0.20000	(a)
32 Chloroform	83	4.762	4.762	(0.823)	2682	0.20000	0.20
41 Benzene	78	5.415	5.415	(0.936)	6927	0.20000	0.22
* 42 FLUOROBENZENE (IS)	96	5.786	5.787	(1.000)	1200156	50.0000	
45 1,2-Dichloropropane	63	6.467	6.467	(1.118)	1942	0.20000	0.24
47 Bromodichloromethane	83	6.804	6.804	(1.176)	1601	0.20000	0.18
58 1,3-Dichloropropane	76	8.224	8.224	(0.913)	1979	0.20000	0.18
60 Dibromochloromethane	129	8.449	8.449	(0.938)	835	0.20000	1.2(M)
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	930510	50.0000	
67 p,m-Xylene	106	9.286	9.286	(1.031)	6027	0.40000	0.41
71 1-Methylethylbenzene	105	10.047	10.047	(0.887)	7189	0.20000	0.22
73 1,1,2,2-Tetrachloroethane	83	10.371	10.371	(0.916)	1405	0.20000	0.18
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	443793	50.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 200PPT.D
Lab Smp Id: 200PPT
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 200PPT
Level: LOW
Sample Type: WATER

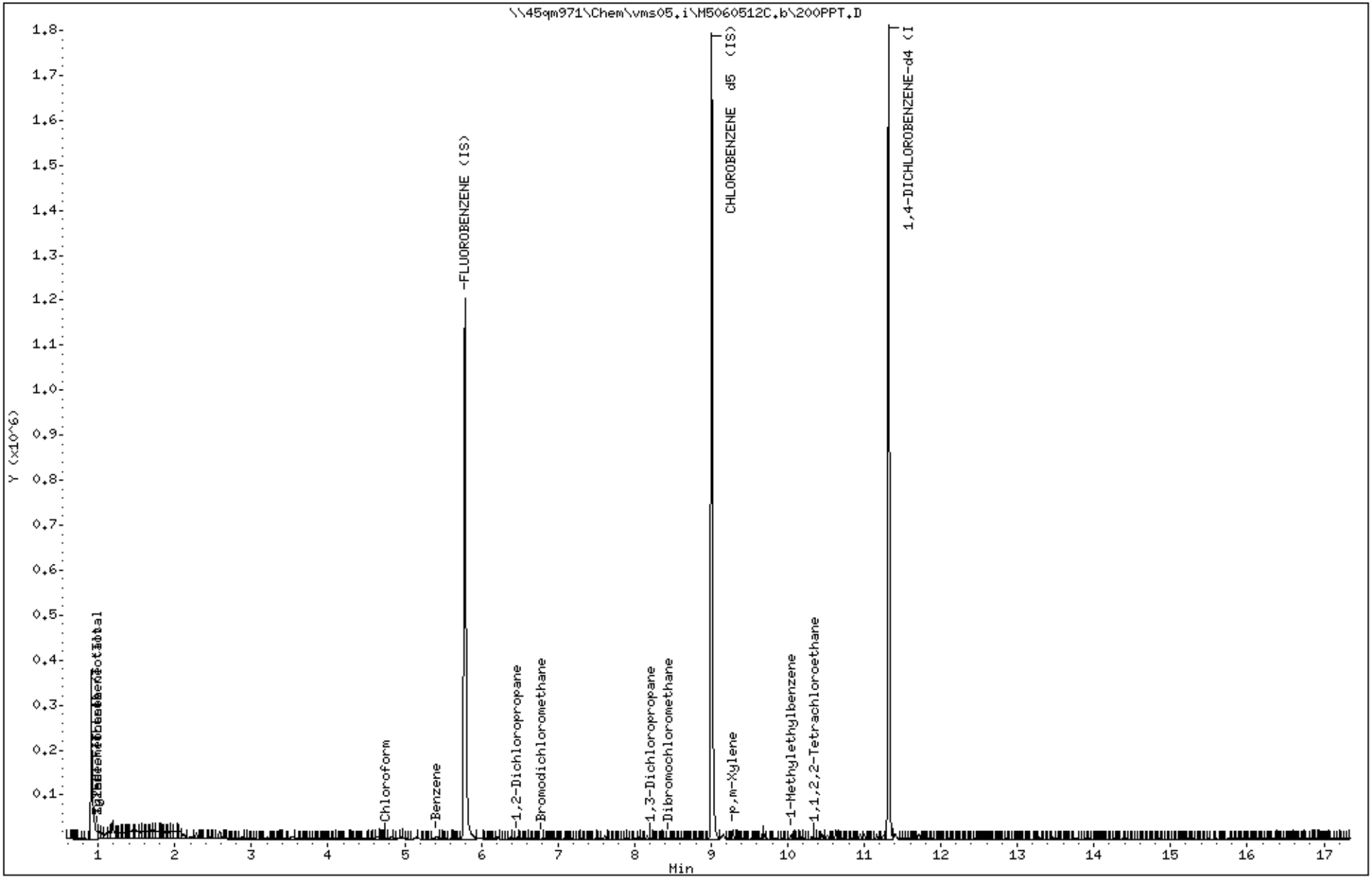
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1200156	14.28
63 CHLOROBENZENE d5	811097	405549	1622194	930510	14.72
86 1,4-DICHLOROBENZE	436748	218374	873496	443793	1.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	-0.02
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\200PPT.D
Date : 05-JUN-2012 07:14
Client ID: 200PPT
Sample Info: 200PPT
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\500PPT.D
Lab Smp Id: 500PPT Client Smp ID: 500PPT
Inj Date : 05-JUN-2012 07:42 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 500PPT
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 4 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				8095	1.00000	(a)
M 2 Xylenes (Total)	100				26912	1.50000	(a)
M 3 Trihalomethanes (Total)	100				11500	0.50000	(a)
5 Chloromethane	50	1.138	1.138	(0.197)	7838	0.50000	0.89
6 Vinyl Chloride	62	1.207	1.207	(0.209)	4478	0.50000	0.48
13 1,1-Dichloroethene	61	2.110	2.110	(0.365)	5847	0.50000	0.54
22 trans 1,2-Dichloroethene	96	2.875	2.875	(0.497)	3607	0.50000	0.49
23 1,1-Dichloroethane	63	3.402	3.402	(0.588)	6751	0.50000	0.50
29 cis-1,2-Dichloroethene	96	4.267	4.267	(0.737)	4488	0.50000	0.53
32 Chloroform	83	4.759	4.762	(0.822)	5910	0.50000	0.46
38 Carbon tetrachloride	117	5.141	5.141	(0.888)	2632	0.50000	1.8
40 1,2-Dichloroethane	62	5.480	5.480	(0.947)	3874	0.50000	0.46
41 Benzene	78	5.420	5.415	(0.936)	15373	0.50000	0.50
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	1161602	50.0000	
43 Trichloroethylene	130	6.216	6.216	(1.074)	4244	0.50000	0.53
45 1,2-Dichloropropane	63	6.471	6.467	(1.118)	3800	0.50000	0.48
47 Bromodichloromethane	83	6.808	6.804	(1.176)	3558	0.50000	0.42
52 cis 1,3-Dichloropropene	75	7.296	7.296	(1.261)	3606	0.50000	0.40(MH)
54 Toluene	92	7.614	7.614	(1.315)	9183	0.50000	0.50
55 trans 1,3-Dichloropropene	75	7.894	7.894	(1.364)	2941	0.50000	1.6
58 1,3-Dichloropropane	76	8.229	8.224	(0.913)	4844	0.50000	0.46
59 Tetrachloroethylene	164	8.166	8.166	(0.907)	3362	0.50000	0.52
60 Dibromochloromethane	129	8.453	8.449	(0.938)	2032	0.50000	1.4

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	907761	50.0000	
64 Chlorobenzene	112	9.036	9.036	(1.003)	10831	0.50000	0.51(Q)
65 1,1,1,2-Tetrachloroethane	131	9.132	9.132	(1.014)	2472	0.50000	0.42
66 Ethylbenzene	106	9.165	9.165	(1.017)	5538	0.50000	0.47
67 p,m-Xylene	106	9.284	9.286	(1.031)	13656	1.00000	0.96
68 o-Xylene	91	9.672	9.672	(1.074)	13256	0.50000	0.48
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	16365	0.50000	0.54
73 1,1,2,2-Tetrachloroethane	83	10.370	10.371	(0.916)	3345	0.50000	0.46
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	7286	0.50000	0.53
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	421004	50.0000	
87 1,4-Dichlorobenzene	146	11.345	11.345	(1.002)	7845	0.50000	0.55
90 1,2-Dichlorobenzene	146	11.706	11.706	(1.034)	5764	0.50000	0.47
93 Hexachlorobutadiene	223	13.464	13.464	(1.189)	703	0.50000	0.38(Q)
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	1534	0.50000	0.36

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 500PPT.D
Lab Smp Id: 500PPT
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 500PPT
Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1161602	10.61
63 CHLOROBENZENE d5	811097	405549	1622194	907761	11.92
86 1,4-DICHLOROBENZE	436748	218374	873496	421004	-3.60

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.02
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\500PPT.D

Date : 05-JUN-2012 07:42

Client ID: 500PPT

Instrument: vms05.i

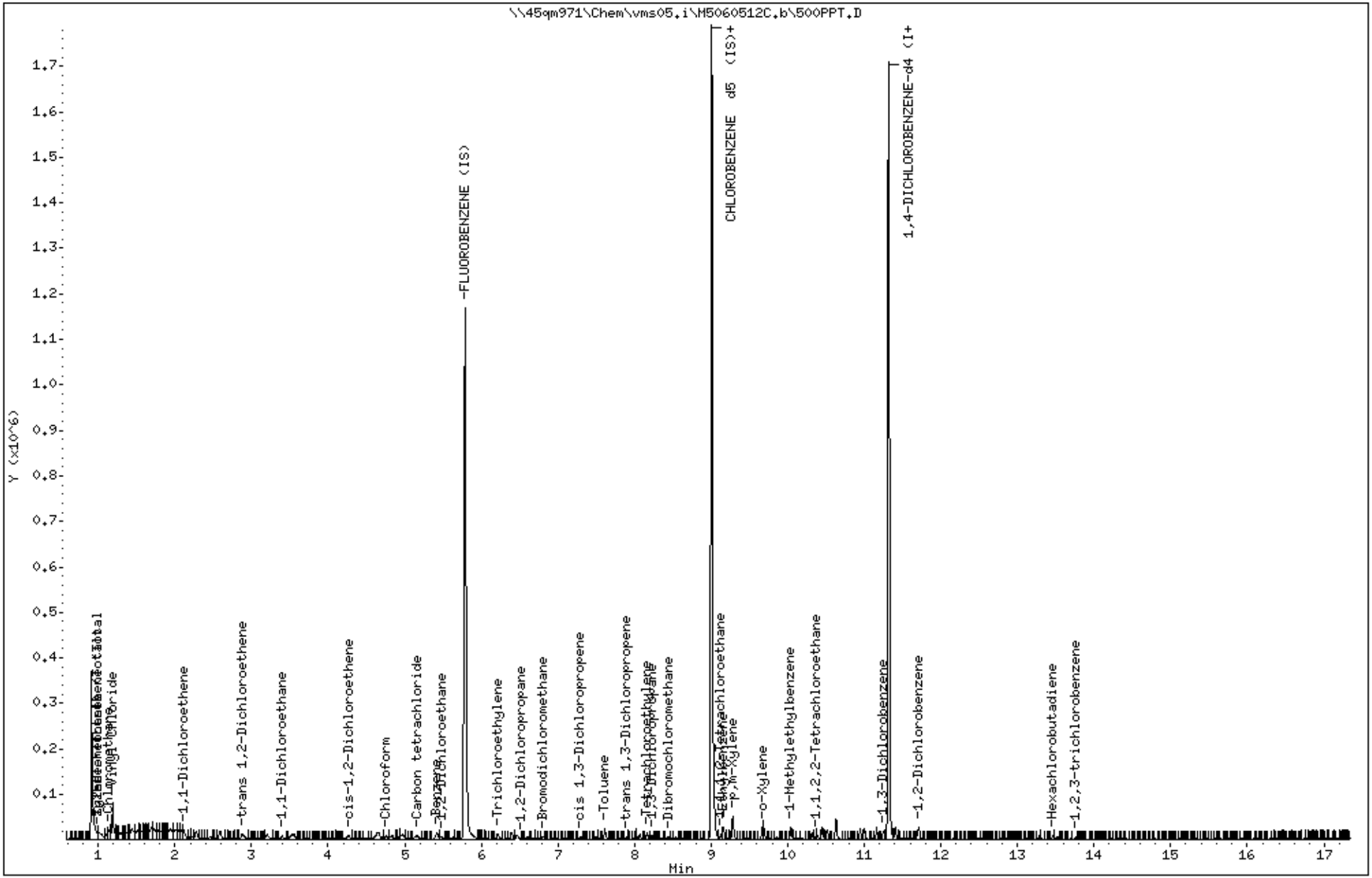
Sample Info: 500PPT

Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18



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3506280

PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\1PPB.D
Lab Smp Id: 1PPB Client Smp ID: 1PPB
Inj Date : 05-JUN-2012 08:10 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 1PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 5 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				16052	2.00000	(a)
M 2 Xylenes (Total)	100				56023	3.00000	(a)
M 3 Trihalomethanes (Total)	100				27045	1.00000	(a)
4 Dichlorodifluoromethane	85	1.019	1.019	(0.176)	6807	1.00000	0.97
5 Chloromethane	50	1.139	1.138	(0.197)	10773	1.00000	1.3
6 Vinyl Chloride	62	1.204	1.207	(0.208)	9266	1.00000	1.0
7 Bromomethane	96	1.432	1.432	(0.248)	5768	1.00000	1.1
8 Chloroethane	64	1.507	1.507	(0.260)	5723	1.00000	1.2
9 Trichlorofluoromethane	101	1.692	1.692	(0.292)	8419	1.00000	0.90
113 Bromoethane	108	2.265	2.265	(0.391)	5265	1.00000	1.1
10 Acrolein	56	1.184	1.184	(0.205)	40625	2.00000	2.3
11 1,1,2 Trichlorotrifluoromethan	101	2.118	2.118	(0.366)	5301	1.00000	0.93
13 1,1-Dichloroethene	61	2.107	2.110	(0.364)	11019	1.00000	1.1
109 t-Butyl-Alcohol	59	2.809	2.809	(0.485)	8240	10.0000	12.1
14 Acetonitrile	41	2.460	2.460	(0.425)	10470	10.0000	8.1
15 Iodomethane	142	2.229	2.229	(0.385)	347	1.00000	0.22(QM)
16 Methyl Acetate	43	2.519	2.519	(0.435)	4919	1.00000	1.1
17 Allyl Chloride	41	2.460	2.460	(0.425)	9734	1.00000	0.78
18 Carbon Disulfide	76	2.278	2.278	(0.394)	27808	1.00000	1.3
19 Methylene Chloride	49	2.586	2.586	(0.447)	18341	1.00000	1.1
20 Acrylonitrile	53	2.896	2.896	(0.501)	3900	2.00000	2.0
21 Methyl-tert-butyl ether	73	2.898	2.898	(0.501)	8108	1.00000	1.2
22 trans 1,2-Dichloroethene	96	2.876	2.875	(0.497)	7176	1.00000	1.0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	13950	1.00000	1.1
24 Vinyl Acetate	43	3.543	3.543	(0.612)	18353	1.00000	0.98
25 Chloroprene	53	3.514	3.514	(0.607)	9063	1.00000	1.0
27 Propionitrile	54	3.519	3.519	(0.608)	393	10.0000	9.6(Q)
114 tert-Butyl ethyl ether	59	4.101	4.101	(0.709)	5412	1.00000	1.1
28 2,2-Dichloropropane	77	4.231	4.231	(0.731)	3800	1.00000	2.4
29 cis-1,2-Dichloroethene	96	4.268	4.267	(0.737)	8876	1.00000	1.1
30 Methyacrylonitrile	67	4.651	4.651	(0.804)	25686	10.0000	10.0
31 Isobutyl Alcohol	43	5.601	5.601	(0.968)	1492	20.0000	(M)
32 Chloroform	83	4.759	4.762	(0.822)	12614	1.00000	1.0
33 Bromochloromethane	49	4.605	4.605	(0.796)	7151	1.00000	1.1
35 1,1,1-Trichloroethane	97	4.934	4.934	(0.853)	9450	1.00000	1.0
36 Cyclohexane	56	4.970	4.970	(0.859)	12027	1.00000	0.96
37 1,1-Dichloropropene	75	5.163	5.163	(0.892)	9746	1.00000	0.99
38 Carbon tetrachloride	117	5.142	5.141	(0.889)	5093	1.00000	2.2
40 1,2-Dichloroethane	62	5.479	5.480	(0.947)	8032	1.00000	1.0
41 Benzene	78	5.418	5.415	(0.936)	30709	1.00000	1.1
115 tert-Amyl-methyl ether	73	5.625	5.625	(0.972)	6913	1.00000	0.98
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	1093594	50.0000	
43 Trichloroethylene	130	6.216	6.216	(1.074)	7517	1.00000	1.00
44 Methyl Cyclohexane	55	6.394	6.394	(1.105)	9640	1.00000	1.0
45 1,2-Dichloropropane	63	6.468	6.467	(1.118)	8033	1.00000	1.1(q)
46 Methyl Methacrylate	69	6.688	6.688	(1.156)	3819	1.00000	0.97
47 Bromodichloromethane	83	6.806	6.804	(1.176)	7732	1.00000	0.98
48 1,4 Dioxane	88	9.038	9.038	(1.562)	123	20.0000	36.1(Q)
49 Dibromomethane	93	6.600	6.600	(1.140)	4158	1.00000	0.99
50 4-Methyl-2-Pentanone	43	7.494	7.494	(1.295)	12372	2.00000	2.1
51 2-Hexanone	43	8.362	8.362	(0.928)	7073	2.00000	1.9
52 cis 1,3-Dichloropropene	75	7.294	7.296	(1.260)	7820	1.00000	0.93
54 Toluene	92	7.616	7.614	(1.316)	18682	1.00000	1.1
55 trans 1,3-Dichloropropene	75	7.894	7.894	(1.364)	6072	1.00000	2.0
56 Ethyl Methacrylate	69	8.025	8.025	(1.387)	7539	1.00000	0.97
57 1,1,2-Trichloroethane	97	8.070	8.070	(1.394)	5769	1.00000	1.0
58 1,3-Dichloropropane	76	8.227	8.224	(0.913)	10443	1.00000	1.0
59 Tetrachloroethylene	164	8.166	8.166	(0.907)	6595	1.00000	1.1
60 Dibromochloromethane	129	8.447	8.449	(0.938)	4453	1.00000	1.8
61 1,2-Dibromoethane	107	8.536	8.536	(0.948)	6422	1.00000	1.0
62 1-Chlorohexane	91	9.052	9.052	(1.005)	10397	1.00000	0.98
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	858884	50.0000	
64 Chlorobenzene	112	9.034	9.036	(1.003)	21137	1.00000	1.0(q)
65 1,1,1,2-Tetrachloroethane	131	9.134	9.132	(1.014)	5054	1.00000	0.90
66 Ethylbenzene	106	9.163	9.165	(1.017)	11998	1.00000	1.1
67 p,m-Xylene	106	9.284	9.286	(1.031)	28047	2.00000	2.1
68 o-Xylene	91	9.671	9.672	(1.074)	27976	1.00000	1.1
69 Styrene	104	9.692	9.692	(1.076)	21072	1.00000	1.0
70 Bromoform	173	9.859	9.859	(1.094)	2246	1.00000	2.9
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	34009	1.00000	1.1
72 1,4-Dichloro-2-Butene	53	10.432	10.432	(0.921)	953	2.00000	3.3(Q)
73 1,1,2,2-Tetrachloroethane	83	10.368	10.371	(0.916)	8372	1.00000	1.1
75 1,2,3- trichloropropane	75	10.395	10.395	(0.918)	5878	1.00000	1.0
76 n-Propylbenzene	91	10.453	10.453	(0.923)	40318	1.00000	1.1
77 Bromobenzene	77	10.315	10.315	(0.911)	12269	1.00000	1.1
78 1,3,5-Trimethylbenzene	105	10.636	10.636	(0.939)	27235	1.00000	1.1
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	24343	1.00000	1.1

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
80 4-Chlorotoluene	91	10.631	10.631	(0.939)	27202	1.00000	1.1
81 tert-Butylbenzene	119	10.946	10.946	(0.967)	20962	1.00000	0.99
82 1,2,4-trimethylbenzene	105	10.998	10.998	(0.971)	27244	1.00000	1.1
83 sec-Butylbenzene	105	11.165	11.165	(0.986)	33971	1.00000	1.0
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	27636	1.00000	1.0
85 1,3-Dichlorobenzene	146	11.255	11.252	(0.994)	14750	1.00000	1.0
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	429052	50.0000	
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	15373	1.00000	1.1
124 1,2,3-trimethylbenzene	105	11.406	11.406	(1.008)	25676	1.00000	1.1
88 Benzyl Chloride	91	11.494	11.494	(1.015)	6015	1.00000	0.87
89 n-Butylbenzene	91	11.721	11.721	(1.035)	24732	1.00000	0.99
90 1,2-Dichlorobenzene	146	11.703	11.706	(1.034)	13563	1.00000	1.1
92 1,2,4-Trichlorobenzene	180	13.293	13.293	(1.174)	5944	1.00000	0.97
93 Hexachlorobutadiene	223	13.470	13.464	(1.190)	2010	1.00000	1.0(q)
94 Naphthalene	128	13.525	13.525	(1.195)	11007	1.00000	0.96
95 1,2,3-trichlorobenzene	180	13.765	13.763	(1.216)	4845	1.00000	1.1(q)
103 Isopropyl Ether	45	3.548	3.548	(0.613)	21976	1.00000	1.0
104 Ethyl acetate	43	4.493	4.493	(0.776)	10245	2.00000	1.9
105 Cyclohexanone	55	10.136	10.136	(1.125)	1182	10.0000	9.9
106 Ethyl ether	59	1.937	1.937	(0.335)	5047	1.00000	1.1
107 2-Nitropropane	43	7.494	7.494	(1.295)	11990	2.00000	2.1
108 Tetrahydrofuran	42	4.674	4.674	(0.808)	5414	2.00000	2.4
112 2-Cleve	63	7.107	7.107	(1.228)	17	2.00000	0.57(Q)
116 Ethanol	45	1.937	1.937	(0.335)	7090	80.0000	122
117 t-butyl formate	59	4.828	4.828	(0.834)	13786	20.0000	64.9
118 tert-amyl alcohol	59	5.611	5.611	(0.970)	2231	20.0000	15.2(Q)
119 3,3-dimethyl-1-butanol	57	8.601	8.601	(1.486)	2053	20.0000	49.6
120 Chlorotrifluoroethylene	116	1.179	1.179	(0.204)	18	1.00000	3.0(aQ)
121 2-Chloro-1,1,1-trifluoroethane	118	1.553	1.553	(0.268)	48	1.00000	4.6(aQ)
122 n-Hexane	57	3.203	3.203	(0.554)	9188	1.00000	0.96(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 1PPB.D
Lab Smp Id: 1PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 1PPB
Level: LOW
Sample Type: WATER

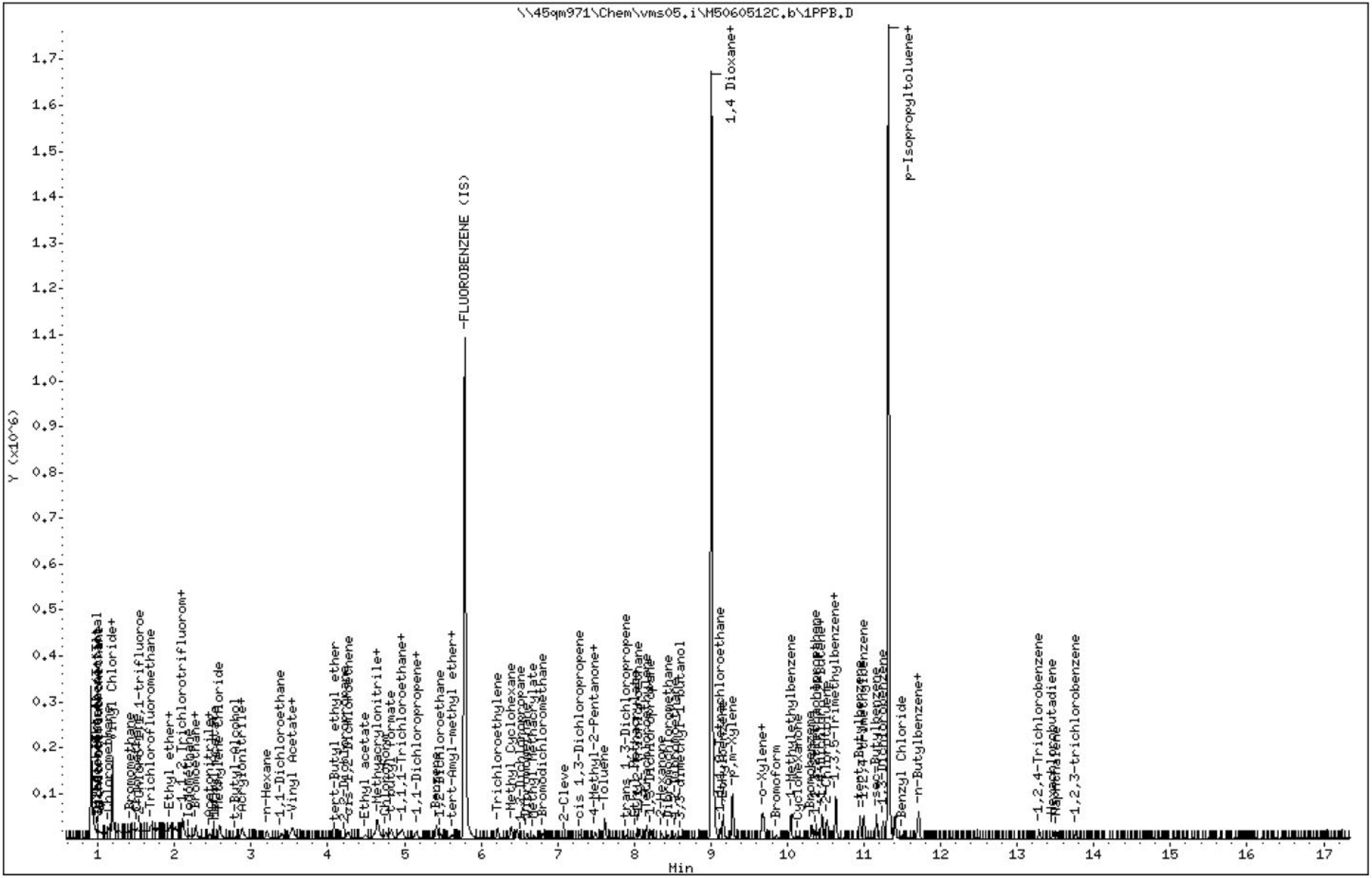
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1093594	4.13
63 CHLOROBENZENE d5	811097	405549	1622194	858884	5.89
86 1,4-DICHLOROBENZE	436748	218374	873496	429052	-1.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\1PPB.D
Date : 05-JUN-2012 08:10
Client ID: 1PPB
Sample Info: 1PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\5PPB.D
Lab Smp Id: 5PPB Client Smp ID: 5PPB
Inj Date : 05-JUN-2012 09:08 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 5PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				72943	10.0000	(a)
M 2 Xylenes (Total)	100				254773	15.0000	(a)
M 3 Trihalomethanes (Total)	100				133790	5.00000	(a)
4 Dichlorodifluoromethane	85	1.018	1.019	(0.176)	35205	5.00000	5.2
5 Chloromethane	50	1.137	1.138	(0.197)	44129	5.00000	5.5
6 Vinyl Chloride	62	1.204	1.207	(0.208)	43862	5.00000	5.2(q)
7 Bromomethane	96	1.432	1.432	(0.247)	26519	5.00000	5.1
8 Chloroethane	64	1.507	1.507	(0.260)	24204	5.00000	5.4
9 Trichlorofluoromethane	101	1.693	1.692	(0.293)	46445	5.00000	5.1
113 Bromoethane	108	2.263	2.265	(0.391)	21656	5.00000	4.9
10 Acrolein	56	1.184	1.184	(0.205)	191419	10.0000	11.0
11 1,1,2 Trichlorotrifluoromethan	101	2.121	2.118	(0.367)	27975	5.00000	5.1
12 Acetone	43	2.204	2.204	(0.381)	17965	10.0000	10.2
13 1,1-Dichloroethene	61	2.108	2.110	(0.364)	50897	5.00000	5.1
109 t-Butyl-Alcohol	59	2.806	2.809	(0.485)	35839	50.0000	54.4
14 Acetonitrile	41	2.455	2.460	(0.424)	56755	50.0000	45.4
15 Iodomethane	142	2.237	2.229	(0.387)	1761	5.00000	1.2(q)
16 Methyl Acetate	43	2.516	2.519	(0.435)	23289	5.00000	5.2
17 Allyl Chloride	41	2.455	2.460	(0.424)	55741	5.00000	4.6
18 Carbon Disulfide	76	2.278	2.278	(0.394)	106251	5.00000	5.0
19 Methylene Chloride	49	2.586	2.586	(0.447)	55829	5.00000	5.4
20 Acrylonitrile	53	2.896	2.896	(0.500)	17953	10.0000	9.6(q)
21 Methyl-tert-butyl ether	73	2.897	2.898	(0.501)	32867	5.00000	4.9

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.497)	34361	5.00000	5.1
23 1,1-Dichloroethane	63	3.396	3.402	(0.587)	62822	5.00000	5.1
24 Vinyl Acetate	43	3.540	3.543	(0.612)	89626	5.00000	4.9
25 Chloroprene	53	3.511	3.514	(0.607)	41696	5.00000	4.8
26 2-Butanone	43	4.369	4.366	(0.755)	19369	10.0000	9.5
27 Propionitrile	54	3.510	3.519	(0.606)	1993	50.0000	50.2(Q)
114 tert-Butyl ethyl ether	59	4.099	4.101	(0.708)	25790	5.00000	5.2
28 2,2-Dichloropropane	77	4.231	4.231	(0.731)	18002	5.00000	5.0
29 cis-1,2-Dichloroethene	96	4.264	4.267	(0.737)	38582	5.00000	5.0
30 Methyacrylonitrile	67	4.645	4.651	(0.803)	122968	50.0000	49.5
31 Isobutyl Alcohol	43	5.529	5.601	(0.955)	4844	100.000	71.7
32 Chloroform	83	4.759	4.762	(0.822)	60296	5.00000	5.2
33 Bromochloromethane	49	4.604	4.605	(0.795)	32013	5.00000	5.2
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.860)	27336	5.00000	4.6
35 1,1,1-Trichloroethane	97	4.933	4.934	(0.852)	43378	5.00000	4.8
36 Cyclohexane	56	4.974	4.970	(0.859)	60454	5.00000	5.0
37 1,1-Dichloropropene	75	5.163	5.163	(0.892)	47873	5.00000	5.0
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	27208	5.00000	5.0
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	5313	5.00000	4.5(Q)
40 1,2-Dichloroethane	62	5.475	5.480	(0.946)	40001	5.00000	5.3
41 Benzene	78	5.417	5.415	(0.936)	138087	5.00000	5.0
115 tert-Amyl-methyl ether	73	5.621	5.625	(0.971)	32183	5.00000	4.7
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	1061162	50.0000	
43 Trichloroethylene	130	6.216	6.216	(1.074)	35744	5.00000	4.9
44 Methyl Cyclohexane	55	6.395	6.394	(1.105)	45932	5.00000	4.9
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	37903	5.00000	5.2
46 Methyl Methacrylate	69	6.688	6.688	(1.156)	18163	5.00000	4.8(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	37693	5.00000	4.9
48 1,4 Dioxane	88	9.019	9.038	(1.558)	753	100.000	228(Q)
49 Dibromomethane	93	6.595	6.600	(1.139)	20114	5.00000	4.9
50 4-Methyl-2-Pentanone	43	7.492	7.494	(1.294)	56696	10.0000	10.2
51 2-Hexanone	43	8.357	8.362	(0.928)	33941	10.0000	9.8
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	39219	5.00000	4.8
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	104704	5.00000	4.7
54 Toluene	92	7.615	7.614	(1.316)	84719	5.00000	5.0
55 trans 1,3-Dichloropropene	75	7.891	7.894	(1.363)	33417	5.00000	5.2
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	37136	5.00000	4.9
57 1,1,2-Trichloroethane	97	8.065	8.070	(1.394)	28170	5.00000	5.1
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	49198	5.00000	5.2
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	29905	5.00000	5.2
60 Dibromochloromethane	129	8.447	8.449	(0.938)	23678	5.00000	4.9
61 1,2-Dibromoethane	107	8.535	8.536	(0.947)	29660	5.00000	5.0
62 1-Chlorohexane	91	9.051	9.052	(1.005)	48701	5.00000	4.9(q)
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	813273	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	96804	5.00000	5.1
65 1,1,1,2-Tetrachloroethane	131	9.132	9.132	(1.014)	24945	5.00000	4.7
66 Ethylbenzene	106	9.163	9.165	(1.017)	54645	5.00000	5.2(q)
67 p,m-Xylene	106	9.285	9.286	(1.031)	129681	10.0000	10.1
68 o-Xylene	91	9.671	9.672	(1.074)	125092	5.00000	5.0
69 Styrene	104	9.692	9.692	(1.076)	99005	5.00000	5.1
70 Bromoform	173	9.861	9.859	(1.095)	12123	5.00000	5.5
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	145492	5.00000	5.0
72 1,4-Dichloro-2-Butene	53	10.426	10.432	(0.921)	4684	10.0000	9.6(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	36298	5.00000	5.2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	36848	5.00000	5.0
75 1,2,3- trichloropropane	75	10.393	10.395	(0.918)	28240	5.00000	5.3
76 n-Propylbenzene	91	10.453	10.453	(0.923)	187653	5.00000	5.2
77 Bromobenzene	77	10.314	10.315	(0.911)	56710	5.00000	5.2
78 1,3,5-Trimethylbenzene	105	10.635	10.636	(0.939)	122866	5.00000	5.2
79 2-Chlorotoluene	91	10.518	10.519	(0.929)	110363	5.00000	5.4
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	119099	5.00000	5.2
81 tert-Butylbenzene	119	10.948	10.946	(0.967)	105605	5.00000	5.3(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	126293	5.00000	5.3
83 sec-Butylbenzene	105	11.163	11.165	(0.986)	157296	5.00000	5.1
84 p-Isopropyltoluene	119	11.317	11.318	(1.000)	129079	5.00000	5.2
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	69276	5.00000	5.2
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	404423	50.0000	
87 1,4-Dichlorobenzene	146	11.343	11.345	(1.002)	72286	5.00000	5.3
124 1,2,3-trimethylbenzene	105	11.405	11.406	(1.007)	121031	5.00000	5.4
88 Benzyl Chloride	91	11.493	11.494	(1.015)	25768	5.00000	4.0
89 n-Butylbenzene	91	11.720	11.721	(1.035)	119557	5.00000	5.1
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	62991	5.00000	5.3
91 1,2-dibromo-3-chloropropane	75	12.481	12.482	(1.103)	3212	5.00000	4.2(qM)
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	28851	5.00000	5.0
93 Hexachlorobutadiene	223	13.468	13.464	(1.190)	9307	5.00000	5.2(q)
94 Naphthalene	128	13.524	13.525	(1.195)	53096	5.00000	4.9
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	19788	5.00000	4.8
103 Isopropyl Ether	45	3.546	3.548	(0.613)	106607	5.00000	5.0
104 Ethyl acetate	43	4.484	4.493	(0.775)	53110	10.0000	10.1
105 Cyclohexanone	55	10.137	10.136	(1.125)	4607	50.0000	40.7
106 Ethyl ether	59	1.937	1.937	(0.335)	23576	5.00000	5.2
107 2-Nitropropane	43	7.492	7.494	(1.294)	56696	10.0000	10.2
108 Tetrahydrofuran	42	4.670	4.674	(0.807)	22426	10.0000	10.2
112 2-Cleve	63	7.112	7.107	(1.229)	363	10.0000	12.6(q)
116 Ethanol	45	1.937	1.937	(0.335)	21743	400.000	385
117 t-butyl formate	59	4.829	4.828	(0.834)	73613	100.000	116
118 tert-amyl alcohol	59	5.609	5.611	(0.969)	12618	100.000	88.4(Q)
119 3,3-dimethyl-1-butanol	57	8.600	8.601	(1.486)	12963	100.000	108(q)
120 Chlorotrifluoroethylene	116	1.210	1.179	(0.209)	19	5.00000	3.2(a)
121 2-Chloro-1,1,1-trifluoroethane	118	1.562	1.553	(0.270)	37	5.00000	3.6(aQ)
122 n-Hexane	57	3.205	3.203	(0.554)	44838	5.00000	4.8(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 5PPB.D
Lab Smp Id: 5PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 5PPB
Level: LOW
Sample Type: WATER

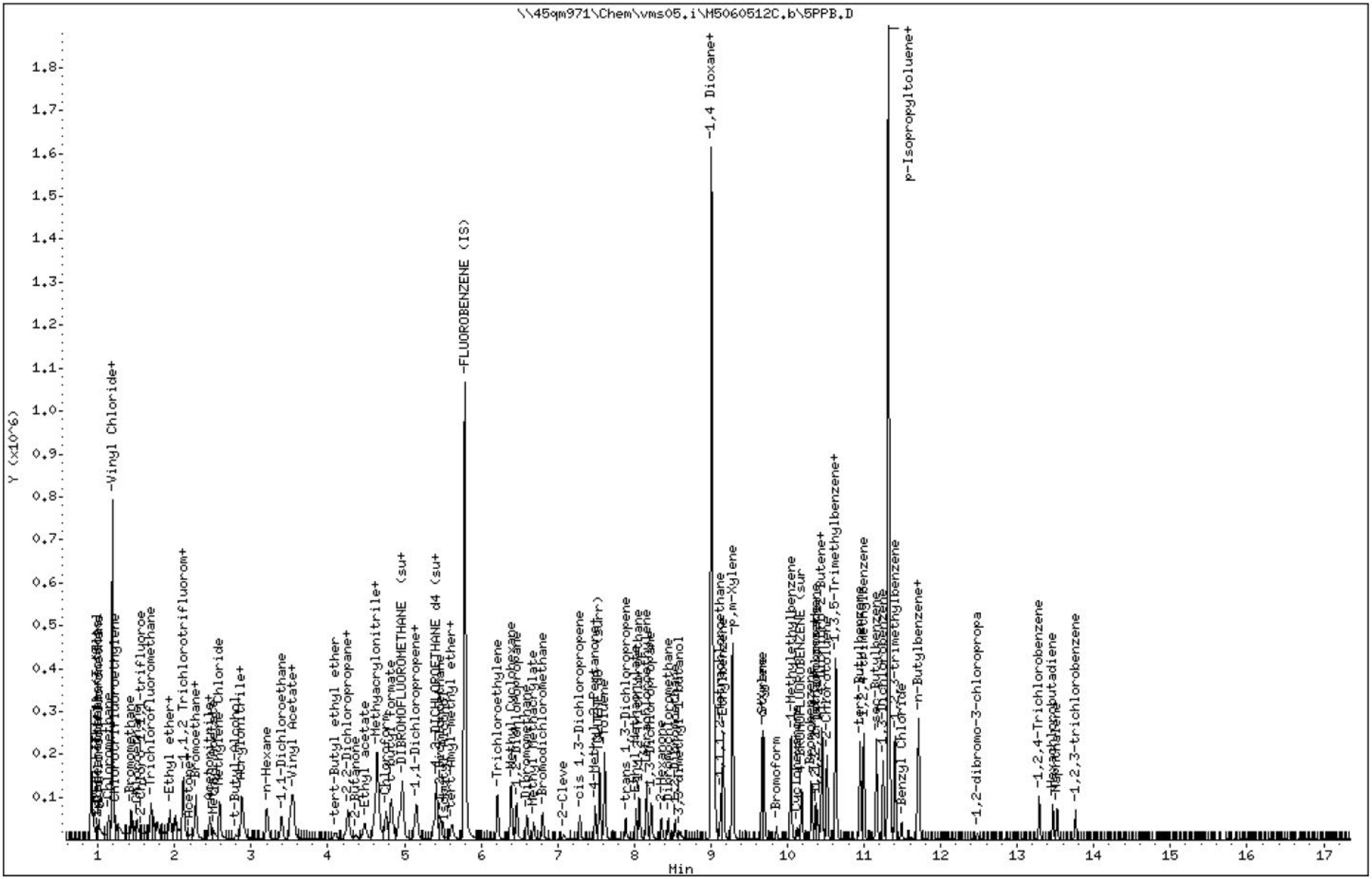
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1061162	1.04
63 CHLOROBENZENE d5	811097	405549	1622194	813273	0.27
86 1,4-DICHLOROBENZE	436748	218374	873496	404423	-7.40

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\5PPB.D
Date : 05-JUN-2012 09:08
Client ID: 5PPB
Sample Info: 5PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\10PPB.D
Lab Smp Id: 10PPB Client Smp ID: 10PPB
Inj Date : 05-JUN-2012 09:37 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 10PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				145909	20.0000	(a)
M 2 Xylenes (Total)	100				514404	30.0000	(a)
M 3 Trihalomethanes (Total)	100				271372	10.0000	(a)
4 Dichlorodifluoromethane	85	1.018	1.019	(0.176)	69002	10.0000	10.2
5 Chloromethane	50	1.139	1.138	(0.197)	79506	10.0000	9.9
6 Vinyl Chloride	62	1.204	1.207	(0.208)	87137	10.0000	10.3(q)
7 Bromomethane	96	1.431	1.432	(0.247)	49454	10.0000	9.6(q)
8 Chloroethane	64	1.506	1.507	(0.260)	43180	10.0000	9.7
9 Trichlorofluoromethane	101	1.693	1.692	(0.293)	95074	10.0000	10.5
113 Bromoethane	108	2.263	2.265	(0.391)	47125	10.0000	10.6
10 Acrolein	56	1.185	1.184	(0.205)	376307	20.0000	21.8
11 1,1,2 Trichlorotrifluoromethan	101	2.121	2.118	(0.367)	55736	10.0000	10.2
12 Acetone	43	2.197	2.204	(0.380)	34409	20.0000	23.0
13 1,1-Dichloroethene	61	2.108	2.110	(0.364)	102668	10.0000	10.4
109 t-Butyl-Alcohol	59	2.805	2.809	(0.485)	68542	100.000	105
14 Acetonitrile	41	2.456	2.460	(0.424)	127407	100.000	103
15 Iodomethane	142	2.236	2.229	(0.386)	4929	10.0000	3.3(q)
16 Methyl Acetate	43	2.515	2.519	(0.435)	45551	10.0000	10.2
17 Allyl Chloride	41	2.456	2.460	(0.424)	127560	10.0000	10.6
18 Carbon Disulfide	76	2.277	2.278	(0.394)	212941	10.0000	10.1
19 Methylene Chloride	49	2.586	2.586	(0.447)	96461	10.0000	10.2
20 Acrylonitrile	53	2.888	2.896	(0.499)	37043	20.0000	20.0(q)
21 Methyl-tert-butyl ether	73	2.896	2.898	(0.500)	62741	10.0000	9.4

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.496)	67837	10.0000	10.2
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	124198	10.0000	10.2
24 Vinyl Acetate	43	3.537	3.543	(0.611)	176740	10.0000	9.8
25 Chloroprene	53	3.511	3.514	(0.607)	88227	10.0000	10.3
26 2-Butanone	43	4.362	4.366	(0.754)	43194	20.0000	21.3
27 Propionitrile	54	3.511	3.519	(0.607)	4282	100.000	109(q)
114 tert-Butyl ethyl ether	59	4.098	4.101	(0.708)	47586	10.0000	9.7
28 2,2-Dichloropropane	77	4.230	4.231	(0.731)	39582	10.0000	9.1
29 cis-1,2-Dichloroethene	96	4.264	4.267	(0.737)	78072	10.0000	10.2
30 Methyacrylonitrile	67	4.643	4.651	(0.802)	253480	100.000	103
31 Isobutyl Alcohol	43	5.535	5.601	(0.956)	10612	200.000	201(Q)
32 Chloroform	83	4.759	4.762	(0.822)	117859	10.0000	10.2
33 Bromochloromethane	49	4.602	4.605	(0.795)	60070	10.0000	9.8
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	60007	10.0000	10.3
35 1,1,1-Trichloroethane	97	4.933	4.934	(0.852)	90014	10.0000	10.0
36 Cyclohexane	56	4.974	4.970	(0.859)	128748	10.0000	10.6
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	99406	10.0000	10.5
38 Carbon tetrachloride	117	5.139	5.141	(0.888)	61951	10.0000	9.4
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.378	5.380	(0.929)	12364	10.0000	10.6(q)
40 1,2-Dichloroethane	62	5.474	5.480	(0.946)	78333	10.0000	10.4
41 Benzene	78	5.417	5.415	(0.936)	278416	10.0000	10.1
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.971)	66544	10.0000	9.8
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	1054036	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	75815	10.0000	10.4
44 Methyl Cyclohexane	55	6.393	6.394	(1.105)	98610	10.0000	10.6
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	74255	10.0000	10.2
46 Methyl Methacrylate	69	6.686	6.688	(1.155)	38466	10.0000	10.1(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	76901	10.0000	10.1
48 1,4 Dioxane	88	9.040	9.038	(1.562)	278	200.000	84.7(Q)
49 Dibromomethane	93	6.595	6.600	(1.140)	40565	10.0000	10.0
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	113896	20.0000	20.5
51 2-Hexanone	43	8.357	8.362	(0.928)	74347	20.0000	21.2
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	84008	10.0000	10.3
$ 53 TOLUENE d8 (surr)	98	7.547	7.548	(1.304)	223421	10.0000	10.2
54 Toluene	92	7.615	7.614	(1.316)	170060	10.0000	10.2
55 trans 1,3-Dichloropropene	75	7.891	7.894	(1.364)	68455	10.0000	9.4
56 Ethyl Methacrylate	69	8.022	8.025	(1.386)	75022	10.0000	10.0
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.394)	56445	10.0000	10.3
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	97631	10.0000	10.2
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	60229	10.0000	10.3
60 Dibromochloromethane	129	8.444	8.449	(0.937)	49882	10.0000	9.0
61 1,2-Dibromoethane	107	8.535	8.536	(0.947)	60580	10.0000	10.2
62 1-Chlorohexane	91	9.052	9.052	(1.005)	104890	10.0000	10.4
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	823411	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	194670	10.0000	10.1
65 1,1,1,2-Tetrachloroethane	131	9.133	9.132	(1.014)	53043	10.0000	9.8
66 Ethylbenzene	106	9.163	9.165	(1.017)	108422	10.0000	10.2(Q)
67 p,m-Xylene	106	9.284	9.286	(1.031)	261016	20.0000	20.1
68 o-Xylene	91	9.671	9.672	(1.074)	253388	10.0000	10.1
69 Styrene	104	9.692	9.692	(1.076)	197559	10.0000	10
70 Bromoform	173	9.859	9.859	(1.095)	26730	10.0000	9.2
71 1-Methylethylbenzene	105	10.045	10.047	(0.887)	304775	10.0000	10.2
72 1,4-Dichloro-2-Butene	53	10.427	10.432	(0.921)	10475	20.0000	18.9(q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	73567	10.0000	10.3

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	76913	10.0000	10.3
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	54632	10.0000	10.1
76 n-Propylbenzene	91	10.452	10.453	(0.923)	383363	10.0000	10.5
77 Bromobenzene	77	10.314	10.315	(0.911)	113512	10.0000	10.3
78 1,3,5-Trimethylbenzene	105	10.635	10.636	(0.939)	253040	10.0000	10.4
79 2-Chlorotoluene	91	10.515	10.519	(0.929)	216960	10.0000	10.4
80 4-Chlorotoluene	91	10.629	10.631	(0.939)	237150	10.0000	10.2
81 tert-Butylbenzene	119	10.947	10.946	(0.967)	215777	10.0000	10.6(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	254113	10.0000	10.4
83 sec-Butylbenzene	105	11.164	11.165	(0.986)	328811	10.0000	10.5
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	264678	10.0000	10.4
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	138471	10.0000	10.2
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	412702	50.0000	
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	139805	10.0000	10.0
124 1,2,3-trimethylbenzene	105	11.405	11.406	(1.007)	238044	10.0000	10.4
88 Benzyl Chloride	91	11.493	11.494	(1.015)	59422	10.0000	8.9
89 n-Butylbenzene	91	11.719	11.721	(1.035)	253456	10.0000	10.6
90 1,2-Dichlorobenzene	146	11.703	11.706	(1.034)	126400	10.0000	10.5
91 1,2-dibromo-3-chloropropane	75	12.482	12.482	(1.103)	7720	10.0000	9.8(M)
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	60414	10.0000	10.2
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	19340	10.0000	10.6(q)
94 Naphthalene	128	13.523	13.525	(1.195)	115588	10.0000	10.5
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	42745	10.0000	10.2
103 Isopropyl Ether	45	3.547	3.548	(0.613)	213318	10.0000	10.1
104 Ethyl acetate	43	4.482	4.493	(0.775)	107851	20.0000	20.7
105 Cyclohexanone	55	10.133	10.136	(1.125)	13081	100.000	114
106 Ethyl ether	59	1.937	1.937	(0.335)	44902	10.0000	10
107 2-Nitropropane	43	7.491	7.494	(1.294)	114233	20.0000	20.7
108 Tetrahydrofuran	42	4.672	4.674	(0.807)	44369	20.0000	20.3
112 2-Cleve	63	7.109	7.107	(1.228)	923	20.0000	32.2(Q)
116 Ethanol	45	1.937	1.937	(0.335)	43802	800.000	782
117 t-butyl formate	59	4.827	4.828	(0.834)	162679	200.000	192(q)
118 tert-amyl alcohol	59	5.607	5.611	(0.969)	32117	200.000	226(q)
119 3,3-dimethyl-1-butanol	57	8.600	8.601	(1.486)	28847	200.000	194
120 Chlorotrifluoroethylene	116	1.128	1.179	(0.195)	26	10.0000	4.4(a)
121 2-Chloro-1,1,1-trifluoroethane	118	1.567	1.553	(0.271)	43	10.0000	4.3(aQ)
122 n-Hexane	57	3.206	3.203	(0.554)	99774	10.0000	10.8

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 10PPB.D
Lab Smp Id: 10PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 10PPB
Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1054036	0.37
63 CHLOROBENZENE d5	811097	405549	1622194	823411	1.52
86 1,4-DICHLOROBENZE	436748	218374	873496	412702	-5.51

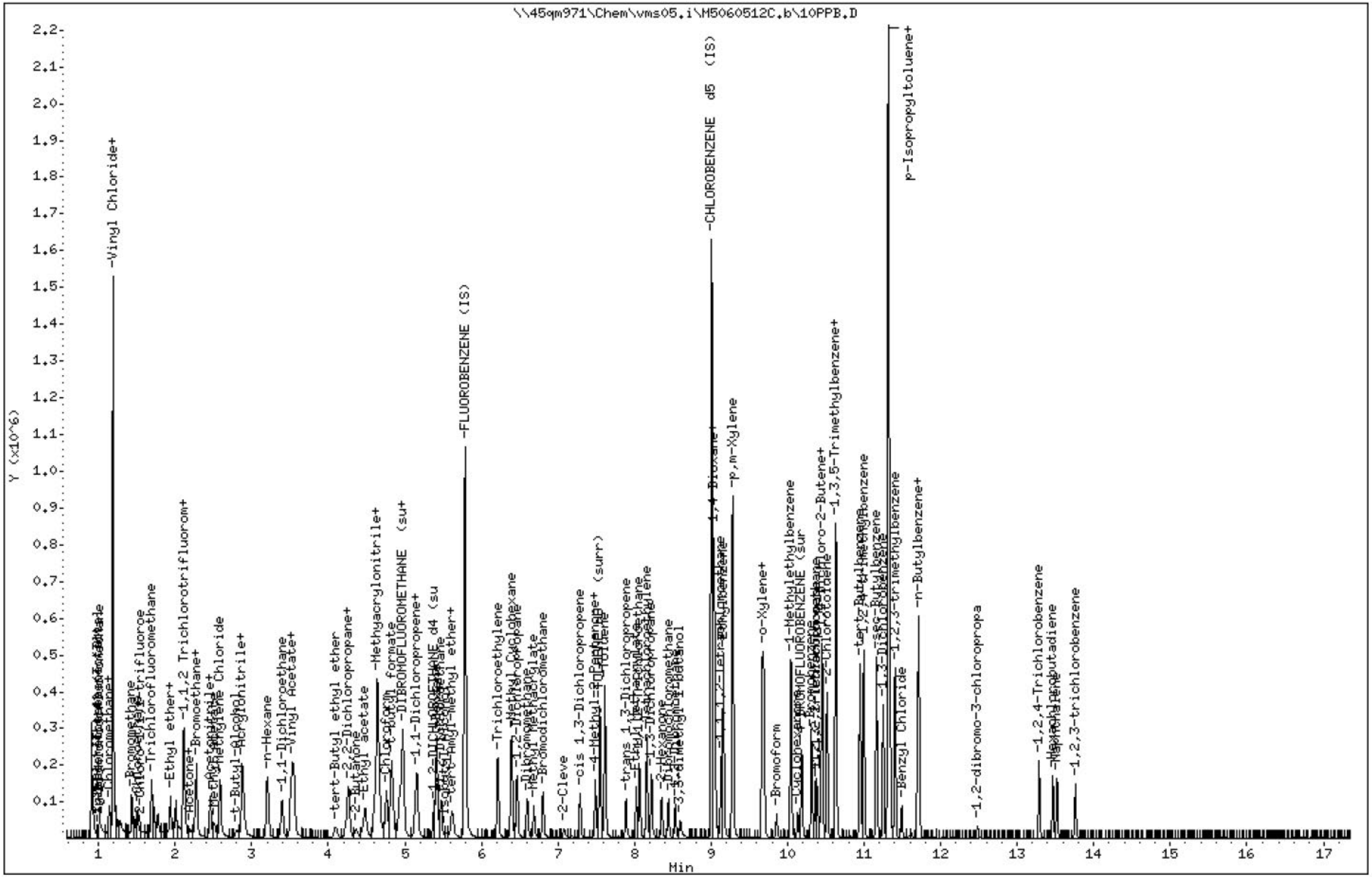
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\10PPB.D
Date : 05-JUN-2012 09:37
Client ID: 10PPB
Sample Info: 10PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i

Operator: VW
Column diameter: 0.18



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PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\20PPB.D
Lab Smp Id: 20PPB Client Smp ID: 20PPB
Inj Date : 05-JUN-2012 10:06 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 20PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				274740	40.0000	(a)
M 2 Xylenes (Total)	100				984784	60.0000	(a)
M 3 Trihalomethanes (Total)	100				541938	20.0000	(a)
4 Dichlorodifluoromethane	85	1.019	1.019	(0.176)	135151	20.0000	20.0
5 Chloromethane	50	1.139	1.138	(0.197)	144562	20.0000	18.1
6 Vinyl Chloride	62	1.205	1.207	(0.208)	161013	20.0000	19.1(q)
7 Bromomethane	96	1.433	1.432	(0.248)	103398	20.0000	20.0(q)
8 Chloroethane	64	1.507	1.507	(0.260)	81889	20.0000	18.4
9 Trichlorofluoromethane	101	1.694	1.692	(0.293)	173470	20.0000	19.3
113 Bromoethane	108	2.263	2.265	(0.391)	87391	20.0000	19.8
10 Acrolein	56	1.189	1.184	(0.205)	714956	40.0000	41.6
11 1,1,2 Trichlorotrifluoromethan	101	2.122	2.118	(0.367)	100478	20.0000	18.4
12 Acetone	43	2.199	2.204	(0.380)	60267	40.0000	43.0
13 1,1-Dichloroethene	61	2.109	2.110	(0.365)	189379	20.0000	19.2
109 t-Butyl-Alcohol	59	2.805	2.809	(0.485)	119541	200.000	183
14 Acetonitrile	41	2.458	2.460	(0.425)	248556	200.000	201
15 Iodomethane	142	2.240	2.229	(0.387)	17256	20.0000	11.5(qM)
16 Methyl Acetate	43	2.514	2.519	(0.434)	85164	20.0000	19.2
17 Allyl Chloride	41	2.459	2.460	(0.425)	249230	20.0000	20.8
18 Carbon Disulfide	76	2.279	2.278	(0.394)	391360	20.0000	18.7
19 Methylene Chloride	49	2.587	2.586	(0.447)	176833	20.0000	19.6
20 Acrylonitrile	53	2.888	2.896	(0.499)	68841	40.0000	37.4
21 Methyl-tert-butyl ether	73	2.897	2.898	(0.501)	120857	20.0000	18.2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.875	2.875	(0.497)	130591	20.0000	19.7
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	248179	20.0000	20.4
24 Vinyl Acetate	43	3.540	3.543	(0.612)	345687	20.0000	19.2
25 Chloroprene	53	3.511	3.514	(0.607)	171150	20.0000	20.2
26 2-Butanone	43	4.358	4.366	(0.753)	79316	40.0000	39.3
27 Propionitrile	54	3.513	3.519	(0.607)	8341	200.000	212(Q)
114 tert-Butyl ethyl ether	59	4.097	4.101	(0.708)	86586	20.0000	17.7
28 2,2-Dichloropropane	77	4.233	4.231	(0.731)	87560	20.0000	18.1
29 cis-1,2-Dichloroethene	96	4.265	4.267	(0.737)	144149	20.0000	18.9
30 Methyacrylonitrile	67	4.645	4.651	(0.803)	484532	200.000	197
31 Isobutyl Alcohol	43	5.544	5.601	(0.958)	19415	400.000	388(q)
32 Chloroform	83	4.760	4.762	(0.822)	228122	20.0000	19.8
33 Bromochloromethane	49	4.603	4.605	(0.795)	119084	20.0000	19.4
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	119243	20.0000	20.5
35 1,1,1-Trichloroethane	97	4.935	4.934	(0.853)	180344	20.0000	20.2
36 Cyclohexane	56	4.974	4.970	(0.860)	243114	20.0000	20.2
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	188935	20.0000	20.0
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	127913	20.0000	17.9
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	24381	20.0000	20.9(q)
40 1,2-Dichloroethane	62	5.474	5.480	(0.946)	147704	20.0000	19.6
41 Benzene	78	5.418	5.415	(0.936)	536123	20.0000	19.5
115 tert-Amyl-methyl ether	73	5.623	5.625	(0.972)	128075	20.0000	18.9
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	1050084	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	142341	20.0000	19.7
44 Methyl Cyclohexane	55	6.394	6.394	(1.105)	183031	20.0000	19.8
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	142401	20.0000	19.7
46 Methyl Methacrylate	69	6.685	6.688	(1.155)	74680	20.0000	19.8(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	152395	20.0000	20.1
48 1,4 Dioxane	88	9.033	9.038	(1.561)	1099	400.000	336(Q)
49 Dibromomethane	93	6.599	6.600	(1.140)	78352	20.0000	19.5
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	213922	40.0000	38.7
51 2-Hexanone	43	8.356	8.362	(0.928)	142259	40.0000	41.3
52 cis 1,3-Dichloropropene	75	7.290	7.296	(1.260)	167647	20.0000	20.7
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	449702	20.0000	20.5
54 Toluene	92	7.615	7.614	(1.316)	325073	20.0000	19.5
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	141120	20.0000	18.1
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	147458	20.0000	19.8
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.394)	106597	20.0000	19.6
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	187269	20.0000	20.0
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	111573	20.0000	19.4
60 Dibromochloromethane	129	8.446	8.449	(0.938)	102759	20.0000	17.8
61 1,2-Dibromoethane	107	8.533	8.536	(0.947)	116954	20.0000	20.0
62 1-Chlorohexane	91	9.052	9.052	(1.005)	198121	20.0000	19.9
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	808448	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	365392	20.0000	19.3
65 1,1,1,2-Tetrachloroethane	131	9.134	9.132	(1.014)	110323	20.0000	20.9
66 Ethylbenzene	106	9.163	9.165	(1.017)	206477	20.0000	19.8(Q)
67 p,m-Xylene	106	9.284	9.286	(1.031)	500119	40.0000	39.3
68 o-Xylene	91	9.671	9.672	(1.074)	484665	20.0000	19.6
69 Styrene	104	9.692	9.692	(1.076)	381642	20.0000	19.6
70 Bromoform	173	9.862	9.859	(1.095)	58662	20.0000	17.6
71 1-Methylethylbenzene	105	10.045	10.047	(0.887)	594403	20.0000	19.6
72 1,4-Dichloro-2-Butene	53	10.425	10.432	(0.921)	23357	40.0000	38.6(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	142847	20.0000	19.6

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	155128	20.0000	20.3
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	103700	20.0000	18.7
76 n-Propylbenzene	91	10.452	10.453	(0.923)	730168	20.0000	19.6
77 Bromobenzene	77	10.314	10.315	(0.911)	223446	20.0000	19.8
78 1,3,5-Trimethylbenzene	105	10.635	10.636	(0.939)	489022	20.0000	19.7
79 2-Chlorotoluene	91	10.518	10.519	(0.929)	411602	20.0000	19.4
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	454969	20.0000	19.1
81 tert-Butylbenzene	119	10.947	10.946	(0.967)	411259	20.0000	19.8(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	483165	20.0000	19.4
83 sec-Butylbenzene	105	11.164	11.165	(0.986)	630813	20.0000	19.7
84 p-Isopropyltoluene	119	11.317	11.318	(1.000)	509092	20.0000	19.6
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	266484	20.0000	19.2
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	421516	50.0000	
87 1,4-Dichlorobenzene	146	11.343	11.345	(1.002)	270960	20.0000	19.1
124 1,2,3-trimethylbenzene	105	11.405	11.406	(1.007)	429125	20.0000	18.3
88 Benzyl Chloride	91	11.493	11.494	(1.015)	135360	20.0000	19.9
89 n-Butylbenzene	91	11.719	11.721	(1.035)	480892	20.0000	19.6
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	238430	20.0000	19.4
91 1,2-dibromo-3-chloropropane	75	12.482	12.482	(1.103)	15417	20.0000	19.2
92 1,2,4-Trichlorobenzene	180	13.287	13.293	(1.174)	117494	20.0000	19.4
93 Hexachlorobutadiene	223	13.468	13.464	(1.190)	37306	20.0000	19.9(q)
94 Naphthalene	128	13.523	13.525	(1.195)	214663	20.0000	19.0
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	78759	20.0000	18.5
103 Isopropyl Ether	45	3.547	3.548	(0.613)	414413	20.0000	19.7
104 Ethyl acetate	43	4.482	4.493	(0.775)	199098	40.0000	38.3
105 Cyclohexanone	55	10.130	10.136	(1.125)	27857	200.000	247
106 Ethyl ether	59	1.937	1.937	(0.335)	86440	20.0000	19.3
107 2-Nitropropane	43	7.491	7.494	(1.294)	213837	40.0000	38.9
108 Tetrahydrofuran	42	4.670	4.674	(0.807)	83856	40.0000	38.6
112 2-Cleve	63	7.112	7.107	(1.229)	1329	40.0000	46.6(Q)
116 Ethanol	45	1.938	1.937	(0.335)	81238	1600.00	1450
117 t-butyl formate	59	4.829	4.828	(0.834)	328034	400.000	335(q)
118 tert-amyl alcohol	59	5.609	5.611	(0.969)	59871	400.000	424(q)
119 3,3-dimethyl-1-butanol	57	8.600	8.601	(1.486)	58669	400.000	356
120 Chlorotrifluoroethylene	116	1.210	1.179	(0.209)	20	20.0000	3.4(a)
121 2-Chloro-1,1,1-trifluoroethane	118	1.566	1.553	(0.271)	37	20.0000	3.7(aQ)
122 n-Hexane	57	3.206	3.203	(0.554)	186406	20.0000	20.3

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 20PPB.D
Lab Smp Id: 20PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 20PPB
Level: LOW
Sample Type: WATER

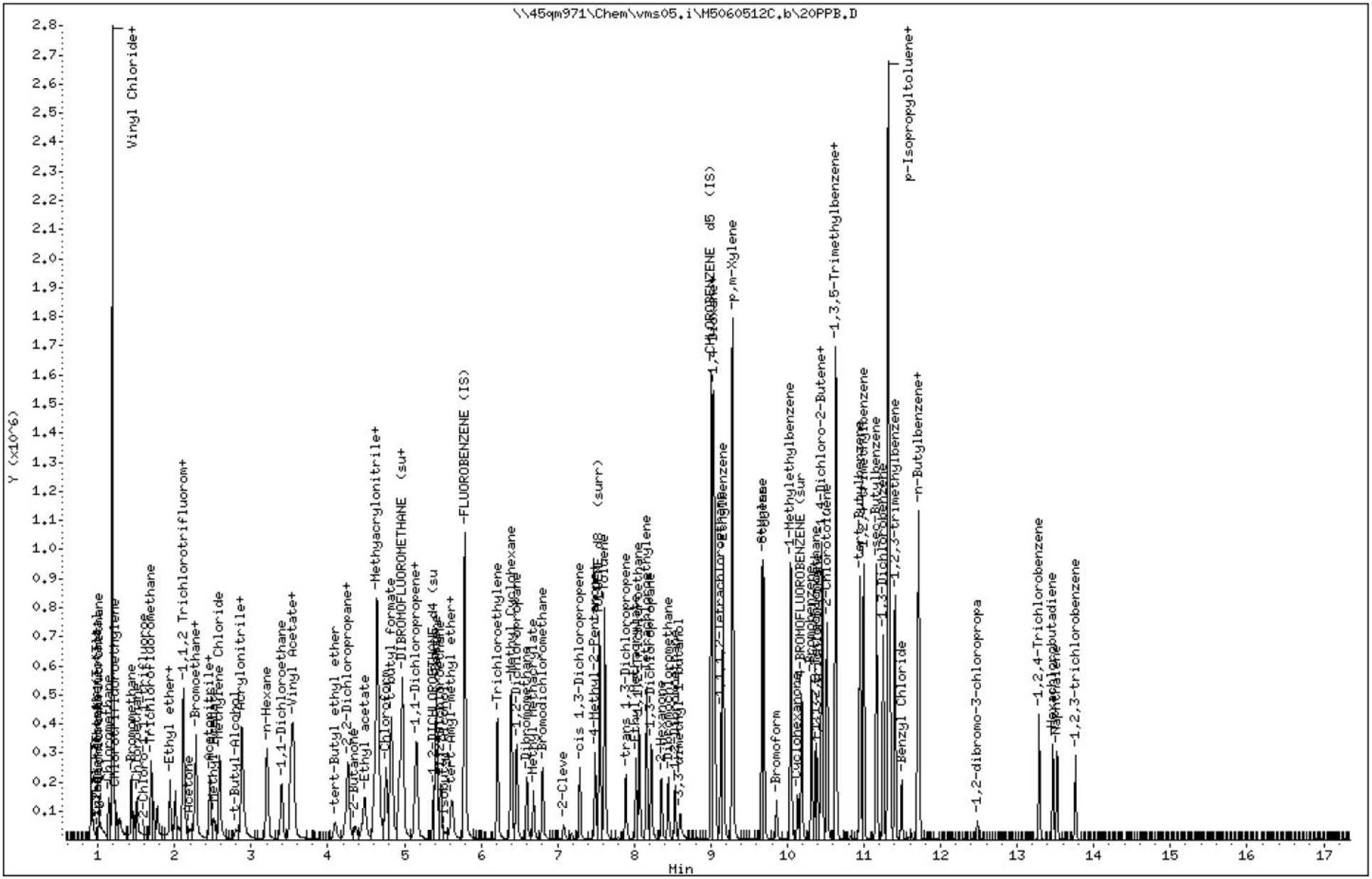
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1050084	-0.01
63 CHLOROBENZENE d5	811097	405549	1622194	808448	-0.33
86 1,4-DICHLOROBENZE	436748	218374	873496	421516	-3.49

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\20PPB.D
Date : 05-JUN-2012 10:06
Client ID: 20PPB
Sample Info: 20PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\50PPB.D
Lab Smp Id: 50PPB Client Smp ID: 50PPB
Inj Date : 05-JUN-2012 10:34 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 50PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 16-MAY-2012 07:21 Cal File: 200PPT.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				717708	100.000	(a)
M 2 Xylenes (Total)	100				2600337	150.000	(a)
M 3 Trihalomethanes (Total)	100				1472663	50.0000	(a)
4 Dichlorodifluoromethane	85	1.017	1.019	(0.176)	349121	50.0000	51.8
5 Chloromethane	50	1.136	1.138	(0.196)	374390	50.0000	46.9
6 Vinyl Chloride	62	1.204	1.207	(0.208)	439646	50.0000	52.2(Q)
7 Bromomethane	96	1.431	1.432	(0.247)	281906	50.0000	54.6(q)
8 Chloroethane	64	1.505	1.507	(0.260)	214133	50.0000	48.2
9 Trichlorofluoromethane	101	1.692	1.692	(0.292)	475101	50.0000	52.8
113 Bromoethane	108	2.262	2.265	(0.391)	221442	50.0000	50.2
10 Acrolein	56	1.184	1.184	(0.205)	1647931	100.000	95.9
11 1,1,2 Trichlorotrifluoromethan	101	2.120	2.118	(0.366)	284810	50.0000	52.2
12 Acetone	43	2.197	2.204	(0.380)	130761	100.000	97.4
13 1,1-Dichloroethene	61	2.107	2.110	(0.364)	488036	50.0000	49.6
109 t-Butyl-Alcohol	59	2.805	2.809	(0.485)	281436	500.000	431
14 Acetonitrile	41	2.455	2.460	(0.424)	673387	500.000	544
15 Iodomethane	142	2.236	2.229	(0.386)	101195	50.0000	67.3(q)
16 Methyl Acetate	43	2.512	2.519	(0.434)	212526	50.0000	48.0
17 Allyl Chloride	41	2.455	2.460	(0.424)	625524	50.0000	52.2
18 Carbon Disulfide	76	2.277	2.278	(0.394)	990518	50.0000	47.3
19 Methylene Chloride	49	2.585	2.586	(0.447)	446614	50.0000	51.0
20 Acrylonitrile	53	2.884	2.896	(0.498)	178564	100.000	97.0
21 Methyl-tert-butyl ether	73	2.895	2.898	(0.500)	325554	50.0000	49.0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.496)	342844	50.0000	51.8
23 1,1-Dichloroethane	63	3.394	3.402	(0.587)	604528	50.0000	49.6
24 Vinyl Acetate	43	3.536	3.543	(0.611)	953381	50.0000	52.8
25 Chloroprene	53	3.510	3.514	(0.607)	441207	50.0000	51.9
26 2-Butanone	43	4.352	4.366	(0.752)	191936	100.000	95.0
27 Propionitrile	54	3.510	3.519	(0.607)	20944	500.000	533(Q)
114 tert-Butyl ethyl ether	59	4.097	4.101	(0.708)	248929	50.0000	50.9
28 2,2-Dichloropropane	77	4.231	4.231	(0.731)	258567	50.0000	50.1
29 cis-1,2-Dichloroethene	96	4.263	4.267	(0.737)	374864	50.0000	49.2
30 Methyacrylonitrile	67	4.648	4.651	(0.803)	1217666	500.000	495
31 Isobutyl Alcohol	43	5.534	5.601	(0.956)	53364	1000.00	994(Q)
32 Chloroform	83	4.760	4.762	(0.823)	583361	50.0000	50.7
33 Bromochloromethane	49	4.603	4.605	(0.795)	306303	50.0000	50.0
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	300087	50.0000	51.6
35 1,1,1-Trichloroethane	97	4.934	4.934	(0.853)	475639	50.0000	53.2
36 Cyclohexane	56	4.973	4.970	(0.859)	634742	50.0000	52.6
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	485382	50.0000	51.4
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	370515	50.0000	48.8
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.382	5.380	(0.930)	61010	50.0000	52.3(Q)
40 1,2-Dichloroethane	62	5.474	5.480	(0.946)	383947	50.0000	51.1
41 Benzene	78	5.418	5.415	(0.936)	1374901	50.0000	50.0
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.971)	348193	50.0000	51.3
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	1050188	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	373363	50.0000	51.6
44 Methyl Cyclohexane	55	6.394	6.394	(1.105)	478285	50.0000	51.7
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	369807	50.0000	51.2
46 Methyl Methacrylate	69	6.685	6.688	(1.155)	193684	50.0000	51.2(q)
47 Bromodichloromethane	83	6.804	6.804	(1.176)	414501	50.0000	54.7
48 1,4 Dioxane	88	9.036	9.038	(1.561)	3190	1000.00	975(Q)
49 Dibromomethane	93	6.595	6.600	(1.140)	202996	50.0000	50.4
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	519767	100.000	94.0
51 2-Hexanone	43	8.357	8.362	(0.928)	343505	100.000	99.4
52 cis 1,3-Dichloropropene	75	7.290	7.296	(1.260)	461012	50.0000	56.8
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	1129447	50.0000	51.6
54 Toluene	92	7.615	7.614	(1.316)	854519	50.0000	51.3
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	401445	50.0000	49.0
56 Ethyl Methacrylate	69	8.022	8.025	(1.386)	379874	50.0000	51.1
57 1,1,2-Trichloroethane	97	8.065	8.070	(1.394)	276781	50.0000	50.8
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	481937	50.0000	51.3
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	290887	50.0000	50.5
60 Dibromochloromethane	129	8.445	8.449	(0.937)	298734	50.0000	49.4
61 1,2-Dibromoethane	107	8.533	8.536	(0.947)	296844	50.0000	50.6
62 1-Chlorohexane	91	9.053	9.052	(1.005)	529837	50.0000	53.2(q)
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	811097	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	974253	50.0000	51.2
65 1,1,1,2-Tetrachloroethane	131	9.134	9.132	(1.014)	304867	50.0000	57.5
66 Ethylbenzene	106	9.164	9.165	(1.017)	539891	50.0000	51.6
67 p,m-Xylene	106	9.285	9.286	(1.031)	1325353	100.000	104
68 o-Xylene	91	9.671	9.672	(1.074)	1274984	50.0000	51.5
69 Styrene	104	9.691	9.692	(1.076)	1017818	50.0000	52.2
70 Bromoform	173	9.860	9.859	(1.095)	176067	50.0000	48.0
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	1557026	50.0000	49.5
72 1,4-Dichloro-2-Butene	53	10.425	10.432	(0.921)	68466	100.000	100(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	362152	50.0000	48.1

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	395934	50.0000	50.0
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	252240	50.0000	44.0
76 n-Propylbenzene	91	10.453	10.453	(0.923)	1932244	50.0000	50.1
77 Bromobenzene	77	10.314	10.315	(0.911)	577630	50.0000	49.4
78 1,3,5-Trimethylbenzene	105	10.636	10.636	(0.939)	1299709	50.0000	50.5
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	1081707	50.0000	49.2
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	1217002	50.0000	49.4
81 tert-Butylbenzene	119	10.948	10.946	(0.967)	1083132	50.0000	50.2(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	1284884	50.0000	49.7
83 sec-Butylbenzene	105	11.164	11.165	(0.986)	1674325	50.0000	50.5
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	1365251	50.0000	50.6
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	717493	50.0000	50.0
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	436748	50.0000	(q)
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	719874	50.0000	48.9
124 1,2,3-trimethylbenzene	105	11.406	11.406	(1.007)	1191880	50.0000	49.0
88 Benzyl Chloride	91	11.492	11.494	(1.015)	415914	50.0000	59.0
89 n-Butylbenzene	91	11.719	11.721	(1.035)	1310573	50.0000	51.7
90 1,2-Dichlorobenzene	146	11.703	11.706	(1.034)	639976	50.0000	50.2
91 1,2-dibromo-3-chloropropane	75	12.481	12.482	(1.102)	41111	50.0000	49.3
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	320211	50.0000	51.2
93 Hexachlorobutadiene	223	13.467	13.464	(1.190)	96298	50.0000	49.7(q)
94 Naphthalene	128	13.523	13.525	(1.194)	564501	50.0000	48.3
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	209164	50.0000	47.4
103 Isopropyl Ether	45	3.546	3.548	(0.613)	1087277	50.0000	51.8
104 Ethyl acetate	43	4.480	4.493	(0.774)	501225	100.000	96.4
105 Cyclohexanone	55	10.131	10.136	(1.125)	56155	500.000	497
106 Ethyl ether	59	1.937	1.937	(0.335)	220267	50.0000	49.2
107 2-Nitropropane	43	7.491	7.494	(1.294)	519521	100.000	94.4
108 Tetrahydrofuran	42	4.670	4.674	(0.807)	204205	100.000	93.9
112 2-Cleve	63	7.108	7.107	(1.228)	2624	100.000	92.0(Q)
116 Ethanol	45	1.937	1.937	(0.335)	214979	4000.00	3850
117 t-butyl formate	59	4.830	4.828	(0.835)	1043829	1000.00	948(Q)
118 tert-amyl alcohol	59	5.605	5.611	(0.969)	143501	1000.00	1020(q)
119 3,3-dimethyl-1-butanol	57	8.599	8.601	(1.486)	166499	1000.00	939(Q)
120 Chlorotrifluoroethylene	116	1.201	1.179	(0.208)	37	50.0000	6.4(aQ)
121 2-Chloro-1,1,1-trifluoroethane	118	1.553	1.553	(0.268)	36	50.0000	3.6(aQ)
122 n-Hexane	57	3.205	3.203	(0.554)	493404	50.0000	53.7

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 50PPB.D
Lab Smp Id: 50PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 50PPB
Level: LOW
Sample Type: WATER

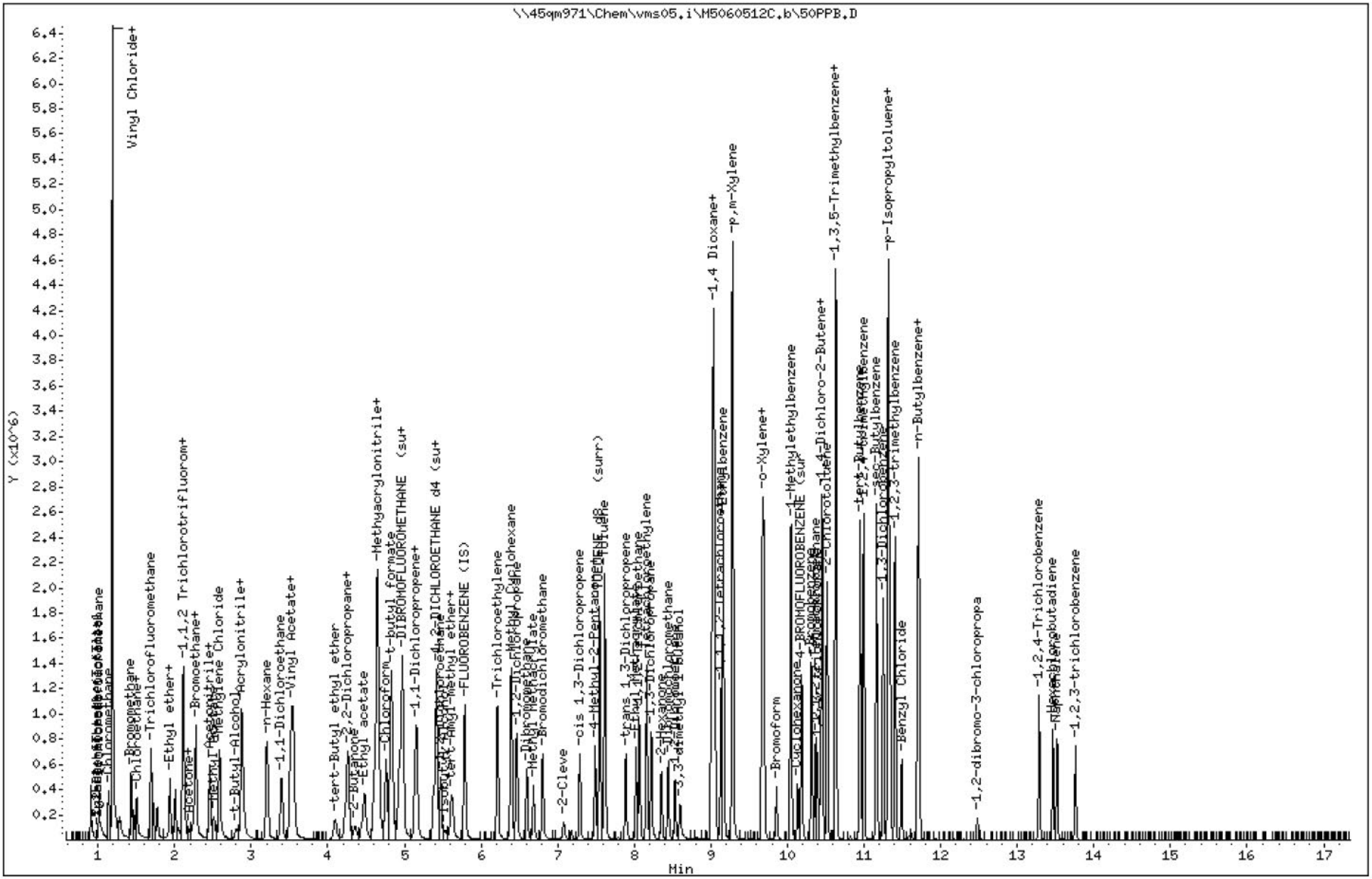
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1050188	0.00
63 CHLOROBENZENE d5	811097	405549	1622194	811097	0.00
86 1,4-DICHLOROBENZE	436748	218374	873496	436748	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\50PPB.D
Date : 05-JUN-2012 10:34
Client ID: 50PPB
Sample Info: 50PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\60PPB.D
Lab Smp Id: 60PPB Client Smp ID: 60PPB
Inj Date : 05-JUN-2012 11:02 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 60PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 10:34 Cal File: 50PPB.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				835599	120.000	(a)
M 2 Xylenes (Total)	100				3049159	180.000	(a)
M 3 Trihalomethanes (Total)	100				1746416	60.0000	(a)
4 Dichlorodifluoromethane	85	1.018	1.019	(0.176)	435581	60.0000	64.1
5 Chloromethane	50	1.137	1.138	(0.197)	442645	60.0000	55.0
6 Vinyl Chloride	62	1.203	1.207	(0.208)	543445	60.0000	64.1(q)
7 Bromomethane	96	1.431	1.432	(0.247)	314612	60.0000	60.5(Aq)
8 Chloroethane	64	1.505	1.507	(0.260)	260388	60.0000	58.2
9 Trichlorofluoromethane	101	1.692	1.692	(0.292)	587443	60.0000	64.8
113 Bromoethane	108	2.262	2.265	(0.391)	254112	60.0000	57.2
10 Acrolein	56	1.184	1.184	(0.205)	1884189	120.000	109
11 1,1,2 Trichlorotrifluoromethan	101	2.119	2.118	(0.366)	369059	60.0000	67.1
12 Acetone	43	2.201	2.204	(0.380)	152511	120.000	113
13 1,1-Dichloroethene	61	2.107	2.110	(0.364)	581795	60.0000	58.6
109 t-Butyl-Alcohol	59	2.809	2.809	(0.485)	332946	600.000	506
14 Acetonitrile	41	2.455	2.460	(0.424)	794953	600.000	638
15 Iodomethane	142	2.235	2.229	(0.386)	159922	60.0000	106(Aq)
16 Methyl Acetate	43	2.514	2.519	(0.434)	258404	60.0000	58.0
17 Allyl Chloride	41	2.455	2.460	(0.424)	797713	60.0000	66.0
18 Carbon Disulfide	76	2.277	2.278	(0.393)	1176423	60.0000	55.8
19 Methylene Chloride	49	2.586	2.586	(0.447)	509270	60.0000	57.8
20 Acrylonitrile	53	2.887	2.896	(0.499)	236051	120.000	127
21 Methyl-tert-butyl ether	73	2.897	2.898	(0.501)	391841	60.0000	58.5

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.872	2.875	(0.496)	400272	60.0000	60.0
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	698001	60.0000	56.8
24 Vinyl Acetate	43	3.537	3.543	(0.611)	1157885	60.0000	63.7
25 Chloroprene	53	3.510	3.514	(0.607)	516069	60.0000	60.3
26 2-Butanone	43	4.357	4.366	(0.753)	237174	120.000	116
27 Propionitrile	54	3.510	3.519	(0.606)	23489	600.000	593(q)
114 tert-Butyl ethyl ether	59	4.096	4.101	(0.708)	290418	60.0000	58.9
28 2,2-Dichloropropane	77	4.232	4.231	(0.731)	316306	60.0000	60.5
29 cis-1,2-Dichloroethene	96	4.263	4.267	(0.737)	435327	60.0000	56.7
30 Methyacrylonitrile	67	4.651	4.651	(0.804)	1491699	600.000	602
31 Isobutyl Alcohol	43	5.537	5.601	(0.957)	68930	1200.00	1200(q)
32 Chloroform	83	4.761	4.762	(0.823)	683303	60.0000	58.9
33 Bromochloromethane	49	4.604	4.605	(0.795)	350110	60.0000	56.7
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	343315	60.0000	58.6
35 1,1,1-Trichloroethane	97	4.934	4.934	(0.853)	562345	60.0000	62.4
36 Cyclohexane	56	4.974	4.970	(0.859)	752651	60.0000	61.9
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	572118	60.0000	60.2
38 Carbon tetrachloride	117	5.141	5.141	(0.888)	448439	60.0000	58.3
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	67757	60.0000	57.6(q)
40 1,2-Dichloroethane	62	5.475	5.480	(0.946)	439781	60.0000	58.0
41 Benzene	78	5.418	5.415	(0.936)	1600562	60.0000	57.8
115 tert-Amyl-methyl ether	73	5.623	5.625	(0.971)	414767	60.0000	60.6
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	1058495	50.0000	
43 Trichloroethylene	130	6.215	6.216	(1.074)	435755	60.0000	59.7
44 Methyl Cyclohexane	55	6.395	6.394	(1.105)	581979	60.0000	62.4
45 1,2-Dichloropropane	63	6.468	6.467	(1.117)	427714	60.0000	58.7
46 Methyl Methacrylate	69	6.686	6.688	(1.155)	234034	60.0000	61.4(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	487650	60.0000	63.9
48 1,4 Dioxane	88	9.037	9.038	(1.561)	3631	1200.00	1100(Q)
49 Dibromomethane	93	6.599	6.600	(1.140)	237983	60.0000	58.7
50 4-Methyl-2-Pentanone	43	7.492	7.494	(1.294)	647718	120.000	116
51 2-Hexanone	43	8.357	8.362	(0.928)	425601	120.000	123
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	540793	60.0000	66.2
$ 53 TOLUENE d8 (surr)	98	7.549	7.548	(1.304)	1291440	60.0000	58.5
54 Toluene	92	7.616	7.614	(1.316)	998370	60.0000	59.4
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	481553	60.0000	58.0
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	463616	60.0000	61.8
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.394)	325346	60.0000	59.3
58 1,3-Dichloropropane	76	8.226	8.224	(0.913)	566901	60.0000	60.5
59 Tetrachloroethylene	164	8.164	8.166	(0.906)	348559	60.0000	60.7
60 Dibromochloromethane	129	8.446	8.449	(0.938)	357957	60.0000	59.1
61 1,2-Dibromoethane	107	8.534	8.536	(0.947)	349547	60.0000	59.7
62 1-Chlorohexane	91	9.054	9.052	(1.005)	629077	60.0000	63.3(q)
* 63 CHLOROBENZENE d5 (IS)	117	9.009	9.008	(1.000)	809283	50.0000	
64 Chlorobenzene	112	9.036	9.036	(1.003)	1132388	60.0000	59.6
65 1,1,1,2-Tetrachloroethane	131	9.135	9.132	(1.014)	351358	60.0000	66.4
66 Ethylbenzene	106	9.165	9.165	(1.017)	619939	60.0000	59.4
67 p,m-Xylene	106	9.286	9.286	(1.031)	1555833	120.000	122
68 o-Xylene	91	9.672	9.672	(1.074)	1493326	60.0000	60.5
69 Styrene	104	9.692	9.692	(1.076)	1185835	60.0000	61.0
70 Bromoform	173	9.860	9.859	(1.095)	217506	60.0000	58.9
71 1-Methylethylbenzene	105	10.047	10.047	(0.887)	1812314	60.0000	58.1
72 1,4-Dichloro-2-Butene	53	10.426	10.432	(0.921)	84370	120.000	121(q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	437625	60.0000	58.6

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	460615	60.0000	58.7
75 1,2,3- trichloropropane	75	10.393	10.395	(0.918)	309346	60.0000	54.4
76 n-Propylbenzene	91	10.454	10.453	(0.923)	2261713	60.0000	59.1
77 Bromobenzene	77	10.315	10.315	(0.911)	670007	60.0000	57.8
78 1,3,5-Trimethylbenzene	105	10.636	10.636	(0.939)	1512405	60.0000	59.3
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	1246779	60.0000	57.2
80 4-Chlorotoluene	91	10.631	10.631	(0.939)	1403277	60.0000	57.4
81 tert-Butylbenzene	119	10.948	10.946	(0.967)	1289983	60.0000	60.4(Q)
82 1,2,4-trimethylbenzene	105	10.998	10.998	(0.971)	1491784	60.0000	58.3
83 sec-Butylbenzene	105	11.165	11.165	(0.986)	1955603	60.0000	59.5
84 p-Isopropyltoluene	119	11.319	11.318	(1.000)	1601596	60.0000	59.9
85 1,3-Dichlorobenzene	146	11.253	11.252	(0.994)	828832	60.0000	58.2
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.322	11.321	(1.000)	432894	50.0000	(q)
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	828680	60.0000	56.8
124 1,2,3-trimethylbenzene	105	11.407	11.406	(1.007)	1441660	60.0000	59.8
88 Benzyl Chloride	91	11.493	11.494	(1.015)	552999	60.0000	79.2
89 n-Butylbenzene	91	11.719	11.721	(1.035)	1545862	60.0000	61.5
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	754295	60.0000	59.7
91 1,2-dibromo-3-chloropropane	75	12.483	12.482	(1.103)	56330	60.0000	68.2
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	397065	60.0000	64.0
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	124366	60.0000	64.7(q)
94 Naphthalene	128	13.523	13.525	(1.194)	732586	60.0000	63.2
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	273562	60.0000	62.6
103 Isopropyl Ether	45	3.548	3.548	(0.613)	1256619	60.0000	59.4
104 Ethyl acetate	43	4.483	4.493	(0.775)	626148	120.000	120
105 Cyclohexanone	55	10.131	10.136	(1.125)	56925	600.000	505
106 Ethyl ether	59	1.937	1.937	(0.335)	251172	60.0000	55.6
107 2-Nitropropane	43	7.492	7.494	(1.294)	647491	120.000	117
108 Tetrahydrofuran	42	4.672	4.674	(0.807)	253559	120.000	116
112 2-Cleve	63	7.109	7.107	(1.228)	2621	120.000	91.1(Q)
116 Ethanol	45	1.937	1.937	(0.335)	276867	4800.00	4920
117 t-butyl formate	59	4.831	4.828	(0.835)	1304917	1200.00	1160(q)
118 tert-amyl alcohol	59	5.608	5.611	(0.969)	185289	1200.00	1300(Q)
119 3,3-dimethyl-1-butanol	57	8.600	8.601	(1.486)	226924	1200.00	1260
120 Chlorotrifluoroethylene	116	1.189	1.179	(0.206)	48	60.0000	8.2(aQ)
121 2-Chloro-1,1,1-trifluoroethane	118	1.558	1.553	(0.269)	15	60.0000	1.5(aQ)
122 n-Hexane	57	3.204	3.203	(0.554)	596508	60.0000	64.4

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 60PPB.D
Lab Smp Id: 60PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 60PPB
Level: LOW
Sample Type: WATER

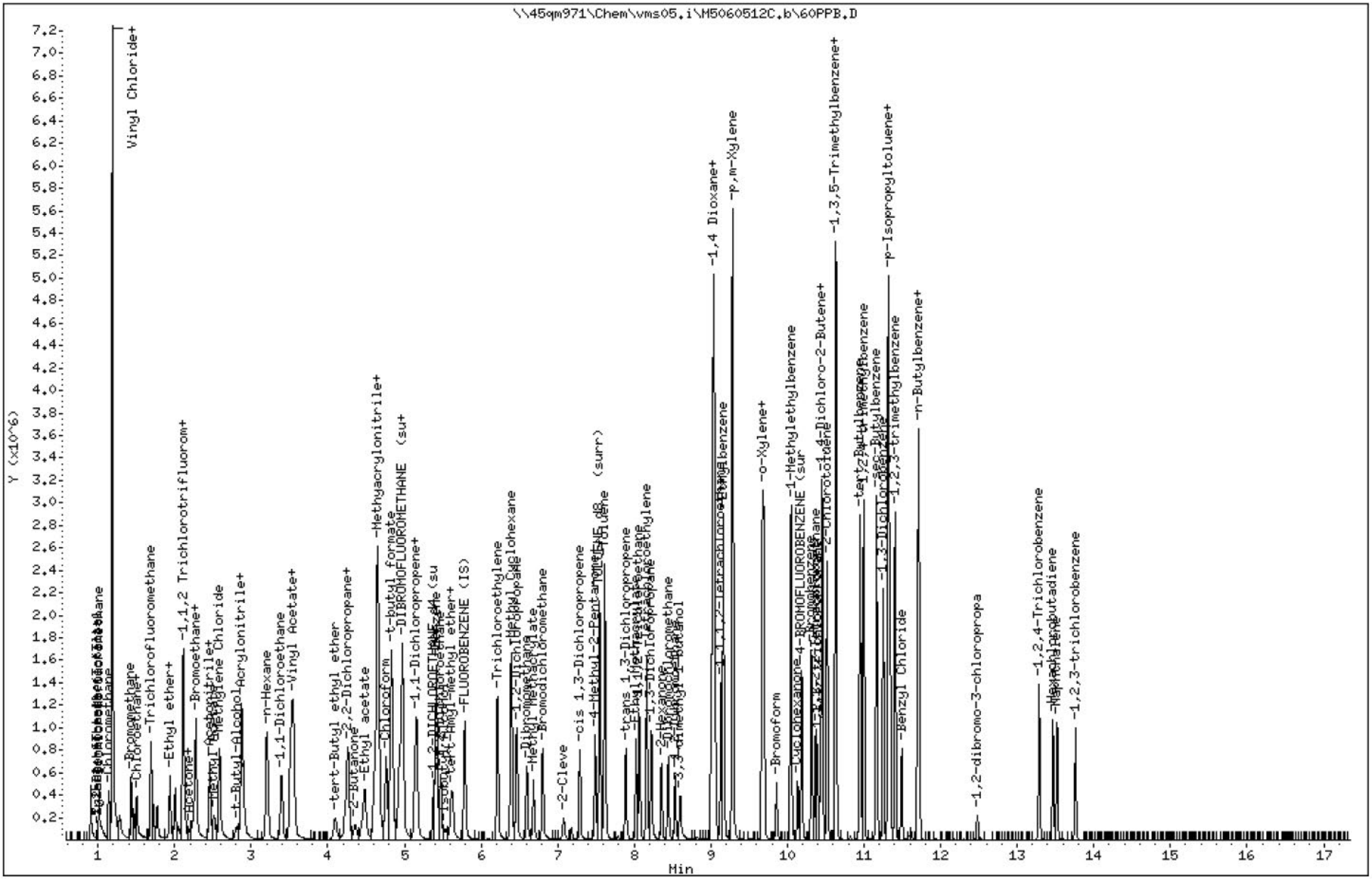
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1058495	0.79
63 CHLOROBENZENE d5	811097	405549	1622194	809283	-0.22
86 1,4-DICHLOROBENZE	436748	218374	873496	432894	-0.88

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\60PPB.D
Date : 05-JUN-2012 11:02
Client ID: 60PPB
Sample Info: 60PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\80PPB.D
Lab Smp Id: 80PPB Client Smp ID: 80PPB
Inj Date : 05-JUN-2012 11:31 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 80PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 11:02 Cal File: 60PPB.D
Als bottle: 8 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				1147095	160.000	(a)
M 2 Xylenes (Total)	100				4186196	240.000	(a)
M 3 Trihalomethanes (Total)	100				2431378	80.0000	(a)
4 Dichlorodifluoromethane	85	1.020	1.019	(0.176)	569096	80.0000	85.0(A)
5 Chloromethane	50	1.138	1.138	(0.197)	572724	80.0000	72.2
6 Vinyl Chloride	62	1.204	1.207	(0.208)	722627	80.0000	86.4(Aq)
7 Bromomethane	96	1.432	1.432	(0.247)	413862	80.0000	80.7(Aq)
8 Chloroethane	64	1.506	1.507	(0.260)	343479	80.0000	77.9
9 Trichlorofluoromethane	101	1.693	1.692	(0.292)	791598	80.0000	88.6(A)
113 Bromoethane	108	2.262	2.265	(0.391)	346298	80.0000	79.0
10 Acrolein	56	1.184	1.184	(0.205)	2375894	160.000	139
11 1,1,2 Trichlorotrifluoromethan	101	2.120	2.118	(0.366)	481839	80.0000	88.9(A)
12 Acetone	43	2.200	2.204	(0.380)	217057	160.000	165(A)
13 1,1-Dichloroethene	61	2.108	2.110	(0.364)	744925	80.0000	76.1
109 t-Butyl-Alcohol	59	2.811	2.809	(0.486)	485187	800.000	748
14 Acetonitrile	41	2.456	2.460	(0.424)	1106698	800.000	900(A)
15 Iodomethane	142	2.235	2.229	(0.386)	277715	80.0000	186(Aq)
16 Methyl Acetate	43	2.514	2.519	(0.434)	352457	80.0000	80.2(A)
17 Allyl Chloride	41	2.455	2.460	(0.424)	1076219	80.0000	90.3(A)
18 Carbon Disulfide	76	2.277	2.278	(0.393)	1576495	80.0000	75.8
19 Methylene Chloride	49	2.586	2.586	(0.447)	700174	80.0000	81.0(A)
20 Acrylonitrile	53	2.888	2.896	(0.499)	312023	160.000	170(A)
21 Methyl-tert-butyl ether	73	2.898	2.898	(0.501)	572767	80.0000	86.7(A)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.496)	549457	80.0000	83.6(A)
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	961711	80.0000	79.4
24 Vinyl Acetate	43	3.538	3.543	(0.611)	1574566	80.0000	87.8(A)
25 Chloroprene	53	3.511	3.514	(0.607)	708222	80.0000	83.9(A)
26 2-Butanone	43	4.357	4.366	(0.753)	332980	160.000	166(A)
27 Propionitrile	54	3.512	3.519	(0.607)	32572	800.000	834(Aq)
114 tert-Butyl ethyl ether	59	4.099	4.101	(0.708)	429544	80.0000	88.4(A)
28 2,2-Dichloropropane	77	4.233	4.231	(0.731)	476117	80.0000	91.4(A)
29 cis-1,2-Dichloroethene	96	4.264	4.267	(0.737)	597638	80.0000	79.0
30 Methyacrylonitrile	67	4.655	4.651	(0.804)	2051649	800.000	840(A)
31 Isobutyl Alcohol	43	5.535	5.601	(0.956)	107610	1600.00	1590(q)
32 Chloroform	83	4.762	4.762	(0.823)	934462	80.0000	81.7(A)
33 Bromochloromethane	49	4.605	4.605	(0.796)	478460	80.0000	78.6
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.975	4.974	(0.860)	463362	80.0000	80.2(A)
35 1,1,1-Trichloroethane	97	4.936	4.934	(0.853)	780447	80.0000	87.8(A)
36 Cyclohexane	56	4.976	4.970	(0.860)	1031705	80.0000	86.0(A)
37 1,1-Dichloropropene	75	5.162	5.163	(0.892)	783142	80.0000	83.5(A)
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	629489	80.0000	82.3(A)
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.381	5.380	(0.930)	91841	80.0000	79.2(q)
40 1,2-Dichloroethane	62	5.475	5.480	(0.946)	609797	80.0000	81.6(A)
41 Benzene	78	5.419	5.415	(0.936)	2167235	80.0000	79.3
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.971)	614934	80.0000	91.1(A)
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	1043722	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	600172	80.0000	83.4(A)
44 Methyl Cyclohexane	55	6.395	6.394	(1.105)	792544	80.0000	86.2(A)
45 1,2-Dichloropropane	63	6.468	6.467	(1.117)	588417	80.0000	81.9(A)
46 Methyl Methacrylate	69	6.686	6.688	(1.155)	323449	80.0000	86.1(Aq)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	677019	80.0000	89.9(A)
48 1,4 Dioxane	88	9.038	9.038	(1.561)	5046	1600.00	1550(Q)
49 Dibromomethane	93	6.599	6.600	(1.140)	329005	80.0000	82.2(A)
50 4-Methyl-2-Pentanone	43	7.493	7.494	(1.294)	884858	160.000	161(A)
51 2-Hexanone	43	8.357	8.362	(0.928)	581622	160.000	166(A)
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	755501	80.0000	93.7(A)
$ 53 TOLUENE d8 (surr)	98	7.549	7.548	(1.304)	1748619	80.0000	80.3(A)
54 Toluene	92	7.616	7.614	(1.316)	1367248	80.0000	82.6(A)
55 trans 1,3-Dichloropropene	75	7.891	7.894	(1.363)	679213	80.0000	82.4(A)
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	636931	80.0000	86.2
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.393)	442882	80.0000	81.9(A)
58 1,3-Dichloropropane	76	8.226	8.224	(0.913)	782010	80.0000	81.9(A)
59 Tetrachloroethylene	164	8.164	8.166	(0.906)	474246	80.0000	81.0(A)
60 Dibromochloromethane	129	8.446	8.449	(0.938)	506002	80.0000	81.6(A)
61 1,2-Dibromoethane	107	8.534	8.536	(0.947)	476364	80.0000	79.8
62 1-Chlorohexane	91	9.054	9.052	(1.005)	865789	80.0000	85.5(Aq)
* 63 CHLOROBENZENE d5 (IS)	117	9.009	9.008	(1.000)	824378	50.0000	
64 Chlorobenzene	112	9.037	9.036	(1.003)	1562230	80.0000	80.8(A)
65 1,1,1,2-Tetrachloroethane	131	9.135	9.132	(1.014)	501405	80.0000	93.0(A)
66 Ethylbenzene	106	9.166	9.165	(1.017)	859077	80.0000	80.8(A)
67 p,m-Xylene	106	9.287	9.286	(1.031)	2131772	160.000	164(A)
68 o-Xylene	91	9.672	9.672	(1.074)	2054424	80.0000	81.7(A)
69 Styrene	104	9.692	9.692	(1.076)	1645800	80.0000	83.1(A)
70 Bromoform	173	9.861	9.859	(1.095)	313895	80.0000	82.4(A)
71 1-Methylethylbenzene	105	10.047	10.047	(0.887)	2487729	80.0000	76.9
72 1,4-Dichloro-2-Butene	53	10.427	10.432	(0.921)	120350	160.000	159(q)
73 1,1,2,2-Tetrachloroethane	83	10.370	10.371	(0.916)	598813	80.0000	77.3

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.187	10.186	(0.900)	632771	80.0000	77.8
75 1,2,3- trichloropropane	75	10.393	10.395	(0.918)	416917	80.0000	70.7
76 n-Propylbenzene	91	10.454	10.453	(0.923)	3075106	80.0000	77.5
77 Bromobenzene	77	10.315	10.315	(0.911)	933125	80.0000	77.6
78 1,3,5-Trimethylbenzene	105	10.637	10.636	(0.939)	2093596	80.0000	79.1
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	1676524	80.0000	74.1
80 4-Chlorotoluene	91	10.632	10.631	(0.939)	1965853	80.0000	77.5
81 tert-Butylbenzene	119	10.949	10.946	(0.967)	1785387	80.0000	80.6(Aq)
82 1,2,4-trimethylbenzene	105	10.999	10.998	(0.971)	2074977	80.0000	78.1
83 sec-Butylbenzene	105	11.166	11.165	(0.986)	2722745	80.0000	79.8
84 p-Isopropyltoluene	119	11.320	11.318	(1.000)	2214179	80.0000	79.8
85 1,3-Dichlorobenzene	146	11.253	11.252	(0.994)	1152685	80.0000	78.1
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.322	11.321	(1.000)	449063	50.0000	(q)
87 1,4-Dichlorobenzene	146	11.345	11.345	(1.002)	1164318	80.0000	77.0
124 1,2,3-trimethylbenzene	105	11.407	11.406	(1.008)	1964841	80.0000	78.6
88 Benzyl Chloride	91	11.493	11.494	(1.015)	758460	80.0000	105
89 n-Butylbenzene	91	11.721	11.721	(1.035)	2143731	80.0000	82.2(A)
90 1,2-Dichlorobenzene	146	11.705	11.706	(1.034)	1051666	80.0000	80.3(A)
91 1,2-dibromo-3-chloropropane	75	12.483	12.482	(1.103)	77714	80.0000	90.7(A)
92 1,2,4-Trichlorobenzene	180	13.289	13.293	(1.174)	550115	80.0000	85.5(A)
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	170110	80.0000	85.3(Aq)
94 Naphthalene	128	13.524	13.525	(1.194)	1031970	80.0000	85.8(A)
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	380937	80.0000	84.0(A)
103 Isopropyl Ether	45	3.548	3.548	(0.613)	1755375	80.0000	84.1(A)
104 Ethyl acetate	43	4.484	4.493	(0.775)	868686	160.000	168(A)
105 Cyclohexanone	55	10.132	10.136	(1.125)	97164	800.000	846(A)
106 Ethyl ether	59	1.938	1.937	(0.335)	341913	80.0000	76.8
107 2-Nitropropane	43	7.493	7.494	(1.294)	884937	160.000	162(A)
108 Tetrahydrofuran	42	4.672	4.674	(0.807)	350348	160.000	162(A)
112 2-Cleve	63	7.111	7.107	(1.229)	3404	160.000	120(Q)
116 Ethanol	45	1.937	1.937	(0.335)	382522	6400.00	6890(A)
117 t-butyl formate	59	4.832	4.828	(0.835)	1867946	1600.00	1660(Aq)
118 tert-amyl alcohol	59	5.608	5.611	(0.969)	233841	1600.00	1660(Aq)
119 3,3-dimethyl-1-butanol	57	8.599	8.601	(1.486)	327356	1600.00	1820(A)
120 Chlorotrifluoroethylene	116	1.220	1.179	(0.211)	76	80.0000	13.1(Q)
121 2-Chloro-1,1,1-trifluoroethane	118	1.557	1.553	(0.269)	62	80.0000	6.2(aQ)
122 n-Hexane	57	3.206	3.203	(0.554)	797448	80.0000	87.3(A)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 80PPB.D
Lab Smp Id: 80PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 80PPB
Level: LOW
Sample Type: WATER

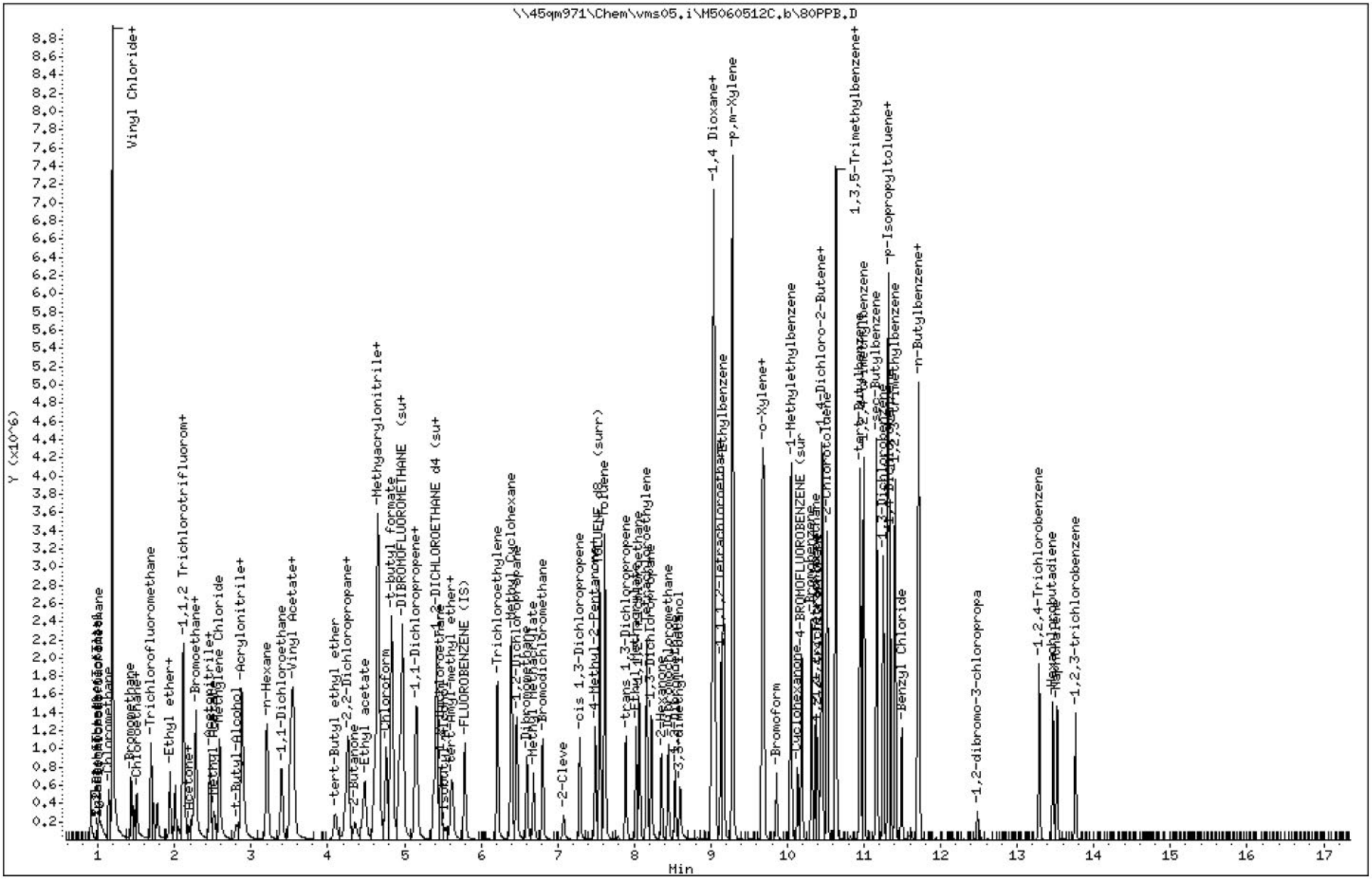
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	1043722	-0.62
63 CHLOROBENZENE d5	811097	405549	1622194	824378	1.64
86 1,4-DICHLOROBENZE	436748	218374	873496	449063	2.82

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.02
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\80PPB.D
Date : 05-JUN-2012 11:31
Client ID: 80PPB
Sample Info: 80PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



94

3506280

PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\2PPBR.D
Lab Smp Id: 2PPB Client Smp ID: 2PPB
Inj Date : 05-JUN-2012 13:19 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : 2PPB
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 08:10 Cal File: 1PPB.D
Als bottle: 14 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				23552	4.00000	(a)
M 2 Xylenes (Total)	100				85146	6.00000	(a)
M 3 Trihalomethanes (Total)	100				44788	2.00000	(a)
4 Dichlorodifluoromethane	85	1.019	1.019	(0.176)	10067	2.00000	1.6
5 Chloromethane	50	1.140	1.138	(0.197)	14152	2.00000	1.9
6 Vinyl Chloride	62	1.205	1.207	(0.208)	11925	2.00000	1.5(Q)
7 Bromomethane	96	1.434	1.432	(0.248)	8036	2.00000	1.7(q)
8 Chloroethane	64	1.507	1.507	(0.260)	7247	2.00000	1.8
9 Trichlorofluoromethane	101	1.694	1.692	(0.293)	13617	2.00000	1.6
113 Bromoethane	108	2.263	2.265	(0.391)	7178	2.00000	1.8
10 Acrolein	56	1.189	1.184	(0.205)	65487	4.00000	4.1
11 1,1,2 Trichlorotrifluoromethan	101	2.122	2.118	(0.367)	8486	2.00000	1.7
12 Acetone	43	2.204	2.204	(0.381)	6674	4.00000	2.1(M)
13 1,1-Dichloroethene	61	2.109	2.110	(0.364)	16597	2.00000	1.8
109 t-Butyl-Alcohol	59	2.807	2.809	(0.485)	13213	20.0000	21.9
14 Acetonitrile	41	2.455	2.460	(0.424)	22212	20.0000	19.4(M)
15 Iodomethane	142	2.240	2.229	(0.387)	3381	2.00000	2.4(q)
16 Methyl Acetate	43	2.517	2.519	(0.435)	7965	2.00000	1.9
17 Allyl Chloride	41	2.455	2.460	(0.424)	20618	2.00000	1.8(M)
18 Carbon Disulfide	76	2.279	2.278	(0.394)	36628	2.00000	1.9
19 Methylene Chloride	49	2.588	2.586	(0.447)	22812	2.00000	1.9
20 Acrylonitrile	53	2.890	2.896	(0.499)	6735	4.00000	3.9(M)
21 Methyl-tert-butyl ether	73	2.897	2.898	(0.501)	11806	2.00000	1.9

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.876	2.875	(0.497)	10454	2.00000	1.7
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	20649	2.00000	1.8
24 Vinyl Acetate	43	3.541	3.543	(0.612)	29730	2.00000	1.8
25 Chloroprene	53	3.514	3.514	(0.607)	13661	2.00000	1.7
26 2-Butanone	43	4.366	4.366	(0.754)	7823	4.00000	4.2(MH)
27 Propionitrile	54	3.505	3.519	(0.606)	573	20.0000	15.8(Q)
114 tert-Butyl ethyl ether	59	4.098	4.101	(0.708)	8447	2.00000	1.9(q)
28 2,2-Dichloropropane	77	4.234	4.231	(0.732)	4754	2.00000	2.7
29 cis-1,2-Dichloroethene	96	4.266	4.267	(0.737)	13098	2.00000	1.8
30 Methyacrylonitrile	67	4.647	4.651	(0.803)	43196	20.0000	19.0
31 Isobutyl Alcohol	43	5.621	5.601	(0.971)	5859	40.0000	106(Q)
32 Chloroform	83	4.761	4.762	(0.823)	19880	2.00000	1.9
33 Bromochloromethane	49	4.605	4.605	(0.796)	11020	2.00000	1.9
35 1,1,1-Trichloroethane	97	4.935	4.934	(0.853)	13509	2.00000	1.6
36 Cyclohexane	56	4.975	4.970	(0.860)	18305	2.00000	1.6
37 1,1-Dichloropropene	75	5.164	5.163	(0.892)	15322	2.00000	1.8
38 Carbon tetrachloride	117	5.138	5.141	(0.888)	8345	2.00000	2.7
40 1,2-Dichloroethane	62	5.477	5.480	(0.946)	13379	2.00000	1.9
41 Benzene	78	5.418	5.415	(0.936)	44677	2.00000	1.8
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.971)	12453	2.00000	2.0
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	972312	50.0000	
43 Trichloroethylene	130	6.215	6.216	(1.074)	11606	2.00000	1.7
44 Methyl Cyclohexane	55	6.396	6.394	(1.105)	13892	2.00000	1.6
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	12178	2.00000	1.8
46 Methyl Methacrylate	69	6.691	6.688	(1.156)	6652	2.00000	1.9(q)
47 Bromodichloromethane	83	6.804	6.804	(1.175)	12431	2.00000	1.8
48 1,4 Dioxane	88	9.039	9.038	(1.562)	72	40.0000	23.8(Q)
49 Dibromomethane	93	6.605	6.600	(1.141)	7644	2.00000	2.0(M)
50 4-Methyl-2-Pentanone	43	7.493	7.494	(1.295)	20430	4.00000	4.0
51 2-Hexanone	43	8.358	8.362	(0.928)	11753	4.00000	3.6
52 cis 1,3-Dichloropropene	75	7.293	7.296	(1.260)	12530	2.00000	1.7
54 Toluene	92	7.616	7.614	(1.316)	27126	2.00000	1.8
55 trans 1,3-Dichloropropene	75	7.893	7.894	(1.364)	10633	2.00000	2.7
56 Ethyl Methacrylate	69	8.025	8.025	(1.386)	12574	2.00000	1.8
57 1,1,2-Trichloroethane	97	8.065	8.070	(1.393)	9223	2.00000	1.8
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	17301	2.00000	2.0
59 Tetrachloroethylene	164	8.165	8.166	(0.906)	8636	2.00000	1.6
60 Dibromochloromethane	129	8.447	8.449	(0.938)	8261	2.00000	2.5
61 1,2-Dibromoethane	107	8.535	8.536	(0.947)	10327	2.00000	1.9
62 1-Chlorohexane	91	9.052	9.052	(1.005)	15320	2.00000	1.6
* 63 CHLOROBENZENE d5 (IS)	117	9.009	9.008	(1.000)	760354	50.0000	
64 Chlorobenzene	112	9.036	9.036	(1.003)	32790	2.00000	1.8(q)
65 1,1,1,2-Tetrachloroethane	131	9.132	9.132	(1.014)	8795	2.00000	1.8
66 Ethylbenzene	106	9.163	9.165	(1.017)	17249	2.00000	1.8
67 p,m-Xylene	106	9.284	9.286	(1.031)	42525	4.00000	3.6
68 o-Xylene	91	9.670	9.672	(1.073)	42621	2.00000	1.8
69 Styrene	104	9.692	9.692	(1.076)	32204	2.00000	1.8
70 Bromoform	173	9.859	9.859	(1.094)	4216	2.00000	3.5
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	47772	2.00000	1.8
72 1,4-Dichloro-2-Butene	53	10.423	10.432	(0.921)	1622	4.00000	4.8(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	13577	2.00000	2.1
75 1,2,3- trichloropropane	75	10.395	10.395	(0.918)	12422	2.00000	2.6
76 n-Propylbenzene	91	10.452	10.453	(0.923)	58874	2.00000	1.8
77 Bromobenzene	77	10.315	10.315	(0.911)	18830	2.00000	1.9

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
78	1,3,5-Trimethylbenzene	105	10.634	10.636	(0.939)	38430	2.00000	1.8
79	2-Chlorotoluene	91	10.519	10.519	(0.929)	34034	2.00000	1.8
80	4-Chlorotoluene	91	10.631	10.631	(0.939)	39547	2.00000	1.9
81	tert-Butylbenzene	119	10.949	10.946	(0.967)	32331	2.00000	1.8
82	1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	40133	2.00000	1.8
83	sec-Butylbenzene	105	11.164	11.165	(0.986)	50702	2.00000	1.8
84	p-Isopropyltoluene	119	11.317	11.318	(1.000)	40973	2.00000	1.8
85	1,3-Dichlorobenzene	146	11.253	11.252	(0.994)	22677	2.00000	1.9
* 86	1,4-DICHLOROBENZENE-d4 (IS)	152	11.320	11.321	(1.000)	369882	50.0000	
87	1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	22951	2.00000	1.8(q)
124	1,2,3-trimethylbenzene	105	11.405	11.406	(1.008)	38490	2.00000	1.9
88	Benzyl Chloride	91	11.494	11.494	(1.015)	7668	2.00000	1.3
89	n-Butylbenzene	91	11.721	11.721	(1.035)	37120	2.00000	1.7
90	1,2-Dichlorobenzene	146	11.705	11.706	(1.034)	19104	2.00000	1.8
91	1,2-dibromo-3-chloropropane	75	12.482	12.482	(1.103)	1371	2.00000	1.9(QM)
92	1,2,4-Trichlorobenzene	180	13.287	13.293	(1.174)	9393	2.00000	1.8
93	Hexachlorobutadiene	223	13.469	13.464	(1.190)	3163	2.00000	1.9(q)
94	Naphthalene	128	13.525	13.525	(1.195)	19226	2.00000	1.9
95	1,2,3-trichlorobenzene	180	13.764	13.763	(1.216)	6893	2.00000	1.8
103	Isopropyl Ether	45	3.546	3.548	(0.613)	35649	2.00000	1.8
104	Ethyl acetate	43	4.489	4.493	(0.776)	20028	4.00000	4.2
105	Cyclohexanone	55	10.136	10.136	(1.125)	1964	20.0000	18.5
106	Ethyl ether	59	1.938	1.937	(0.335)	8652	2.00000	2.1
107	2-Nitropropane	43	7.493	7.494	(1.295)	20545	4.00000	4.0
108	Tetrahydrofuran	42	4.678	4.674	(0.808)	7118	4.00000	3.5
116	Ethanol	45	1.938	1.937	(0.335)	8987	160.000	174
117	t-butyl formate	59	4.835	4.828	(0.835)	23754	40.0000	75.6
118	tert-amyl alcohol	59	5.611	5.611	(0.969)	5372	40.0000	41.0(q)
119	3,3-dimethyl-1-butanol	57	8.599	8.601	(1.486)	2925	40.0000	56.1(Q)
120	Chlorotrifluoroethylene	116	1.177	1.179	(0.203)	36	2.00000	6.7(aQ)
121	2-Chloro-1,1,1-trifluoroethane	118	1.533	1.553	(0.265)	35	2.00000	3.8(aq)
122	n-Hexane	57	3.207	3.203	(0.554)	12620	2.00000	1.5(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 2PPBR.D
Lab Smp Id: 2PPB
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 2PPB
Level: LOW
Sample Type: WATER

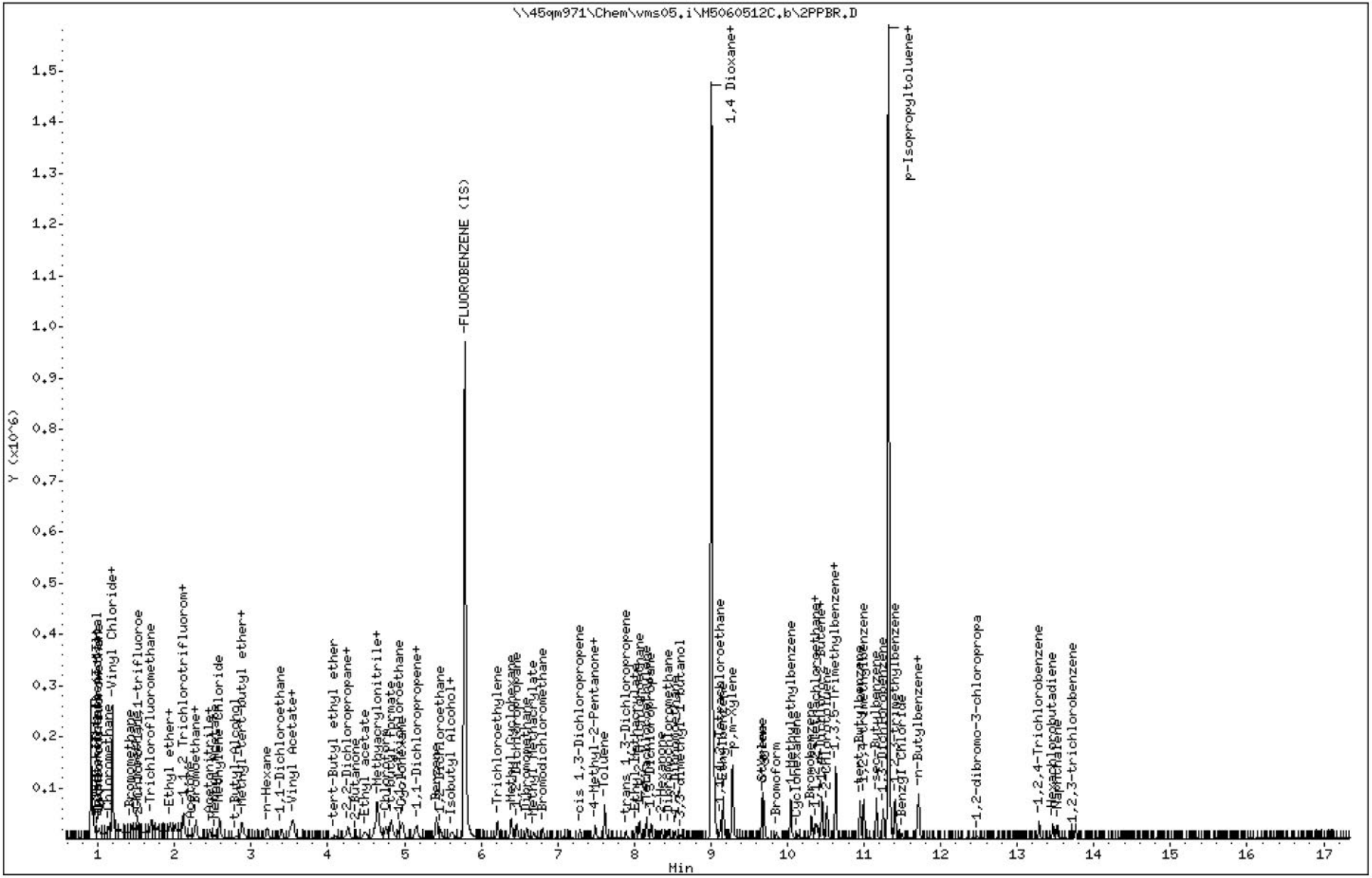
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	972312	-7.42
63 CHLOROBENZENE d5	811097	405549	1622194	760354	-6.26
86 1,4-DICHLOROBENZE	436748	218374	873496	369882	-15.31

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.02
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\2PPBR.D
Date : 05-JUN-2012 13:19
Client ID: 2PPB
Sample Info: 2PPB
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060512C.b\SEC52.D
Lab Smp Id: SEC52 Client Smp ID: SEC52
Inj Date : 05-JUN-2012 14:49 MS Autotune Date: 05-JUN-2012 05:49
Operator : VW Inst ID: vms05.i
Smp Info : SEC52
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Meth Date : 09-Jun-2012 10:18 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 17 QC Sample: SSC
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				590137	89.6263	89.6
M 2 Xylenes (Total)	100				2195315	138.082	138
M 3 Trihalomethanes (Total)	100				1277193	190.032	190
4 Dichlorodifluoromethane	85	1.018	1.019	(0.176)	272294	43.6676	43.7
5 Chloromethane	50	1.136	1.138	(0.196)	307873	41.6710	41.7
6 Vinyl Chloride	62	1.203	1.207	(0.208)	382742	49.1712	49.2(Q)
7 Bromomethane	96	1.430	1.432	(0.247)	217640	45.5977	45.6(q)
8 Chloroethane	64	1.505	1.507	(0.260)	185818	45.2523	45.2
9 Trichlorofluoromethane	101	1.691	1.692	(0.292)	425995	51.1944	51.2
113 Bromoethane	108	2.261	2.265	(0.391)	178789	43.8311	43.8
10 Acrolein	56	1.184	1.184	(0.205)	1580984	99.4741	99.5
11 1,1,2 Trichlorotrifluoromethan	101	2.118	2.118	(0.366)	258658	51.2414	51.2
12 Acetone	43	2.206	2.204	(0.381)	125086	100.814	101
13 1,1-Dichloroethene	61	2.107	2.110	(0.364)	410442	45.0426	45.0
109 t-Butyl-Alcohol	59	2.810	2.809	(0.486)	269518	446.570	446
14 Acetonitrile	41	2.455	2.460	(0.424)	588507	514.324	514
15 Iodomethane	142	2.234	2.229	(0.386)	135498	97.4484	97.4(AqR)
16 Methyl Acetate	43	2.515	2.519	(0.435)	197654	48.2945	48.3
17 Allyl Chloride	41	2.455	2.460	(0.424)	588507	53.0486	53.0
18 Carbon Disulfide	76	2.276	2.278	(0.393)	822365	42.4795	42.5
19 Methylene Chloride	49	2.585	2.586	(0.447)	383581	47.2581	47.2
20 Acrylonitrile	53	2.887	2.896	(0.499)	176187	103.396	103
21 Methyl-tert-butyl ether	73	2.897	2.898	(0.501)	275273	44.7776	44.8

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
22 trans 1,2-Dichloroethene	96	2.872	2.875	(0.496)	273741	44.7269	44.7
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	514441	45.6253	45.6
24 Vinyl Acetate	43	3.538	3.543	(0.611)	872520	52.2710	52.3
25 Chloroprene	53	3.510	3.514	(0.606)	363066	46.2021	46.2
26 2-Butanone	43	4.357	4.366	(0.753)	183602	98.2507	98.2
27 Propionitrile	54	3.510	3.519	(0.606)	16362	450.279	450(Q)
114 tert-Butyl ethyl ether	59	4.096	4.101	(0.708)	198098	43.7881	43.8
28 2,2-Dichloropropane	77	4.232	4.231	(0.731)	209248	44.0739	44.1
29 cis-1,2-Dichloroethene	96	4.263	4.267	(0.737)	316396	44.8994	44.9
30 Methyacrylonitrile	67	4.649	4.651	(0.803)	1133858	498.580	498
31 Isobutyl Alcohol	43	5.539	5.601	(0.957)	61867	1184.44	1180(QH)
32 Chloroform	83	4.760	4.762	(0.822)	490953	46.1133	46.1
33 Bromochloromethane	49	4.603	4.605	(0.795)	267533	47.1831	47.2
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.860)	267919	49.8431	49.8
35 1,1,1-Trichloroethane	97	4.934	4.934	(0.853)	403022	48.6909	48.7
36 Cyclohexane	56	4.974	4.970	(0.859)	537744	48.1827	48.2
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	411390	47.1280	47.1
38 Carbon tetrachloride	117	5.139	5.141	(0.888)	309880	44.2765	44.3
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.381	5.380	(0.930)	54965	50.9332	50.9(q)
40 1,2-Dichloroethane	62	5.475	5.480	(0.946)	336997	48.4419	48.4
41 Benzene	78	5.418	5.415	(0.936)	1163592	45.7622	45.8
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.971)	311027	49.5053	49.5
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	971636	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	309148	46.1746	46.2
44 Methyl Cyclohexane	55	6.394	6.394	(1.105)	420049	49.0912	49.1
45 1,2-Dichloropropane	63	6.468	6.467	(1.118)	320030	47.8554	47.8
46 Methyl Methacrylate	69	6.686	6.688	(1.155)	175951	50.3218	50.3(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	360727	51.4639	51.5
48 1,4 Dioxane	88	9.035	9.038	(1.561)	2731	902.515	902(Q)
49 Dibromomethane	93	6.599	6.600	(1.140)	177816	47.7566	47.8
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	493535	96.5314	96.5
51 2-Hexanone	43	8.357	8.362	(0.928)	322383	98.3624	98.4
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	399084	53.1962	53.2
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	978942	48.3110	48.3
54 Toluene	92	7.615	7.614	(1.316)	718693	46.6209	46.6
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	344290	45.4812	45.5
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	343717	49.9470	49.9
57 1,1,2-Trichloroethane	97	8.067	8.070	(1.394)	243474	48.3560	48.4
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	428014	48.0658	48.1
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	248390	45.5104	45.5
60 Dibromochloromethane	129	8.445	8.449	(0.937)	265638	46.3864	46.4
61 1,2-Dibromoethane	107	8.534	8.536	(0.947)	262813	47.2254	47.2
62 1-Chlorohexane	91	9.053	9.052	(1.005)	443789	46.9681	47.0(q)
* 63 CHLOROBENZENE d5 (IS)	117	9.009	9.008	(1.000)	769004	50.0000	
64 Chlorobenzene	112	9.036	9.036	(1.003)	819608	45.4364	45.4
65 1,1,1,2-Tetrachloroethane	131	9.134	9.132	(1.014)	257480	51.1875	51.2
66 Ethylbenzene	106	9.164	9.165	(1.017)	443830	44.7807	44.8
67 p,m-Xylene	106	9.285	9.286	(1.031)	1112270	91.9330	91.9
68 o-Xylene	91	9.672	9.672	(1.074)	1083045	46.1493	46.1
69 Styrene	104	9.692	9.692	(1.076)	865095	46.8418	46.8
70 Bromoform	173	9.861	9.859	(1.095)	159875	46.0684	46.1
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	1245304	41.5493	41.5
72 1,4-Dichloro-2-Butene	53	10.426	10.432	(0.921)	59194	91.7923	91.8(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	330194	46.0233	46.0

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	343450	45.5403	45.5
75 1,2,3- trichloropropane	75	10.393	10.395	(0.918)	231039	42.2762	42.3
76 n-Propylbenzene	91	10.453	10.453	(0.923)	1635124	44.4608	44.5
77 Bromobenzene	77	10.314	10.315	(0.911)	495822	44.4742	44.5
78 1,3,5-Trimethylbenzene	105	10.636	10.636	(0.940)	1101121	44.8932	44.9
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	913529	43.5873	43.6
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	1041685	44.3378	44.3
81 tert-Butylbenzene	119	10.949	10.946	(0.967)	916548	44.6289	44.6(Q)
82 1,2,4-trimethylbenzene	105	10.998	10.998	(0.971)	1087307	44.1809	44.2
83 sec-Butylbenzene	105	11.165	11.165	(0.986)	1434137	45.3646	45.4
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	1178905	45.8813	45.9
85 1,3-Dichlorobenzene	146	11.253	11.252	(0.994)	601386	43.9530	44.0
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	416135	50.0000	(q)
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	601669	42.9224	42.9
124 1,2,3-trimethylbenzene	105	11.406	11.406	(1.007)	1030798	44.5230	44.5
88 Benzyl Chloride	91	11.492	11.494	(1.015)	355026	52.8957	52.9
89 n-Butylbenzene	91	11.719	11.721	(1.035)	1143050	47.2972	47.3
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	545783	44.9675	45.0
91 1,2-dibromo-3-chloropropane	75	12.483	12.482	(1.103)	39901	50.2554	50.2
92 1,2,4-Trichlorobenzene	180	13.289	13.293	(1.174)	280234	46.9864	47.0
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	93570	50.6593	50.6(q)
94 Naphthalene	128	13.523	13.525	(1.194)	517509	46.4568	46.4
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	188675	44.8855	44.9
103 Isopropyl Ether	45	3.548	3.548	(0.613)	949177	48.8424	48.8
104 Ethyl acetate	43	4.482	4.493	(0.774)	478106	99.4096	99.4
105 Cyclohexanone	55	10.132	10.136	(1.125)	31484	293.948	294(R)
106 Ethyl ether	59	1.937	1.937	(0.335)	193849	46.7668	46.8
107 2-Nitropropane	43	7.491	7.494	(1.294)	490617	96.4109	96.4
108 Tetrahydrofuran	42	4.673	4.674	(0.807)	193037	95.9850	96.0
112 2-Cleve	63	7.108	7.107	(1.228)	1951	73.9009	73.9(QR)
116 Ethanol	45	1.937	1.937	(0.335)	192659	3728.88	3730
117 t-butyl formate	59	4.831	4.828	(0.835)	899223	886.656	887(Q)
118 tert-amyl alcohol	59	5.608	5.611	(0.969)	159474	1219.76	1220(QR)
119 3,3-dimethyl-1-butanol	57	8.599	8.601	(1.486)	184790	1118.79	1120(Q)
120 Chlorotrifluoroethylene	116	1.220	1.179	(0.211)	18	3.34223	3.3(aQR)
121 2-Chloro-1,1,1-trifluoroethane	118	1.534	1.553	(0.265)	68	7.33121	7.3(aQR)
122 n-Hexane	57	3.204	3.203	(0.554)	430526	50.6226	50.6

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: SEC52.D
Lab Smp Id: SEC52
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060512C.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: SEC52
Level: LOW
Sample Type: WATER

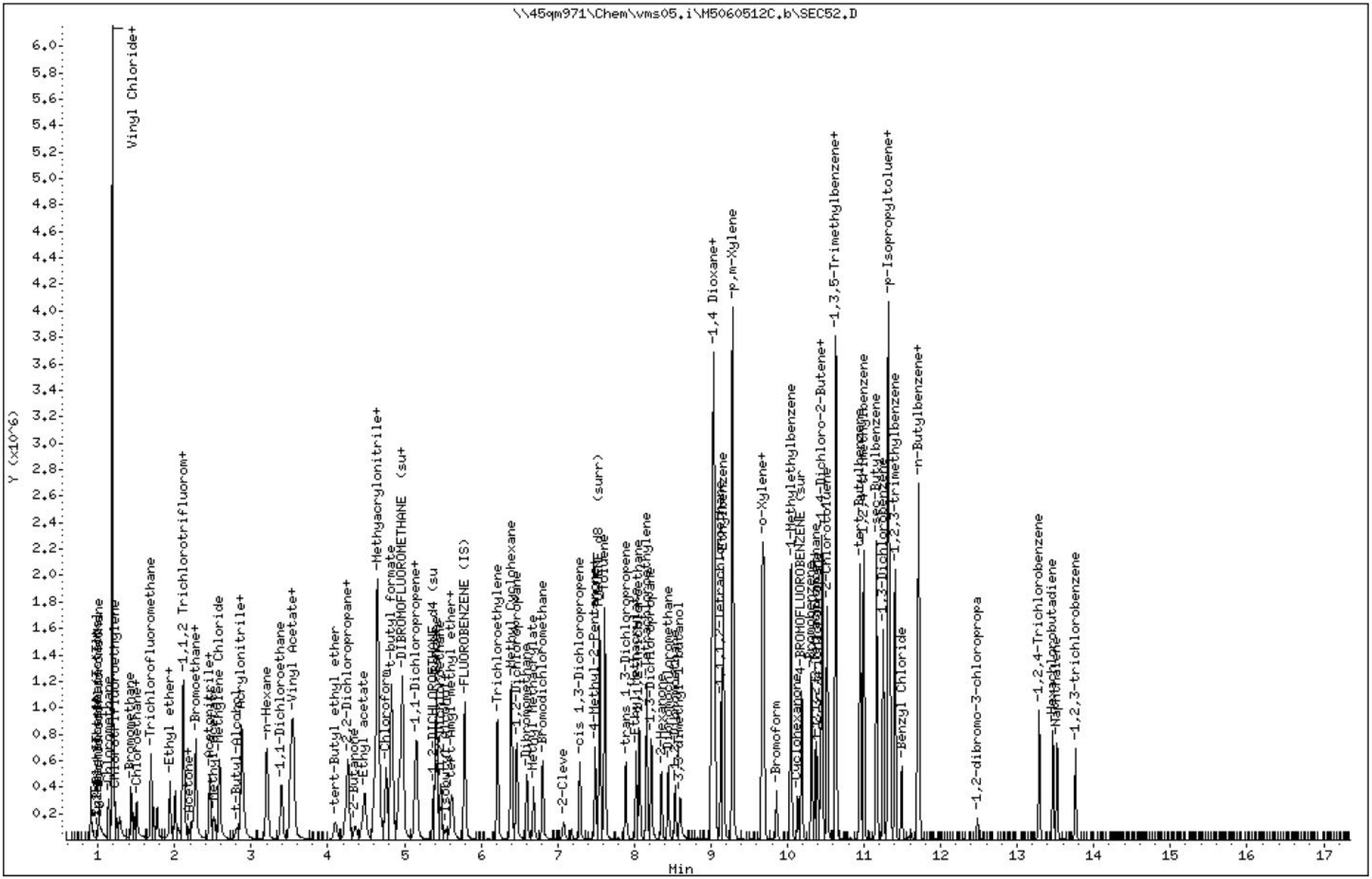
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	971636	-7.48
63 CHLOROBENZENE d5	811097	405549	1622194	769004	-5.19
86 1,4-DICHLOROBENZE	436748	218374	873496	416135	-4.72

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060512C.b\SEC52.D
Date : 05-JUN-2012 14:49
Client ID: SEC52
Sample Info: SEC52
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



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PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\BFB51.D
Lab Smp Id: 060812BFB51 Client Smp ID: 060812BFB51
Inj Date : 08-JUN-2012 06:26 MS Autotune Date: 06-JUN-2012 06:00
Operator : VW Inst ID: vms05.i
Smp Info : 060812BFB51
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1uM film
Method : \\45qm971\Chem\vms05.i\M5060812.b\BFBE.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: VOLS11

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
10.186	10.270	-0.084	95	59496			0.00- 100.00	100.00
10.186	10.270	-0.084	50	11131			15.00- 40.00	18.71
10.186	10.270	-0.084	75	27768			30.00- 60.00	46.67
10.186	10.270	-0.084	96	4262			5.00- 9.00	7.16
10.186	10.270	-0.084	173	188			0.00- 2.00	0.39
10.186	10.270	-0.084	174	48000			50.00- 100.00	80.68
10.186	10.270	-0.084	175	3166			5.00- 9.00	6.60
10.186	10.270	-0.084	176	45696			95.00- 101.00	95.20
10.186	10.270	-0.084	177	3222			5.00- 9.00	7.05

Data File: \\45qm971\Chem\vms05.i\M5060812.b\BFB51.D

Date : 08-JUN-2012 06:26

Client ID: 060812BFB51

Instrument: vms05.i

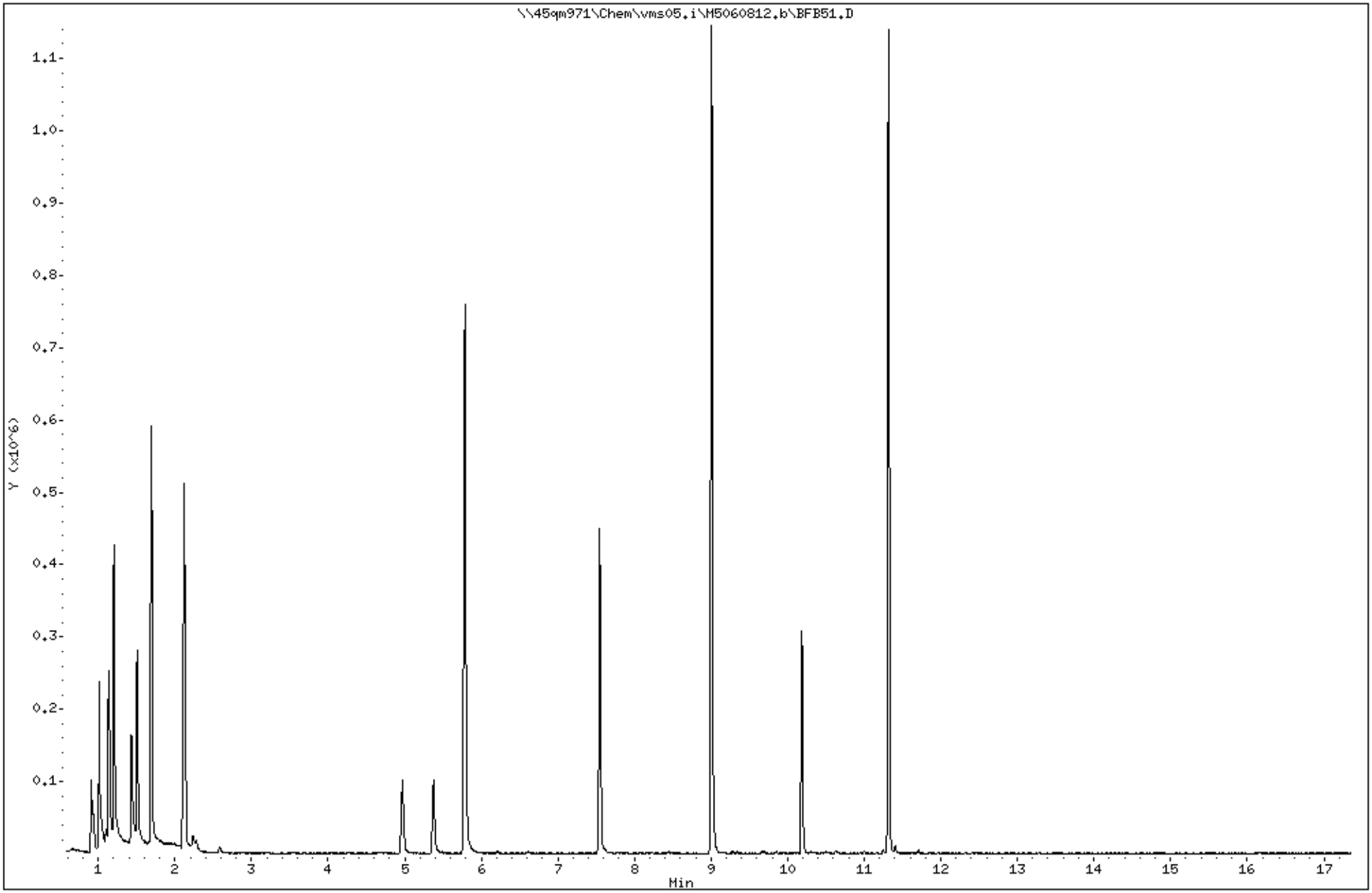
Sample Info: 060812BFB51

Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18



106

3506280

Data File: \\45qm971\Chem\vms05.i\M5060812.b\BFB51.D

Date : 08-JUN-2012 06:26

Client ID: 060812BFB51

Instrument: vms05.i

Sample Info: 060812BFB51

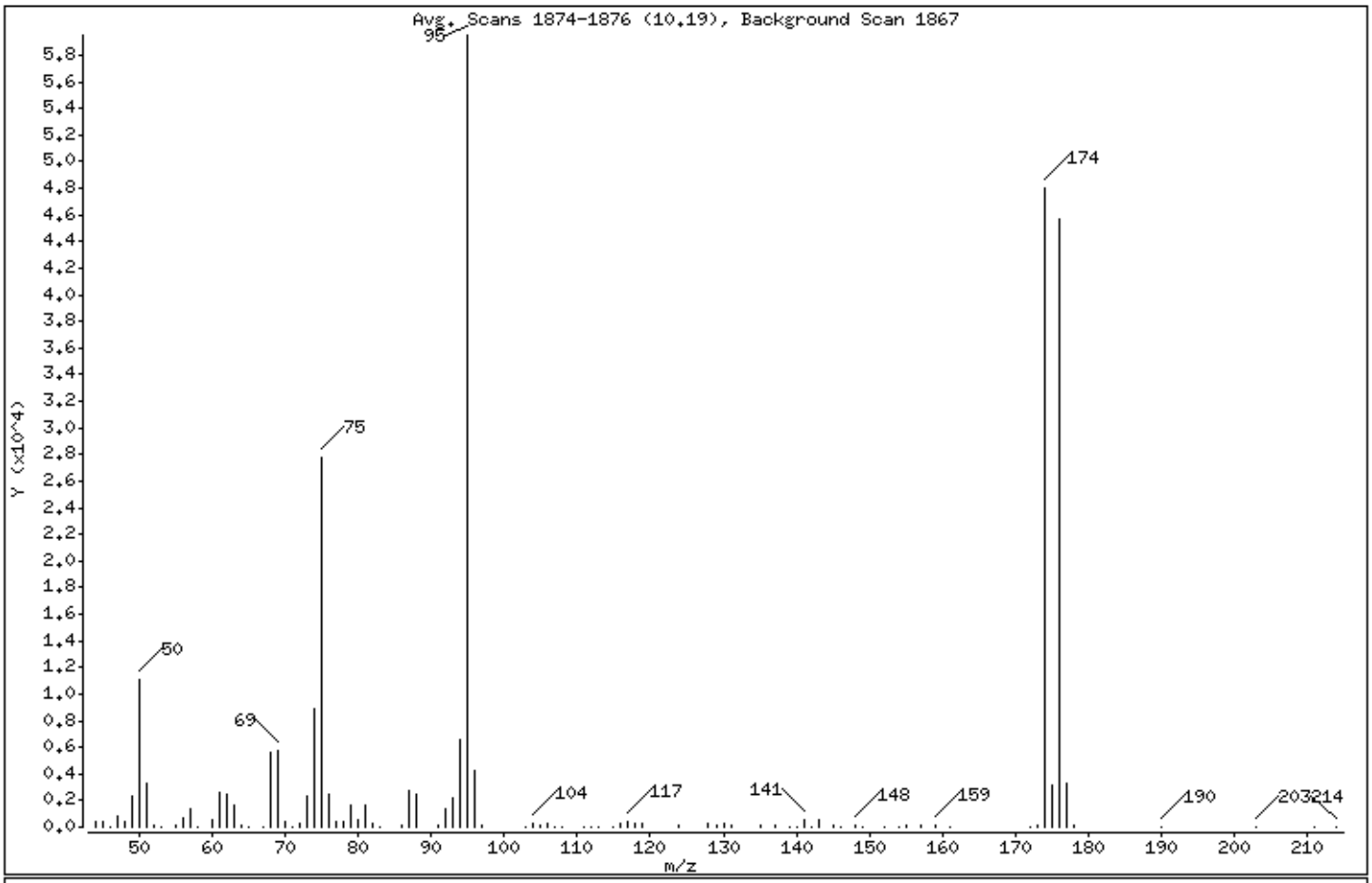
Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.71
75	30.00 - 60.00% of mass 95	46.67
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.32 (0.39)
174	50.00 - 100.00% of mass 95	80.68
175	5.00 - 9.00% of mass 174	5.32 (6.60)
176	95.00 - 101.00% of mass 174	76.81 (95.20)
177	5.00 - 9.00% of mass 176	5.42 (7.05)

Date : 08-JUN-2012 06:26

Client ID: 060812BFB51 Instrument: vms05.i

Sample Info: 060812BFB51

Purge Volume: 5.0 Operator: VW

Column phase: DB-624 Column diameter: 0.18

Data File: BFB51.D
Spectrum: Avg. Scans 1874-1876 (10.19), Background Scan 1867
Location of Maximum: 95.00
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
44.00	342	71.00	39	104.00	224	143.00	509
45.00	476	72.00	305	105.00	108	145.00	90
46.00	17	73.00	2334	106.00	207	146.00	30
47.00	816	74.00	8923	107.00	61	148.00	132
48.00	380	75.00	27768	108.00	18	149.00	35
49.00	2380	76.00	2425	111.00	57	152.00	24
50.00	11131	77.00	426	112.00	41	154.00	60
51.00	3245	78.00	347	113.00	17	155.00	118
52.00	148	79.00	1587	115.00	40	157.00	104
53.00	19	80.00	509	116.00	227	159.00	101
55.00	101	81.00	1593	117.00	415	161.00	46
56.00	729	82.00	323	118.00	244	172.00	47
57.00	1334	83.00	31	119.00	300	173.00	188
58.00	53	86.00	124	124.00	81	174.00	48000
60.00	591	87.00	2798	128.00	207	175.00	3166
61.00	2599	88.00	2460	129.00	82	176.00	45696
62.00	2426	91.00	182	130.00	211	177.00	3222
63.00	1576	92.00	1368	131.00	109	178.00	88
64.00	205	93.00	2246	135.00	108	190.00	17
65.00	22	94.00	6606	137.00	111	203.00	18
67.00	66	95.00	59496	139.00	23	211.00	18
68.00	5671	96.00	4262	140.00	59	214.00	29
69.00	5689	97.00	88	141.00	603		
70.00	342	103.00	18	142.00	41		

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Data file : \\45qm971\Chem\vms05.i\M5060812.b\50CCV52.D
Lab Smp Id: 060812CCV52 Client Smp ID: 060812CCV52
Inj Date : 08-JUN-2012 07:33 MS Autotune Date: 06-JUN-2012 06:00
Operator : VW Inst ID: vms05.i
Smp Info : 060812CCV52
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				468308	100.000	(a)
M 2 Xylenes (Total)	100				1749911	150.000	(a)
M 3 Trihalomethanes (Total)	100				954965	50.0000	(a)
4 Dichlorodifluoromethane	85	1.017	1.019	(0.176)	206896	50.0000	44.9
5 Chloromethane	50	1.138	1.138	(0.197)	192304	50.0000	35.2
6 Vinyl Chloride	62	1.204	1.207	(0.208)	281661	50.0000	48.9(q)
7 Bromomethane	96	1.433	1.432	(0.248)	172205	50.0000	48.8(q)
8 Chloroethane	64	1.507	1.507	(0.260)	153293	50.0000	50.5
9 Trichlorofluoromethane	101	1.693	1.692	(0.293)	348791	50.0000	56.7
113 Bromoethane	108	2.263	2.265	(0.391)	142938	50.0000	47.4
10 Acrolein	56	1.185	1.184	(0.205)	1173502	100.000	99.9
11 1,1,2 Trichlorotrifluoromethan	101	2.122	2.118	(0.367)	207523	50.0000	55.6
12 Acetone	43	2.204	2.204	(0.381)	90128	100.000	98.2
13 1,1-Dichloroethene	61	2.109	2.110	(0.364)	341730	50.0000	50.7
109 t-Butyl-Alcohol	59	2.806	2.809	(0.485)	132731	500.000	297
14 Acetonitrile	41	2.455	2.460	(0.424)	427337	500.000	505
15 Iodomethane	142	2.235	2.229	(0.386)	155229	50.0000	151(Aq)
16 Methyl Acetate	43	2.513	2.519	(0.434)	139806	50.0000	46.2
17 Allyl Chloride	41	2.455	2.460	(0.424)	427119	50.0000	52.1
18 Carbon Disulfide	76	2.279	2.278	(0.394)	746957	50.0000	52.2
19 Methylene Chloride	49	2.586	2.586	(0.447)	296366	50.0000	49.4
20 Acrylonitrile	53	2.886	2.896	(0.499)	124751	100.000	99.0(q)
21 Methyl-tert-butyl ether	73	2.895	2.898	(0.500)	182564	50.0000	40.2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.497)	223179	50.0000	49.3
23 1,1-Dichloroethane	63	3.395	3.402	(0.587)	403315	50.0000	48.4
24 Vinyl Acetate	43	3.537	3.543	(0.611)	623909	50.0000	50.6
25 Chloroprene	53	3.513	3.514	(0.607)	287288	50.0000	49.4
26 2-Butanone	43	4.355	4.366	(0.753)	125358	100.000	90.7
27 Propionitrile	54	3.511	3.519	(0.607)	13675	500.000	509(q)
114 tert-Butyl ethyl ether	59	4.096	4.101	(0.708)	131327	50.0000	39.3
28 2,2-Dichloropropane	77	4.232	4.231	(0.731)	157377	50.0000	44.8
29 cis-1,2-Dichloroethene	96	4.264	4.267	(0.737)	245129	50.0000	47.0
30 Methyacrylonitrile	67	4.647	4.651	(0.803)	815400	500.000	485
31 Isobutyl Alcohol	43	5.620	5.601	(0.971)	88686	1000.00	1690
32 Chloroform	83	4.760	4.762	(0.822)	387468	50.0000	49.2
33 Bromochloromethane	49	4.603	4.605	(0.795)	209302	50.0000	49.9
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	212618	50.0000	53.5
35 1,1,1-Trichloroethane	97	4.934	4.934	(0.853)	315585	50.0000	51.6
36 Cyclohexane	56	4.975	4.970	(0.860)	441813	50.0000	53.5
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	335981	50.0000	52.1
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	218518	50.0000	42.3
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	42744	50.0000	53.6(q)
40 1,2-Dichloroethane	62	5.474	5.480	(0.946)	263206	50.0000	51.2
41 Benzene	78	5.418	5.415	(0.936)	918144	50.0000	48.8
115 tert-Amyl-methyl ether	73	5.621	5.625	(0.971)	203539	50.0000	43.8
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	718336	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	243995	50.0000	49.3
44 Methyl Cyclohexane	55	6.394	6.394	(1.105)	342756	50.0000	54.2
45 1,2-Dichloropropane	63	6.467	6.467	(1.117)	250163	50.0000	50.6
46 Methyl Methacrylate	69	6.685	6.688	(1.155)	126744	50.0000	49.0
47 Bromodichloromethane	83	6.804	6.804	(1.176)	276271	50.0000	53.3
48 1,4 Dioxane	88	9.030	9.038	(1.560)	2066	1000.00	924(Q)
49 Dibromomethane	93	6.599	6.600	(1.140)	138494	50.0000	50.3
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	351105	100.000	92.9
51 2-Hexanone	43	8.357	8.362	(0.928)	227715	100.000	92.7
52 cis 1,3-Dichloropropene	75	7.290	7.296	(1.260)	299177	50.0000	53.9
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	765414	50.0000	51.1
54 Toluene	92	7.615	7.614	(1.316)	568620	50.0000	49.9
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	258045	50.0000	46.1
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	251222	50.0000	49.4
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.394)	185814	50.0000	49.9
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	326135	50.0000	48.8
59 Tetrachloroethylene	164	8.164	8.166	(0.906)	195320	50.0000	47.7
60 Dibromochloromethane	129	8.445	8.449	(0.937)	186889	50.0000	43.6
61 1,2-Dibromoethane	107	8.533	8.536	(0.947)	196956	50.0000	47.2
62 1-Chlorohexane	91	9.053	9.052	(1.005)	367184	50.0000	51.8
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	576539	50.0000	
64 Chlorobenzene	112	9.036	9.036	(1.003)	650223	50.0000	48.1
65 1,1,1,2-Tetrachloroethane	131	9.134	9.132	(1.014)	189587	50.0000	50.3
66 Ethylbenzene	106	9.164	9.165	(1.017)	359460	50.0000	48.4
67 p,m-Xylene	106	9.285	9.286	(1.031)	884435	100.000	97.5
68 o-Xylene	91	9.672	9.672	(1.074)	865476	50.0000	49.2
69 Styrene	104	9.692	9.692	(1.076)	671968	50.0000	48.5
70 Bromoform	173	9.861	9.859	(1.095)	104337	50.0000	40.4
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	1037764	50.0000	45.9
72 1,4-Dichloro-2-Butene	53	10.426	10.432	(0.921)	35571	100.000	74.6(q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	245671	50.0000	45.4

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	274139	50.0000	48.2
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	171627	50.0000	41.6
76 n-Propylbenzene	91	10.453	10.453	(0.923)	1296311	50.0000	46.7
77 Bromobenzene	77	10.314	10.315	(0.911)	385343	50.0000	45.8
78 1,3,5-Trimethylbenzene	105	10.636	10.636	(0.939)	872590	50.0000	47.1
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	713246	50.0000	45.1
80 4-Chlorotoluene	91	10.631	10.631	(0.939)	813451	50.0000	45.9
81 tert-Butylbenzene	119	10.948	10.946	(0.967)	725122	50.0000	46.8(q)
82 1,2,4-trimethylbenzene	105	10.998	10.998	(0.971)	868991	50.0000	46.8
83 sec-Butylbenzene	105	11.165	11.165	(0.986)	1134101	50.0000	47.5
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	929172	50.0000	47.9
85 1,3-Dichlorobenzene	146	11.253	11.252	(0.994)	464591	50.0000	45.0
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.322	11.321	(1.000)	314057	50.0000	(q)
87 1,4-Dichlorobenzene	146	11.344	11.345	(1.002)	470046	50.0000	44.4
124 1,2,3-trimethylbenzene	105	11.406	11.406	(1.007)	829606	50.0000	47.5
88 Benzyl Chloride	91	11.493	11.494	(1.015)	236048	50.0000	46.6
89 n-Butylbenzene	91	11.720	11.721	(1.035)	902286	50.0000	49.5
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	410627	50.0000	44.8
91 1,2-dibromo-3-chloropropane	75	12.483	12.482	(1.103)	26669	50.0000	44.5
92 1,2,4-Trichlorobenzene	180	13.289	13.293	(1.174)	205940	50.0000	45.8
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	64193	50.0000	46.0(q)
94 Naphthalene	128	13.524	13.525	(1.195)	367860	50.0000	43.8
95 1,2,3-trichlorobenzene	180	13.763	13.763	(1.216)	136552	50.0000	43.0
103 Isopropyl Ether	45	3.546	3.548	(0.613)	729991	50.0000	50.8
104 Ethyl acetate	43	4.480	4.493	(0.774)	335462	100.000	94.3
105 Cyclohexanone	55	10.133	10.136	(1.125)	25784	500.000	321
106 Ethyl ether	59	1.937	1.937	(0.335)	151283	50.0000	49.4
107 2-Nitropropane	43	7.491	7.494	(1.294)	351104	100.000	93.3
108 Tetrahydrofuran	42	4.666	4.674	(0.806)	134542	100.000	90.5
112 2-Cleve	63	7.103	7.107	(1.227)	941	100.000	48.2(q)
116 Ethanol	45	1.937	1.937	(0.335)	144446	4000.00	3780
117 t-butyl formate	59	4.832	4.828	(0.835)	418646	1000.00	578(q)
118 tert-amyl alcohol	59	5.606	5.611	(0.969)	75895	1000.00	785(q)
119 3,3-dimethyl-1-butanol	57	8.600	8.601	(1.486)	59163	1000.00	507(q)
120 Chlorotrifluoroethylene	116	1.189	1.179	(0.206)	21	50.0000	5.3(aq)
121 2-Chloro-1,1,1-trifluoroethane	118	1.568	1.553	(0.271)	15	50.0000	2.2(aq)
122 n-Hexane	57	3.206	3.203	(0.554)	349651	50.0000	55.6

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 50CCV52.D
Lab Smp Id: 060812CCV52
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 060812CCV52
Level: LOW
Sample Type: WATER

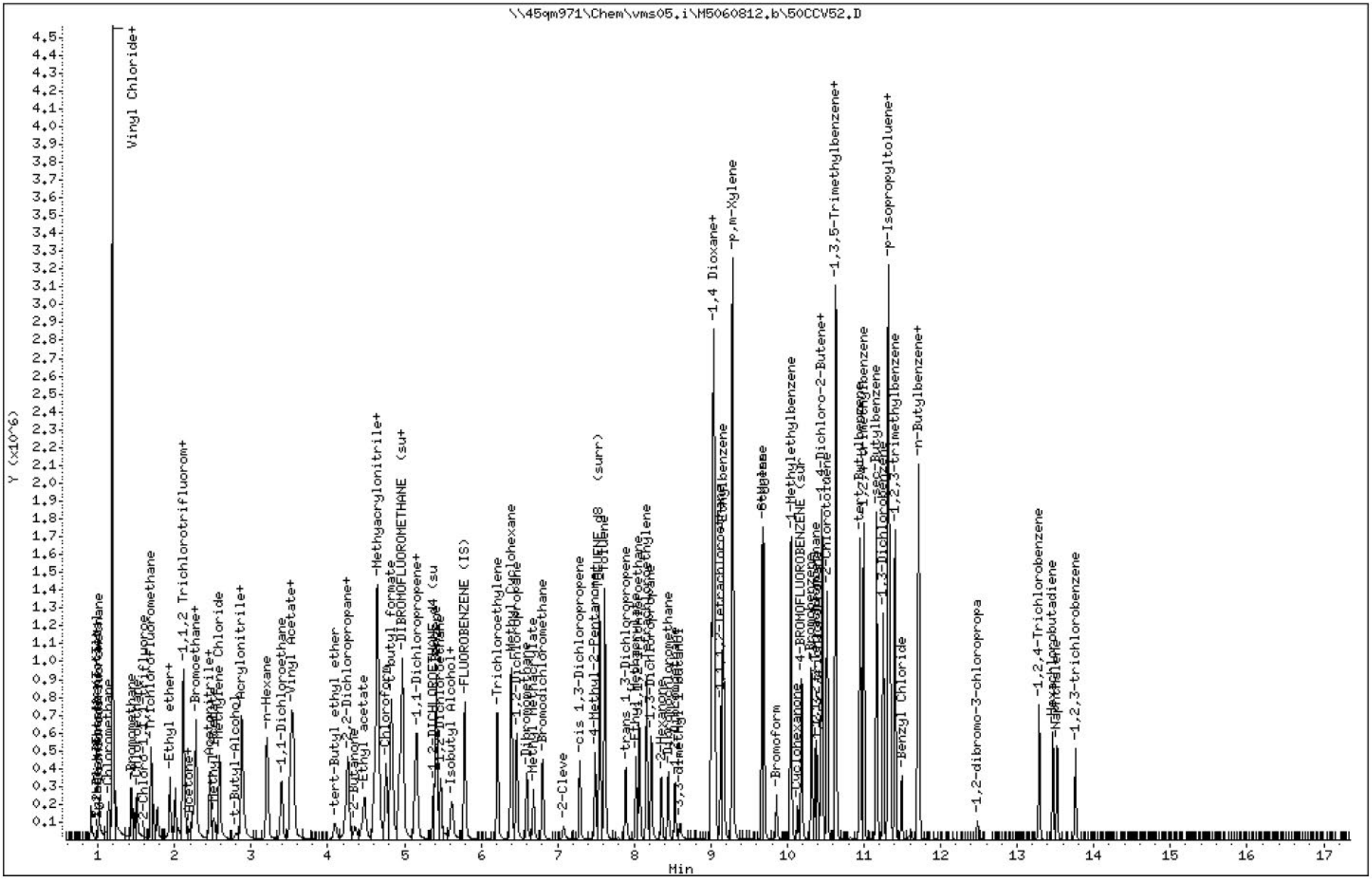
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	718336	-31.60
63 CHLOROBENZENE d5	811097	405549	1622194	576539	-28.92
86 1,4-DICHLOROBENZE	436748	218374	873496	314057	-28.09

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\50CCV52.D
Date : 08-JUN-2012 07:33
Client ID: 060812CCV52
Sample Info: 060812CCV52
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\LCS51.D
Lab Smp Id: 060812LCS51 Client Smp ID: 060812LCS51
Inj Date : 08-JUN-2012 08:19 MS Autotune Date: 06-JUN-2012 06:00
Operator : VW Inst ID: vms05.i
Smp Info : 060812LCS51
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				208484	41.4701	41.5
M 2 Xylenes (Total)	100				760443	60.8852	60.9
M 3 Trihalomethanes (Total)	100				407616	77.0444	77.0
4 Dichlorodifluoromethane	85	1.016	1.019	(0.176)	80521	16.9019	16.9
5 Chloromethane	50	1.137	1.138	(0.196)	84610	14.9896	15.0
6 Vinyl Chloride	62	1.204	1.207	(0.208)	115807	19.4735	19.5(q)
7 Bromomethane	96	1.432	1.432	(0.248)	75071	20.5865	20.6(q)
8 Chloroethane	64	1.506	1.507	(0.260)	69236	22.0694	22.1
9 Trichlorofluoromethane	101	1.694	1.692	(0.293)	139865	22.0005	22.0
113 Bromoethane	108	2.263	2.265	(0.391)	63785	20.4675	20.5
10 Acrolein	56	1.185	1.184	(0.205)	495810	40.8322	40.8
11 1,1,2 Trichlorotrifluoromethan	101	2.121	2.118	(0.367)	82175	21.3079	21.3
12 Acetone	43	2.204	2.204	(0.381)	36584	36.4628	36.5
13 1,1-Dichloroethene	61	2.108	2.110	(0.364)	151715	21.7924	21.8
109 t-Butyl-Alcohol	59	2.801	2.809	(0.484)	16091	34.8971	34.9(R)
14 Acetonitrile	41	2.455	2.460	(0.424)	173061	197.966	198
15 Iodomethane	142	2.235	2.229	(0.386)	56071	52.7820	52.8(qR)
16 Methyl Acetate	43	2.511	2.519	(0.434)	51565	16.4912	16.5
17 Allyl Chloride	41	2.455	2.460	(0.424)	172719	20.3783	20.4
18 Carbon Disulfide	76	2.279	2.278	(0.394)	338195	22.8658	22.9
19 Methylene Chloride	49	2.585	2.586	(0.447)	136374	21.4698	21.5
20 Acrylonitrile	53	2.886	2.896	(0.499)	46711	35.8803	35.9
21 Methyl-tert-butyl ether	73	2.893	2.898	(0.500)	76971	16.3881	16.4

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.497)	97641	20.8817	20.9
23 1,1-Dichloroethane	63	3.394	3.402	(0.587)	180217	20.9204	20.9
24 Vinyl Acetate	43	3.536	3.543	(0.611)	258823	20.2952	20.3
25 Chloroprene	53	3.510	3.514	(0.607)	125683	20.9343	20.9
26 2-Butanone	43	4.354	4.366	(0.752)	47486	33.2605	33.3
27 Propionitrile	54	3.506	3.519	(0.606)	5955	214.502	214(Q)
114 tert-Butyl ethyl ether	59	4.089	4.101	(0.707)	61548	17.8072	17.8
28 2,2-Dichloropropane	77	4.232	4.231	(0.731)	63568	18.5617	18.6
29 cis-1,2-Dichloroethene	96	4.263	4.267	(0.737)	110843	20.5884	20.6
30 Methyacrylonitrile	67	4.642	4.651	(0.802)	321193	184.862	185
31 Isobutyl Alcohol	43	5.619	5.601	(0.971)	34469	922.701	923(R)
32 Chloroform	83	4.758	4.762	(0.822)	174301	21.4285	21.4
33 Bromochloromethane	49	4.601	4.605	(0.795)	91289	21.0733	21.1
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.973	4.974	(0.859)	213187	51.9120	51.9
35 1,1,1-Trichloroethane	97	4.933	4.934	(0.853)	136130	21.5267	21.5
36 Cyclohexane	56	4.974	4.970	(0.860)	189626	22.2392	22.2
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	146687	21.9949	22.0
38 Carbon tetrachloride	117	5.139	5.141	(0.888)	88619	17.5466	17.5
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.379	5.380	(0.930)	42199	51.1826	51.2
40 1,2-Dichloroethane	62	5.473	5.480	(0.946)	114953	21.6282	21.6
41 Benzene	78	5.417	5.415	(0.936)	409643	21.0871	21.1
115 tert-Amyl-methyl ether	73	5.621	5.625	(0.971)	83920	17.4833	17.5
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	742332	50.0000	
43 Trichloroethylene	130	6.214	6.216	(1.074)	106469	20.8145	20.8
44 Methyl Cyclohexane	55	6.393	6.394	(1.105)	145916	22.3209	22.3
45 1,2-Dichloropropane	63	6.466	6.467	(1.117)	110465	21.6207	21.6
46 Methyl Methacrylate	69	6.684	6.688	(1.155)	48938	18.3196	18.3(q)
47 Bromodichloromethane	83	6.805	6.804	(1.176)	119040	22.2291	22.2
48 1,4 Dioxane	88	9.029	9.038	(1.560)	1110	480.133	480(Q)
49 Dibromomethane	93	6.595	6.600	(1.140)	58797	20.6692	20.7
50 4-Methyl-2-Pentanone	43	7.491	7.494	(1.294)	137312	35.1532	35.2
51 2-Hexanone	43	8.356	8.362	(0.928)	83325	32.4179	32.4
52 cis 1,3-Dichloropropene	75	7.291	7.296	(1.260)	125276	21.8569	21.8
$ 53 TOLUENE d8 (surr)	98	7.547	7.548	(1.304)	804820	51.9868	52.0
54 Toluene	92	7.614	7.614	(1.316)	248801	21.1249	21.1
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	99414	18.0163	18.0
56 Ethyl Methacrylate	69	8.022	8.025	(1.386)	99071	18.8434	18.8
57 1,1,2-Trichloroethane	97	8.066	8.070	(1.394)	78191	20.3264	20.3
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	140506	20.1199	20.1
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	84044	19.6352	19.6
60 Dibromochloromethane	129	8.445	8.449	(0.938)	75536	17.5227	17.5
61 1,2-Dibromoethane	107	8.533	8.536	(0.947)	82850	18.9834	19.0
62 1-Chlorohexane	91	9.053	9.052	(1.005)	156797	21.1600	21.2
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	603082	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	285279	20.1660	20.2
65 1,1,1,2-Tetrachloroethane	131	9.133	9.132	(1.014)	76927	19.5008	19.5
66 Ethylbenzene	106	9.163	9.165	(1.017)	152698	19.6453	19.6(Q)
67 p,m-Xylene	106	9.285	9.286	(1.031)	383226	40.3895	40.4
68 o-Xylene	91	9.671	9.672	(1.074)	377217	20.4957	20.5
69 Styrene	104	9.691	9.692	(1.076)	292333	20.1836	20.2
70 Bromoform	173	9.860	9.859	(1.095)	38739	15.8641	15.9
71 1-Methylethylbenzene	105	10.046	10.047	(0.887)	455459	20.7842	20.8
72 1,4-Dichloro-2-Butene	53	10.424	10.432	(0.921)	11584	27.2893	27.3(Q)
73 1,1,2,2-Tetrachloroethane	83	10.369	10.371	(0.916)	97821	18.6482	18.6

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	274471	49.7767	49.8
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	72246	18.0809	18.1
76 n-Propylbenzene	91	10.452	10.453	(0.923)	568899	21.1572	21.2
77 Bromobenzene	77	10.314	10.315	(0.911)	169815	20.8331	20.8
78 1,3,5-Trimethylbenzene	105	10.635	10.636	(0.939)	369435	20.6006	20.6
79 2-Chlorotoluene	91	10.519	10.519	(0.929)	317841	20.7417	20.7
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	353106	20.5560	20.6
81 tert-Butylbenzene	119	10.947	10.946	(0.967)	308884	20.5709	20.6(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	375139	20.8483	20.8
83 sec-Butylbenzene	105	11.164	11.165	(0.986)	484971	20.9816	21.0
84 p-Isopropyltoluene	119	11.318	11.318	(1.000)	398630	21.2189	21.2
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	198285	19.8208	19.8
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	304255	50.0000	
87 1,4-Dichlorobenzene	146	11.343	11.345	(1.002)	201863	19.6961	19.7
124 1,2,3-trimethylbenzene	105	11.405	11.406	(1.007)	351377	20.7578	20.8
88 Benzyl Chloride	91	11.493	11.494	(1.015)	73319	14.9408	14.9
89 n-Butylbenzene	91	11.719	11.721	(1.035)	377713	21.3761	21.4
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	171044	19.2745	19.3
91 1,2-dibromo-3-chloropropane	75	12.483	12.482	(1.103)	8730	15.0387	15.0
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	75352	17.2799	17.3
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	25407	18.8136	18.8(Q)
94 Naphthalene	128	13.524	13.525	(1.195)	120562	14.8026	14.8
95 1,2,3-trichlorobenzene	180	13.762	13.763	(1.216)	42712	13.8975	13.9
103 Isopropyl Ether	45	3.543	3.548	(0.612)	312195	21.0272	21.0
104 Ethyl acetate	43	4.481	4.493	(0.774)	125897	34.2630	34.3
105 Cyclohexanone	55	10.138	10.136	(1.125)	5127	61.0374	61.0(R)
106 Ethyl ether	59	1.937	1.937	(0.335)	65700	20.7465	20.7
107 2-Nitropropane	43	7.491	7.494	(1.294)	137710	35.4205	35.4
108 Tetrahydrofuran	42	4.668	4.674	(0.807)	52285	34.0287	34.0
112 2-Cleve	63	7.101	7.107	(1.227)	80	3.96632	4.0(QR)
116 Ethanol	45	1.936	1.937	(0.335)	60229	1525.81	1520
117 t-butyl formate	59	4.827	4.828	(0.834)	140526	223.982	224(Q)
118 tert-amyl alcohol	59	5.606	5.611	(0.969)	20611	206.342	206(Q)
119 3,3-dimethyl-1-butanol	57	8.602	8.601	(1.487)	13265	140.454	140
120 Chlorotrifluoroethylene	116	1.220	1.179	(0.211)	22	5.34678	5.3(a)
121 2-Chloro-1,1,1-trifluoroethane	118	1.604	1.553	(0.277)	36	5.08013	5.1(aQ)
122 n-Hexane	57	3.205	3.203	(0.554)	149910	23.0718	23.1

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: LCS51.D
Lab Smp Id: 060812LCS51
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 060812LCS51
Level: LOW
Sample Type: WATER

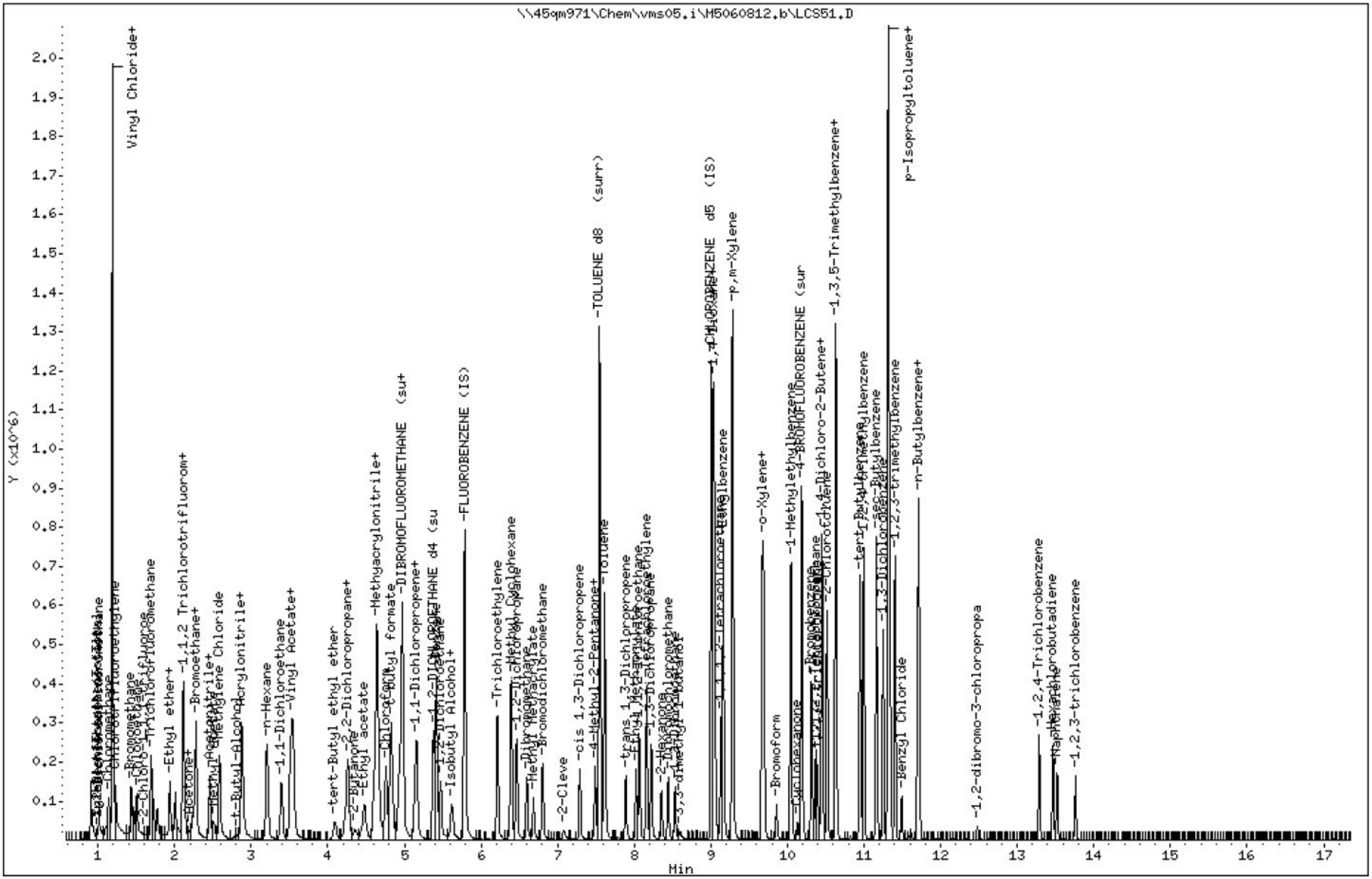
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	742332	-29.31
63 CHLOROBENZENE d5	811097	405549	1622194	603082	-25.65
86 1,4-DICHLOROBENZE	436748	218374	873496	304255	-30.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	-0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\LCS51.D
Date : 08-JUN-2012 08:19
Client ID: 060812LCS51
Sample Info: 060812LCS51
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\LCS51D.D
Lab Smp Id: 060812LCS51D Client Smp ID: 060812LCS51D
Inj Date : 08-JUN-2012 08:47 MS Autotune Date: 06-JUN-2012 06:00
Operator : VW Inst ID: vms05.i
Smp Info : 060812LCS51D
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 5 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				194563	40.8543	40.8
M 2 Xylenes (Total)	100				712771	59.9788	60.0
M 3 Trihalomethanes (Total)	100				385483	77.5569	77.6
4 Dichlorodifluoromethane	85	1.016	1.019	(0.176)	75837	16.7981	16.8
5 Chloromethane	50	1.138	1.138	(0.197)	81809	15.2940	15.3
6 Vinyl Chloride	62	1.203	1.207	(0.208)	107441	19.0648	19.1(q)
7 Bromomethane	96	1.431	1.432	(0.247)	63683	18.4283	18.4(q)
8 Chloroethane	64	1.506	1.507	(0.260)	64684	21.7574	21.8
9 Trichlorofluoromethane	101	1.692	1.692	(0.292)	127706	21.1976	21.2
113 Bromoethane	108	2.262	2.265	(0.391)	57075	19.3261	19.3
10 Acrolein	56	1.184	1.184	(0.205)	528134	45.8969	45.9
11 1,1,2 Trichlorotrifluoromethan	101	2.120	2.118	(0.366)	77139	21.1070	21.1
12 Acetone	43	2.204	2.204	(0.381)	43273	46.3686	46.4
13 1,1-Dichloroethene	61	2.107	2.110	(0.364)	138666	21.0183	21.0
109 t-Butyl-Alcohol	59	2.514	2.809	(0.434)	4371	10.0032	10.0(QR)
14 Acetonitrile	41	2.455	2.460	(0.424)	185994	224.513	224
15 Iodomethane	142	2.234	2.229	(0.386)	50976	50.6366	50.6(qR)
16 Methyl Acetate	43	2.513	2.519	(0.434)	62122	20.9650	21.0
17 Allyl Chloride	41	2.455	2.460	(0.424)	166004	20.6680	20.7
18 Carbon Disulfide	76	2.278	2.278	(0.394)	308235	21.9914	22.0
19 Methylene Chloride	49	2.585	2.586	(0.447)	126928	21.0691	21.1
20 Acrylonitrile	53	2.888	2.896	(0.499)	55063	44.6322	44.6
21 Methyl-tert-butyl ether	73	2.895	2.898	(0.500)	73665	16.5507	16.6

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
22 trans 1,2-Dichloroethene	96	2.873	2.875	(0.496)	91638	20.6805	20.7
23 1,1-Dichloroethane	63	3.394	3.402	(0.587)	169440	20.7559	20.8
24 Vinyl Acetate	43	3.536	3.543	(0.611)	259491	21.4716	21.5
25 Chloroprene	53	3.509	3.514	(0.606)	119333	20.9746	21.0
26 2-Butanone	43	4.358	4.366	(0.753)	57614	42.5837	42.6
27 Propionitrile	54	3.510	3.519	(0.606)	5764	219.092	219(q)
114 tert-Butyl ethyl ether	59	4.096	4.101	(0.708)	54506	16.6409	16.6
28 2,2-Dichloropropane	77	4.232	4.231	(0.731)	59272	18.2910	18.3
29 cis-1,2-Dichloroethene	96	4.264	4.267	(0.737)	102925	20.1738	20.2
30 Methyacrylonitrile	67	4.644	4.651	(0.802)	350172	212.674	213
31 Isobutyl Alcohol	43	5.620	5.601	(0.971)	40036	1087.96	1090(R)
32 Chloroform	83	4.758	4.762	(0.822)	161740	20.9826	21.0
33 Bromochloromethane	49	4.602	4.605	(0.795)	88390	21.5313	21.5
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.973	4.974	(0.859)	206033	52.9414	52.9
35 1,1,1-Trichloroethane	97	4.933	4.934	(0.852)	119520	19.9442	19.9
36 Cyclohexane	56	4.973	4.970	(0.859)	177966	22.0246	22.0
37 1,1-Dichloropropene	75	5.161	5.163	(0.892)	137080	21.6898	21.7
38 Carbon tetrachloride	117	5.140	5.141	(0.888)	81542	17.0824	17.1
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.379	5.380	(0.929)	41167	52.6891	52.7
40 1,2-Dichloroethane	62	5.473	5.480	(0.946)	112582	22.3522	22.4
41 Benzene	78	5.417	5.415	(0.936)	384208	20.8703	20.9
115 tert-Amyl-methyl ether	73	5.622	5.625	(0.972)	83784	18.4192	18.4
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	703472	50.0000	
43 Trichloroethylene	130	6.213	6.216	(1.074)	99791	20.5866	20.6
44 Methyl Cyclohexane	55	6.393	6.394	(1.105)	134195	21.6619	21.7
45 1,2-Dichloropropane	63	6.466	6.467	(1.117)	104340	21.5500	21.6
46 Methyl Methacrylate	69	6.686	6.688	(1.155)	53613	21.1783	21.2
47 Bromodichloromethane	83	6.805	6.804	(1.176)	110974	21.8676	21.9
48 1,4 Dioxane	88	9.033	9.038	(1.561)	920	419.930	420(Q)
49 Dibromomethane	93	6.595	6.600	(1.140)	57804	21.4426	21.4
50 4-Methyl-2-Pentanone	43	7.490	7.494	(1.294)	159931	43.2056	43.2
51 2-Hexanone	43	8.356	8.362	(0.928)	101757	41.7382	41.7
52 cis 1,3-Dichloropropene	75	7.290	7.296	(1.260)	117779	21.6841	21.7
$ 53 TOLUENE d8 (surr)	98	7.547	7.548	(1.304)	790306	53.8692	53.9
54 Toluene	92	7.614	7.614	(1.316)	237182	21.2508	21.2
55 trans 1,3-Dichloropropene	75	7.890	7.894	(1.363)	97838	18.6590	18.6
56 Ethyl Methacrylate	69	8.023	8.025	(1.386)	104810	21.0362	21.0
57 1,1,2-Trichloroethane	97	8.065	8.070	(1.394)	77990	21.3941	21.4
58 1,3-Dichloropropane	76	8.225	8.224	(0.913)	139384	21.0428	21.0
59 Tetrachloroethylene	164	8.163	8.166	(0.906)	79352	19.5455	19.5
60 Dibromochloromethane	129	8.445	8.449	(0.937)	73738	18.0021	18.0
61 1,2-Dibromoethane	107	8.534	8.536	(0.947)	84032	20.2995	20.3
62 1-Chlorohexane	91	9.052	9.052	(1.005)	147377	20.9686	21.0
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	572027	50.0000	
64 Chlorobenzene	112	9.035	9.036	(1.003)	264908	19.7426	19.7
65 1,1,1,2-Tetrachloroethane	131	9.133	9.132	(1.014)	75031	20.0527	20.0
66 Ethylbenzene	106	9.163	9.165	(1.017)	147718	20.0364	20.0
67 p,m-Xylene	106	9.284	9.286	(1.031)	355715	39.5253	39.5
68 o-Xylene	91	9.670	9.672	(1.073)	357056	20.4535	20.4
69 Styrene	104	9.691	9.692	(1.076)	278949	20.3052	20.3
70 Bromoform	173	9.861	9.859	(1.095)	39031	16.7046	16.7
71 1-Methylethylbenzene	105	10.045	10.047	(0.887)	429803	20.1146	20.1
72 1,4-Dichloro-2-Butene	53	10.425	10.432	(0.921)	12211	29.3124	29.3(Q)
73 1,1,2,2-Tetrachloroethane	83	10.368	10.371	(0.916)	103772	20.2881	20.3

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	264971	49.2815	49.3
75 1,2,3- trichloropropane	75	10.392	10.395	(0.918)	91248	23.4200	23.4
76 n-Propylbenzene	91	10.452	10.453	(0.923)	532650	20.3152	20.3
77 Bromobenzene	77	10.314	10.315	(0.911)	164032	20.6378	20.6
78 1,3,5-Trimethylbenzene	105	10.635	10.636	(0.939)	349118	19.9651	20.0
79 2-Chlorotoluene	91	10.518	10.519	(0.929)	301459	20.1753	20.2
80 4-Chlorotoluene	91	10.630	10.631	(0.939)	327138	19.5309	19.5
81 tert-Butylbenzene	119	10.948	10.946	(0.967)	290365	19.8316	19.8(Q)
82 1,2,4-trimethylbenzene	105	10.997	10.998	(0.971)	349776	19.9354	19.9
83 sec-Butylbenzene	105	11.164	11.165	(0.986)	445329	19.7588	19.8
84 p-Isopropyltoluene	119	11.317	11.318	(1.000)	371166	20.2618	20.3
85 1,3-Dichlorobenzene	146	11.252	11.252	(0.994)	189886	19.4662	19.5
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.320	11.321	(1.000)	296675	50.0000	
87 1,4-Dichlorobenzene	146	11.343	11.345	(1.002)	192000	19.2124	19.2
124 1,2,3-trimethylbenzene	105	11.405	11.406	(1.008)	334508	20.2661	20.3
88 Benzyl Chloride	91	11.493	11.494	(1.015)	85532	17.8748	17.9
89 n-Butylbenzene	91	11.720	11.721	(1.035)	355938	20.6584	20.6
90 1,2-Dichlorobenzene	146	11.704	11.706	(1.034)	169506	19.5892	19.6
91 1,2-dibromo-3-chloropropane	75	12.481	12.482	(1.102)	11714	20.6946	20.7
92 1,2,4-Trichlorobenzene	180	13.288	13.293	(1.174)	84603	19.8971	19.9
93 Hexachlorobutadiene	223	13.469	13.464	(1.190)	25553	19.4052	19.4(q)
94 Naphthalene	128	13.524	13.525	(1.195)	161418	20.3253	20.3
95 1,2,3-trichlorobenzene	180	13.762	13.763	(1.216)	57497	19.1862	19.2
103 Isopropyl Ether	45	3.546	3.548	(0.613)	300979	21.3916	21.4
104 Ethyl acetate	43	4.480	4.493	(0.774)	147584	42.3838	42.4
105 Cyclohexanone	55	10.132	10.136	(1.125)	10427	130.874	131
106 Ethyl ether	59	1.937	1.937	(0.335)	64533	21.5037	21.5
107 2-Nitropropane	43	7.490	7.494	(1.294)	159762	43.3625	43.4
108 Tetrahydrofuran	42	4.669	4.674	(0.807)	58908	40.4570	40.4
112 2-Cleve	63	7.106	7.107	(1.228)	239	12.5039	12.5(Q)
116 Ethanol	45	1.937	1.937	(0.335)	62433	1669.01	1670
117 t-butyl formate	59	4.827	4.828	(0.834)	126310	215.204	215(Q)
118 tert-amyl alcohol	59	5.608	5.611	(0.969)	33633	355.309	355(q)
119 3,3-dimethyl-1-butanol	57	8.599	8.601	(1.486)	23932	232.149	232(q)
120 Chlorotrifluoroethylene	116	1.266	1.179	(0.219)	16	4.10337	4.1(aqR)
121 2-Chloro-1,1,1-trifluoroethane	118	1.574	1.553	(0.272)	16	2.38256	2.4(aQ)
122 n-Hexane	57	3.205	3.203	(0.554)	140310	22.7872	22.8

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
q - Qualifier signal exceeded ratio warning limit.

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: LCS51D.D
Lab Smp Id: 060812LCS51D
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 060812LCS51D
Level: LOW
Sample Type: WATER

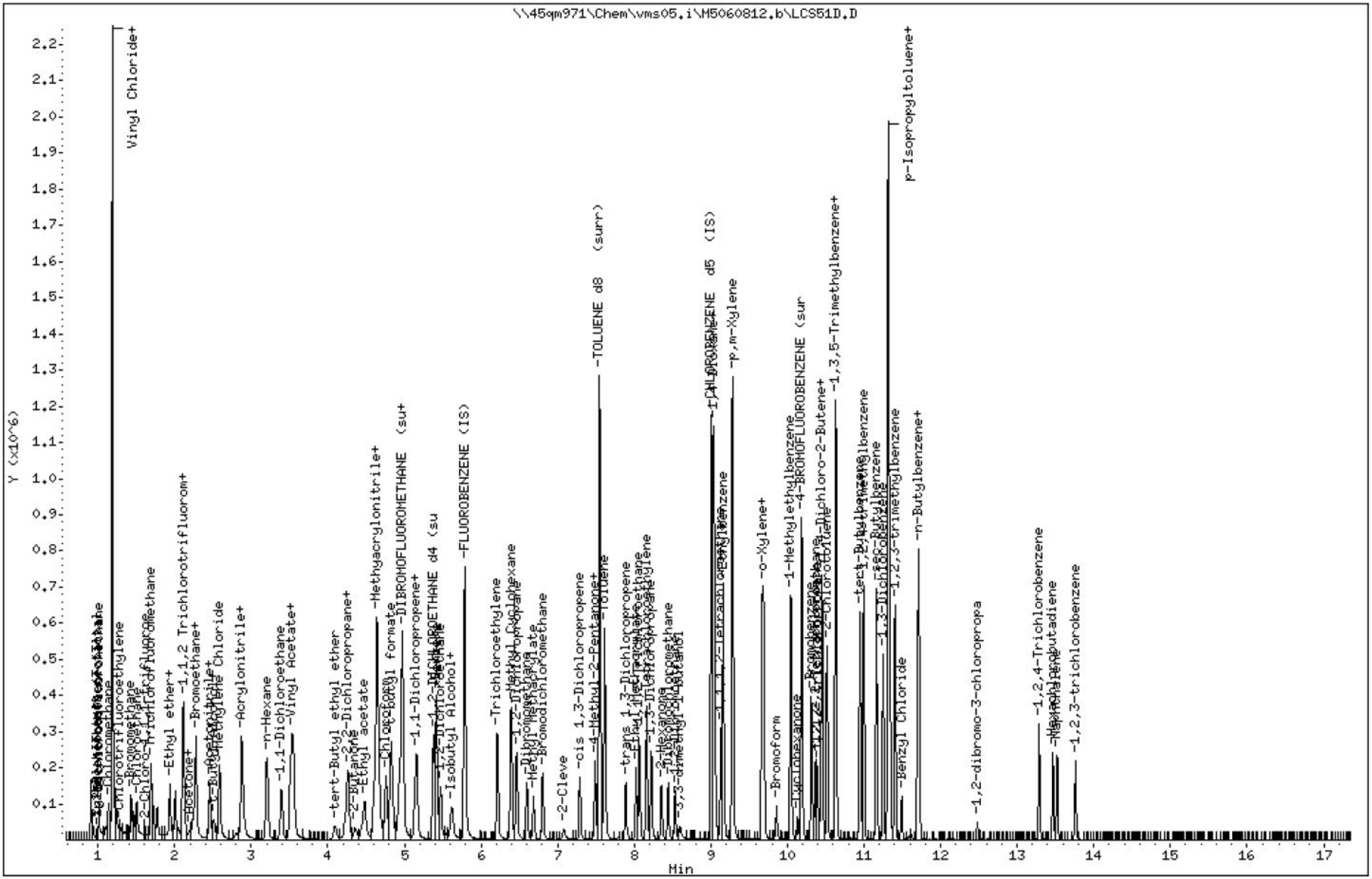
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	703472	-33.01
63 CHLOROBENZENE d5	811097	405549	1622194	572027	-29.47
86 1,4-DICHLOROBENZE	436748	218374	873496	296675	-32.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\LCS51D.D
Date : 08-JUN-2012 08:47
Client ID: 060812LCS51D
Sample Info: 060812LCS51D
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\BLK52.D
Lab Smp Id: 060812BLK52 Client Smp ID: 060812BLK52
Inj Date : 08-JUN-2012 10:42 MS Autotune Date: 08-JUN-2012 10:08
Operator : VW Inst ID: vms05.i
Smp Info : 060812BLK52
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 9 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.973	4.974	(0.859)	221027	51.4135	51.4
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.379	5.380	(0.929)	43865	50.8234	50.8
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	777093	50.0000	
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	854944	52.7542	52.8
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	602273	50.0000	
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	285473	53.5199	53.5
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	294318	50.0000	

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: BLK52.D
Lab Smp Id: 060812BLK52
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Client Smp ID: 060812BLK52
Level: LOW
Sample Type: WATER

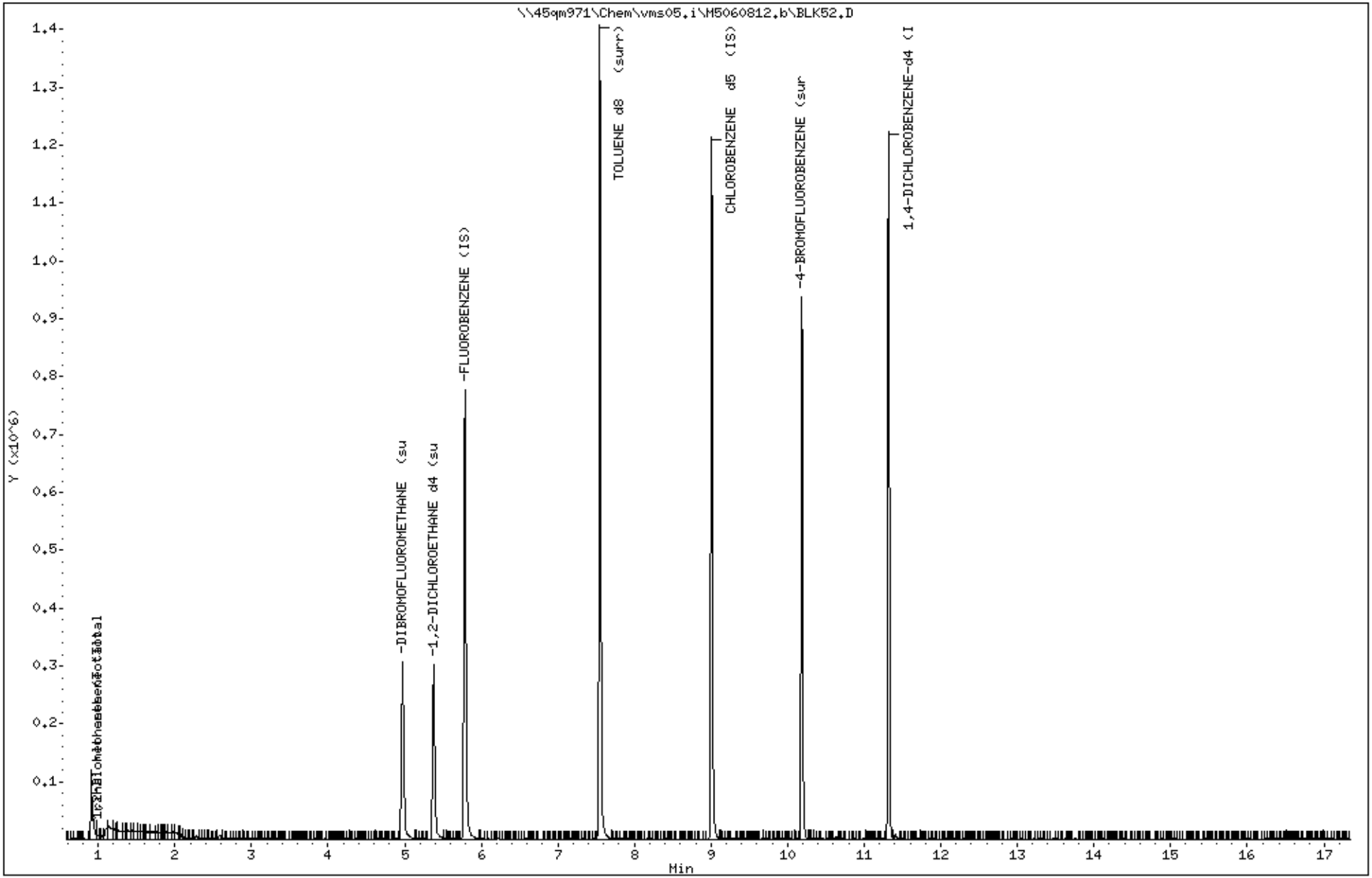
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	777093	-26.00
63 CHLOROBENZENE d5	811097	405549	1622194	602273	-25.75
86 1,4-DICHLOROBENZE	436748	218374	873496	294318	-32.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\BLK52.D
Date : 08-JUN-2012 10:42
Client ID: 060812BLK52
Sample Info: 060812BLK52
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



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PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\628003.D
Lab Smp Id: 350628003
Inj Date : 08-JUN-2012 15:30 MS Autotune Date: 08-JUN-2012 11:00
Operator : VW Inst ID: vms05.i
Smp Info : 350628003;3506280;1;
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 45QM971

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	207174	50.0410	50.0
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.381	5.380	(0.930)	40899	49.2059	49.2
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	748367	50.0000	
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	794206	50.8875	50.9
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	576876	50.0000	
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	266080	50.9689	51.0
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	288054	50.0000	

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 628003.D
Lab Smp Id: 350628003
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Level: LOW
Sample Type: WATER

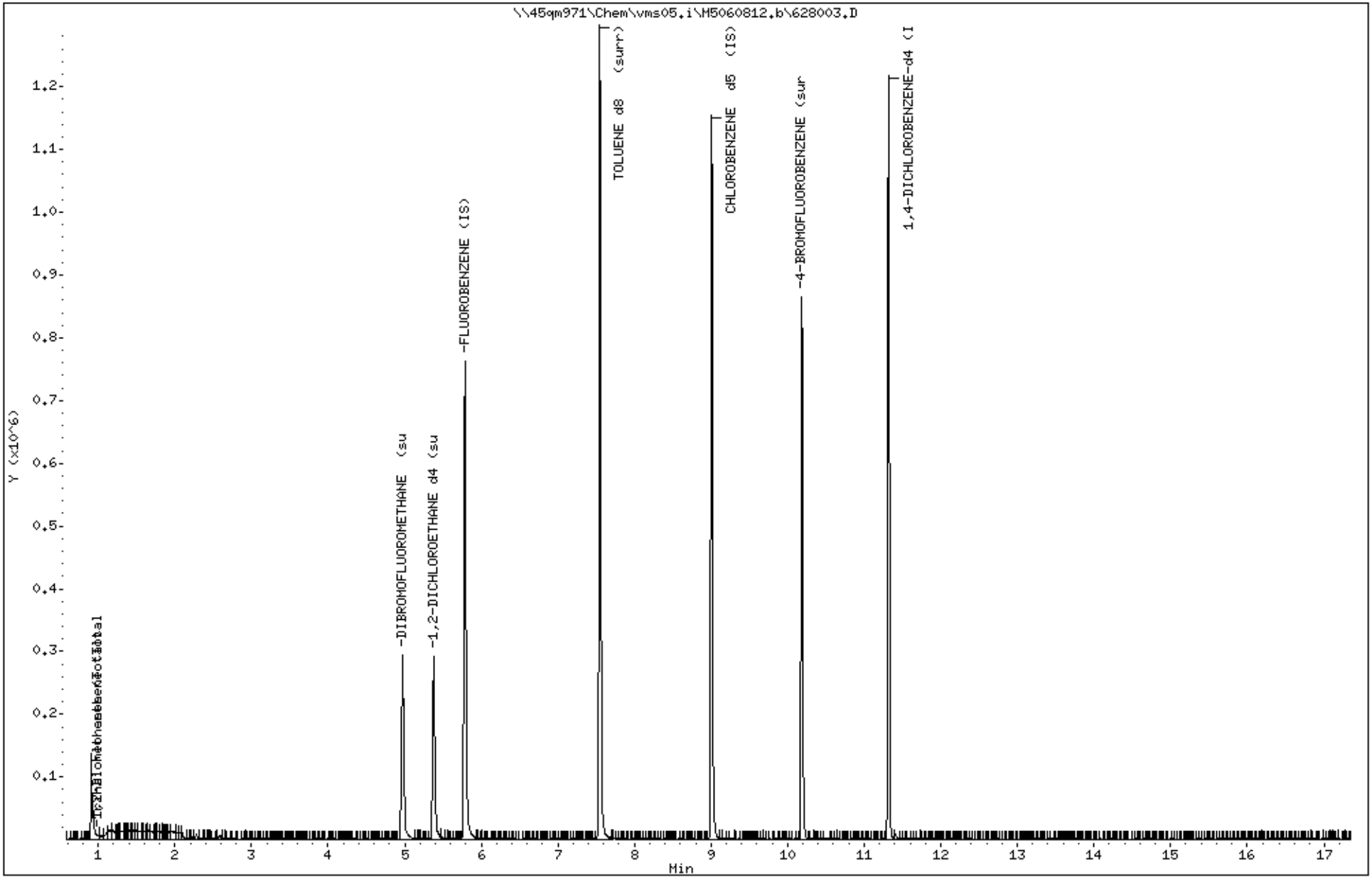
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	748367	-28.74
63 CHLOROBENZENE d5	811097	405549	1622194	576876	-28.88
86 1,4-DICHLOROBENZE	436748	218374	873496	288054	-34.05

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\628003.D
Date : 08-JUN-2012 15:30
Client ID:
Sample Info: 350628003;3506280;1;
Purge Volume: 5.0
Column phase: DB-624

Instrument: vms05.i
Operator: VW
Column diameter: 0.18



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3506280

PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\628002.D
Lab Smp Id: 350628002
Inj Date : 08-JUN-2012 15:58 MS Autotune Date: 08-JUN-2012 11:00
Operator : VW Inst ID: vms05.i
Smp Info : 350628002;3506280;1;
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 45QM971

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				4111	0.75812	0.76(a)
29 cis-1,2-Dichloroethene	96	4.265	4.267	(0.737)	4111	0.75812	0.76
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	205182	49.6044	49.6
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	41760	50.2869	50.3
* 42 FLUOROBENZENE (IS)	96	5.787	5.787	(1.000)	747695	50.0000	
43 Trichloroethylene	130	6.220	6.216	(1.075)	3180	0.61722	0.62
$ 53 TOLUENE d8 (surr)	98	7.547	7.548	(1.304)	781918	50.1452	50.1
* 63 CHLOROBENZENE d5 (IS)	117	9.008	9.008	(1.000)	580066	50.0000	
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	262305	51.6061	51.6
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	280461	50.0000	
124 1,2,3-trimethylbenzene	105	11.406	11.406	(1.008)	2867	0.18374	0.18

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 628002.D
Lab Smp Id: 350628002
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34
Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	747695	-28.80
63 CHLOROBENZENE d5	811097	405549	1622194	580066	-28.48
86 1,4-DICHLOROBENZE	436748	218374	873496	280461	-35.78

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.00
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	-0.01
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\628002.D

Date : 08-JUN-2012 15:58

Client ID:

Instrument: vms05.i

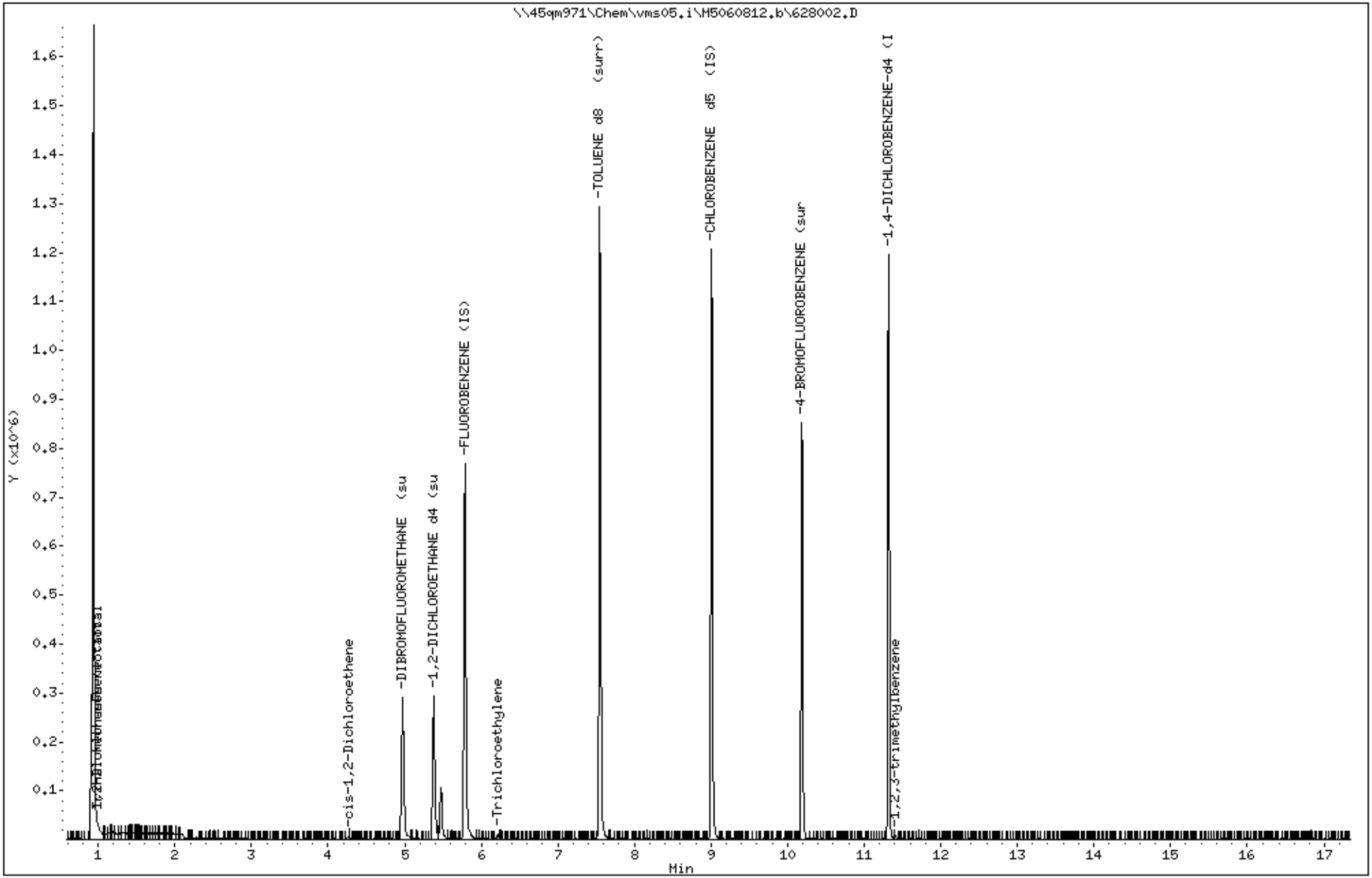
Sample Info: 350628002;3506280;1;

Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18



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3506280

PEL Laboratories, Inc.

Data file : \\45qm971\Chem\vms05.i\M5060812.b\628001.D
Lab Smp Id: 350628001
Inj Date : 08-JUN-2012 16:27 MS Autotune Date: 08-JUN-2012 11:00
Operator : VW Inst ID: vms05.i
Smp Info : 350628001;3506280;1;
Misc Info : 1
Comment : column: db-624 20M X 0.18mm 1um film
Method : \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Meth Date : 09-Jun-2012 10:20 vwenzel Quant Type: ISTD
Cal Date : 05-JUN-2012 07:14 Cal File: 200PPT.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: all.sub
Target Version: 4.14
Processing Host: 45QM971

Concentration Formula: Amt * DF * Vf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vf	5.000	Final Volume
Vo	5.000	Sample Volume
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
M 1 1,2-Dichloroethene (Total)	100				3960	0.74080	0.74(a)
29 cis-1,2-Dichloroethene	96	4.266	4.267	(0.737)	3960	0.74080	0.74
$ 34 DIBROMOFLUOROMETHANE (surr)	113	4.974	4.974	(0.859)	209585	51.3995	51.4
$ 39 1,2-DICHLOROETHANE d4 (surr)	102	5.380	5.380	(0.930)	40966	50.0421	50.0
* 42 FLUOROBENZENE (IS)	96	5.788	5.787	(1.000)	737066	50.0000	
43 Trichloroethylene	130	6.217	6.216	(1.074)	3060	0.60250	0.60
$ 53 TOLUENE d8 (surr)	98	7.548	7.548	(1.304)	802269	52.1922	52.2
* 63 CHLOROBENZENE d5 (IS)	117	9.009	9.008	(1.000)	578038	50.0000	
$ 74 4-BROMOFLUOROBENZENE (surr)	95	10.186	10.186	(0.900)	265583	52.9004	52.9
* 86 1,4-DICHLOROBENZENE-d4 (IS)	152	11.321	11.321	(1.000)	277018	50.0000	
124 1,2,3-trimethylbenzene	105	11.404	11.406	(1.007)	2934	0.19037	0.19

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

PEL Laboratories, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: vms05.i
Lab File ID: 628001.D
Lab Smp Id: 350628001
Analysis Type: VOA
Quant Type: ISTD
Operator: VW
Method File: \\45qm971\Chem\vms05.i\M5060812.b\8260B.m
Misc Info: 1

Calibration Date: 05-JUN-2012
Calibration Time: 10:34

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	1050188	525094	2100376	737066	-29.82
63 CHLOROBENZENE d5	811097	405549	1622194	578038	-28.73
86 1,4-DICHLOROBENZE	436748	218374	873496	277018	-36.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
42 FLUOROBENZENE (IS	5.79	5.29	6.29	5.79	0.01
63 CHLOROBENZENE d5	9.01	8.51	9.51	9.01	0.00
86 1,4-DICHLOROBENZE	11.32	10.82	11.82	11.32	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\45qm971\Chem\vms05.i\M5060812.b\628001.D

Date : 08-JUN-2012 16:27

Client ID:

Instrument: vms05.i

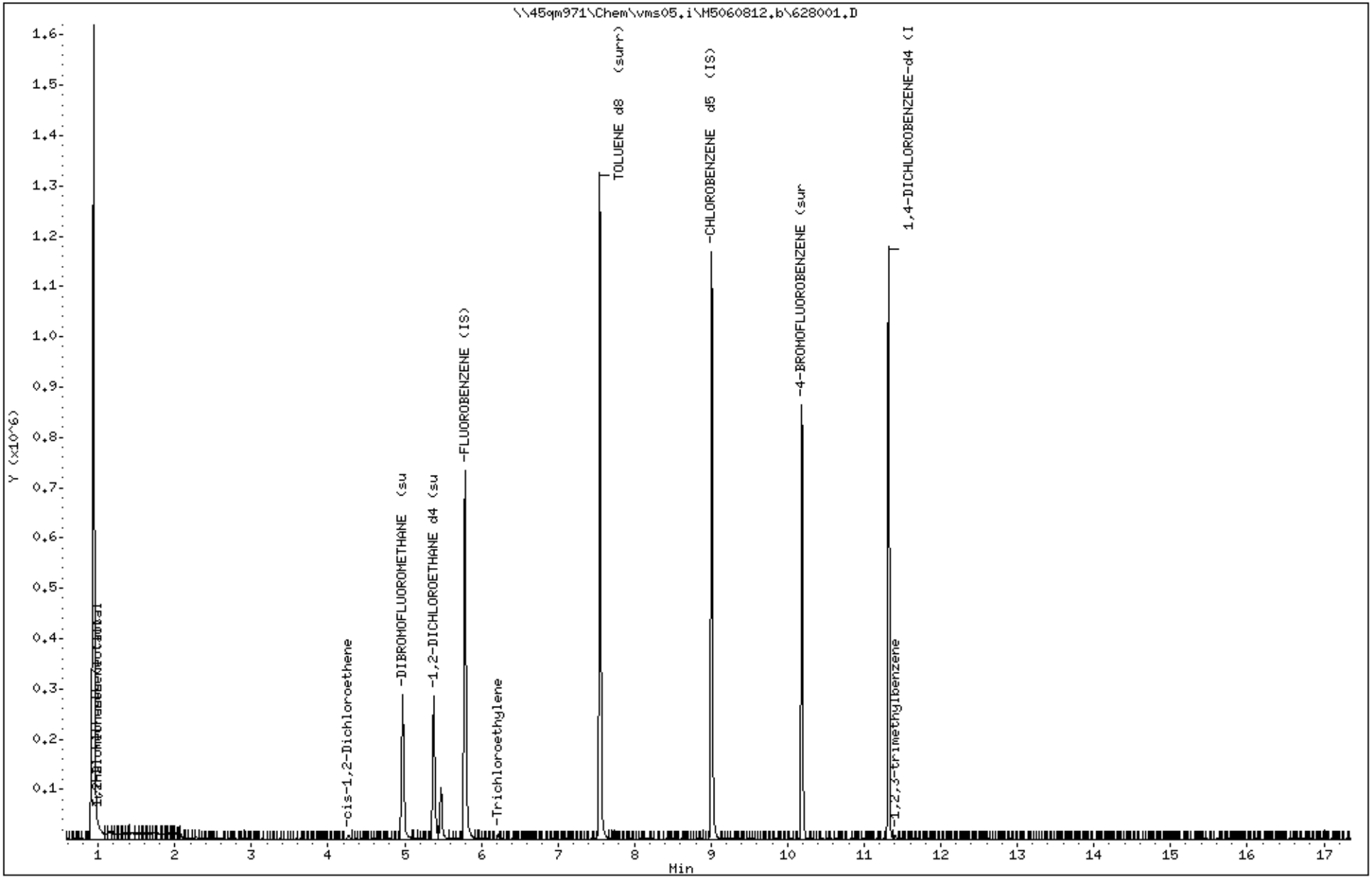
Sample Info: 350628001;3506280;1;

Purge Volume: 5.0

Operator: VW

Column phase: DB-624

Column diameter: 0.18



135

3506280

End Of Report

140612 1158

CH2MHILL
Applied Sciences Laboratory

ANALYTICAL REPORT

For:
SLOP

ASL Report #: L1791
Project ID: 364298.01.SL.VI.VM
Attn: Chris English/STL
cc:
Shane Lowe/STL

Authorized and Released By:

Laboratory Project Manager
Ben Thompson
(541) 758-0235 ext.23132
July 02, 2012

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

CH2M HILL Applied Sciences Laboratory • 1100 NE Circle Boulevard, Suite 300 • Corvallis, Oregon 97330 • www.ch2mhill.com/asl

ASL Report #: L1791

Sample Receipt Comments

We certify that the test results meet all standard ASL requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
L179101	PP-1-AA-01-060512	06/05/12 10:04	06/07/12
L179102	PP-1-IA-01-060512	06/05/12 10:02	06/07/12
L179103	PP-1-SG-01-060512	06/05/12 10:03	06/07/12
L179104	PP-1-SG-01-060512-FD	06/05/12 10:03	06/07/12

ASL Report #: L1791

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Sample Equipment Certification 42

Chain of Custody/Shipping Documents 67

CH2MHILL
Applied Sciences Laboratory (ASL)

CH2M HILL
Applied Sciences Laboratory (ASL)
1100 NE Circle Blvd
Suite 300
Corvallis, OR 97330
Tel 541.768.3120
Fax 541.752.0276

Organic CLP-Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N — The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ — The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

P — The primary and confirmation analyte result recoveries do not match.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Inorganic CLP-Like Data Qualifiers

U — The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

E — The analyte was positively identified; the associated numerical value exceeded the instrument calibration range.

N — The matrix spike/matrix spike duplicate recovery for the analyte is outside of acceptance criteria—qualifier is applied to the native sample only.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TO-15 SIM

CASE NARRATIVE
VOLATILE ORGANIC ANALYSIS

Analytical Method: TO-15SIM SDG: L1791

Lab Name: CH2M HILL Applied Science Laboratories Project # 364298.01.SL.VI.VM

Base/Command: SLOP Prime Contractor:

I. RECEIPT

A. Date: June 07, 2012

B. Sample Information:

LAB SAMPLE ID	CLIENT SAMPLE ID	CANISTER ID	SAMPLE MATRIX	DATE SAMPLED	TIME SAMPLED	RECEIVED PRESS. (torr)
L179101	PP-1-AA-01-060512	6L2635S	AIR	06/05/2012	10:04	383
L179102	PP-1-IA-01-060512	6L2515S	AIR	06/05/2012	10:02	714
L179103	PP-1-SG-01-060512	6L2563S	AIR	06/05/2012	10:03	575
L179104	PP-1-SG-01-060512-FD	6L2599A	AIR	06/05/2012	10:03	89

II. Holding Times:
All acceptance criteria were met.

III. Analysis:

A. Calibration:
All acceptance criteria were met.

B. Blanks:
All acceptance criteria were met.

C. Duplicate Sample(s):
All acceptance criteria were met.

D. Instrument Performance Check:
All acceptance criteria were met.

E. Surrogate Recoveries:
All acceptance criteria were met.

F. Internal Standards:
All acceptance criteria were met.

G. Laboratory Control Sample (LCS):
All acceptance criteria were met.

H. Matrix Spike(MS)/Matrix Spike Duplicate(MSD):
Not applicable.

IV. Sampling Equipment Exceptions:
None.

V. Documentation Exceptions:
None.

VI. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared By: _____ Date: 6/22/12

Reviewed By: _____ Date: 07/02/12

SAMPLE DATA
SUMMARY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **PP-1-AA-01-060512**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179101

Lab File ID: L179101.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 2.87

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.0149	0.149	0.149	U
75-09-2	Methylene chloride	0.0406	5.09	0.530	J
156-60-5	trans-1,2-Dichloroethene	0.0231	0.231	0.231	U
156-59-2	cis-1,2-Dichloroethene	0.0464	0.231	0.231	U
67-66-3	Chloroform	0.0285	0.285	0.0889	J
107-06-2	1,2-Dichloroethane	0.0236	0.236	0.0564	J
56-23-5	Carbon tetrachloride	0.0367	0.367	0.506	
71-43-2	Benzene	0.0187	0.187	0.527	
79-01-6	Trichloroethene (TCE)	0.0314	0.314	0.113	J
79-00-5	1,1,2-Trichloroethane	0.0319	0.319	0.319	U
127-18-4	Tetrachloroethene (PCE)	0.0396	0.396	0.110	J
79-34-5	1,1,2,2-Tetrachloroethane	0.0401	0.401	0.401	U
91-20-3	Naphthalene	0.153	0.306	2.05	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-IA-01-060512

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179102

Lab File ID: L179102R.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/21/12

Dilution Factor: 4.18

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.0217	0.217	0.217	U
75-09-2	Methylene chloride	0.0590	7.39	0.837	J
156-60-5	trans-1,2-Dichloroethene	0.0337	0.337	0.337	U
156-59-2	cis-1,2-Dichloroethene	0.0674	0.337	0.337	U
67-66-3	Chloroform	0.0415	0.415	1.42	
107-06-2	1,2-Dichloroethane	0.0344	0.344	0.0980	J
56-23-5	Carbon tetrachloride	0.0535	0.535	0.582	
71-43-2	Benzene	0.0272	0.272	0.676	
79-01-6	Trichloroethene (TCE)	0.0457	0.457	0.705	
79-00-5	1,1,2-Trichloroethane	0.0464	0.464	0.171	J
127-18-4	Tetrachloroethene (PCE)	0.0577	0.577	0.869	
79-34-5	1,1,2,2-Tetrachloroethane	0.0584	0.584	0.559	J
91-20-3	Naphthalene	0.223	0.446	66.1	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-SG-01-060512

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179103

Lab File ID: L179103.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 1.92

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00998	0.0998	0.0998	U
75-09-2	Methylene chloride	0.0271	3.39	0.200	J
156-60-5	trans-1,2-Dichloroethene	0.0155	0.155	0.155	U
156-59-2	cis-1,2-Dichloroethene	0.0310	0.155	0.155	U
67-66-3	Chloroform	0.0191	0.191	0.314	
107-06-2	1,2-Dichloroethane	0.0158	0.158	0.0343	J
56-23-5	Carbon tetrachloride	0.0246	0.246	0.474	
71-43-2	Benzene	0.0125	0.125	0.263	
79-01-6	Trichloroethene (TCE)	0.0210	0.210	0.518	
79-00-5	1,1,2-Trichloroethane	0.0213	0.213	0.213	U
127-18-4	Tetrachloroethene (PCE)	0.0265	0.265	1.04	
79-34-5	1,1,2,2-Tetrachloroethane	0.0268	0.268	0.0602	J
91-20-3	Naphthalene	0.102	0.205	4.73	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-SG-01-060512-FD

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179104

Lab File ID: L179104.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 12.3

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.0640	0.640	0.640	U
75-09-2	Methylene chloride	0.174	21.7	0.919	J
156-60-5	trans-1,2-Dichloroethene	0.0992	0.992	0.291	J
156-59-2	cis-1,2-Dichloroethene	0.198	0.992	1.23	
67-66-3	Chloroform	0.122	1.22	0.219	J
107-06-2	1,2-Dichloroethane	0.101	1.01	0.207	J
56-23-5	Carbon tetrachloride	0.157	1.57	0.417	J
71-43-2	Benzene	0.0799	0.799	1.28	
79-01-6	Trichloroethene (TCE)	0.134	1.34	3.12	
79-00-5	1,1,2-Trichloroethane	0.137	1.37	1.37	U
127-18-4	Tetrachloroethene (PCE)	0.170	1.70	3.46	
79-34-5	1,1,2,2-Tetrachloroethane	0.172	1.72	1.72	U
91-20-3	Naphthalene	0.656	1.31	3.76	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0621**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0621

Lab File ID: XB1-0621.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 06/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	0.114	J
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0290	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0243	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB2-0620**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB2-0620

Lab File ID: XB2-0620.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 06/20/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	0.0181	J
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0256	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-AA-01-060512

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179101

Lab File ID: L179101.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 2.87

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00574	0.0574	0.0574	U
75-09-2	Methylene chloride	0.0115	1.440	0.150	J
156-60-5	trans-1,2-Dichloroethene	0.00574	0.0574	0.0574	U
156-59-2	cis-1,2-Dichloroethene	0.0115	0.0574	0.0574	U
67-66-3	Chloroform	0.00574	0.0574	0.0179	J
107-06-2	1,2-Dichloroethane	0.00574	0.0574	0.0137	J
56-23-5	Carbon tetrachloride	0.00574	0.0574	0.0791	
71-43-2	Benzene	0.00574	0.0574	0.162	
79-01-6	Trichloroethene (TCE)	0.00574	0.0574	0.0207	J
79-00-5	1,1,2-Trichloroethane	0.00574	0.0574	0.0574	U
127-18-4	Tetrachloroethene (PCE)	0.00574	0.0574	0.016	J
79-34-5	1,1,2,2-Tetrachloroethane	0.00574	0.0574	0.0574	U
91-20-3	Naphthalene	0.0287	0.0574	0.384	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-IA-01-060512

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179102

Lab File ID: L179102R.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/21/12

Dilution Factor: 4.18

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00836	0.0836	0.0836	U
75-09-2	Methylene chloride	0.0167	2.090	0.237	J
156-60-5	trans-1,2-Dichloroethene	0.00836	0.0836	0.0836	U
156-59-2	cis-1,2-Dichloroethene	0.0167	0.0836	0.0836	U
67-66-3	Chloroform	0.00836	0.0836	0.285	
107-06-2	1,2-Dichloroethane	0.00836	0.0836	0.0238	J
56-23-5	Carbon tetrachloride	0.00836	0.0836	0.091	
71-43-2	Benzene	0.00836	0.0836	0.208	
79-01-6	Trichloroethene (TCE)	0.00836	0.0836	0.129	
79-00-5	1,1,2-Trichloroethane	0.00836	0.0836	0.0309	J
127-18-4	Tetrachloroethene (PCE)	0.00836	0.0836	0.126	
79-34-5	1,1,2,2-Tetrachloroethane	0.00836	0.0836	0.0801	J
91-20-3	Naphthalene	0.0418	0.0836	12.400	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-SG-01-060512

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179103

Lab File ID: L179103.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 1.92

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00384	0.0384	0.0384	U
75-09-2	Methylene chloride	0.00768	0.960	0.0565	J
156-60-5	trans-1,2-Dichloroethene	0.00384	0.0384	0.0384	U
156-59-2	cis-1,2-Dichloroethene	0.00768	0.0384	0.0384	U
67-66-3	Chloroform	0.00384	0.0384	0.0633	
107-06-2	1,2-Dichloroethane	0.00384	0.0384	0.00834	J
56-23-5	Carbon tetrachloride	0.00384	0.0384	0.074	
71-43-2	Benzene	0.00384	0.0384	0.0808	
79-01-6	Trichloroethene (TCE)	0.00384	0.0384	0.0949	
79-00-5	1,1,2-Trichloroethane	0.00384	0.0384	0.0384	U
127-18-4	Tetrachloroethene (PCE)	0.00384	0.0384	0.151	
79-34-5	1,1,2,2-Tetrachloroethane	0.00384	0.0384	0.00862	J
91-20-3	Naphthalene	0.0192	0.0384	0.887	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

PP-1-SG-01-060512-FD

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: L179104

Lab File ID: L179104.D

Level: (LOW/MED) LOW

Date Received: 06/07/12

Date Analyzed: 06/20/12

Dilution Factor: 12.3

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.0246	0.246	0.246	U
75-09-2	Methylene chloride	0.0492	6.150	0.260	J
156-60-5	trans-1,2-Dichloroethene	0.0246	0.246	0.0721	J
156-59-2	cis-1,2-Dichloroethene	0.0492	0.246	0.305	
67-66-3	Chloroform	0.0246	0.246	0.0441	J
107-06-2	1,2-Dichloroethane	0.0246	0.246	0.0503	J
56-23-5	Carbon tetrachloride	0.0246	0.246	0.0652	J
71-43-2	Benzene	0.0246	0.246	0.393	
79-01-6	Trichloroethene (TCE)	0.0246	0.246	0.572	
79-00-5	1,1,2-Trichloroethane	0.0246	0.246	0.246	U
127-18-4	Tetrachloroethene (PCE)	0.0246	0.246	0.502	
79-34-5	1,1,2,2-Tetrachloroethane	0.0246	0.246	0.246	U
91-20-3	Naphthalene	0.123	0.246	0.706	

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

XB2-0620

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB2-0620

Lab File ID: XB2-0620.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 06/20/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.00511	J
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00788	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0621**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0621

Lab File ID: XB1-0621.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 06/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.0322	J
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00891	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00445	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

QC DATA SUMMARY

AIR VOLATILE SURROGATE RECOVERY

SDG No.: L1791 Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

GC Column: ZB-624 ID: 0.25 (mm) Instrument Name: MSG

	Field/QC Sample ID	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	# Out
1	BS1X0620	101	105											
2	XB2-0620	98	79											
3	PP-1-AA-01-060512	100	95											
4	PP-1-SG-01-060512	100	103											
5	PP-1-SG-01-060512-FD	98	97											
6	BS1X0621	101	103											
7	XB1-0621	96	81											
8	PP-1-IA-01-060512	100	102											

* Values outside of QC limits

D Surrogate diluted out

		QC Limits
S1:	Toluene-d8	(70-130)
S2:	4-Bromofluorobenzene	(70-130)

AIR VOLATILE BLANK SPIKE RECOVERY

SDG No.: L1791 Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM Blank Spike ID: BS1X0620

GC Column: ZB-624 ID: 0.25 (mm) Instrument Name: MSG

Analyte	Spike Added (UG/M3)	BS Result (UG/M3)	%R	QC Limits %R	Q
Naphthalene	2.67	2.80	105	70-130	
Vinyl Chloride	1.30	1.31	101	70-130	
Methylene chloride	1.77	1.70	96	70-130	
trans-1,2-Dichloroethene	2.02	1.94	96	70-130	
cis-1,2-Dichloroethene	2.02	1.90	94	70-130	
Chloroform	2.48	2.32	94	70-130	
1,2-Dichloroethane	2.06	1.94	94	70-130	
Carbon tetrachloride	3.20	3.21	100	70-130	
Benzene	1.62	1.39	86	70-130	
Trichloroethene (TCE)	2.73	2.63	96	70-130	
1,1,2-Trichloroethane	2.77	2.75	99	70-130	
Tetrachloroethene (PCE)	3.45	3.39	98	70-130	
1,1,2,2-Tetrachloroethane	3.49	3.68	105	70-130	

* Values outside of QC limits

Comments:

AIR VOLATILE BLANK SPIKE RECOVERY

SDG No.: L1791 Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM Blank Spike ID: BS1X0621

GC Column: ZB-624 ID: 0.25 (mm) Instrument Name: MSG

Analyte	Spike Added (UG/M3)	BS Result (UG/M3)	%R	QC Limits %R	Q
Naphthalene	2.67	2.73	102	70-130	
Vinyl Chloride	1.30	1.34	103	70-130	
Methylene chloride	1.77	1.54	87	70-130	
trans-1,2-Dichloroethene	2.02	1.96	97	70-130	
cis-1,2-Dichloroethene	2.02	1.93	96	70-130	
Chloroform	2.48	2.37	96	70-130	
1,2-Dichloroethane	2.06	1.97	96	70-130	
Carbon tetrachloride	3.20	3.17	99	70-130	
Benzene	1.62	1.41	87	70-130	
Trichloroethene (TCE)	2.73	2.70	99	70-130	
1,1,2-Trichloroethane	2.77	2.80	101	70-130	
Tetrachloroethene (PCE)	3.45	3.48	101	70-130	
1,1,2,2-Tetrachloroethane	3.49	3.74	107	70-130	

* Values outside of QC limits

Comments:

AIR VOLATILE BLANK SPIKE RECOVERY

SDG No.: L1791 Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM Blank Spike ID: BS1X0620

GC Column: ZB-624 ID: 0.25 (mm) Instrument Name: MSG

Analyte	Spike Added (PPBV)	BS Result (PPBV)	%R	QC Limits %R	Q
Naphthalene	0.500	0.525	105	70-130	
Vinyl Chloride	0.500	0.504	101	70-130	
Methylene chloride	0.500	0.481	96	70-130	
trans-1,2-Dichloroethene	0.500	0.482	96	70-130	
cis-1,2-Dichloroethene	0.500	0.472	94	70-130	
Chloroform	0.500	0.468	94	70-130	
1,2-Dichloroethane	0.500	0.471	94	70-130	
Carbon tetrachloride	0.500	0.501	100	70-130	
Benzene	0.500	0.429	86	70-130	
Trichloroethene (TCE)	0.500	0.482	96	70-130	
1,1,2-Trichloroethane	0.500	0.495	99	70-130	
Tetrachloroethene (PCE)	0.500	0.491	98	70-130	
1,1,2,2-Tetrachloroethane	0.500	0.527	105	70-130	

* Values outside of QC limits

Comments:

AIR VOLATILE BLANK SPIKE RECOVERY

SDG No.: L1791 Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM Blank Spike ID: BS1X0621

GC Column: ZB-624 ID: 0.25 (mm) Instrument Name: MSG

Analyte	Spike Added (PPBV)	BS Result (PPBV)	%R	QC Limits %R	Q
Naphthalene	0.500	0.512	102	70-130	
Vinyl Chloride	0.500	0.514	103	70-130	
Methylene chloride	0.500	0.435	87	70-130	
trans-1,2-Dichloroethene	0.500	0.485	97	70-130	
cis-1,2-Dichloroethene	0.500	0.478	96	70-130	
Chloroform	0.500	0.478	96	70-130	
1,2-Dichloroethane	0.500	0.479	96	70-130	
Carbon tetrachloride	0.500	0.495	99	70-130	
Benzene	0.500	0.434	87	70-130	
Trichloroethene (TCE)	0.500	0.494	99	70-130	
1,1,2-Trichloroethane	0.500	0.504	101	70-130	
Tetrachloroethene (PCE)	0.500	0.505	101	70-130	
1,1,2,2-Tetrachloroethane	0.500	0.535	107	70-130	

* Values outside of QC limits

Comments:

4A

AIR VOLATILE METHOD BLANK SUMMARY

Field Sample ID:

XB2-0620

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Lab Sample ID: XB2-0620

Lab File ID: XB2-0620.D

Date Analyzed: 06/20/12

GC Column: ZB-624 ID: 0.25 (mm)

Time Analyzed: 1437

Instrument Name: MSG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	BS1X0620	BS1X0620	BS1X0620.D	06/20/12	1305
2	PP-1-AA-01-060512	L179101	L179101.D	06/20/12	1526
3	PP-1-SG-01-060512	L179103	L179103.D	06/20/12	1741
4	PP-1-SG-01-060512-FD	L179104	L179104.D	06/20/12	1825

Comments:

4A

AIR VOLATILE METHOD BLANK SUMMARY

Field Sample ID:

XB1-0621

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Lab Sample ID: XB1-0621

Lab File ID: XB1-0621.D

Date Analyzed: 06/21/12

GC Column: ZB-624 ID: 0.25 (mm)

Time Analyzed: 1234

Instrument Name: MSG

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	BS1X0621	BS1X0621	BS1X0621.D	06/21/12	1147
2	PP-1-IA-01-060512	L179102	L179102R.D	06/21/12	1617

Comments:

5B

VOLATILE ORGANIC RUN LOG

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab File ID: T1-0619.D

Instrument ID: MSG

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	LEVEL1	LEVEL1	LEVEL1.D	06/19/12	1926
2	LEVEL2	LEVEL2	LEVEL2.D	06/19/12	2055
3	LEVEL3	LEVEL3	LEVEL3.D	06/19/12	2140
4	LEVEL4	LEVEL4	LEVEL4.D	06/19/12	2225
5	LEVEL5	LEVEL5	LEVEL5.D	06/19/12	2311
6	LEVEL6	LEVEL6	LEVEL6.D	06/19/12	2356
7	LEVEL7	LEVEL7	LEVEL7.D	06/20/12	0041
8	LEVEL8	LEVEL8	LEVEL8.D	06/20/12	0126
9	ICV-0619	ICV-0619	ICV-0619.D	06/20/12	0212

5B

VOLATILE ORGANIC RUN LOG

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab File ID: T1-0620.D

Instrument ID: MSG

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	CV1-0620	CV1-0620	CV1-0620.D	06/20/12	1217
2	BS1X0620	BS1X0620	BS1X0620.D	06/20/12	1305
3	XB2-0620	XB2-0620	XB2-0620.D	06/20/12	1437
4	PP-1-AA-01-060512	L179101	L179101.D	06/20/12	1526
5	PP-1-SG-01-060512	L179103	L179103.D	06/20/12	1741
6	PP-1-SG-01-060512-FD	L179104	L179104.D	06/20/12	1825

5B

VOLATILE ORGANIC RUN LOG

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab File ID: T1-0621.D

Instrument ID: MSG

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	CV1-0621	CV1-0621	CV1-0621.D	06/21/12	1102
2	BS1X0621	BS1X0621	BS1X0621.D	06/21/12	1147
3	XB1-0621	XB1-0621	XB1-0621.D	06/21/12	1234
4	PP-1-IA-01-060512	L179102	L179102R.D	06/21/12	1617

VOLATILE ORGANICS INITIAL CALIBRATION DATA

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date(s): 06/19/12 06/20/12

Instrument Name: MSG

Calibration Times: 1926 0126

Heat Purge: (Y/N) N

Concentration Units: 062012G1

ICAL Sample IDs: LEVEL1 LEVEL2 LEVEL3 LEVEL4 LEVEL5 LEVEL6

ICAL File IDs: LEVEL1.D LEVEL2.D LEVEL3.D LEVEL4.D LEVEL5.D LEVEL6.D

Analyte	Std 1	RF 1	Std 2	RF 2	Std 3	RF 3	Std 4	RF 4	Std 5	RF 5	Std 6	RF 6
Bromochloromethane	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000
Vinyl Chloride	.004	.615	.02	1.271	.05	1.230	.25	1.145	.5	1.058	2	1.108
Methylene chloride	.004	2.430	.01	1.740	.02	1.613	.05	1.492	.25	1.399	.5	1.441
trans-1,2-Dichloroethene	.004	1.756	.01	1.853	.02	1.825	.05	1.769	.25	1.696	.5	1.758
cis-1,2-Dichloroethene	.004	1.800	.01	1.627	.02	1.783	.05	1.644	.25	1.600	.5	1.632
Chloroform	.004	2.562	.01	2.613	.02	2.622	.05	3.140	.25	2.537	.5	2.561
1,2-Dichloroethane	.004	1.654	.01	1.710	.02	1.773	.05	1.631	.25	1.620	.5	1.689
Carbon tetrachloride	.004	2.723	.01	2.524	.02	2.529	.05	2.420	.25	2.402	.5	2.559
Benzene			.01	6.235	.02	5.239	.05	4.174	.25	3.611	.5	3.729
1,4-difluorobenzene	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000
Trichloroethene (TCE)	.004	0.435	.01	0.423	.02	0.429	.05	0.420	.25	0.397	.5	0.398
1,1,2-Trichloroethane	.004	0.396	.01	0.382	.02	0.397	.05	0.380	.25	0.375	.5	0.383
Toluene-d8	.1	0.987	.1	0.990	.1	0.978	.1	0.980	.1	1.014	.1	1.015
Tetrachloroethene (PCE)	.004	0.617	.01	0.571	.02	0.587	.05	0.579	.25	0.561	.5	0.566
Chlorobenzene-d5	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000	.1	1.000
1,1,2,2-Tetrachloroethane	.004	0.734	.01	0.711	.02	0.803	.05	0.807	.25	0.782	.5	0.835
4-Bromofluorobenzene	.1	0.560	.1	0.573	.1	0.592	.1	0.610	.1	0.613	.1	0.667
Naphthalene	.004	0.561	.01	0.493	.02	0.509	.05	0.470	.25	0.575	.5	0.939

* SPCC # CCC

VOLATILE ORGANICS INITIAL CALIBRATION DATA

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date(s): 06/19/12 06/20/12

Instrument Name: MSG

Calibration Times: 1926 0126

Heat Purge: (Y/N) N

Concentration Units: 062012G1

ICAL Sample IDs: LEVEL7 LEVEL8

ICAL File IDs: LEVEL7.D LEVEL8.D

Analyte	Std 7	RF 7	Std 8	RF 8	Std 9	RF 9						
Bromochloromethane	.1	1.000	.1	1.000								
Vinyl Chloride	5	0.990		0.823								
Methylene chloride	2	1.337	5	1.242								
trans-1,2-Dichloroethene	2	1.654	5	1.551								
cis-1,2-Dichloroethene	2	1.620	5	1.538								
Chloroform	2	2.285	5	2.113								
1,2-Dichloroethane	2	1.618	5	1.497								
Carbon tetrachloride	2	2.354	5	2.197								
Benzene	2	3.430	5	3.230								
1,4-difluorobenzene	.1	1.000	.1	1.000								
Trichloroethene (TCE)	2	0.370	5	0.357								
1,1,2-Trichloroethane	2	0.364	5	0.354								
Toluene-d8	.1	1.039	.1	1.080								
Tetrachloroethene (PCE)	2	0.532	5	0.525								
Chlorobenzene-d5	.1	1.000	.1	1.000								
1,1,2,2-Tetrachloroethane	2	0.796	5	0.727								
4-Bromofluorobenzene	.1	0.648	.1	0.660								
Naphthalene	2	1.021	5	1.053								

* SPCC # CCC

VOLATILE ORGANICS INITIAL CALIBRATION DATA

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date(s): 06/19/12 06/20/12

Instrument Name: MSG

Calibration Times: 1926 0126

Heat Purge: (Y/N) N

Concentration Units: 062012G1

Analyte	Curve Type	Avg. RF	%RSD	Mean %RSD	r	COD	Q
Bromochloromethane	LINR	1.000			0.999		
Vinyl Chloride	AVG	1.030	21.2	12.5			
Methylene chloride	AVG	1.587	23.6	12.5			
trans-1,2-Dichloroethene	AVG	1.733	5.61	12.5			
cis-1,2-Dichloroethene	AVG	1.656	5.44	12.5			
Chloroform	AVG	2.554	11.6	12.5			
1,2-Dichloroethane	AVG	1.649	4.93	12.5			
Carbon tetrachloride	AVG	2.463	6.38	12.5			
Benzene	AVG	5.087	26.1	12.5			
1,4-difluorobenzene	AVG	1.000	0.00	12.5			
Trichloroethene (TCE)	AVG	0.404	6.99	12.5			
1,1,2-Trichloroethane	AVG	0.379	3.81	12.5			
Toluene-d8	AVG	1.010	3.48	12.5			
Tetrachloroethene (PCE)	AVG	0.567	5.20	12.5			
Chlorobenzene-d5	AVG	1.000	0.00	12.5			
1,1,2,2-Tetrachloroethane	AVG	0.774	5.77	12.5			
4-Bromofluorobenzene	AVG	0.615	6.47	12.5			
Naphthalene	LINR	0.703			0.999		

* SPCC # CCC

VOLATILE INITIAL CALIBRATION CHECK

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date/Time: 06/20/12 0212

Instrument ID: MSG

Init. Calib. Date(s): 06/19/12 06/20/12

2nd Source ID: ICV-0619

Init. Calib. Time(s): 1926 0126

Lab File ID: ICV-0619.D

GC Column: ZB-624 ID: 0.25 (mm)

Heat Purge:(Y/N) N

Concentration Units: ppbv

Analyte	Expected	Found	RRF	Min. RRF	%D	Max. %D	Q
Vinyl Chloride	0.500	0.521	1.074	0.000	4.25	30	
Methylene chloride	0.500	0.396	1.258	0.000	-20.7	30	
trans-1,2-Dichloroethene	0.500	0.439	1.522	0.000	-12.1	30	
cis-1,2-Dichloroethene	0.500	0.449	1.488	0.000	-10.1	30	
Chloroform	0.500	0.456	2.331	0.000	-8.73	30	
1,2-Dichloroethane	0.500	0.452	1.492	0.000	-9.52	30	
Carbon tetrachloride	0.500	0.410	2.019	0.000	-18.1	30	
Benzene	0.500	0.411	3.477	0.000	-17.9	30	
Trichloroethene (TCE)	0.500	0.452	0.365	0.000	-9.64	30	
1,1,2-Trichloroethane	0.500	0.467	0.354	0.000	-6.55	30	
Tetrachloroethene (PCE)	0.500	0.466	0.529	0.000	-6.82	30	
1,1,2,2-Tetrachloroethane	0.500	0.517	0.801	0.000	3.47	30	
Naphthalene	0.500	0.495	0.965	0.000	-1.09	30	

* SPCC # CCC

VOLATILE CONTINUING CALIBRATION CHECK

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date/Time: 06/20/12 1217

Instrument ID: MSG

Init. Calib. Date(s): 06/19/12 06/20/12

Cal Check ID: CV1-0620

Init. Calib. Time(s): 1926 0126

Lab File ID: CV1-0620.D

GC Column: ZB-624 ID: 0.25 (mm)

Heat Purge:(Y/N) N

Concentration Units: ppbv

Analyte	Expected	Found	RRF	Min. RRF	%D	Max. %D	Q
Vinyl Chloride	0.500	0.504	1.039	0.000	0.86	30	
Methylene chloride	0.500	0.453	1.436	0.000	-9.48	30	
trans-1,2-Dichloroethene	0.500	0.484	1.675	0.000	-3.31	30	
cis-1,2-Dichloroethene	0.500	0.471	1.558	0.000	-5.87	30	
Chloroform	0.500	0.471	2.407	0.000	-5.76	30	
1,2-Dichloroethane	0.500	0.471	1.554	0.000	-5.78	30	
Carbon tetrachloride	0.500	0.493	2.429	0.000	-1.41	30	
Benzene	0.500	0.428	3.629	0.000	-14.3	30	
Trichloroethene (TCE)	0.500	0.520	0.420	0.000	4.04	30	
1,1,2-Trichloroethane	0.500	0.498	0.377	0.000	-0.47	30	
Toluene-d8	0.100	0.101	1.018	0.000	0.78	30	
Tetrachloroethene (PCE)	0.500	0.491	0.557	0.000	-1.81	30	
1,1,2,2-Tetrachloroethane	0.500	0.532	0.824	0.000	6.39	30	
4-Bromofluorobenzene	0.100	0.105	0.648	0.000	5.27	30	
Naphthalene	0.500	0.527	1.034	0.000	5.44	30	

* SPCC # CCC

VOLATILE CONTINUING CALIBRATION CHECK

SDG No.: L1791

Lab Name: CH2M HILL/LAB/CVO

Analysis Method: TO15 SIM

Calibration Date/Time: 06/21/12 1102

Instrument ID: MSG

Init. Calib. Date(s): 06/19/12 06/20/12

Cal Check ID: CV1-0621

Init. Calib. Time(s): 1926 0126

Lab File ID: CV1-0621.D

GC Column: ZB-624 ID: 0.25 (mm)

Heat Purge:(Y/N) N

Concentration Units: ppbv

Analyte	Expected	Found	RRF	Min. RRF	%D	Max. %D	Q
Vinyl Chloride	0.500	0.509	1.048	0.000	1.72	30	
Methylene chloride	0.500	0.436	1.384	0.000	-12.8	30	
trans-1,2-Dichloroethene	0.500	0.484	1.678	0.000	-3.14	30	
cis-1,2-Dichloroethene	0.500	0.482	1.595	0.000	-3.66	30	
Chloroform	0.500	0.481	2.455	0.000	-3.90	30	
1,2-Dichloroethane	0.500	0.480	1.583	0.000	-3.99	30	
Carbon tetrachloride	0.500	0.496	2.442	0.000	-0.88	30	
Benzene	0.500	0.439	3.720	0.000	-12.2	30	
Trichloroethene (TCE)	0.500	0.494	0.399	0.000	-1.12	30	
1,1,2-Trichloroethane	0.500	0.507	0.384	0.000	1.40	30	
Toluene-d8	0.100	0.102	1.031	0.000	2.01	30	
Tetrachloroethene (PCE)	0.500	0.507	0.576	0.000	1.47	30	
1,1,2,2-Tetrachloroethane	0.500	0.529	0.819	0.000	5.76	30	
4-Bromofluorobenzene	0.100	0.103	0.632	0.000	2.76	30	
Naphthalene	0.500	0.536	1.054	0.000	7.27	30	

* SPCC # CCC

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: LEVEL6

Date Analyzed: 06/19/12

Lab File ID: LEVEL6.D

Time Analyzed: 2356

Instrument Name: MSG

Heat Purge: (Y/N) N

GC Column: ZB-624 ID: 0.25 (mm)

		IS1		IS2		IS3	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	Reference Cal	1714	14.85	6760	16.53	5914	20.87
	Upper Limit	2400	15.35	9464	17.03	8280	21.37
	Lower Limit	1028	14.35	4056	16.03	3548	20.37
Field Sample ID	Lab Sample ID						
ICV-0619	ICV-0619	1728	14.84	7131	16.52	6299	20.87

IS1: Bromochloromethane

IS2: 1,4-Difluorobenzene

IS3: Chlorobenzene-d5

AREA UPPER LIMIT = + 40% of Internal Standard Area
AREA LOWER LIMIT = - 40% of Internal Standard Area
RT UPPER LIMIT = + 0.50 of Internal Standard RT
RT LOWER LIMIT = - 0.50 of Internal Standard RT

Column used to flag values outside of QC limits with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: CV1-0620

Date Analyzed: 06/20/12

Lab File ID: CV1-0620.D

Time Analyzed: 1217

Instrument Name: MSG

Heat Purge: (Y/N) N

GC Column: ZB-624 ID: 0.25 (mm)

		IS1		IS2		IS3	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	Reference Cal	1693	14.86	6735	16.54	5916	20.87
	Upper Limit	2370	15.36	9429	17.04	8282	21.37
	Lower Limit	1016	14.36	4041	16.04	3550	20.37
Field Sample ID	Lab Sample ID						
BS1X0620	BS1X0620	1712	14.85	6776	16.53	5962	20.86
XB2-0620	XB2-0620	1528	14.87	5914	16.55	5066	20.87
PP-1-AA-01-060512	L179101	1577	14.84	6352	16.53	5534	20.86
PP-1-SG-01-060512	L179103	1536	14.85	6466	16.52	5637	20.86
PP-1-SG-01-060512-FD	L179104	1615	14.85	6433	16.54	5422	20.86

IS1: Bromochloromethane

IS2: 1,4-Difluorobenzene

IS3: Chlorobenzene-d5

AREA UPPER LIMIT = + 40% of Internal Standard Area
AREA LOWER LIMIT = - 40% of Internal Standard Area
RT UPPER LIMIT = + 0.50 of Internal Standard RT
RT LOWER LIMIT = - 0.50 of Internal Standard RT

Column used to flag values outside of QC limits with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

SDG No.: L1791

Analysis Method: TO15 SIM

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: CV1-0621

Date Analyzed: 06/21/12

Lab File ID: CV1-0621.D

Time Analyzed: 1102

Instrument Name: MSG

Heat Purge: (Y/N) N

GC Column: ZB-624 ID: 0.25 (mm)

		IS1		IS2		IS3	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	Reference Cal	1636	14.87	6484	16.54	5871	20.87
	Upper Limit	2290	15.37	9078	17.04	8219	21.37
	Lower Limit	982	14.37	3890	16.04	3523	20.37
Field Sample ID	Lab Sample ID						
BS1X0621	BS1X0621	1635	14.85	6433	16.54	5707	20.86
XB1-0621	XB1-0621	1516	14.87	5687	16.55	4923	20.87
PP-1-IA-01-060512	L179102	1587	14.85	6312	16.53	5646	20.86

IS1: Bromochloromethane

IS2: 1,4-Difluorobenzene

IS3: Chlorobenzene-d5

AREA UPPER LIMIT = + 40% of Internal Standard Area
AREA LOWER LIMIT = - 40% of Internal Standard Area
RT UPPER LIMIT = + 0.50 of Internal Standard RT
RT LOWER LIMIT = - 0.50 of Internal Standard RT

Column used to flag values outside of QC limits with an asterisk

CH2MHILL
Applied Sciences Laboratory (ASL)

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

MDL Study Report

Analytical Method: TO15 SIM
Matrix: Air

Instrument ID: MSG
Concentration Units: PPTV

Analyte	Analysis Date	Amt. Spiked	Replicates 1	2	3	4	5	6	7	8	Std. Dev.	MDL
Vinyl Chloride	12/02/11	2.00	2.50	2.51	2.51	2.60	2.66	2.68	2.51		0.0783	2.00
Methylene chloride	12/02/11	5.00	6.31	6.78	6.54	9.85	6.98	6.89	6.99	6.63	1.13	4.00
trans-1,2-Dichloroethene	12/02/11	2.00	1.96	1.90	2.16	1.84	1.70	1.98	1.88		0.141	2.00
cis-1,2-Dichloroethene	12/02/11	10.0	11.3	11.5	11.4	11.3	11.5	11.6	8.79	11.3	0.930	4.00
Chloroform	12/02/11	1.00	1.35	1.25	1.21	1.34	1.38	1.22	1.30		0.0673	2.00
1,2-Dichloroethane	12/02/11	1.00	1.22	1.27	1.11	1.14	1.10	1.41	1.10		0.116	2.00
Carbon tetrachloride	12/02/11	1.00	1.22	1.25	1.17	1.48	1.27	1.28	1.13		0.112	2.00
Benzene	12/02/11	1.00	5.85	5.91	5.87	5.84	5.94	5.83	5.90		0.0407	2.00
Trichloroethene (TCE)	12/02/11	1.00	1.32	1.21	1.22	1.40	1.43	1.29	1.55		0.122	2.00
1,1,2-Trichloroethane	12/02/11	2.00	2.18	1.98	2.09	2.03	2.03	2.19	2.11		0.0793	2.00
Tetrachloroethene (PCE)	12/02/11	1.00	1.30	1.26	1.42	1.28	1.23	1.23	1.20		0.0725	2.00
1,1,2,2-Tetrachloroethane	12/02/11	5.00	9.25	9.00	9.10	9.27	9.44	9.48	9.07	9.02	0.186	2.00
Naphthalene	12/02/11	30.0	12.1	10.7	7.58	11.9	8.40	9.24	9.28		1.74	10.0

MDL FORM

SAMPLE EQUIPMENT CERTIFICATION

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2515S**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2515S

Lab File ID: 6L2515S.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0211	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0116	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2563S**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2563S

Lab File ID: 6L2563S

Level: (LOW/MED) LOW

Date Received: __/__/

Date Analyzed: 05/11/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0160	J
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0149	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0117	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2599A**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2599A

Lab File ID: 6L2599A.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/01/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0101	J
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0113	J
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0120	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0178	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2635S**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2635S

Lab File ID: 6L2635S.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0476	J
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0166	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0179	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3928B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3928B

Lab File ID: FC3928B.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0341	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3952B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3952B

Lab File ID: FC3952B.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0234	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3959B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3959B

Lab File ID: FcCert2.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0481	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3963B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3963B

Lab File ID: FcCert4.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	0.0284	J
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0351	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0132	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0430**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0430

Lab File ID: XB1-0430.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 04/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0650	U
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0521**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0521

Lab File ID: XB1-0521.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	1.77	U
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0218	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0808	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0530**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0530

Lab File ID: XB1-0521.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0520	U
75-09-2	Methylene chloride	0.0141	1.77	0.0661	J
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.128	U
71-43-2	Benzene	0.00650	0.0650	0.0323	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.109	U
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.107	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB2-0510**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB2-0510

Lab File ID: XB2-0510.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/10/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: UG/M3

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.00520	0.0520	0.0673	
75-09-2	Methylene chloride	0.0141	1.77	0.0449	J
156-60-5	trans-1,2-Dichloroethene	0.00810	0.0807	0.0807	U
156-59-2	cis-1,2-Dichloroethene	0.0161	0.0807	0.0807	U
67-66-3	Chloroform	0.00990	0.0993	0.0993	U
107-06-2	1,2-Dichloroethane	0.00820	0.0823	0.0823	U
56-23-5	Carbon tetrachloride	0.0128	0.128	0.0730	J
71-43-2	Benzene	0.00650	0.0650	0.0429	J
79-01-6	Trichloroethene (TCE)	0.0109	0.109	0.0146	J
79-00-5	1,1,2-Trichloroethane	0.0111	0.111	0.111	U
127-18-4	Tetrachloroethene (PCE)	0.0138	0.138	0.138	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0140	0.140	0.140	U
91-20-3	Naphthalene	0.0533	0.107	0.0794	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2515S**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2515S

Lab File ID: 6L2515S.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00650	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00212	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2563S**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2563S

Lab File ID: 6L2563S

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/11/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.00615	J
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00460	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00214	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **6L2599A**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2599A

Lab File ID: 6L2599A.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/01/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.00250	J
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.00227	J
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00368	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00326	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: 6L2635S

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: 6L2635S

Lab File ID: 6L2635S.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.0118	J
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00512	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00328	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3928B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3928B

Lab File ID: FC3928B.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.0105	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3952B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3952B

Lab File ID: FC3952B.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/22/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00719	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3959B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3959B

Lab File ID: FcCert2.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.0148	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **FC3963B**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: FC3963B

Lab File ID: FcCert4.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.00803	J
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.0108	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00241	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0430**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0430

Lab File ID: XB1-0430.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 04/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.020	U
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0521**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0521

Lab File ID: XB1-0521.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/21/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.500	U
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00670	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.0148	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB1-0530**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB1-0530

Lab File ID: XB1-0521.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/30/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.020	U
75-09-2	Methylene chloride	0.004	0.500	0.0187	J
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.020	U
71-43-2	Benzene	0.002	0.020	0.00993	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.020	U
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.020	U

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Sample ID: **XB2-0510**

SDG No.: L1791

Analysis Method: TO15 SIM

Matrix: AIR

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: XB2-0510

Lab File ID: XB2-0510.D

Level: (LOW/MED) LOW

Date Received: / /

Date Analyzed: 05/10/12

Dilution Factor: 1

Instrument: MSG

GC Column: ZB-624 ID: 0.25 (mm)

Concentration Units: PPBV

CAS No.	Analyte	DL	PQL	Result	Q
75-01-4	Vinyl Chloride	0.002	0.020	0.0259	
75-09-2	Methylene chloride	0.004	0.500	0.0127	J
156-60-5	trans-1,2-Dichloroethene	0.002	0.020	0.020	U
156-59-2	cis-1,2-Dichloroethene	0.004	0.020	0.020	U
67-66-3	Chloroform	0.002	0.020	0.020	U
107-06-2	1,2-Dichloroethane	0.002	0.020	0.020	U
56-23-5	Carbon tetrachloride	0.002	0.020	0.0114	J
71-43-2	Benzene	0.002	0.020	0.0132	J
79-01-6	Trichloroethene (TCE)	0.002	0.020	0.00268	J
79-00-5	1,1,2-Trichloroethane	0.002	0.020	0.020	U
127-18-4	Tetrachloroethene (PCE)	0.002	0.020	0.020	U
79-34-5	1,1,2,2-Tetrachloroethane	0.002	0.020	0.020	U
91-20-3	Naphthalene	0.010	0.020	0.0149	J

CHAIN OF CUSTODY/SHIPPING DOCUMENTS

CH2MHILL Applied Sciences Lab
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
(541) 768-3120 FAX (541) 752-0276

COC # _____

Project # or Purchase Order #
364298.01.SL.VI.VM

Project Name
St. Louis Ordnance Plant

Company Name or Home Address/Phone Number
CH2M HILL, Inc./314.335.3000

Email Address for Reporting
Shane.lowe@ch2m.com

Report Copy to:
Shane Lowe

Turnaround Time
☐24 hours ☐48 hours ☐72 hours
☐7 days ☒14 days ☐21 days (STD)

Drinking Water? Yes ☐ No ☒

Sample Disposal: Dispose ☒ Return ☐

THIS AREA FOR LAB USE ONLY

Lab # 6179 | Page 1 | of 1

EPA Tier QC Level
1 (Screening) 2 3 4

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	Matrix AIR	CLIENT SAMPLE ID	TOTAL # OF CONTAINERS	Requested Analytical Method # / Preservative: Benzene, Carbon tetrachloride, Chloroform, 1,2-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, Methylene chloride, Naphthalene, 1,1,2,2,-tetrachloroethane, Tetrachloroethene, 1,1,2-tetrachloroethane, Trichloroethene, Vinyl chloride by TO-15 SIM (UNPRES)	Canister ID	Lab ID
06/05/12	1004					X	PP-1-AA-01-060512	1	X	6L26355	1
06/05/12	1002					X	PP-1-IA-01-060512	1	X	6L25155	2
06/05/12	1003					X	PP-1-SG-01-060512	1	X	6L25635	3
06/05/12	1003					X	PP-1-SG-01-060512-FD	1	X	6L2599A	4

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Volatile Contaminants/Odorous ☐ Biohazard ☐ Other _____

Relinquished By: Glyn Roberts	Glyn Roberts	Date/Time 6/6/12 1200	Received By:	Date/Time
Sampled By and Title	(Please sign and print name) Glyn Roberts	Date/Time 6/5/12 1200	Relinquished By (Please sign and print name)	Date/Time
Received By Carmen Bell	(Please sign and print name) 6/7/12	Date/Time 1600	Relinquished By (Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Shipped Via UPS Fed-Ex Other_____	Tracking #

Special Instructions

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original – LAB, Yellow – LAB, Pink – Client
Rev 09 LAB FORM 340

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: L1791
Client/Project: St Louis

Date received: 6/7/12
Checked by: Cog
Checked by:

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD	✓		
Were custody seals intact and on the outside of the cooler?		✓	
Type of packing material: Ice Blue Ice Bubble wrap			
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER °C	✓		
All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER	✓		
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

Thompson, Ben/CVO

From: English, Chris/STL
Sent: Wednesday, June 13, 2012 1:27 PM
To: Thompson, Ben/CVO; Roberts, Glynn/STL
Subject: RE: SLOP Samples

Thanks Ben – I agree, let's run it.

From: Thompson, Ben/CVO
Sent: Wednesday, June 13, 2012 3:26 PM
To: English, Chris/STL; Roberts, Glynn/STL
Subject: RE: SLOP Samples

Probably around 5x. It is a soil gas sample and a field dup, so that may work in our favor. We'll run it. If it doesn't work out, I won't bill it.

-Ben

From: English, Chris/STL
Sent: Wednesday, June 13, 2012 12:25 PM
To: Thompson, Ben/CVO; Roberts, Glynn/STL
Subject: RE: SLOP Samples

Sorry, Ben. I should have responded sooner. Do you have any idea how elevated the RLs will be (e.g., x10, x100)? If we won't know unless we run the sample, then I would like for us to run the sample.

Thanks,

Chris

From: Thompson, Ben/CVO
Sent: Wednesday, June 13, 2012 1:37 PM
To: English, Chris/STL; Roberts, Glynn/STL
Subject: RE: SLOP Samples

Hi Guys,
Any thoughts on this?

-Ben

From: Thompson, Ben/CVO
Sent: Monday, June 11, 2012 2:13 PM
To: English, Chris/STL; Roberts, Glynn/STL
Subject: SLOP Samples

Guys,
Sample PP-1-SG-01-060512-FD was received at 91 torr. The flow controller went out calibrated correctly, but came back with a flow of near 0. It probably got knocked around in shipping. We can analyze this sample, but the reporting limits will be elevated. Do you want us to analyze it?

-Ben

VersionCode	LabName	SDG	FieldID	NativeID	QAQCType	LRType	Matrix
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2515S	6L2515S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2563S	6L2563S	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N		AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N		AIR

4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2599A	6L2599A	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	6L2635S	6L2635S	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR

4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3928B	FC3928B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3952B	FC3952B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR

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4.30CH2MLS7	CHMC	L1791	FC3959B	FC3959B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
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4.30CH2MLS7	CHMC	L1791	FC3963B	FC3963B	N	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
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4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
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4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
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4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0430	XB1-0430	LB	AIR

4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0521	XB1-0521	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0530	XB1-0530	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR

4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0510	XB2-0510	LB	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-AA-01-060512	PP-1-AA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR

4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-IA-01-060512	PP-1-IA-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512	PP-1-SG-01-060512	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR

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4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	PP-1-SG-01-060512-FD	PP-1-SG-01-060512-FD	N	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0620	BS1X0620	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	BS1X0621	BS1X0621	BS	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR

4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
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4.30CH2MLS7	CHMC	L1791	XB1-0621	XB1-0621	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR
4.30CH2MLS7	CHMC	L1791	XB2-0620	XB2-0620	LB	AIR

LabSampleID	AnalysisMethod	ExtractionMethod	SampleDate	SampleTim	ReceiveDat	ExtractDate	ExtractTime	AnalysisDate
6L2515S	TO15 SIM	NONE						5/22/2012
6L2515S	TO15 SIM	NONE						5/22/2012
6L2515S	TO15 SIM	NONE	5/22/2012	2:52				5/22/2012
6L2515S	TO15 SIM	NONE	5/22/2012	2:52				5/22/2012
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6L2515S	TO15 SIM	NONE	5/22/2012	2:52				5/22/2012
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6L2563S	TO15 SIM	NONE						5/11/2012
6L2563S	TO15 SIM	NONE						5/11/2012
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6L2563S	TO15 SIM	NONE	5/11/2012	5:48				5/11/2012
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6L2599A	TO15 SIM	NONE						5/1/2012
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6L2599A	TO15 SIM	NONE	5/1/2012	6:57				5/1/2012

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6L2635S	TO15 SIM	NONE			5/22/2012
6L2635S	TO15 SIM	NONE			5/22/2012
6L2635S	TO15 SIM	NONE	5/22/2012	1:21	5/22/2012
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FC3928B	TO15 SIM	NONE			5/21/2012
FC3928B	TO15 SIM	NONE			5/21/2012
FC3928B	TO15 SIM	NONE	5/21/2012	20:51	5/21/2012
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FC3952B	TO15 SIM	NONE			5/22/2012
FC3952B	TO15 SIM	NONE			5/22/2012
FC3952B	TO15 SIM	NONE	5/22/2012	0:36	5/22/2012
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FC3959B	TO15 SIM	NONE			5/30/2012
FC3959B	TO15 SIM	NONE			5/30/2012
FC3959B	TO15 SIM	NONE	5/30/2012	20:22	5/30/2012
FC3959B	TO15 SIM	NONE	5/30/2012	20:22	5/30/2012
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AnalysisTime	PercentSolids	LabLotCtlNum	CAS	ParamID	Analyte	Result
2:52	0		2037-26-5	BZMED8	Toluene-d8	98
2:52	0		460-00-4	BR4FBZ	4-Bromofluorobenzene	74
2:52	0		75-01-4	VC	Vinyl Chloride	0.052
2:52	0		75-09-2	MTLNCL	Methylene chloride	1.77
2:52	0		156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
2:52	0		156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
2:52	0		67-66-3	TCLME	Chloroform	0.0993
2:52	0		107-06-2	DCA12	1,2-Dichloroethane	0.0823
2:52	0		56-23-5	CTCL	Carbon tetrachloride	0.128
2:52	0		71-43-2	BZ	Benzene	0.0211
2:52	0		79-01-6	TCE	Trichloroethene (TCE)	0.0116
2:52	0		79-00-5	TCA112	1,1,2-Trichloroethane	0.111
2:52	0		127-18-4	PCE	Tetrachloroethene (PCE)	0.138
2:52	0		79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
2:52	0		91-20-3	NAPH	Naphthalene	0.107
5:48	0		2037-26-5	BZMED8	Toluene-d8	108
5:48	0		460-00-4	BR4FBZ	4-Bromofluorobenzene	81
5:48	0		75-01-4	VC	Vinyl Chloride	0.016
5:48	0		75-09-2	MTLNCL	Methylene chloride	1.77
5:48	0		156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
5:48	0		156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
5:48	0		67-66-3	TCLME	Chloroform	0.0993
5:48	0		107-06-2	DCA12	1,2-Dichloroethane	0.0823
5:48	0		56-23-5	CTCL	Carbon tetrachloride	0.128
5:48	0		71-43-2	BZ	Benzene	0.0149
5:48	0		79-01-6	TCE	Trichloroethene (TCE)	0.0117
5:48	0		79-00-5	TCA112	1,1,2-Trichloroethane	0.111
5:48	0		127-18-4	PCE	Tetrachloroethene (PCE)	0.138
5:48	0		79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
5:48	0		91-20-3	NAPH	Naphthalene	0.107
6:57	0		2037-26-5	BZMED8	Toluene-d8	101
6:57	0		460-00-4	BR4FBZ	4-Bromofluorobenzene	88
6:57	0		75-01-4	VC	Vinyl Chloride	0.052

6:57	0	75-09-2	MTLNCL	Methylene chloride	1.77
6:57	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0101
6:57	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
6:57	0	67-66-3	TCLME	Chloroform	0.0113
6:57	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
6:57	0	56-23-5	CTCL	Carbon tetrachloride	0.128
6:57	0	71-43-2	BZ	Benzene	0.012
6:57	0	79-01-6	TCE	Trichloroethene (TCE)	0.0178
6:57	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
6:57	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
6:57	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
6:57	0	91-20-3	NAPH	Naphthalene	0.107
1:21	0	2037-26-5	BZMED8	Toluene-d8	99
1:21	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	78
1:21	0	75-01-4	VC	Vinyl Chloride	0.052
1:21	0	75-09-2	MTLNCL	Methylene chloride	1.77
1:21	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
1:21	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0476
1:21	0	67-66-3	TCLME	Chloroform	0.0993
1:21	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
1:21	0	56-23-5	CTCL	Carbon tetrachloride	0.128
1:21	0	71-43-2	BZ	Benzene	0.0166
1:21	0	79-01-6	TCE	Trichloroethene (TCE)	0.0179
1:21	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
1:21	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
1:21	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
1:21	0	91-20-3	NAPH	Naphthalene	0.107
20:51	0	2037-26-5	BZMED8	Toluene-d8	98
20:51	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	76
20:51	0	75-01-4	VC	Vinyl Chloride	0.052
20:51	0	75-09-2	MTLNCL	Methylene chloride	1.77
20:51	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
20:51	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
20:51	0	67-66-3	TCLME	Chloroform	0.0993

20:51	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
20:51	0	56-23-5	CTCL	Carbon tetrachloride	0.128
20:51	0	71-43-2	BZ	Benzene	0.0341
20:51	0	79-01-6	TCE	Trichloroethene (TCE)	0.109
20:51	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
20:51	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
20:51	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
20:51	0	91-20-3	NAPH	Naphthalene	0.107
0:36	0	2037-26-5	BZMED8	Toluene-d8	99
0:36	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	79
0:36	0	75-01-4	VC	Vinyl Chloride	0.052
0:36	0	75-09-2	MTLNCL	Methylene chloride	1.77
0:36	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
0:36	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
0:36	0	67-66-3	TCLME	Chloroform	0.0993
0:36	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
0:36	0	56-23-5	CTCL	Carbon tetrachloride	0.128
0:36	0	71-43-2	BZ	Benzene	0.0234
0:36	0	79-01-6	TCE	Trichloroethene (TCE)	0.109
0:36	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
0:36	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
0:36	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
0:36	0	91-20-3	NAPH	Naphthalene	0.107
20:22	0	2037-26-5	BZMED8	Toluene-d8	99
20:22	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	83
20:22	0	75-01-4	VC	Vinyl Chloride	0.052
20:22	0	75-09-2	MTLNCL	Methylene chloride	1.77
20:22	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
20:22	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
20:22	0	67-66-3	TCLME	Chloroform	0.0993
20:22	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
20:22	0	56-23-5	CTCL	Carbon tetrachloride	0.128
20:22	0	71-43-2	BZ	Benzene	0.0481
20:22	0	79-01-6	TCE	Trichloroethene (TCE)	0.109

20:22	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
20:22	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
20:22	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
20:22	0	91-20-3	NAPH	Naphthalene	0.107
21:51	0	2037-26-5	BZMED8	Toluene-d8	98
21:51	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	85
21:51	0	75-01-4	VC	Vinyl Chloride	0.052
21:51	0	75-09-2	MTLNCL	Methylene chloride	0.0284
21:51	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
21:51	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
21:51	0	67-66-3	TCLME	Chloroform	0.0993
21:51	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
21:51	0	56-23-5	CTCL	Carbon tetrachloride	0.128
21:51	0	71-43-2	BZ	Benzene	0.0351
21:51	0	79-01-6	TCE	Trichloroethene (TCE)	0.0132
21:51	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
21:51	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
21:51	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
21:51	0	91-20-3	NAPH	Naphthalene	0.107
13:24	0	2037-26-5	BZMED8	Toluene-d8	101
13:24	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	91
13:24	0	75-01-4	VC	Vinyl Chloride	0.052
13:24	0	75-09-2	MTLNCL	Methylene chloride	1.77
13:24	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
13:24	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
13:24	0	67-66-3	TCLME	Chloroform	0.0993
13:24	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
13:24	0	56-23-5	CTCL	Carbon tetrachloride	0.128
13:24	0	71-43-2	BZ	Benzene	0.065
13:24	0	79-01-6	TCE	Trichloroethene (TCE)	0.109
13:24	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
13:24	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
13:24	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
13:24	0	91-20-3	NAPH	Naphthalene	0.107

13:07	0	2037-26-5	BZMED8	Toluene-d8	100
13:07	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	79
13:07	0	75-01-4	VC	Vinyl Chloride	0.052
13:07	0	75-09-2	MTLNCL	Methylene chloride	1.77
13:07	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
13:07	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
13:07	0	67-66-3	TCLME	Chloroform	0.0993
13:07	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
13:07	0	56-23-5	CTCL	Carbon tetrachloride	0.128
13:07	0	71-43-2	BZ	Benzene	0.0218
13:07	0	79-01-6	TCE	Trichloroethene (TCE)	0.0808
13:07	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
13:07	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
13:07	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
13:07	0	91-20-3	NAPH	Naphthalene	0.107
19:37	0	2037-26-5	BZMED8	Toluene-d8	99
19:37	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	85
19:37	0	75-01-4	VC	Vinyl Chloride	0.052
19:37	0	75-09-2	MTLNCL	Methylene chloride	0.0661
19:37	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
19:37	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
19:37	0	67-66-3	TCLME	Chloroform	0.0993
19:37	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
19:37	0	56-23-5	CTCL	Carbon tetrachloride	0.128
19:37	0	71-43-2	BZ	Benzene	0.0323
19:37	0	79-01-6	TCE	Trichloroethene (TCE)	0.109
19:37	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
19:37	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
19:37	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
19:37	0	91-20-3	NAPH	Naphthalene	0.107
20:04	0	2037-26-5	BZMED8	Toluene-d8	111
20:04	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	94
20:04	0	75-01-4	VC	Vinyl Chloride	0.0673
20:04	0	75-09-2	MTLNCL	Methylene chloride	0.0449

20:04	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
20:04	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
20:04	0	67-66-3	TCLME	Chloroform	0.0993
20:04	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
20:04	0	56-23-5	CTCL	Carbon tetrachloride	0.073
20:04	0	71-43-2	BZ	Benzene	0.0429
20:04	0	79-01-6	TCE	Trichloroethene (TCE)	0.0146
20:04	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
20:04	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
20:04	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
20:04	0	91-20-3	NAPH	Naphthalene	0.0794
15:26	0	2037-26-5	BZMED8	Toluene-d8	100
15:26	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	95
15:26	0	75-01-4	VC	Vinyl Chloride	0.149
15:26	0	75-09-2	MTLNCL	Methylene chloride	0.53
15:26	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.231
15:26	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.231
15:26	0	67-66-3	TCLME	Chloroform	0.0889
15:26	0	107-06-2	DCA12	1,2-Dichloroethane	0.0564
15:26	0	56-23-5	CTCL	Carbon tetrachloride	0.506
15:26	0	71-43-2	BZ	Benzene	0.527
15:26	0	79-01-6	TCE	Trichloroethene (TCE)	0.113
15:26	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.319
15:26	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.11
15:26	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.401
15:26	0	91-20-3	NAPH	Naphthalene	2.05
16:17	0	2037-26-5	BZMED8	Toluene-d8	100
16:17	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	102
16:17	0	75-01-4	VC	Vinyl Chloride	0.217
16:17	0	75-09-2	MTLNCL	Methylene chloride	0.837
16:17	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.337
16:17	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.337
16:17	0	67-66-3	TCLME	Chloroform	1.42
16:17	0	107-06-2	DCA12	1,2-Dichloroethane	0.098

16:17	0	56-23-5	CTCL	Carbon tetrachloride	0.582
16:17	0	71-43-2	BZ	Benzene	0.676
16:17	0	79-01-6	TCE	Trichloroethene (TCE)	0.705
16:17	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.171
16:17	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.869
16:17	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.559
16:17	0	91-20-3	NAPH	Naphthalene	66.1
17:41	0	2037-26-5	BZMED8	Toluene-d8	100
17:41	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	103
17:41	0	75-01-4	VC	Vinyl Chloride	0.0998
17:41	0	75-09-2	MTLNCL	Methylene chloride	0.2
17:41	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.155
17:41	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.155
17:41	0	67-66-3	TCLME	Chloroform	0.314
17:41	0	107-06-2	DCA12	1,2-Dichloroethane	0.0343
17:41	0	56-23-5	CTCL	Carbon tetrachloride	0.474
17:41	0	71-43-2	BZ	Benzene	0.263
17:41	0	79-01-6	TCE	Trichloroethene (TCE)	0.518
17:41	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.213
17:41	0	127-18-4	PCE	Tetrachloroethene (PCE)	1.04
17:41	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.0602
17:41	0	91-20-3	NAPH	Naphthalene	4.73
18:25	0	2037-26-5	BZMED8	Toluene-d8	98
18:25	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	97
18:25	0	75-01-4	VC	Vinyl Chloride	0.64
18:25	0	75-09-2	MTLNCL	Methylene chloride	0.919
18:25	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.291
18:25	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	1.23
18:25	0	67-66-3	TCLME	Chloroform	0.219
18:25	0	107-06-2	DCA12	1,2-Dichloroethane	0.207
18:25	0	56-23-5	CTCL	Carbon tetrachloride	0.417
18:25	0	71-43-2	BZ	Benzene	1.28
18:25	0	79-01-6	TCE	Trichloroethene (TCE)	3.12
18:25	0	79-00-5	TCA112	1,1,2-Trichloroethane	1.37

18:25	0	127-18-4	PCE	Tetrachloroethene (PCE)	3.46
18:25	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	1.72
18:25	0	91-20-3	NAPH	Naphthalene	3.76
13:05	0	2037-26-5	BZMED8	Toluene-d8	101
13:05	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	105
13:05	0	91-20-3	NAPH	Naphthalene	2.8
13:05	0	75-01-4	VC	Vinyl Chloride	1.31
13:05	0	75-09-2	MTLNCL	Methylene chloride	1.7
13:05	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	1.94
13:05	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	1.9
13:05	0	67-66-3	TCLME	Chloroform	2.32
13:05	0	107-06-2	DCA12	1,2-Dichloroethane	1.94
13:05	0	56-23-5	CTCL	Carbon tetrachloride	3.21
13:05	0	71-43-2	BZ	Benzene	1.39
13:05	0	79-01-6	TCE	Trichloroethene (TCE)	2.63
13:05	0	79-00-5	TCA112	1,1,2-Trichloroethane	2.75
13:05	0	127-18-4	PCE	Tetrachloroethene (PCE)	3.39
13:05	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	3.68
11:47	0	2037-26-5	BZMED8	Toluene-d8	101
11:47	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	103
11:47	0	91-20-3	NAPH	Naphthalene	2.73
11:47	0	75-01-4	VC	Vinyl Chloride	1.34
11:47	0	75-09-2	MTLNCL	Methylene chloride	1.54
11:47	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	1.96
11:47	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	1.93
11:47	0	67-66-3	TCLME	Chloroform	2.37
11:47	0	107-06-2	DCA12	1,2-Dichloroethane	1.97
11:47	0	56-23-5	CTCL	Carbon tetrachloride	3.17
11:47	0	71-43-2	BZ	Benzene	1.41
11:47	0	79-01-6	TCE	Trichloroethene (TCE)	2.7
11:47	0	79-00-5	TCA112	1,1,2-Trichloroethane	2.8
11:47	0	127-18-4	PCE	Tetrachloroethene (PCE)	3.48
11:47	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	3.74
12:34	0	2037-26-5	BZMED8	Toluene-d8	96

12:34	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	81
12:34	0	75-01-4	VC	Vinyl Chloride	0.052
12:34	0	75-09-2	MTLNCL	Methylene chloride	0.114
12:34	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
12:34	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
12:34	0	67-66-3	TCLME	Chloroform	0.0993
12:34	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
12:34	0	56-23-5	CTCL	Carbon tetrachloride	0.128
12:34	0	71-43-2	BZ	Benzene	0.029
12:34	0	79-01-6	TCE	Trichloroethene (TCE)	0.0243
12:34	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
12:34	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
12:34	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
12:34	0	91-20-3	NAPH	Naphthalene	0.107
14:37	0	2037-26-5	BZMED8	Toluene-d8	98
14:37	0	460-00-4	BR4FBZ	4-Bromofluorobenzene	79
14:37	0	75-01-4	VC	Vinyl Chloride	0.052
14:37	0	75-09-2	MTLNCL	Methylene chloride	0.0181
14:37	0	156-60-5	DCE12T	trans-1,2-Dichloroethene	0.0807
14:37	0	156-59-2	DCE12C	cis-1,2-Dichloroethene	0.0807
14:37	0	67-66-3	TCLME	Chloroform	0.0993
14:37	0	107-06-2	DCA12	1,2-Dichloroethane	0.0823
14:37	0	56-23-5	CTCL	Carbon tetrachloride	0.128
14:37	0	71-43-2	BZ	Benzene	0.0256
14:37	0	79-01-6	TCE	Trichloroethene (TCE)	0.109
14:37	0	79-00-5	TCA112	1,1,2-Trichloroethane	0.111
14:37	0	127-18-4	PCE	Tetrachloroethene (PCE)	0.138
14:37	0	79-34-5	PCA	1,1,2,2-Tetrachloroethane	0.14
14:37	0	91-20-3	NAPH	Naphthalene	0.107

ExpectedValue	Units	Dilution	MDL	RL	LabQualifie	Surrogate	Comments	ParValUncert	Recovery
100	PERCENT	1				Y			98
100	PERCENT	1				Y			74
	UG/M3	1	0.0052	0.052	U	N			
	UG/M3	1	0.0141	1.77	U	N			
	UG/M3	1	0.0081	0.0807	U	N			
	UG/M3	1	0.0161	0.0807	U	N			
	UG/M3	1	0.0099	0.0993	U	N			
	UG/M3	1	0.0082	0.0823	U	N			
	UG/M3	1	0.0128	0.128	U	N			
	UG/M3	1	0.0065	0.065	J	N			
	UG/M3	1	0.0109	0.109	J	N			
	UG/M3	1	0.0111	0.111	U	N			
	UG/M3	1	0.0138	0.138	U	N			
	UG/M3	1	0.014	0.14	U	N			
	UG/M3	1	0.0533	0.107	U	N			
100	PERCENT	1				Y			108
100	PERCENT	1				Y			81
	UG/M3	1	0.0052	0.052	J	N			
	UG/M3	1	0.0141	1.77	U	N			
	UG/M3	1	0.0081	0.0807	U	N			
	UG/M3	1	0.0161	0.0807	U	N			
	UG/M3	1	0.0099	0.0993	U	N			
	UG/M3	1	0.0082	0.0823	U	N			
	UG/M3	1	0.0128	0.128	U	N			
	UG/M3	1	0.0065	0.065	J	N			
	UG/M3	1	0.0109	0.109	J	N			
	UG/M3	1	0.0111	0.111	U	N			
	UG/M3	1	0.0138	0.138	U	N			
	UG/M3	1	0.014	0.14	U	N			
	UG/M3	1	0.0533	0.107	U	N			
100	PERCENT	1				Y			101
100	PERCENT	1				Y			88
	UG/M3	1	0.0052	0.052	U	N			

	UG/M3	1	0.0141	1.77	U	N	
	UG/M3	1	0.0081	0.0807	J	N	
	UG/M3	1	0.0161	0.0807	U	N	
	UG/M3	1	0.0099	0.0993	J	N	
	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	J	N	
	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	99
100	PERCENT	1				Y	78
	UG/M3	1	0.0052	0.052	U	N	
	UG/M3	1	0.0141	1.77	U	N	
	UG/M3	1	0.0081	0.0807	U	N	
	UG/M3	1	0.0161	0.0807	J	N	
	UG/M3	1	0.0099	0.0993	U	N	
	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	J	N	
	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	98
100	PERCENT	1				Y	76
	UG/M3	1	0.0052	0.052	U	N	
	UG/M3	1	0.0141	1.77	U	N	
	UG/M3	1	0.0081	0.0807	U	N	
	UG/M3	1	0.0161	0.0807	U	N	
	UG/M3	1	0.0099	0.0993	U	N	

	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	U	N	
	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	99
100	PERCENT	1				Y	79
	UG/M3	1	0.0052	0.052	U	N	
	UG/M3	1	0.0141	1.77	U	N	
	UG/M3	1	0.0081	0.0807	U	N	
	UG/M3	1	0.0161	0.0807	U	N	
	UG/M3	1	0.0099	0.0993	U	N	
	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	U	N	
	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	99
100	PERCENT	1				Y	83
	UG/M3	1	0.0052	0.052	U	N	
	UG/M3	1	0.0141	1.77	U	N	
	UG/M3	1	0.0081	0.0807	U	N	
	UG/M3	1	0.0161	0.0807	U	N	
	UG/M3	1	0.0099	0.0993	U	N	
	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	U	N	

	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	98
100	PERCENT	1				Y	85
	UG/M3	1	0.0052	0.052	U	N	
	UG/M3	1	0.0141	1.77	J	N	
	UG/M3	1	0.0081	0.0807	U	N	
	UG/M3	1	0.0161	0.0807	U	N	
	UG/M3	1	0.0099	0.0993	U	N	
	UG/M3	1	0.0082	0.0823	U	N	
	UG/M3	1	0.0128	0.128	U	N	
	UG/M3	1	0.0065	0.065	J	N	
	UG/M3	1	0.0109	0.109	J	N	
	UG/M3	1	0.0111	0.111	U	N	
	UG/M3	1	0.0138	0.138	U	N	
	UG/M3	1	0.014	0.14	U	N	
	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	101
100	PERCENT	1				Y	91
0	UG/M3	1	0.0052	0.052	U	N	
0	UG/M3	1	0.0141	1.77	U	N	
0	UG/M3	1	0.0081	0.0807	U	N	
0	UG/M3	1	0.0161	0.0807	U	N	
0	UG/M3	1	0.0099	0.0993	U	N	
0	UG/M3	1	0.0082	0.0823	U	N	
0	UG/M3	1	0.0128	0.128	U	N	
0	UG/M3	1	0.0065	0.065	U	N	
0	UG/M3	1	0.0109	0.109	U	N	
0	UG/M3	1	0.0111	0.111	U	N	
0	UG/M3	1	0.0138	0.138	U	N	
0	UG/M3	1	0.014	0.14	U	N	
0	UG/M3	1	0.0533	0.107	U	N	

100	PERCENT	1				Y	100
100	PERCENT	1				Y	79
0	UG/M3	1	0.0052	0.052	U	N	
0	UG/M3	1	0.0141	1.77	U	N	
0	UG/M3	1	0.0081	0.0807	U	N	
0	UG/M3	1	0.0161	0.0807	U	N	
0	UG/M3	1	0.0099	0.0993	U	N	
0	UG/M3	1	0.0082	0.0823	U	N	
0	UG/M3	1	0.0128	0.128	U	N	
0	UG/M3	1	0.0065	0.065	J	N	
0	UG/M3	1	0.0109	0.109	J	N	
0	UG/M3	1	0.0111	0.111	U	N	
0	UG/M3	1	0.0138	0.138	U	N	
0	UG/M3	1	0.014	0.14	U	N	
0	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	99
100	PERCENT	1				Y	85
0	UG/M3	1	0.0052	0.052	U	N	
0	UG/M3	1	0.0141	1.77	J	N	
0	UG/M3	1	0.0081	0.0807	U	N	
0	UG/M3	1	0.0161	0.0807	U	N	
0	UG/M3	1	0.0099	0.0993	U	N	
0	UG/M3	1	0.0082	0.0823	U	N	
0	UG/M3	1	0.0128	0.128	U	N	
0	UG/M3	1	0.0065	0.065	J	N	
0	UG/M3	1	0.0109	0.109	U	N	
0	UG/M3	1	0.0111	0.111	U	N	
0	UG/M3	1	0.0138	0.138	U	N	
0	UG/M3	1	0.014	0.14	U	N	
0	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	111
100	PERCENT	1				Y	94
0	UG/M3	1	0.0052	0.052	=	N	
0	UG/M3	1	0.0141	1.77	J	N	

0	UG/M3	1	0.0081	0.0807	U	N		
0	UG/M3	1	0.0161	0.0807	U	N		
0	UG/M3	1	0.0099	0.0993	U	N		
0	UG/M3	1	0.0082	0.0823	U	N		
0	UG/M3	1	0.0128	0.128	J	N		
0	UG/M3	1	0.0065	0.065	J	N		
0	UG/M3	1	0.0109	0.109	J	N		
0	UG/M3	1	0.0111	0.111	U	N		
0	UG/M3	1	0.0138	0.138	U	N		
0	UG/M3	1	0.014	0.14	U	N		
0	UG/M3	1	0.0533	0.107	J	N		
100	PERCENT	2.87				Y		100
100	PERCENT	2.87				Y		95
	UG/M3	2.87	0.0149	0.149	U	N		
	UG/M3	2.87	0.0406	5.09	J	N		
	UG/M3	2.87	0.0231	0.231	U	N		
	UG/M3	2.87	0.0464	0.231	U	N		
	UG/M3	2.87	0.0285	0.285	J	N		
	UG/M3	2.87	0.0236	0.236	J	N		
	UG/M3	2.87	0.0367	0.367	=	N		
	UG/M3	2.87	0.0187	0.187	=	N		
	UG/M3	2.87	0.0314	0.314	J	N		
	UG/M3	2.87	0.0319	0.319	U	N		
	UG/M3	2.87	0.0396	0.396	J	N		
	UG/M3	2.87	0.0401	0.401	U	N		
	UG/M3	2.87	0.153	0.306	=	N		
100	PERCENT	4.18				Y		100
100	PERCENT	4.18				Y		102
	UG/M3	4.18	0.0217	0.217	U	N		
	UG/M3	4.18	0.059	7.39	J	N		
	UG/M3	4.18	0.0337	0.337	U	N		
	UG/M3	4.18	0.0674	0.337	U	N		
	UG/M3	4.18	0.0415	0.415	=	N		
	UG/M3	4.18	0.0344	0.344	J	N		

	UG/M3	4.18	0.0535	0.535	=	N		
	UG/M3	4.18	0.0272	0.272	=	N		
	UG/M3	4.18	0.0457	0.457	=	N		
	UG/M3	4.18	0.0464	0.464	J	N		
	UG/M3	4.18	0.0577	0.577	=	N		
	UG/M3	4.18	0.0584	0.584	J	N		
	UG/M3	4.18	0.223	0.446	=	N		
100	PERCENT	1.92				Y		100
100	PERCENT	1.92				Y		103
	UG/M3	1.92	0.00998	0.0998	U	N		
	UG/M3	1.92	0.0271	3.39	J	N		
	UG/M3	1.92	0.0155	0.155	U	N		
	UG/M3	1.92	0.031	0.155	U	N		
	UG/M3	1.92	0.0191	0.191	=	N		
	UG/M3	1.92	0.0158	0.158	J	N		
	UG/M3	1.92	0.0246	0.246	=	N		
	UG/M3	1.92	0.0125	0.125	=	N		
	UG/M3	1.92	0.021	0.21	=	N		
	UG/M3	1.92	0.0213	0.213	U	N		
	UG/M3	1.92	0.0265	0.265	=	N		
	UG/M3	1.92	0.0268	0.268	J	N		
	UG/M3	1.92	0.102	0.205	=	N		
100	PERCENT	12.3				Y		98
100	PERCENT	12.3				Y		97
	UG/M3	12.3	0.064	0.64	U	N		
	UG/M3	12.3	0.174	21.7	J	N		
	UG/M3	12.3	0.0992	0.992	J	N		
	UG/M3	12.3	0.198	0.992	=	N		
	UG/M3	12.3	0.122	1.22	J	N		
	UG/M3	12.3	0.101	1.01	J	N		
	UG/M3	12.3	0.157	1.57	J	N		
	UG/M3	12.3	0.0799	0.799	=	N		
	UG/M3	12.3	0.134	1.34	=	N		
	UG/M3	12.3	0.137	1.37	U	N		

	UG/M3	12.3	0.17	1.7	=	N		
	UG/M3	12.3	0.172	1.72	U	N		
	UG/M3	12.3	0.656	1.31	=	N		
100	PERCENT	1				Y		101
100	PERCENT	1				Y		105
2.67	UG/M3	1	0.0533	0.107	=	N		105
1.3	UG/M3	1	0.0052	0.052	=	N		101
1.77	UG/M3	1	0.0141	1.77	J	N		96
2.02	UG/M3	1	0.0081	0.0807	=	N		96
2.02	UG/M3	1	0.0161	0.0807	=	N		94
2.48	UG/M3	1	0.0099	0.0993	=	N		94
2.06	UG/M3	1	0.0082	0.0823	=	N		94
3.2	UG/M3	1	0.0128	0.128	=	N		100
1.62	UG/M3	1	0.0065	0.065	=	N		86
2.73	UG/M3	1	0.0109	0.109	=	N		96
2.77	UG/M3	1	0.0111	0.111	=	N		99
3.45	UG/M3	1	0.0138	0.138	=	N		98
3.49	UG/M3	1	0.014	0.14	=	N		105
100	PERCENT	1				Y		101
100	PERCENT	1				Y		103
2.67	UG/M3	1	0.0533	0.107	=	N		102
1.3	UG/M3	1	0.0052	0.052	=	N		103
1.77	UG/M3	1	0.0141	1.77	J	N		87
2.02	UG/M3	1	0.0081	0.0807	=	N		97
2.02	UG/M3	1	0.0161	0.0807	=	N		96
2.48	UG/M3	1	0.0099	0.0993	=	N		96
2.06	UG/M3	1	0.0082	0.0823	=	N		96
3.2	UG/M3	1	0.0128	0.128	=	N		99
1.62	UG/M3	1	0.0065	0.065	=	N		87
2.73	UG/M3	1	0.0109	0.109	=	N		99
2.77	UG/M3	1	0.0111	0.111	=	N		101
3.45	UG/M3	1	0.0138	0.138	=	N		101
3.49	UG/M3	1	0.014	0.14	=	N		107
100	PERCENT	1				Y		96

100	PERCENT	1				Y	81
0	UG/M3	1	0.0052	0.052	U	N	
0	UG/M3	1	0.0141	1.77	J	N	
0	UG/M3	1	0.0081	0.0807	U	N	
0	UG/M3	1	0.0161	0.0807	U	N	
0	UG/M3	1	0.0099	0.0993	U	N	
0	UG/M3	1	0.0082	0.0823	U	N	
0	UG/M3	1	0.0128	0.128	U	N	
0	UG/M3	1	0.0065	0.065	J	N	
0	UG/M3	1	0.0109	0.109	J	N	
0	UG/M3	1	0.0111	0.111	U	N	
0	UG/M3	1	0.0138	0.138	U	N	
0	UG/M3	1	0.014	0.14	U	N	
0	UG/M3	1	0.0533	0.107	U	N	
100	PERCENT	1				Y	98
100	PERCENT	1				Y	79
0	UG/M3	1	0.0052	0.052	U	N	
0	UG/M3	1	0.0141	1.77	J	N	
0	UG/M3	1	0.0081	0.0807	U	N	
0	UG/M3	1	0.0161	0.0807	U	N	
0	UG/M3	1	0.0099	0.0993	U	N	
0	UG/M3	1	0.0082	0.0823	U	N	
0	UG/M3	1	0.0128	0.128	U	N	
0	UG/M3	1	0.0065	0.065	J	N	
0	UG/M3	1	0.0109	0.109	U	N	
0	UG/M3	1	0.0111	0.111	U	N	
0	UG/M3	1	0.0138	0.138	U	N	
0	UG/M3	1	0.014	0.14	U	N	
0	UG/M3	1	0.0533	0.107	U	N	

LowerCont	UpperCont	Basis	ConcQual	MDLAdjust	RLAdjusted	SampleDes	LeachMethod	LeachDate	LeachTime	LeachLot	AnalysisLot
70	130	X	=				NONE				XB1-0521
70	130	X	=				NONE				XB1-0521
		X	U	0.0052	0.052		NONE				XB1-0521
		X	U	0.0141	1.77		NONE				XB1-0521
		X	U	0.0081	0.0807		NONE				XB1-0521
		X	U	0.0161	0.0807		NONE				XB1-0521
		X	U	0.0099	0.0993		NONE				XB1-0521
		X	U	0.0082	0.0823		NONE				XB1-0521
		X	U	0.0128	0.128		NONE				XB1-0521
		X	J	0.0065	0.065		NONE				XB1-0521
		X	J	0.0109	0.109		NONE				XB1-0521
		X	U	0.0111	0.111		NONE				XB1-0521
		X	U	0.0138	0.138		NONE				XB1-0521
		X	U	0.014	0.14		NONE				XB1-0521
		X	U	0.0533	0.107		NONE				XB1-0521
70	130	X	=				NONE				XB2-0510
70	130	X	=				NONE				XB2-0510
		X	J	0.0052	0.052		NONE				XB2-0510
		X	U	0.0141	1.77		NONE				XB2-0510
		X	U	0.0081	0.0807		NONE				XB2-0510
		X	U	0.0161	0.0807		NONE				XB2-0510
		X	U	0.0099	0.0993		NONE				XB2-0510
		X	U	0.0082	0.0823		NONE				XB2-0510
		X	U	0.0128	0.128		NONE				XB2-0510
		X	J	0.0065	0.065		NONE				XB2-0510
		X	J	0.0109	0.109		NONE				XB2-0510
		X	U	0.0111	0.111		NONE				XB2-0510
		X	U	0.0138	0.138		NONE				XB2-0510
		X	U	0.014	0.14		NONE				XB2-0510
		X	U	0.0533	0.107		NONE				XB2-0510
70	130	X	=				NONE				XB1-0430
70	130	X	=				NONE				XB1-0430
		X	U	0.0052	0.052		NONE				XB1-0430

		X	U	0.0141	1.77	NONE	XB1-0430
		X	J	0.0081	0.0807	NONE	XB1-0430
		X	U	0.0161	0.0807	NONE	XB1-0430
		X	J	0.0099	0.0993	NONE	XB1-0430
		X	U	0.0082	0.0823	NONE	XB1-0430
		X	U	0.0128	0.128	NONE	XB1-0430
		X	J	0.0065	0.065	NONE	XB1-0430
		X	J	0.0109	0.109	NONE	XB1-0430
		X	U	0.0111	0.111	NONE	XB1-0430
		X	U	0.0138	0.138	NONE	XB1-0430
		X	U	0.014	0.14	NONE	XB1-0430
		X	U	0.0533	0.107	NONE	XB1-0430
70	130	X	=			NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
		X	U	0.0052	0.052	NONE	XB1-0521
		X	U	0.0141	1.77	NONE	XB1-0521
		X	U	0.0081	0.0807	NONE	XB1-0521
		X	J	0.0161	0.0807	NONE	XB1-0521
		X	U	0.0099	0.0993	NONE	XB1-0521
		X	U	0.0082	0.0823	NONE	XB1-0521
		X	U	0.0128	0.128	NONE	XB1-0521
		X	J	0.0065	0.065	NONE	XB1-0521
		X	J	0.0109	0.109	NONE	XB1-0521
		X	U	0.0111	0.111	NONE	XB1-0521
		X	U	0.0138	0.138	NONE	XB1-0521
		X	U	0.014	0.14	NONE	XB1-0521
		X	U	0.0533	0.107	NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
		X	U	0.0052	0.052	NONE	XB1-0521
		X	U	0.0141	1.77	NONE	XB1-0521
		X	U	0.0081	0.0807	NONE	XB1-0521
		X	U	0.0161	0.0807	NONE	XB1-0521
		X	U	0.0099	0.0993	NONE	XB1-0521

		X	U	0.0082	0.0823	NONE	XB1-0521
		X	U	0.0128	0.128	NONE	XB1-0521
		X	J	0.0065	0.065	NONE	XB1-0521
		X	U	0.0109	0.109	NONE	XB1-0521
		X	U	0.0111	0.111	NONE	XB1-0521
		X	U	0.0138	0.138	NONE	XB1-0521
		X	U	0.014	0.14	NONE	XB1-0521
		X	U	0.0533	0.107	NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
		X	U	0.0052	0.052	NONE	XB1-0521
		X	U	0.0141	1.77	NONE	XB1-0521
		X	U	0.0081	0.0807	NONE	XB1-0521
		X	U	0.0161	0.0807	NONE	XB1-0521
		X	U	0.0099	0.0993	NONE	XB1-0521
		X	U	0.0082	0.0823	NONE	XB1-0521
		X	U	0.0128	0.128	NONE	XB1-0521
		X	J	0.0065	0.065	NONE	XB1-0521
		X	U	0.0109	0.109	NONE	XB1-0521
		X	U	0.0111	0.111	NONE	XB1-0521
		X	U	0.0138	0.138	NONE	XB1-0521
		X	U	0.014	0.14	NONE	XB1-0521
		X	U	0.0533	0.107	NONE	XB1-0521
70	130	X	=			NONE	XB1-0530
70	130	X	=			NONE	XB1-0530
		X	U	0.0052	0.052	NONE	XB1-0530
		X	U	0.0141	1.77	NONE	XB1-0530
		X	U	0.0081	0.0807	NONE	XB1-0530
		X	U	0.0161	0.0807	NONE	XB1-0530
		X	U	0.0099	0.0993	NONE	XB1-0530
		X	U	0.0082	0.0823	NONE	XB1-0530
		X	U	0.0128	0.128	NONE	XB1-0530
		X	J	0.0065	0.065	NONE	XB1-0530
		X	U	0.0109	0.109	NONE	XB1-0530

		X	U	0.0111	0.111	NONE	XB1-0530
		X	U	0.0138	0.138	NONE	XB1-0530
		X	U	0.014	0.14	NONE	XB1-0530
		X	U	0.0533	0.107	NONE	XB1-0530
70	130	X	=			NONE	XB1-0530
70	130	X	=			NONE	XB1-0530
		X	U	0.0052	0.052	NONE	XB1-0530
		X	J	0.0141	1.77	NONE	XB1-0530
		X	U	0.0081	0.0807	NONE	XB1-0530
		X	U	0.0161	0.0807	NONE	XB1-0530
		X	U	0.0099	0.0993	NONE	XB1-0530
		X	U	0.0082	0.0823	NONE	XB1-0530
		X	U	0.0128	0.128	NONE	XB1-0530
		X	J	0.0065	0.065	NONE	XB1-0530
		X	J	0.0109	0.109	NONE	XB1-0530
		X	U	0.0111	0.111	NONE	XB1-0530
		X	U	0.0138	0.138	NONE	XB1-0530
		X	U	0.014	0.14	NONE	XB1-0530
		X	U	0.0533	0.107	NONE	XB1-0530
70	130	X	=			NONE	XB1-0430
70	130	X	=			NONE	XB1-0430
		X	U	0.0052	0.052	NONE	XB1-0430
		X	U	0.0141	1.77	NONE	XB1-0430
		X	U	0.0081	0.0807	NONE	XB1-0430
		X	U	0.0161	0.0807	NONE	XB1-0430
		X	U	0.0099	0.0993	NONE	XB1-0430
		X	U	0.0082	0.0823	NONE	XB1-0430
		X	U	0.0128	0.128	NONE	XB1-0430
		X	U	0.0065	0.065	NONE	XB1-0430
		X	U	0.0109	0.109	NONE	XB1-0430
		X	U	0.0111	0.111	NONE	XB1-0430
		X	U	0.0138	0.138	NONE	XB1-0430
		X	U	0.014	0.14	NONE	XB1-0430
		X	U	0.0533	0.107	NONE	XB1-0430

70	130	X	=			NONE	XB1-0521
70	130	X	=			NONE	XB1-0521
		X	U	0.0052	0.052	NONE	XB1-0521
		X	U	0.0141	1.77	NONE	XB1-0521
		X	U	0.0081	0.0807	NONE	XB1-0521
		X	U	0.0161	0.0807	NONE	XB1-0521
		X	U	0.0099	0.0993	NONE	XB1-0521
		X	U	0.0082	0.0823	NONE	XB1-0521
		X	U	0.0128	0.128	NONE	XB1-0521
		X	J	0.0065	0.065	NONE	XB1-0521
		X	J	0.0109	0.109	NONE	XB1-0521
		X	U	0.0111	0.111	NONE	XB1-0521
		X	U	0.0138	0.138	NONE	XB1-0521
		X	U	0.014	0.14	NONE	XB1-0521
		X	U	0.0533	0.107	NONE	XB1-0521
70	130	X	=			NONE	XB1-0530
70	130	X	=			NONE	XB1-0530
		X	U	0.0052	0.052	NONE	XB1-0530
		X	J	0.0141	1.77	NONE	XB1-0530
		X	U	0.0081	0.0807	NONE	XB1-0530
		X	U	0.0161	0.0807	NONE	XB1-0530
		X	U	0.0099	0.0993	NONE	XB1-0530
		X	U	0.0082	0.0823	NONE	XB1-0530
		X	U	0.0128	0.128	NONE	XB1-0530
		X	J	0.0065	0.065	NONE	XB1-0530
		X	U	0.0109	0.109	NONE	XB1-0530
		X	U	0.0111	0.111	NONE	XB1-0530
		X	U	0.0138	0.138	NONE	XB1-0530
		X	U	0.014	0.14	NONE	XB1-0530
		X	U	0.0533	0.107	NONE	XB1-0530
70	130	X	=			NONE	XB2-0510
70	130	X	=			NONE	XB2-0510
		X	=	0.0052	0.052	NONE	XB2-0510
		X	J	0.0141	1.77	NONE	XB2-0510

		X	U	0.0081	0.0807		NONE	XB2-0510
		X	U	0.0161	0.0807		NONE	XB2-0510
		X	U	0.0099	0.0993		NONE	XB2-0510
		X	U	0.0082	0.0823		NONE	XB2-0510
		X	J	0.0128	0.128		NONE	XB2-0510
		X	J	0.0065	0.065		NONE	XB2-0510
		X	J	0.0109	0.109		NONE	XB2-0510
		X	U	0.0111	0.111		NONE	XB2-0510
		X	U	0.0138	0.138		NONE	XB2-0510
		X	U	0.014	0.14		NONE	XB2-0510
		X	J	0.0533	0.107		NONE	XB2-0510
70	130	X	=			PP-1-AA-01	NONE	XB2-0620
70	130	X	=			PP-1-AA-01	NONE	XB2-0620
		X	U	0.0149	0.149	PP-1-AA-01	NONE	XB2-0620
		X	J	0.0406	5.09	PP-1-AA-01	NONE	XB2-0620
		X	U	0.0231	0.231	PP-1-AA-01	NONE	XB2-0620
		X	U	0.0464	0.231	PP-1-AA-01	NONE	XB2-0620
		X	J	0.0285	0.285	PP-1-AA-01	NONE	XB2-0620
		X	J	0.0236	0.236	PP-1-AA-01	NONE	XB2-0620
		X	=	0.0367	0.367	PP-1-AA-01	NONE	XB2-0620
		X	=	0.0187	0.187	PP-1-AA-01	NONE	XB2-0620
		X	J	0.0314	0.314	PP-1-AA-01	NONE	XB2-0620
		X	U	0.0319	0.319	PP-1-AA-01	NONE	XB2-0620
		X	J	0.0396	0.396	PP-1-AA-01	NONE	XB2-0620
		X	U	0.0401	0.401	PP-1-AA-01	NONE	XB2-0620
		X	=	0.153	0.306	PP-1-AA-01	NONE	XB2-0620
70	130	X	=			PP-1-IA-01·	NONE	XB1-0621
70	130	X	=			PP-1-IA-01·	NONE	XB1-0621
		X	U	0.0217	0.217	PP-1-IA-01·	NONE	XB1-0621
		X	J	0.059	7.39	PP-1-IA-01·	NONE	XB1-0621
		X	U	0.0337	0.337	PP-1-IA-01·	NONE	XB1-0621
		X	U	0.0674	0.337	PP-1-IA-01·	NONE	XB1-0621
		X	=	0.0415	0.415	PP-1-IA-01·	NONE	XB1-0621
		X	J	0.0344	0.344	PP-1-IA-01·	NONE	XB1-0621

		X	=	0.0535	0.535	PP-1-IA-01·	NONE	XB1-0621
		X	=	0.0272	0.272	PP-1-IA-01·	NONE	XB1-0621
		X	=	0.0457	0.457	PP-1-IA-01·	NONE	XB1-0621
		X	J	0.0464	0.464	PP-1-IA-01·	NONE	XB1-0621
		X	=	0.0577	0.577	PP-1-IA-01·	NONE	XB1-0621
		X	J	0.0584	0.584	PP-1-IA-01·	NONE	XB1-0621
		X	=	0.223	0.446	PP-1-IA-01·	NONE	XB1-0621
70	130	X	=			PP-1-SG-01	NONE	XB2-0620
70	130	X	=			PP-1-SG-01	NONE	XB2-0620
		X	U	0.00998	0.0998	PP-1-SG-01	NONE	XB2-0620
		X	J	0.0271	3.39	PP-1-SG-01	NONE	XB2-0620
		X	U	0.0155	0.155	PP-1-SG-01	NONE	XB2-0620
		X	U	0.031	0.155	PP-1-SG-01	NONE	XB2-0620
		X	=	0.0191	0.191	PP-1-SG-01	NONE	XB2-0620
		X	J	0.0158	0.158	PP-1-SG-01	NONE	XB2-0620
		X	=	0.0246	0.246	PP-1-SG-01	NONE	XB2-0620
		X	=	0.0125	0.125	PP-1-SG-01	NONE	XB2-0620
		X	=	0.021	0.21	PP-1-SG-01	NONE	XB2-0620
		X	U	0.0213	0.213	PP-1-SG-01	NONE	XB2-0620
		X	=	0.0265	0.265	PP-1-SG-01	NONE	XB2-0620
		X	J	0.0268	0.268	PP-1-SG-01	NONE	XB2-0620
		X	=	0.102	0.205	PP-1-SG-01	NONE	XB2-0620
70	130	X	=			PP-1-SG-01	NONE	XB2-0620
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		X	U	0.064	0.64	PP-1-SG-01	NONE	XB2-0620
		X	J	0.174	21.7	PP-1-SG-01	NONE	XB2-0620
		X	J	0.0992	0.992	PP-1-SG-01	NONE	XB2-0620
		X	=	0.198	0.992	PP-1-SG-01	NONE	XB2-0620
		X	J	0.122	1.22	PP-1-SG-01	NONE	XB2-0620
		X	J	0.101	1.01	PP-1-SG-01	NONE	XB2-0620
		X	J	0.157	1.57	PP-1-SG-01	NONE	XB2-0620
		X	=	0.0799	0.799	PP-1-SG-01	NONE	XB2-0620
		X	=	0.134	1.34	PP-1-SG-01	NONE	XB2-0620
		X	U	0.137	1.37	PP-1-SG-01	NONE	XB2-0620

		X	=	0.17	1.7	PP-1-SG-01	NONE	XB2-0620
		X	U	0.172	1.72	PP-1-SG-01	NONE	XB2-0620
		X	=	0.656	1.31	PP-1-SG-01	NONE	XB2-0620
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70	130	X	=				NONE	XB2-0620
70	130	X	=	0.0533	0.107		NONE	XB2-0620
70	130	X	=	0.0052	0.052		NONE	XB2-0620
70	130	X	J	0.0141	1.77		NONE	XB2-0620
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70	130	X	=	0.0082	0.0823		NONE	XB2-0620
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70	130	X	=	0.0065	0.065		NONE	XB2-0620
70	130	X	=	0.0109	0.109		NONE	XB2-0620
70	130	X	=	0.0111	0.111		NONE	XB2-0620
70	130	X	=	0.0138	0.138		NONE	XB2-0620
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70	130	X	=				NONE	XB1-0621

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		X	U	0.0161	0.0807	NONE	XB1-0621
		X	U	0.0099	0.0993	NONE	XB1-0621
		X	U	0.0082	0.0823	NONE	XB1-0621
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		X	J	0.0065	0.065	NONE	XB1-0621
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		X	U	0.0161	0.0807	NONE	XB2-0620
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		X	U	0.0082	0.0823	NONE	XB2-0620
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		X	J	0.0065	0.065	NONE	XB2-0620
		X	U	0.0109	0.109	NONE	XB2-0620
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		X	U	0.0138	0.138	NONE	XB2-0620
		X	U	0.014	0.14	NONE	XB2-0620
		X	U	0.0533	0.107	NONE	XB2-0620

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