December 31, 2012

Mr. Phil Cole
New Jersey Department of Environmental Protection
Bureau of Case Management
401 East State Street
PO Box 028
Trenton, New Jersey 08625

**RE: Remedial Investigation Report**
**Historic Spill 21 – Tank 7930**
**Case #09-05-19-1218-35**
**Hess Corporation – Port Reading Refinery**
**750 Cliff Road**
**Port Reading, New Jersey**

Dear Mr. Cole,

This Remedial Investigation Report for the Historic Spill 21 is being submitted by EnviroTrac Ltd. on behalf of Hess Corporation – Port Reading Refinery located at 750 Cliff Road in Port Reading, New Jersey.

If you have any questions or require additional information please contact our office at 609-387-5553.

Sincerely,
**EnviroTrac, Ltd.**

David J. Carlson, PG, LSRP
Senior Project Manager
NJDEP UST Certification # 266010

Attachments: EDD Disk

Cc: Phil Cole, NJDEP – BCM (3 copies)
Dale Carpenter – USEPA Region II (w/enclosure)
Howard Goldman, Hess Corporation (w/enclosure)
John Engdahl, Hess Corporation (enfos)
EnviroTrac Project File

**New Jersey Department of Environmental Protection**
Site Remediation Program

# RECEPTOR EVALUATION (RE) FORM

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hess Corporation- Port Reading Refinery- Historic Spill 21

List all AKAs:

Street Address: 750 Cliff Road

Municipality: Woodbridge (Township, Borough or City)

County: Middlesex Zip Code: 07077

Program Interest (PI) Number(s): 006148 Case Tracking Number(s): 09-05-19-1218-35

**Indicate the type of submission:**

☐ Initial RE Submission

☒ Updated RE Submission

Indicate the reason for submission of an updated RE form

- ☐ Submission of an Immediate Environmental Concern (IEC) source control report;
- ☒ Submission of a Remedial Investigation Report;
- ☐ Submission of a Remedial Action Report;

Check if included in updated RE

- ☐ The known concentration or extent of contamination in any medium has increased;
- ☐ A new AOC has been identified;
- ☐ A new receptor is identified;
- ☐ A new exposure pathway has been identified.

## SECTION B. ON SITE AND SURROUNDING PROPERTY USE

1. Identify any sensitive populations/uses that are currently on-site or surrounding property usage within 200 feet of the site boundary (check all that apply):

| | On-site | Off-site |
|---|---|---|
| None of the following | ☒ | ☒ |
| Residences or residential property | ☐ | ☐ |
| Public or Private Schools grades K-12 | ☐ | ☐ |
| Child care centers | ☐ | ☐ |
| Public parks, playgrounds or other recreation areas | ☐ | ☐ |
| Other sensitive population use(s) Explain _____ | ☐ | ☐ |

If any of the above applies, attach a list of addresses, facility names, type of use, and a map depicting each location relative to the site.

2. Current site uses (check all that apply):

☒ Industrial ☐ Residential ☐ Commercial ☐ Agricultural
☐ School or child care ☐ Government ☐ Park or recreational use
☐ Vacant ☐ Other: _____

3. Planned future site uses and off-site use within 200 ft of site boundary (check all that apply):

☒ Industrial ☐ Residential ☐ Commercial ☐ Agricultural
☐ School or child care ☐ Government ☐ Park or recreational use
☐ Vacant ☐ Other: _____

Provide a map depicting the location of the proposed changes in land use.

## SECTION C. DESCRIPTION OF CONTAMINATION

1. Identify if any of the following exist at the site (check all that apply):
   - ☐ Free product [N.J.A.C. 7:26E-1.8] identified is ☐ LNAPL* or ☐ DNAPL**. Date identified: _____
   - ☐ Residual product [N.J.A.C. 7:26E-1.8]
   - ☐ Other high concentration source materials not identified above (e.g., buried drums, containers, unsecured friable asbestos)

     Explain: _____

   * LNAPL – measured thickness of .01 feet or more

   **DNAPL – See US EPA DNAPL Overview

2. Soil Migration Pathway

   Has soil contamination been delineated to the applicable Direct Contact Soil Remediation Standard? ..... ☒ Yes ☐ No

   Are all soils either below the applicable Direct Contact Criteria or under an institutional control (i.e. deed notice)? ..... ☒ Yes ☐ No

3. If this evaluation is submitted with a technical document that includes contaminant summary information, proceed to Section D. Otherwise attach a brief summary of all currently available data and information to be included in the site investigation or remedial investigation report.

## SECTION D. GROUND WATER USE

1. Has the requirement for ground water sampling been triggered? ..... ☒ Yes ☐ No ☐ Unknown
   If "No," proceed to Section F. If "Unknown," explain:

   _____

2. Is Ground water contaminated above the Ground Water Remediation Standards [N.J.A.C.7:9C]? ..... ☐ Yes ☒ No ☐ Unknown

   Or ☐ Awaiting laboratory data with the expected due date: _____

   If "Yes," provide the date that the laboratory data was available and confirmed contamination above the Ground Water Remediation Standards. Date: _____

   If "Unknown," explain: _____

   If "No," or awaiting laboratory data proceed to Section F.

3. Has ground water contamination been delineated to the applicable Remediation Standard? ..... ☒ Yes ☐ No
4. Has a well search been completed? ..... ☒ Yes ☐ No

   Date of most recent or updated well search: 02/11/2011

   Identify if any of the following conditions exist based on the well search [N.J.A.C.7:26E-1.14(a)] (check all that apply):
   - ☐ Potable wells located within 500 feet from the downgradient edge of the currently known extent of contamination.
   - ☐ Potable well located 250 feet upgradient or 500 feet side gradient of the currently known extent of contamination.
   - ☐ Ground water contamination is located within a Tier 1 wellhead protection area (WHPA).

5. Is a completed Well Search Spreadsheet or historical well search table attached and has an electronic copy of the spreadsheet been submitted to srpgis_wrs@dep.state.nj.us. ..... ☒ Yes ☐ No

   If "No," explain: _____

6. Are any private potable or irrigation wells located within ½ mile of the currently known extent of contamination? ..... ☐ Yes ☒ No

   If "Yes," was a door to door survey completed? ..... ☐ Yes ☐ No

   If survey was not completed explain: _____

7. Has sampling been conducted of ☐ potable well(s) and /or ☐ non-potable use well(s)? ..... ☐ Yes ☒ No

   If "No," provide justification then proceed to Section E.

   There are none

8 Has contamination been identified in potable well(s) above Ground Water Remediation Standards that is not suspected to be from the site? (If "Yes," provide justification) ..... ☐ Yes ☒ No

_____

9 Has contamination been identified in potable well(s) that is above the Ground Water Remediation Standards or Federal Drinking Water Standards? ..... ☐ Yes ☒ No

Provide date laboratory data was received: _____

Or ☐ awaiting laboratory data with the expected due date: _____

If "Yes" for potable well contamination **not attributable to background**, follow the IEC Guidance Document at http://www.nj.gov/dep/srp/guidance/index.html#iec for required actions and answer the following:

Has an engineered system response action been completed on all receptors? ..... ☐ Yes ☐ No
Provide a brief narrative description:

Date completed: _____ NJDEP Case Manager: _____

10. Were Non-potable use well(s) sampled and results were above Class II Ground Water Remediation Standards? ..... ☐ Yes ☒ No

Provide date laboratory data was received: _____

Or ☐ awaiting laboratory data with the expected due date: _____

11. Has the ground water use evaluation been completed? ..... ☒ Yes ☐ No

**SECTION E. VAPOR INTRUSION (VI)**

1. Contaminants present in ground water exceed the Vapor Intrusion Ground Water Screening Levels that trigger a VI evaluation. (see NJDEP Vapor Intrusion Technical Guidance). ... ☐ Yes ☒ No ☐ Unknown

Or ☐ Awaiting laboratory data and the expected due date: _____

Provide the date that the laboratory data was available and confirmed contamination above the Vapor Intrusion Trigger Levels. Date: _____

2. Other existing conditions that trigger a VI evaluation. (see NJDEP Vapor Intrusion Technical Guidance)

☐ Wet basement or sump containing free product or ground water containing volatile organics
☐ Methane generating conditions causing oxygen deficient or explosion concern
☐ Other human or safety concern from the VI pathway (i.e. elemental mercury, unsaturated contamination, elevated soil gas or indoor vapor (explain):

If you answered "No," or awaiting laboratory data to Question 1., *and* did not check any boxes in Question 2, proceed to Section F, "Ecological Receptors", otherwise complete the rest of this section.

3. Has ground water contamination been delineated to the applicable Ground Water Vapor Screening Level? ..... ☒ Yes ☐ No

4. Was a site specific screening level, modeling or other alternative approach employed for the VI pathway? ..... ☐ Yes ☒ No

5. Identify and locate on a scaled map any buildings/sensitive populations that exist within the following distances from ground water contamination with concentrations above the Vapor Intrusion Ground Water Screening Levels or specific threats (check all that apply):

☐ 30 feet of petroleum free product or dissolved petroleum hydrocarbon contamination in ground water
☐ 100 feet of any non-petroleum free product or any non-petroleum dissolved volatile organic ground water contamination
☒ No buildings exist within the specified distances

6. The vapor intrusion pathway is a concern at or adjacent to the site (if "No," attach justification) ..... ☐ Yes ☒ No

7. Has soil gas sampling of the building(s) been conducted? ☐ Yes ☐ No ☒ N/A
If "No," or "N/A," proceed to #10

8. Has indoor air sampling been conducted at the identified building(s)? ☐ Yes ☐ No
If "No," proceed to #10

9 Has indoor air contamination been identified but not suspected to be from the site?
(if "Yes," attach justification) ☐ Yes ☐ No

10. Indoor air results were above the NJDEP's Rapid Action Levels. ☐ Yes ☒ No

Provide the date that the laboratory data was available and confirmed contamination above the Rapid Action Levels. Date: _____

Or ☐ Awaiting laboratory data with the expected due date: _____

**If "Yes" to #8 above, follow the IEC Guidance Document at** http://www.nj.gov/dep/srp/guidance/index.html#iec **for required actions.**

The IEC engineering system response for control was implemented for all identified structures ☐ Yes ☐ No

Date: _____ NJDEP Case Manager: _____

11. Indoor air sampling was conducted and results were above the NJDEP's Indoor Air Screening Levels but at or below the Rapid Action Levels ☐ Yes ☒ No

Provide the date that the laboratory data was available. Date: _____

Or ☐ Awaiting laboratory data with the expected due date: _____

**If "Yes" to #10 above, answer the following:**

Has the Vapor Concern (VC) Response Action Form notifying the NJDEP of the exceedances been submitted? ☐ Yes ☐ No
Date: _____

Has a plan to mitigate and monitor the exposure been submitted? ☐ Yes ☐ No
Date: _____

Has the Mitigation Response Action Report been submitted? ☐ Yes ☐ No
Date: _____

12. Has the vapor intrusion investigation been completed? ☒ Yes ☐ No
If "No", is the vapor intrusion investigation stepping out as part of the site investigation or remedial investigation. (If "No," attach justification) ☐ Yes ☐ No

**SECTION F. ECOLOGICAL RECEPTORS**

1. Has an Ecological Evaluation (EE) has been conducted? [N.J.A.C. 7:26E-1.16] ☒ Yes ☐ No

Date conducted: _____

2. Do the results of an EE trigger a remedial investigation of ecological receptors? [N.J.A.C. 7:26E-4.8]. ☐ Yes ☒ No

3. Has a remedial investigation of ecological receptors been conducted? ☐ Yes ☒ No

Date conducted: _____

4. Provide the name(s) of any surface water body on or within 200 feet of the site:

_____

5. Is free product or residual product located within 100 feet from an ecological receptor? ☐ Yes ☒ No

6. Available data indicate an impact on: ☐ Ecological receptor(s) ☐ Surface water ☐ Sediment

If this evaluation is submitted with a technical document that includes contaminant summary information, proceed to Section G. Otherwise attach a description of the type of contamination and provide a schedule and a description of all actions to be taken to mitigate exposure

**SECTION G. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION**

Full Legal Name of the Person Responsible for Conducting the Remediation: Hess Corporation

Representative First Name: John Representative Last Name: Engdahl

Title: Senior Specialist

Phone Number: (732) 750-6934 Ext: Fax: (732) 750-6105

Mailing Address: One Hess Plaza

City/Town: Woodbridge State: NJ Zip Code: 07095

Email Address: JEngdahl@Hess.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Date: 12/19/2012

Name/Title: John J. Engdahl/ Senior Specialist **No Changes Since Last Submittal** ☐

**SECTION H. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: 581780

First Name: Dave Last Name: Carlson

Phone Number: (609) 387-5553 Ext: Fax: (609) 387-5533

Mailing Address: 3 Terri Ln, Suite #8

City/Town: Burlington State: NJ Zip Code: 08016

Email Address: davec@envirotrac.com

*I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:*

**[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:**

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☒ *personally reviewed and accepted all of the referenced remediation presented herein.*

*I believe that the information contained herein, and including all attached documents, is true, accurate and complete.*

*It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.*

*My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.*

*I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.*

LSRP Signature: Date: 12/21/12

LSRP Name/Title: David J. Carlson/Senior Project Manager **No Changes Since Last Submittal** ☒

Company Name: EnviroTrac Ltd.

Completed forms should be sent to the municipal clerk, designate health department, and:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

**New Jersey Department of Environmental Protection**
Site Remediation Program

# REMEDIAL INVESTIGATION REPORT FORM

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hess Corporation - Port Reading Refinery- Historic Spill 21

List all AKAs:

Street Address: 750 Cliff Road

Municipality: Woodbridge (Township, Borough or City)

County: Middlesex Zip Code: 07077

Program Interest (PI) Number(s): 006148 Case Tracking Number(s): 09-05-19-1218-35

Date Remediation Initiated Pursuant to N.J.A.C. 7:26C-2: 05/19/2009

State Plane Coordinates for a central location at the site: Easting: 561544 Northing: 630878

Municipal Block(s) and Lot(s):

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Block # | 756 | Lot # | 3 | Block # | | Lot # | |
| Block # | | Lot # | | Block # | | Lot # | |
| Block # | | Lot # | | Block # | | Lot # | |
| Block # | | Lot # | | Block # | | Lot # | |

## SECTION B. SUBMITTAL STATUS

| | Not Applicable | Included in this Submission | Previously Submitted | Date Of Submission | Date of Revised Submission | Date of Document Withdrawal |
|---|---|---|---|---|---|---|
| Public Notification | ☐ | ☐ | ☒ | 09/09/2009 | | |
| Immediate Environmental Concern Report | ☒ | ☐ | ☐ | | | |
| IEC Engineered System Response Action Report | ☒ | ☐ | ☐ | | | |
| Vapor Concern Mitigation Report | ☒ | ☐ | ☐ | | | |
| LNAPL Interim Remedial Measure Report | ☒ | ☐ | ☐ | | | |
| Preliminary Assessment Report | ☒ | ☐ | ☐ | | | |
| Receptor Evaluation | ☐ | ☒ | ☐ | | | |
| Site Investigation Report | ☒ | ☐ | ☐ | | | |
| Remedial Investigation/Remedial Action Work Plan | ☐ | ☒ | ☐ | | | |
| Remedial Action Report | ☒ | ☐ | ☐ | | | |
| Response Action Outcome | ☒ | ☐ | ☐ | | | |
| Alternative Soil Remediation Standard and/or Screening level Application Form | ☒ | ☐ | ☐ | | | |
| Case Inventory Document | ☐ | ☒ | ☐ | | | |
| Permit Application – list: | ☒ | ☐ | ☐ | | | |
| | ☐ | ☐ | ☐ | | | |
| | ☐ | ☐ | ☐ | | | |
| | ☐ | ☐ | ☐ | | | |
| Radionuclide Remedial Investigation Workplan | ☒ | ☐ | ☐ | | | |
| Radionuclide Remedial Investigation Report | ☒ | ☐ | ☐ | | | |
| Radionuclide Remedial Action Workplan | ☒ | ☐ | ☐ | | | |
| Radionuclide Remedial Action Report | ☒ | ☐ | ☐ | | | |

## SECTION C. SITE USE

**Current Site Use (check all that apply)**

- ☒ Industrial
- ☐ Residential
- ☐ Commercial
- ☐ School or child care
- ☐ Other _____
- ☐ Agricultural
- ☐ Park or recreational use
- ☐ Vacant
- ☐ Government

**Intended Future Site Use (check all that apply)**

- ☒ Industrial
- ☐ Residential
- ☐ Commercial
- ☐ School or child care
- ☐ Park or recreational use
- ☐ Vacant
- ☐ Government
- ☐ Future site use unknown

## SECTION D. PUBLIC FUNDS

Did the remediation utilize public funds? ..... ☐ Yes ☒ No

If "Yes," check applicable: ☐ UST Grant ☐ UST Loan ☐ Brownfield Reimbursement Program ☐ HDSRF Grant ☐ HDSRF Loan ☐ Landfill Reimbursement Program ☐ Spill Fund ☐ Schools Development Authority

## SECTION E. SCOPE OF THE REMEDIAL INVESTIGATION REPORT

1. Does the Remedial Investigation address:
   - ☒ Area(s) of Concern (AOCs) Only
   - ☐ Entire Site (based on a completed and submitted Preliminary Assessment/Site Investigation)
2. Total number of contaminated AOCs associated with the case: 21
3. Total number of contaminated AOCs addressed in this submittal: 1
4. Is the Remedial Investigation complete for the contaminated AOCs addressed in this submittal? ..... ☒ Yes ☐ No
5. Is the Remedial Investigation complete for all AOCs associated with this case? ..... ☐ Yes ☒ No

   If "Yes," provide date: _____

## SECTION F. SITE CONDITIONS

1. Check each media-type and highest concentration of contamination present above any applicable standards/criteria at the time of remedial investigation:

| Soil in ppm | | | | | GW = Ground Water in ppb | | | | | | SW = Surface Water in ppb | | | | | | Sed = Sediment in ppm | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Soil ppm | GW ppb | SW ppb | Sed ppm | | | Soil ppm | GW ppb | SW ppb | Sed ppm | | | Soil ppm | GW ppb | SW ppb | Sed ppm | |
| *VOCs | ☒ | ☐ | ☐ | ☐ | <100 | | ☐ | ☐ | ☐ | ☐ | 100–1,000 | | ☐ | ☐ | ☐ | ☐ | >1,000 |
| *SVOCs | ☐ | ☐ | ☐ | ☐ | <100 | | ☐ | ☐ | ☐ | ☐ | 100–1,000 | | ☐ | ☐ | ☐ | ☐ | >1,000 |
| *PAHs | ☐ | ☐ | ☐ | ☐ | <10 | | ☐ | ☐ | ☐ | ☐ | 10–100 | | ☐ | ☐ | ☐ | ☐ | >100 |
| *Metals | ☐ | ☐ | ☐ | ☐ | <100 | | ☐ | ☐ | ☐ | ☐ | 100–1,000 | | ☐ | ☐ | ☐ | ☐ | >1,000 |
| PCBs | ☐ | ☐ | ☐ | ☐ | <10 | | ☐ | ☐ | ☐ | ☐ | 10–100 | | ☐ | ☐ | ☐ | ☐ | >100 |
| *Pesticides | ☐ | ☐ | ☐ | ☐ | <1 | | ☐ | ☐ | ☐ | ☐ | 1-10 | | ☐ | ☐ | ☐ | ☐ | >10 |
| Dioxin (ppb) | ☐ | ☐ | ☐ | ☐ | <1 ppb | | ☐ | ☐ | ☐ | ☐ | 1-10 ppb | | ☐ | ☐ | ☐ | ☐ | >10 ppb |
| Chromium | ☐ | ☐ | ☐ | ☐ | <100 | | ☐ | ☐ | ☐ | ☐ | 100–1,000 | | ☐ | ☐ | ☐ | ☐ | >1,000 |
| Mercury | ☐ | ☐ | ☐ | ☐ | <100 | | ☐ | ☐ | ☐ | ☐ | 100–1,000 | | ☐ | ☐ | ☐ | ☐ | >1,000 |
| Arsenic | ☐ | ☐ | ☐ | ☐ | <10 | | ☐ | ☐ | ☐ | ☐ | 10–100 | | ☐ | ☐ | ☐ | ☐ | >100 |
| EPH | ☐ | | | ☐ | <1,700 | | ☐ | | | ☐ | 1,700–5,100 | | ☐ | | | ☐ | >5,100 |

2. For any contaminant group (*) checked above, identify the compound/element with the highest concentration over its applicable remediation standard:

   Benzene (0.707 mg/kg) _____ _____ _____ _____

3. Were the laboratory reporting minimum detection limits below applicable remediation standards/ criteria required for the site? ..... ☒ Yes ☐ No

4. Are any of the following conditions currently present? (check all that apply)

**Ground water:**

- ☐ Contaminated ground water in the overburden aquifer
- ☐ Contaminated ground water in a confined aquifer
- ☐ Contaminated ground water in the bedrock aquifer
- ☐ Contaminated ground water in multiple aquifer units
- ☐ Multiple distinct ground water plumes
- ☐ Contaminated ground water migrating off-site
- ☐ Background ground water contamination
- ☐ Contaminated ground water discharging to surface water
- ☐ Residual or free product
- ☐ Radionuclides

**Soil:**

- ☐ On-site discharge(s) impacting soil off-site
- ☐ Chromate Production Waste
- ☐ Munitions and explosives of concern
- ☐ Contaminated soil in the saturated zone
- ☐ Historic pesticide impacts to soil
- ☐ Residual or free product
- ☐ Radionuclides
- ☐ Historic Fill
- ☐ Soil contamination due to naturally occurring background conditions

## SECTION G. APPLICABLE REMEDIATION STANDARDS

1 Were Default Remediation Standards used for all compounds? ..... ☒ Yes ☐ No
(If "Yes," check all that apply)

- ☒ Direct Contact
- ☒ Impact to Ground Water Soil Screening Levels
- ☒ Ecological Screening Levels

2. Has compliance averaging been utilized to determine compliance with the Inhalation Pathway?..... ☐ Yes ☒ No

3. Has a compliance option been utilized to determine compliance with the Impact to Ground Water Pathway? (If "Yes," check all that apply) ..... ☐ Yes ☒ No

- ☐ Immobile Compounds
- ☐ Data evaluation for metals and semi-volatiles
- ☐ Data evaluation for volatile organics derived from discharges of petroleum mixtures

4. Were Alternate Remediation Standards used for the Ingestion/Dermal Pathway? ..... ☐ Yes ☒ No

5. Were Alternate Remediation Standards used for the Inhalation Pathway?..... ☐ Yes ☒ No

6. Were Site Specific Standards used for the Impact to Ground Water Pathway? ..... ☐ Yes ☒ No
(If "Yes," check all that apply)

- ☐ Soil-Water Partitioning Equation ☐ SPLP ☐ Sesoil ☐ Sesoil/AT123D
- ☐ DAF Modification ☐ Immobile Chemicals List
- ☐ Soil and Ground Water Analytical Data Evaluation

7. Were site specific Ecological Remediation Goals used? ..... ☐ Yes ☒ No

8. What is the ground water classification for this site as per N.J.A.C. 7:9C? (check all that apply)

- ☐ Class I-A ☐ Class II-A
- ☐ Class I-PL Pinelands Protection Area ☐ Class III-A
- ☐ Class I-PL Pinelands Preservation Area ☐ Class III-B

## SECTION H. BACKGROUND CONDITIONS

Did the RI demonstrate via a background investigation, outside the influence of on-site AOCs **and** operational areas, that:

1. all or any part of the ground water contamination is migrating onto this site per N.J.A.C. 7:26E-3.7(g)?..... ☐ Yes ☒ No ☐ NA

2. soil contamination is naturally occurring per N.J.A.C. 7:26E-3.10..... ☐ Yes ☒ No ☐ NA

## SECTION I. ALTERNATIVE STANDARD / VARIANCES

**Alternative remediation standard**
If proposing an alternative remediation standard pursuant to N.J.A.C. 7:26D-7.4, or alternate vapor intrusion screening level, check here ☐ and attach the Alternative Soil Remediation Standard and/or Screening Level Application Form as an addendum.

A site-specific screening level was developed for the evaluation of the VI pathway ..... ☐ Yes ☒ No

**Variance from regulations**
If the Licensed Site Remediation Professional has varied from the Technical Rules, provide the citation(s) from which the remediation varied and the page(s) in the attached document where the rationale for the variance is provided.

N.J.A.C. 7:26E- _____ Page _____

N.J.A.C. 7:26E- _____ Page _____

N.J.A.C. 7:26E- _____ Page _____

## SECTION J. HISTORIC FILL

1. The presence of historic fill is supported by (check all that apply):

   ☐ Boring logs ☐ Test Pits ☐ Trenches ☐ Aerial Photos ☒ NJDEP Mapped Areas

   ☐ No historic fill identified at the site. If none, skip to K. below.

2. How was the historic fill characterized pursuant to N.J.A.C. 7:26E-4.6? (check all that apply)

   ☐ Samples were collected outside areas potentially impacted by on-site operations (i.e., AOC(s))

   ☐ Contaminant levels in Table 4.2 at N.J.A.C. 7:26E-4.6

3. Are any other AOCs (i.e., location of discharge and any contaminants that may have migrated from that area) located within the defined boundaries of the historic fill? ..... ☒ Yes ☐ No

   If "No," skip to K. below

4. Have the same contaminant type(s) (e.g., lead, arsenic, and/or benzo(a)pyrene, etc.) characterized as being present in the historic fill been **sampled for** as a contaminant of concern at these co-located AOCs? ..... ☒ Yes ☐ No

## SECTION K. GROUND WATER TRIGGER

1. Was a ground water investigation conducted at all AOCs where a ground water investigation was triggered pursuant to N.J.A.C. 7:26E-3.7 and 4.4(a)? ..... ☒ Yes ☐ No ☐ NA
2. Is contamination in soils fully delineated?..... ☐ Yes ☒ No

## SECTION L. GROUND WATER REMEDIAL INVESTIGATION INFORMATION

1. Are contaminants present with a specific gravity less than that of water? ..... ☐ Yes ☒ No
   a. If "Yes," were any monitor wells installed in unconfined aquifers in which the water table is higher than the top of the well screen? ..... ☐ Yes ☐ No

   If "Yes" to 1a, identify the affected wells. _____
2. Are contaminants present with a specific gravity greater than that of water? ..... ☐ Yes ☒ No
   a. If "Yes," were multiple depth discrete ground water samples collected in a vertical profile at each ground water sampling location where dense contaminants were suspected?..... ☐ Yes ☐ No
3. Is ground water in the bedrock aquifer contaminated?..... ☐ Yes ☒ No

   If "Yes," answer questions 3a and 3b.

   a. Were bedrock cores collected? ..... ☐ Yes ☐ No
   b. Were geophysical logging methods conducted to characterize the bedrock aquifer pursuant to N.J.A.C. 7:26E-4.4(g)5? ..... ☐ Yes ☐ No
4. Is contamination in ground water fully delineated?..... ☒ Yes ☐ No

## SECTION M. ECOLOGICAL RECEPTORS

1. Have soil, sediment, and/or surface water data been collected from Environmentally Sensitive Natural Resources (ESNR)? ☐ Yes ☒ No ☐ NA
   a. If "Yes," do contaminant concentrations at the ESNR exceed ecological screening criteria or the aquatic chronic NJSWQS [N.J.A.C.7:9B]? ☐ Yes ☐ No
   b. If "Yes," have soil and sediment data been collected from both surface and subsurface intervals in the ESNR? ☐ Yes ☐ No
   c. If No for 1b, provide explanation No completed pathway to receptor exists
2. Have contaminant migration pathways from the site/AOC to the ESNR been identified? ☐ Yes ☒ No
3. Do the results of the Ecological Evaluation require a remedial investigation of ecological receptors? ☐ Yes ☒ No

   If No, provide explanation _____
4. Has an Ecological Risk Assessment been conducted [N.J.A.C.7:26E-4.7]? ☐ Yes ☒ No
5. Is remediation required in an ESNR? ☐ Yes ☒ No

## SECTION N. LABORATORY DATA

1. Were all data submitted in the appropriate full and/or reduced formats according to the deliverables defined in N.J.A.C. 7:26E-2? ☒ Yes ☐ No
2. Do all data submitted meet the quality assurance/quality control (QA/QC) requirements incorporated by reference in N.J.A.C. 7:26E-2 for:
   sampling ☒ Yes ☐ No
   analysis ☒ Yes ☐ No
3. How was it determined that the data complied with the QA/QC requirements?
   ☒ Laboratory non-conformance summary/narrative
   ☐ Laboratory correspondence
   ☐ LSRP review
   ☐ Independent contractor review
   ☐ Other: _____
4. Has any data been qualified and used? ☐ Yes ☒ No
5. Has any data been rejected and used? ☐ Yes ☒ No
6. Comments:

## SECTION O. MISCELLANEOUS

1. Were any regulated USTs identified during the course of the RI that were not previously known? ☐ Yes ☒ No

   If "Yes," list tank size, contents and registration number(s). _____

   _____

1a. If "Yes," to item N.1. above and if these USTs were Federally Regulated, was the source/cause of release identified on a Confirmed Discharge Notification form? ☐ Yes ☐ No

   If "No," complete and submit a revised Confirmed Discharge Notification form.

2. Were additional Areas of Concern identified during the RI? ☐ Yes ☒ No

   If "Yes," identify AOC: _____

3. Identify Remedial Measures (RMs) conducted during the RI (check all that apply):

- ☐ Soil excavation
- ☐ Potable water supply treatment or replacement
- ☐ Hydraulic containment of source area
- ☐ Soil vapor extraction
- ☐ Enhanced fluid recovery (EFR)
- ☐ Other(s), specify: _____
- ☐ UST closure
- ☐ Free product recovery
- ☐ Vapor intrusion mitigation
- ☒ No RMs were conducted during the RI

4. Did the remedial investigation include sampling to characterize any on-site contaminated media for either on-site or off-site reuse? ☐ Yes ☒ No

5. Has clean fill has been brought onto the site? ☐ Yes ☒ No

   If yes, has it been analyzed? ☐ Yes ☐ No

6. Has new information (material facts, data or other information) been generated during the RI that corrects or contradicts information, or changes conclusions from, previously submitted reports or information? ☐ Yes ☒ No

   If "Yes," explain: _____

7. Have past deficiencies/notice of deficiencies been addressed in this submittal? ☒ Yes ☐ No

**SECTION P. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION**

Full Legal Name of the Person Responsible for Conducting the Remediation: Hess Corporation

Representative First Name: John Representative Last Name: Engdahl

Title: Senior Environmental Specialist

Phone Number: (732) 750-6934 Ext: _____ Fax: (732) 750-6805

Mailing Address: One Hess Plaza

City/Town: Woodbridge State: NJ Zip Code: 07095

Email Address: JEngdahl@hess.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: _____ Date: 12/19/2012

Name/Title: John Engdahl/ Senior Environmental Specialist **No Changes Since Last Submittal** ☒

**SECTION Q. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: 581780

First Name: David Last Name: Carlson

Phone Number: (609) 387-5553 Ext: Fax: (609) 387-5533

Mailing Address: 3 Terri Ln, Suite #8

City/Town: Burlington State: NJ Zip Code: 08016

Email Address: DaveC@envirotrac.com

*I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:*

**[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:**

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☒ *personally reviewed and accepted all of the referenced remediation presented herein.*

*I believe that the information contained herein, and including all attached documents, is true, accurate and complete.*

*It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.*

*My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.*

*I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.*

LSRP Signature: Date: 12/21/12

LSRP Name/Title: David J. Carlson/ Senior Project Manager **No Changes Since Last Submittal** ☒

Company Name: EnviroTrac Ltd

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

| ***Case Inventory Document*** | | | | | | |
|---|---|---|---|---|---|---|
| ***I. Area(s) of Concern, Receptor and Emergency Response Tracking*** | ***Impacted Media*** | ***Contaminants of Concern*** | ***Exposure Route*** | ***Receptors*** | | |
| | | | | ***Existing*** | ***Potential*** | |
| Historic Spill- 21 | Soil | Benzene, Toluene, Ethylbenzene, Total Xylenese | None | None | None | **December 2012** Remdial Investigation Report (RIR) and updated Receptor Evaluation (RE) - Historic Spill (HS)- 21 is located at Tank 7930. On May 9, 2009, a hole was discovered in the water draw sump from Tank 7930. Note- water draw sumps at HC-PR facility are manual and water does not enter the sump without an operator at the water draw valve adjacent to sump. However, on basis of a suspected release of gasoline-impacted water the NJDEP was notified and Incident #09-05-19-1218-35 was assigned. The tank was taken out of service for repair and approximately 2.5 feet of impacted soil was removed from below the sump (area=3'x3'). On June 2, 2009, a soil sample (7930 Sump PE-1) was collected and analyzed for VO+10. The results indicated several compounds above the NJDEP IGWSSL. On October 28, 2009, one (1) temporary monitoring well (TK-7930-TW-1) was installed. The sample was analyzed for VO+10 and BN+15. The results indicate that all results are below the NJDEP GWQS. HC-PR is requesting no further action for HS-21. |

**Remedial Investigation Report**
**Historic Spill- 21 Tank 7930**
**Hess Corporation – Port Reading Refinery**
**750 Cliff Road**
**Port Reading, New Jersey**

**SRP PI # 006148**

**December 31, 2012**

**Prepared for:**

**John J. Engdahl**
**Senior Specialist**
**Hess Corporation**
**One Hess Plaza**
**Woodbridge, NJ 07095**

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**Project Scientist**

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**David J. Carlson, PG**
**Senior Project Manager**
**NJDEP Certification # 26610**

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**Remedial Investigation Report**
**Historic Spill-21 Tank 7930**
**Hess Corporation – Port Reading Refinery**
**750 Cliff Road**
**Port Reading, New Jersey**

## 1.0 Introduction

EnviroTrac Ltd. (ET) has been retained by Hess Corporation (Hess) to provide environmental consulting services with regard to subsurface conditions at the Hess Corporation – Port Reading (HC-PR) Refining facility ("facility"). The facility is located at 750 Cliff Road in Port Reading, Middlesex County, New Jersey. **Figure 1** is a United States Geological Survey (USGS) 7.5 minute series quadrangle map (Arthur Kill, New Jersey) depicting the facility and associated land features.

This Remedial Investigation Report (RIR) presents investigative activities occurring at the HC-PR's Historic Spill 21 – Tank 7930. The location of Historic Spill (HS) - 21 is shown on **Figure 2**, and Site plan for HS-21 is presented at **Figure 3**.

Historic Spill- 21 is located on the north central portion of the facility, within a bermed area containing Tanks 7930 and 7933, which are utilized for gasoline storage. To the north and west is HC-PR's Alkalyation Unit and tank fields are located to the south and east. The Gasoline Treatment Area is located to the east. The closest residential land use is approximately 1,200-feet north of the AOC.

## 2.0 Historical and Background Information

### 2.1 Historical Information

A review of available historic aerial photographs and historic topographic maps of the site and the area of HS-21 has been conducted. The photographs range from 1931 through 2007 and topographic maps range from 1891 to 1981 and indicate that the site was sparsely developed with residential properties until 1957. HS-21, and the areas to the north, east and west appear to be dry upland fields, with residential properties approximately 700 feet north and west and 300 feet east, the main channel of Smith Creek was located to the south. None of the drainage channels associated with Smith Creek, its tributaries, and salt marshes are shown in the area of HS-21, confirming it is not located on former marshland. This assessment is further supported by NJDEP Historic Fill Quadrangles for Arthur Kill and Perth Amboy, which detail no historic fill in the area of HS-21. The area identified as HS-21 was constructed between 1957 and 1966. Photographs between 1966 and 1979 indicate minimal changes to the area. The 1986 photograph depicts the gasoline treatment area to the east. Historical aerial photographs are presented in **Appendix I**, historic topographic maps are presented in **Appendix II**, and Historic Fill Quadrangles are presented in **Appendix III**.

The HC-PR facility currently processes low sulfur gas oils and residuals as feed to a Fluidized Catalytic Cracking Unit (FCCU) that converts gas oil into gasoline, fuel oil and hydrocarbon products (e.g. methane, ethane and liquid petroleum gas). HC-PR operations were initiated in 1958 with a Crude Topping Unit and underwent various expansions between 1958 and 1970. In 1974, refining operations were suspended; and the facility functioned only as a bulk storage and distribution terminal until 1985. In April 1985, following a lengthy retrofit, the HC-PR facility resumed operations, which continue today.

### 2.2 Incident Background

On May 19, 2009, Tank 7930, a gasoline storage tank, was out of service for internal inspection; during inspection an approximate one quarter inch hole was indentified in the water draw sump and gasoline impacted water was indentified within the sump. The NJDEP was notified and Case #09-05-19-1218-35 was assigned, this incident is referred to as HS-21. A vacuum tanker truck was utilized to remove water from the sump depression. On June 2, 2009 Chicago Bridge and Iron Company (CB&I) of Bloomfield, New Jersey, removed the metal sump from the storage tank floor The sump bottom was located approximately 2 feet below ground surface (bgs). Photo-ioniation dector (PID) readings indicated 88 parts per million (ppm) at ground surface. Impacted soil was removed to an approximate depth of 4.5-5.0 bgs, approximately 20 gallons (2.5 feet) of gasoline impacted soil was excavated, and drummed for proper disposal. Soil sample 7930 Sump (PE-1) was collected, at a depth of 4.0-4.5 bgs, PID readings at sample depth 12 ppm. Based on the quantity of impacted soils, the release was estimated to be less the 5 gallons. The Discharge Confirmation Report can be found in **Appendix IV**.

### 2.3 Site Specific Geology and Hydrogeology

According to the NJDEP Geologic Survey Map of New Jersey 2001, the site is underlain by the Raritan Formation and is part of the Coastal Plain Physiographic Province. Soils within this formation are composed predominantly of clayey silt overlying quartz sand. The site is located on the Potomac-Raritan-Magothy bedrock aquifer system. The Geologic Survey Map for the Arthur Kill is presented in **Appendix V**.

There are no predominant geological surface features, such as rock outcroppings, on the subject facility. Site-specific stratigraphy was gathered during soil boring and monitoring well advancement and installation activities in the site area and other parts of HC-PR. The documented lithology confirms the aerial photograph observations that the facility is geographically divided into two distinct sections. In general, on the western portion of the HC-PR, where the office and production facilities are now located, unconsolidated clays, silts, silty sands and clayey sands underlie the facility. In general, the eastern and southeastern portions of the facility (tank farms, Detention Basin, and wastewater treatment) are underlain by 10 to 20 feet of natural sandy fill assumed to be from dredging operations related to the Arthur Kill. This material sits above an approximately 10-foot thick confining marsh layer comprised of organic matter, sands, and peat. Beneath this stratum the limited boring data indicates 10 feet of primarily fine to coarse sands followed by an approximately 15-foot layer of dense glacial till. This is subsequently underlain by a layer of fine to coarse sand with some silt and gravel, and weathered, jointed shale. The predicted depth of the shale at the site is approximately 50-feet bgs and based on a 1958 boring log, the depth to the shale may be as deep as 200-feet bgs at the Arthur Kill shoreline.

HS-21 is situated on the “western” lithology of HC-PR. A lithologic cross section of the ‘western lithology’, based on boring and well log descriptions has been prepared, and is presented as **Figure 4**. The ground surface beneath HS-21 is covered with a concrete directly beneath the concrete pad is approximately 3- to 5- feet of sandy fill material that overlies approximately 10-feet of red clay with interspersed sand and gravel, which overlies approximately 10-feet of red fine sand, interspersed with gravel and clay. Dark grey clays have been encountered from about 25-40 feet bgs. These overlie approximately 10 feet of red-brown sand with silt and clay and the deepest lithologic information for HS-21 documents grey clay from 50 to 58 feet bgs. Shale bedrock is anticipated below this layer. The cross section is presented in **Figure 4;** and the boring logs utilized are included in **Appendix VI.**

Ground water movement varies in relation to topography, lithology, elevations of recharge and discharge areas, and man-made influences. Given the proximity of the facility to the Arthur Kill, a tidal survey was performed in May and June of 2002. The results of the survey concluded that

facility wells adjacent to the Arthur Kill are tidally influenced, but those within the "interior" portions of the facility are generally unaffected by tidal influences.

The headwaters of Smith Creek, a Category Two waterway, are located to the south of the facility. The creek previously flowed through the entire facility, but was progressively filled during the course of facility development. The portion of the Arthur Kill adjacent to the facility is classified as "SE3", the general surface water classification applied to the saline waters of estuaries.

Depth to ground water within the shallow, unconfined water table across the facility has been observed at a general depth ranging between 1.5- to 10.5-feet bgs. The average hydraulic gradient is approximately 0.001 feet per foot (ft/ft). Depth to water at HS-21 was observed at 7.0-feet bgs, the average hydraulic gradient in this area is approximately 0.0045 ft/ft.

### 2.4 Topography

According to the United States Geological Survey *Arthur Kill Quadrangle, New Jersey / New York* 7.5 Minute Series Topographic Map, topography of the facility is generally level at an approximate elevation of 7- to 15-feet above mean sea level (msl). The USGS Topographic Map is presented as **Figure 1.**

### 2.5 Groundwater Direction

As depicted in **Figure 5** Groundwater Flow Map- August 25, 2011, ground water flow direction was toward the south in the HS-21 area.

As depicted in **Figure 6** Groundwater Flow Map- June 26, 2012 the dominant groundwater flow pattern in the HS-21 area is towards the south.

## 3.0 Receptor Evaluation

A formal Receptor Evaluation for the entire HC-PR facility was submitted to the NJDEP in March 2011. The section below customizes information developed by that formal evaluation to address the conditions specific to HS-21. The format and contents of the Receptor Evaluation below correspond to the requirements specified in the August 2012 NJDEP document *Technical Guidance for Ecological Evaluations*.

### 3.1 Groundwater Use

The site area is serviced by a municipal water supply, which is provided by the Middlesex Water Company. The Middlesex Water Company pulls water from the Delaware-Raritan Canal to a water treatment and pumping station located in New Brunswick, New Jersey. Well searches were conducted by The Shaw Group in December 2006 and EnviroTrac in February 2011. The results did not identify any potable wells within the vicinity of the facility. The well search results have previously been submitted to the NJDEP. There are no domestic supplies, irrigation or industrial use wells reported within 0.5 miles of the site.

### 3.2 Vapor Intrusion

The land cover in the area of HS-21 is a mix of asphalt and concrete; several structures are located within or adjacent to HS-21. These structures are used in the distribution of gasoline and other petroleum products, therefore are exempt from indoor air sampling as per the *NJDEP Vapor Intrusion Guidance Document, January 2012*. Due to the nature of the facilities, and shallow groundwater, sub-slab sampling is not proposed at this time. Remediation is ongoing, and change in land use is not anticipated, institutional controls are planned, therefore, no sub-slab sampling is proposed at this time.

### 3.3 Ecological Evaluation

An ecological evaluation (EE) was conducted at HS-21. The EE did not identify environmentally sensitive natural resources (ESNR) within 500-feet of HS-21. Contaminants of Potential Ecological Concern (COPEC) have been identified within HS-21. Present data demonstrates there is not a migration pathway from HS-21 to the nearest ESNR.

#### 3.3.1 Environmentally Sensitive Natural Resources

As stated above the nearest ESNR is located at a surface water body is located 600 feet south of HS-21. The surface water body is known as AOC 12 - Detention Basin. A review of the NJDEP GIS Digital data indicates that freshwater emergent wetlands are located around AOC 12 - Detention Basin and small patches of cord grass (*Spartina Alterniflora*) were identified surrounding the Detention Basin. To the south of the Detention basin are freshwater emergent (0.14 miles) and riverine (0.16 miles) wetlands. No wetlands were identified within the boundaries of HS-21.

A review of available information regarding the possible presence of environmentally sensitive areas and New Jersey or Federally listed species found no rare, threatened or endangered species inhabiting any portions of the site or adjacent to the subject facility. However, rare wildlife species were identified within ¼ mile of the northern boundary of the HC-PR facility. That is was at a location greater than 1,500 feet northeast of HS-21.

During the on-site field investigation of HS-21, there were no visual observations of existing contaminant migration pathways, such as stressed or dead vegetation, discolored soil, absence of biota from particular areas, or seeps and discharges. The subject site is well developed and surrounded by chain-link fence. Interspersed areas of man-made structures, e.g. industrial buildings, above ground storage tank farms, bulkheads, and roadway system cover most of the site.

#### 3.3.2 Contaminants of Potential Ecological Concern (COPECS)

Groundwater and soil samples from the area of HS-21 have been compared to the applicable NJDEP Ecological Screening Criteria. No COPECs have been identified in the area of HS-21.

#### 3.3.3 Contaminant Migration Pathways

Subsurface utilities, including storm sewer lines and process sewer lines (typically six feet bgs ranging from 10- to 18-inches in diameter), and pipelines relating to HC-PR operations run throughout the facility.

Process and surface water in the HS-21 area is directed to the facility sewer system shown on **Figure 7**. All subsurface drains terminate at the AWWTS. Groundwater impact has not been detected at HS-21. Therefore groundwater is not a contaminant migration pathway.

#### 3.3.4 Conclusion of Ecological Evaluation

ENSRs have not been identified within or adjacent to HS-21. Based on the findings of the EE for HS-21, no further EE is required.

## 4.0 Technical Overview

### 4.1 Summary of Findings

HS-21 tank 7930 is subject to remedial investigation due to the May 19, 2009 release of gasoline impacted water from a hole in the water draw sump located at Tank 7930. On June 2, 2009, soil sample 7930 Sump (PE-1) was collected to evaluate subsurface soils, and on October 26, 2009 temporary well TK 7930-TW-1 was installed in the area of HS-21. Based on the results HC-PR is requesting closure for Case #09-05-19-1218-35.

### 4.2 Quality Assurance and Quality Control

Laboratory analytical data generated by EnviroTrac throughout the course of the investigation are considered to be reliable, all samples were submitted to a NJ certified laboratory, and no significant issues have been identified with regard to holding times, method detection limits (MDLs) or precision and accuracy. Laboratory data for groundwater samples referred to in the report are enclosed in **Appendix VII** and **Appendix VIII.**

## 5.0 Remedial Investigation Activities

On June 2, 2009, one soil sample (7930 Sump PE-1) was collected from the area of directly beneath HS-21, and submitted to Accutest Laboratory (NJDEP Certification #12129), of Dayton, New Jersey under proper chain of custody procedures, and analyzed for benzene, toluene, ethylbenzene, and total xylenes, via USEPA method 8260.

Analytical data reported benzene, toluene and total xylenes above the IGWSRS in soil sample 7930 Sump (PE-1). Soil sampling analytical data is summarized in **Table 1.** The laboratory analytical data report package for is presented in **Appendix VII.**

On October 26, 2009 one temporary well (TK 7930-TW-1) was installed immediately adjacent to Tank 7930, and HS-21, TK-7930-TW-1 was advanced to a total depth approximately 10 feet bgs, groundwater was measured at approximately 3.5 bgs. A grab groundwater sample was collected in accordance with NJDEP Field Sampling Procedures Manual 2005, and submitted to Accutest for analysis of VO+10 via EPA 624 and SVO+15 via EPA 8270. The drilling was performed via Geoprobe by Summit Drilling Co., Inc. of Bridgewater, New Jersey; under direct supervision of EnviroTrac Ltd. Sample locations are depicted in **Figure 7.**

Analytical data reported no targeted compounds above the GWQS in groundwater sample TK 7930-TW-1. Groundwater sampling analytical data is summarized in **Table 2.** The laboratory analytical data report package for is presented in **Appendix VIII.**

The Electronic Data Deliverables (EDD) for the samples has been included in the attached disk.

## 6.0 Conclusion

HS-21 tank 7930 is subject to remedial investigation due to the May 19, 2009 release of less than 5 gallons of gasoline impacted water from a small hole in the water draw sump located at Tank 7930. In June 2009 and October 2009 a Remedial Investigation was conducted that included the collection and analysis of one soil and one groundwater sample in accordance to NJDEP regulations. Analytical results reported toluene and total xylenes above the IGWSRS in soil, however all targeted compounds were reported as either ND or below their respective NJDEP GWQS in groundwater.

HS-21 has been addressed as per HC-PR approved Discharge Prevention Control and Countermeasures (DPCC) Plan pursuant to N.J.A.C. 7:1E-4.6. The discharge was contained;

affected soil was removed from the subsurface. Groundwater in the area has not been impacted. As a result HC-PR requests closure for Case #09-05-19-1218-35.

**FIGURES**

1. Site Location Map

2. Site Plan

3. Site Plan—HS-21

4. Western Lithology Cross Section

5. Groundwater Contour Map --- August 25, 2011

6. Groundwater Contour Map – June 26, 2012

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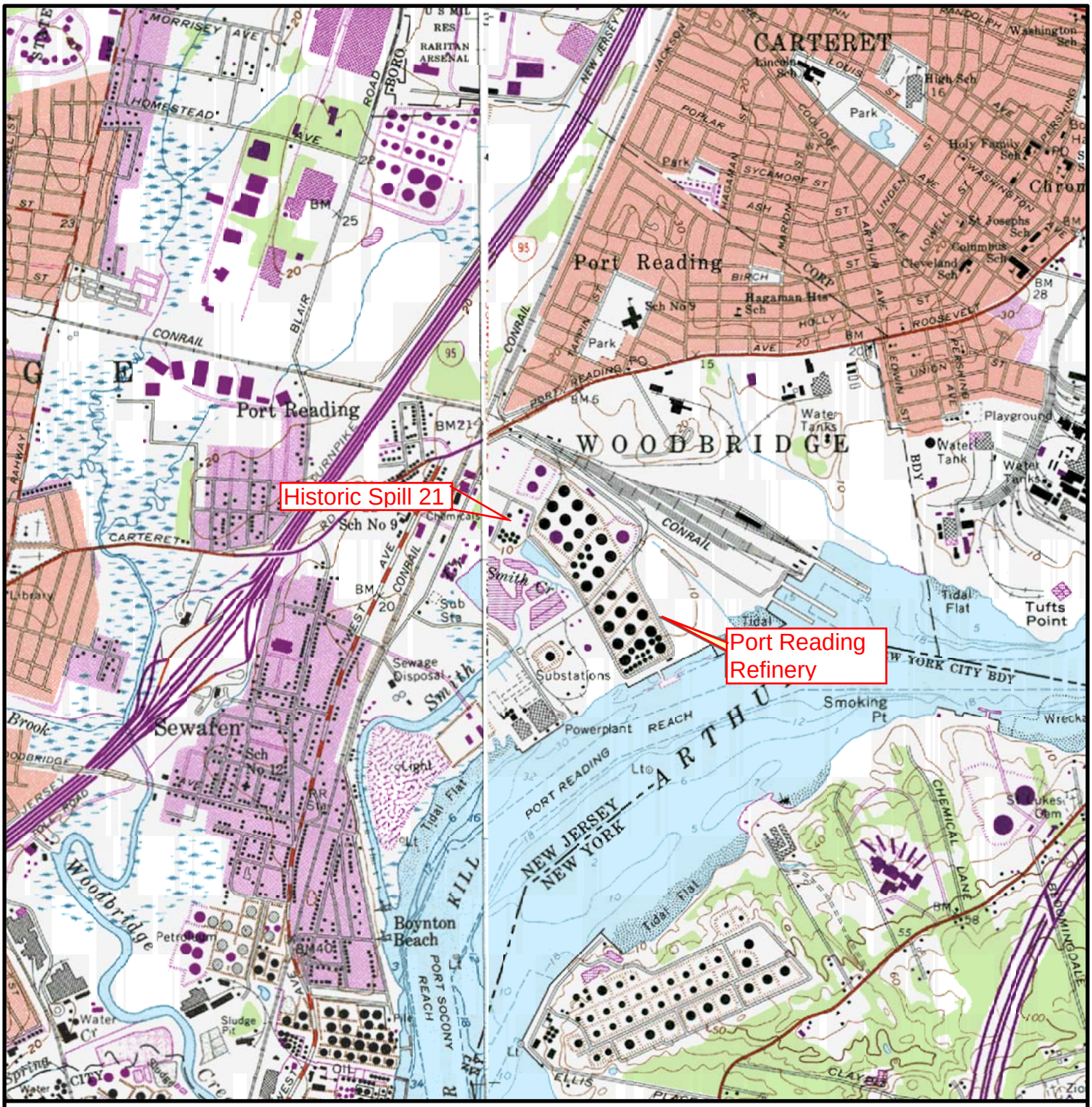
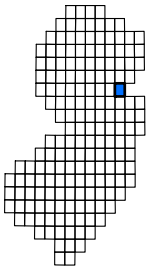


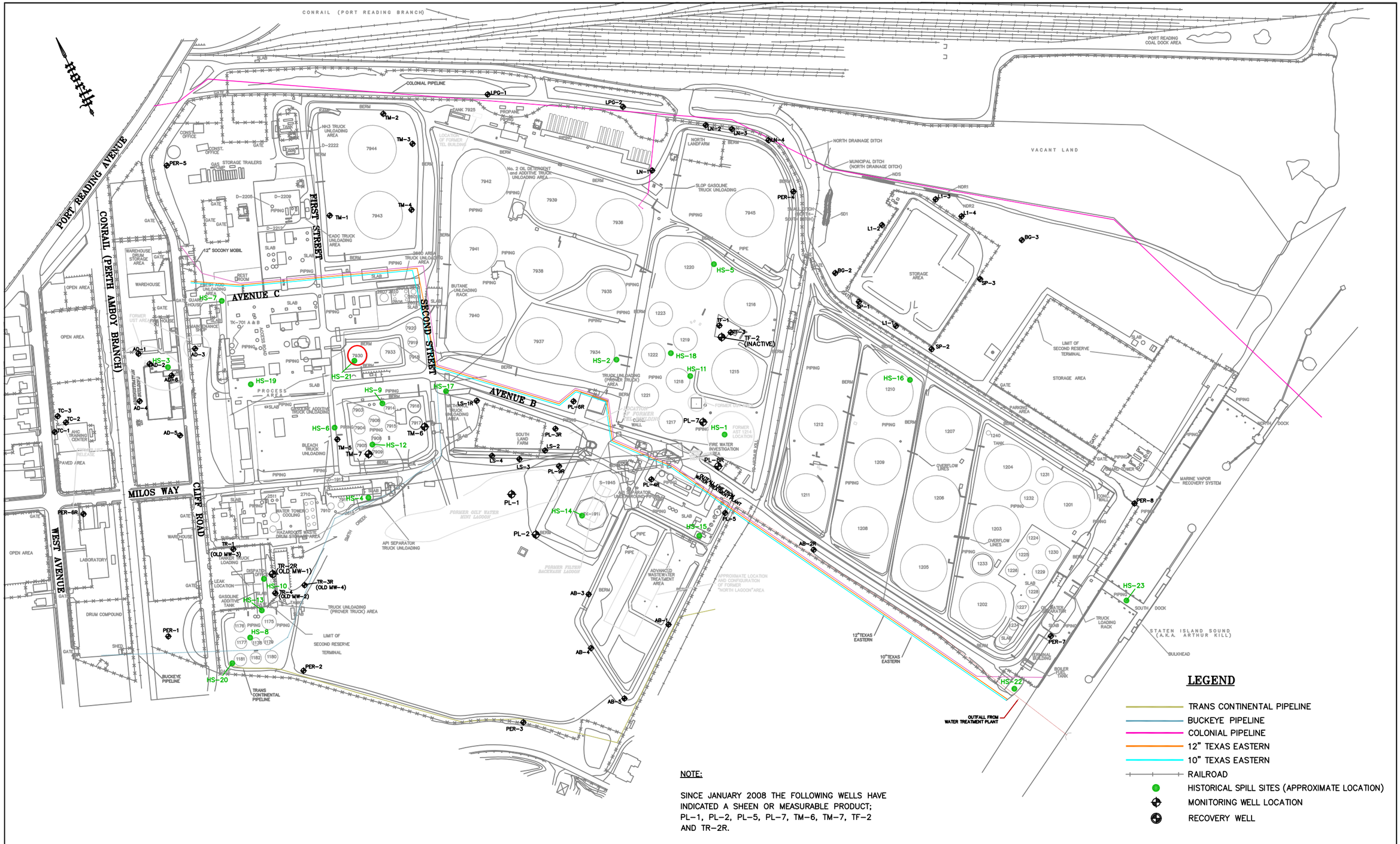



QUADRANGLE LOCATION:
ARTHUR KILL, NEW JERSEY

0 1,000 2,000 4,000 6,000 8,000 Feet

N W E S

| FIGURE # | U.S.G.S. TOPOGRAPHIC MAP | DRAWN BY: B.J.S. | EnviroTrac ENVIRONMENTAL SERVICES |
|---|---|---|---|
| 1 | HESS CORPORATION<br>750 CLIFF ROAD<br>PORT READING, NEW JERSEY | DATE: 7/15/10 | 400E CORPORATE COURT, So. PLAINFIELD NJ 07080<br>PHONE: (908)757-1900 FAX: (908)757-0017 |



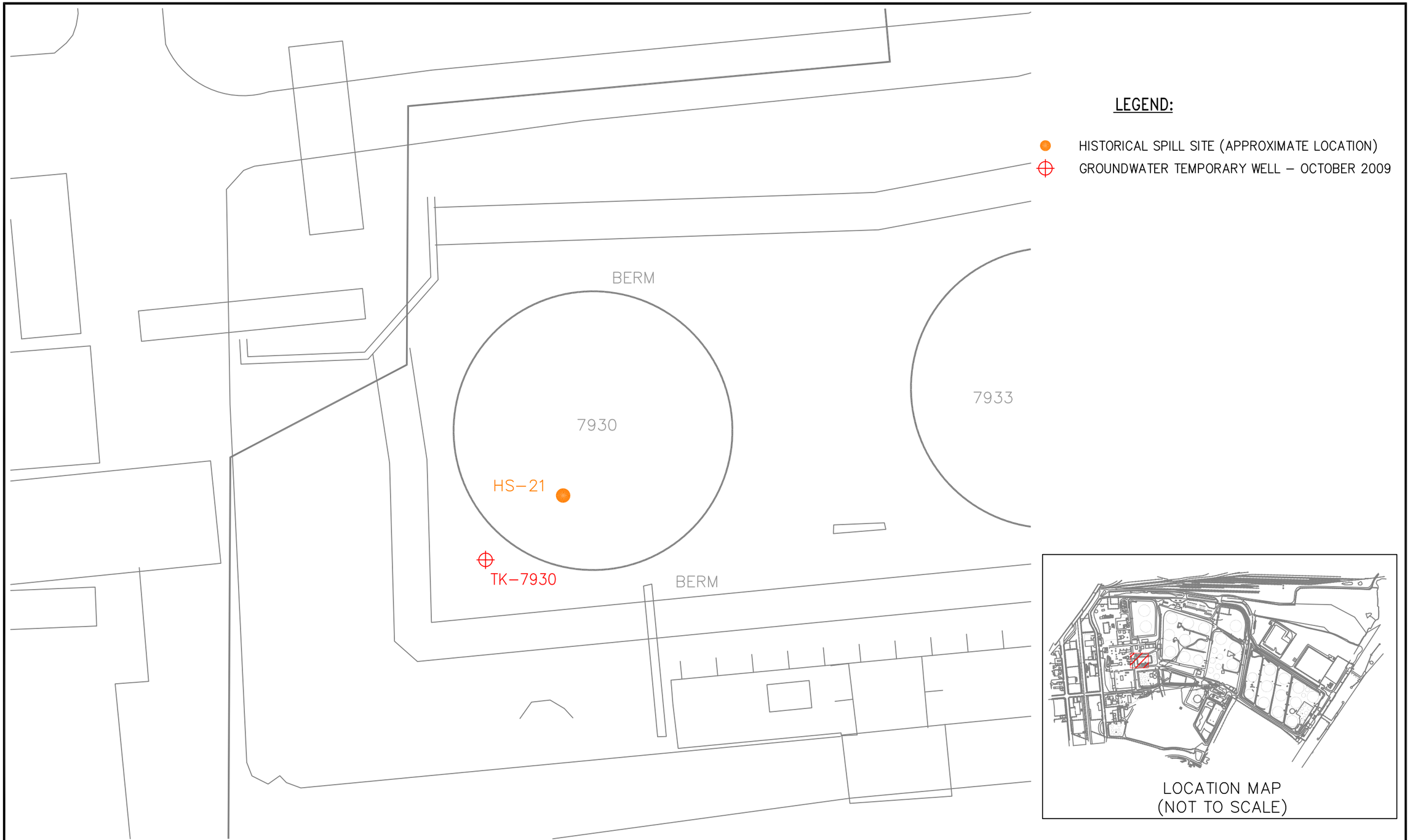

NOTE:

SINCE JANUARY 2008 THE FOLLOWING WELLS HAVE INDICATED A SHEEN OR MEASURABLE PRODUCT; PL-1, PL-2, PL-5, PL-7, TM-6, TM-7, TF-2 AND TR-2R.

## LEGEND

- TRANS CONTINENTAL PIPELINE
- BUCKEYE PIPELINE
- COLONIAL PIPELINE
- 12" TEXAS EASTERN
- 10" TEXAS EASTERN
- RAILROAD
- HISTORICAL SPILL SITES (APPROXIMATE LOCATION)
- MONITORING WELL LOCATION
- RECOVERY WELL

| FIGURE # | HESS CORPORATION<br>750 CLIFF ROAD<br>PORT READING, NEW JERSEY | HESS | SITE PLAN WITH HISTORIC SPILL LOCATIONS | 0 350<br>SCALE IN FEET | EnviroTrac<br>ENVIRONMENTAL SERVICES<br>400E CORPORATE COURT, So. PLAINFIELD NJ 07080<br>PHONE: (908)757-1900 FAX: (908)757-0017 |
|---|---|---|---|---|---|
| 2 | | | DRAWN BY: B.J.S. / REVISION DATE: 7/21/10 | | |




| FIGURE # | | | | |
|---|---|---|---|---|
| 3 | HESS CORPORATION<br>750 CLIFF ROAD<br>PORT READING, NEW JERSEY | HESS | HISTORIC SPILL 21 –<br>SITE PLAN AND SAMPLE LOCATION MAP | 0 12.5 25<br>SCALE IN FEET |
| | | | DRAWN BY: J.M. / REVISION DATE: 12/31/12 | |

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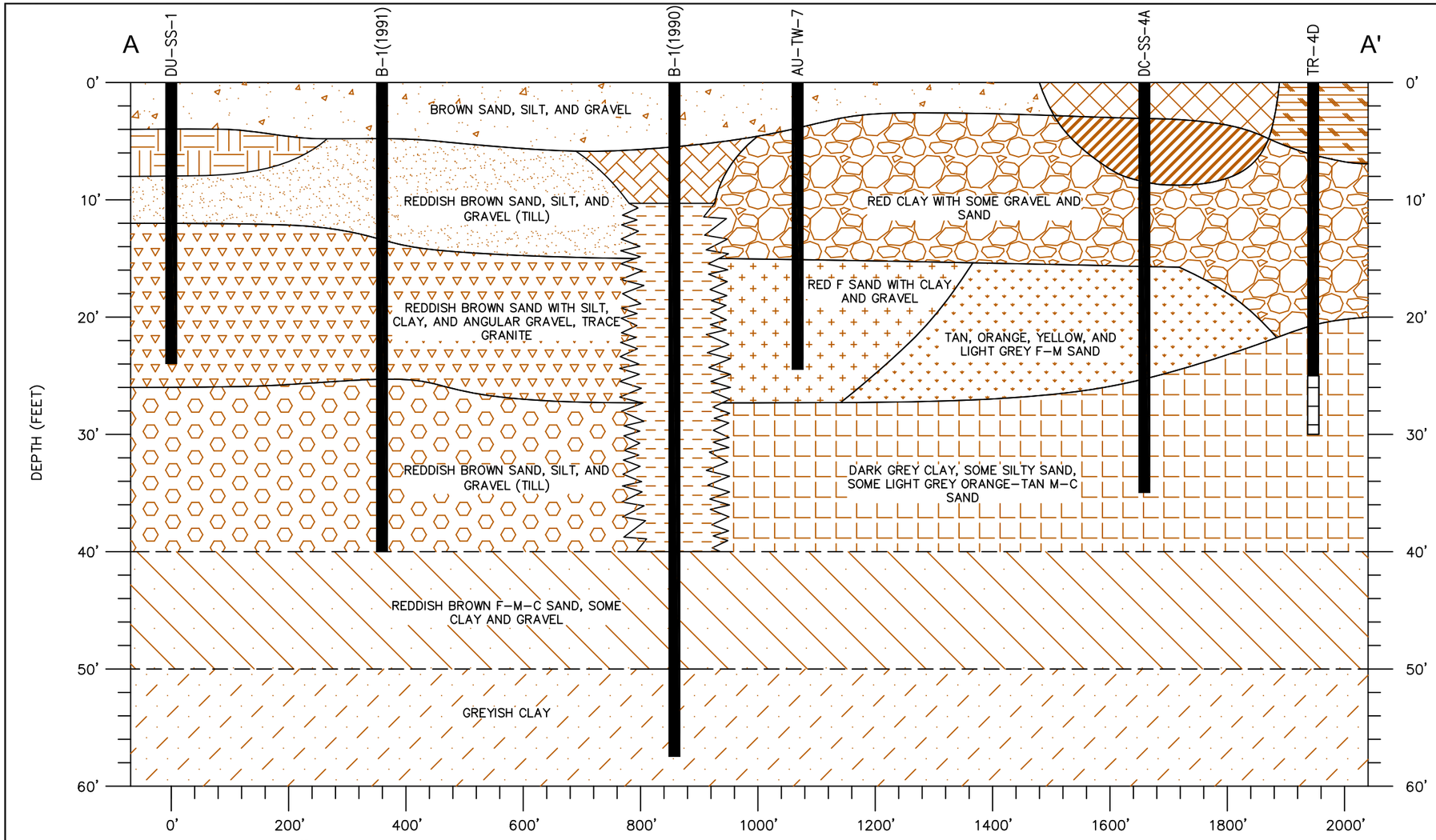
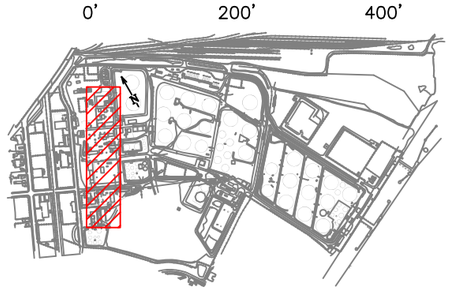
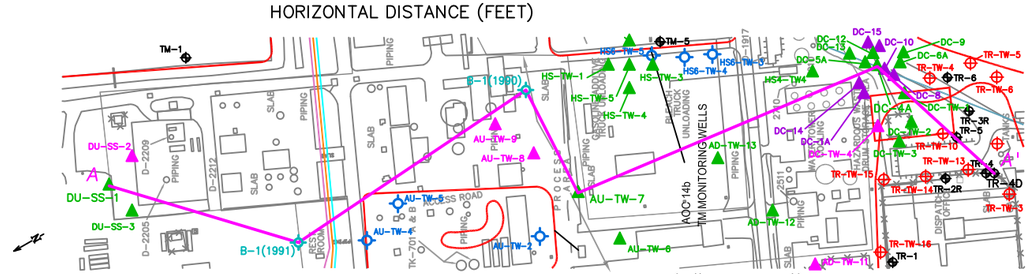



## LEGEND:

- = WELL CASING
- = SCREENED INTERVAL
- = SOIL BORING
- BROWN SAND, SILT, AND GRAVEL
- BROWN SAND, SOME STONE
- DARK BROWN F SAND AND CLAY
- VERY DARK GREY BLACK CLAY
- REDDISH BROWN SILT, CLAY, AND GRAVEL (TILL)
- REDDISH GREY CLAY
- RED CLAY WITH SOME GRAVEL AND SAND
- GREY-BROWN SILT
- REDDISH BROWN SAND WITH SILT, CLAY, AND ANGULAR GRAVEL, TRACE GRANITE
- F-M-C SAND, SOME CLAY AND GRAVEL
- RED F SAND WITH CLAY AND GRAVEL
- TAN, ORANGE, YELLOW, AND LIGHT GREY F-M SAND
- REDDISH BROWN SAND, SILT, AND GRAVEL (TILL)
- DARK GREY CLAY, SOME SILTY SAND, SOME LIGHT GREY ORANGE-TAN M-C SAND
- REDDISH BROWN F-M-C SAND, SOME CLAY AND GRAVEL
- GREYISH CLAY
- LITHIOLOGIC CONTACT INFERRED



LOCATION MAP (NOT TO SCALE)




CROSS SECTION LOCATION (1" = 400')

| FIGURE # | | | | |
|---|---|---|---|---|
| 4 | HESS CORPORATION<br>750 CLIFF ROAD<br>PORT READING, NEW JERSEY | HESS | NORTH-SOUTH CROSS SECTION<br>(WESTERN PORTION OF FACILITY) | VERTICAL SCALE: 1 INCH = 10 FEET<br>HORIZONTAL SCALE: 1 INCH = 200 FEET |
| | | | DRAWN BY: J.M. / REVISION DATE: 9/6/12 | |

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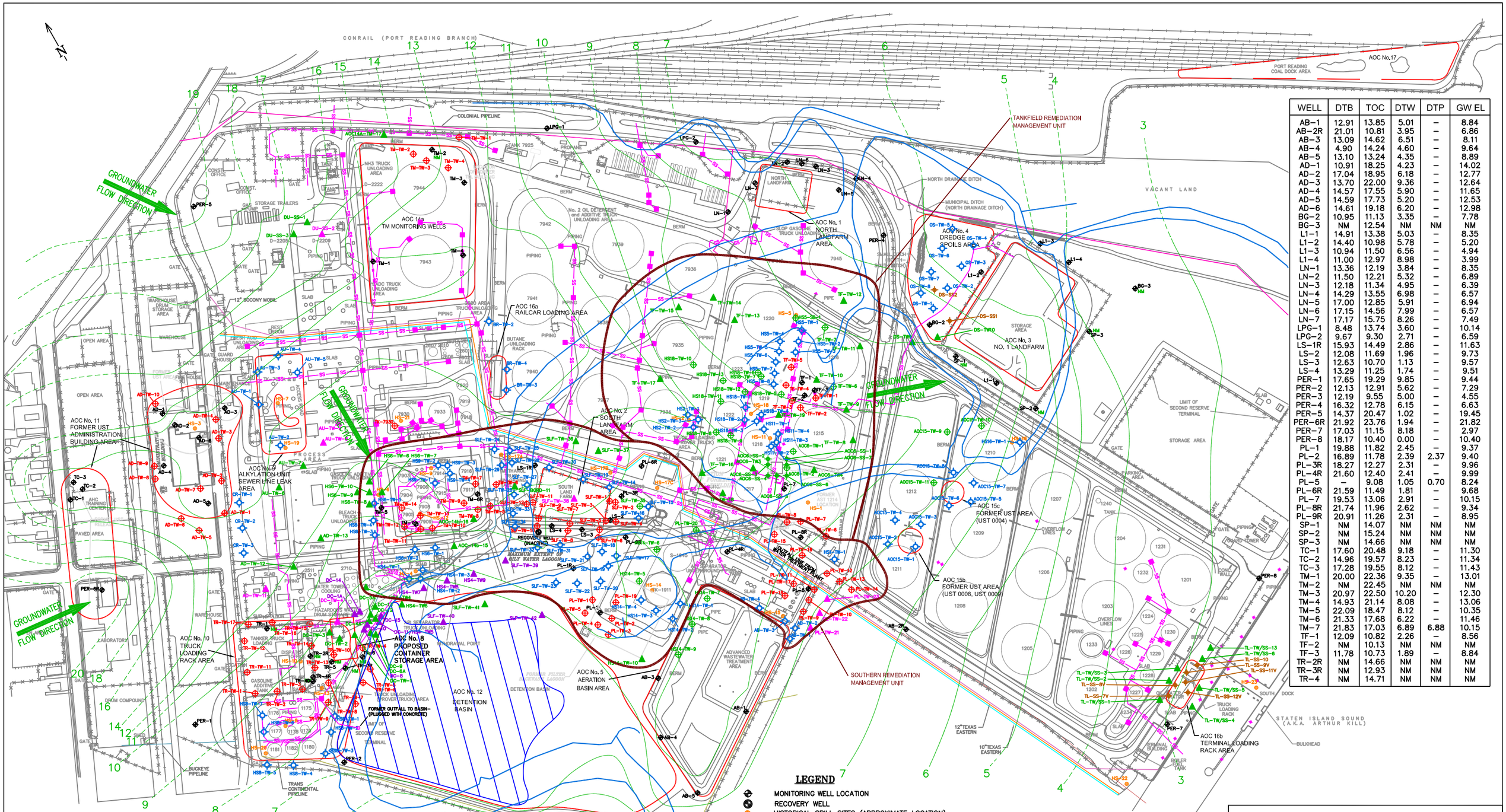


| WELL | DTB | TOC | DTW | DTP | GW EL |
|---|---|---|---|---|---|
| AB–1 | 12.91 | 13.85 | 5.01 | – | 8.84 |
| AB–2R | 21.01 | 10.81 | 3.95 | – | 6.86 |
| AB–3 | 13.09 | 14.62 | 6.51 | – | 8.11 |
| AB–4 | 4.90 | 14.24 | 4.60 | – | 9.64 |
| AB–5 | 13.10 | 13.24 | 4.35 | – | 8.89 |
| AD–1 | 10.91 | 18.25 | 4.23 | – | 14.02 |
| AD–2 | 17.04 | 18.95 | 6.18 | – | 12.77 |
| AD–3 | 13.70 | 22.00 | 9.36 | – | 12.64 |
| AD–4 | 14.57 | 17.55 | 5.90 | – | 11.65 |
| AD–5 | 14.59 | 17.73 | 5.20 | – | 12.53 |
| AD–6 | 14.61 | 19.18 | 6.20 | – | 12.98 |
| BG–2 | 10.95 | 11.13 | 3.35 | – | 7.78 |
| BG–3 | NM | 12.54 | NM | NM | NM |
| L1–1 | 14.91 | 13.38 | 5.03 | – | 8.35 |
| L1–2 | 14.40 | 10.98 | 5.78 | – | 5.20 |
| L1–3 | 10.94 | 11.50 | 6.56 | – | 4.94 |
| L1–4 | 11.00 | 12.97 | 8.98 | – | 3.99 |
| LN–1 | 13.36 | 12.19 | 3.84 | – | 8.35 |
| LN–2 | 11.50 | 12.21 | 5.32 | – | 6.89 |
| LN–3 | 12.18 | 11.34 | 4.95 | – | 6.39 |
| LN–4 | 14.29 | 13.55 | 6.98 | – | 6.57 |
| LN–5 | 17.00 | 12.85 | 5.91 | – | 6.94 |
| LN–6 | 17.15 | 14.56 | 7.99 | – | 6.57 |
| LN–7 | 17.17 | 15.75 | 8.26 | – | 7.49 |
| LPG–1 | 8.48 | 13.74 | 3.60 | – | 10.14 |
| LPG–2 | 9.67 | 9.30 | 2.71 | – | 6.59 |
| LS–1R | 15.93 | 14.49 | 2.86 | – | 11.63 |
| LS–2 | 12.08 | 11.69 | 1.96 | – | 9.73 |
| LS–3 | 12.63 | 10.70 | 1.13 | – | 9.57 |
| LS–4 | 13.29 | 11.25 | 1.74 | – | 9.51 |
| PER–1 | 17.65 | 19.29 | 9.85 | – | 9.44 |
| PER–2 | 12.13 | 12.91 | 5.62 | – | 7.29 |
| PER–3 | 12.19 | 9.55 | 5.00 | – | 4.55 |
| PER–4 | 16.32 | 12.78 | 6.15 | – | 6.63 |
| PER–5 | 14.37 | 20.47 | 1.02 | – | 19.45 |
| PER–6R | 21.92 | 23.76 | 1.94 | – | 21.82 |
| PER–7 | 17.03 | 11.15 | 8.18 | – | 2.97 |
| PER–8 | 18.17 | 10.40 | 0.00 | – | 10.40 |
| PL–1 | 19.88 | 11.82 | 2.45 | – | 9.37 |
| PL–2 | 16.89 | 11.78 | 2.39 | 2.37 | 9.40 |
| PL–3R | 18.27 | 12.27 | 2.31 | – | 9.96 |
| PL–4R | 21.60 | 12.40 | 2.41 | – | 9.99 |
| PL–5 | – | 9.08 | 1.05 | 0.70 | 8.24 |
| PL–6R | 21.59 | 11.49 | 1.81 | – | 9.68 |
| PL–7 | 19.53 | 13.06 | 2.91 | – | 10.15 |
| PL–8R | 21.74 | 11.96 | 2.62 | – | 9.34 |
| PL–9R | 20.91 | 11.26 | 2.31 | – | 8.95 |
| SP–1 | NM | 14.07 | NM | NM | NM |
| SP–2 | NM | 15.24 | NM | NM | NM |
| SP–3 | NM | 14.66 | NM | NM | NM |
| TC–1 | 17.60 | 20.48 | 9.18 | – | 11.30 |
| TC–2 | 14.96 | 19.57 | 8.23 | – | 11.34 |
| TC–3 | 17.28 | 19.55 | 8.12 | – | 11.43 |
| TM–1 | 20.00 | 22.36 | 9.35 | – | 13.01 |
| TM–2 | NM | 22.45 | NM | NM | NM |
| TM–3 | 20.97 | 22.50 | 10.20 | – | 12.30 |
| TM–4 | 14.93 | 21.14 | 8.08 | – | 13.06 |
| TM–5 | 22.09 | 18.47 | 8.12 | – | 10.35 |
| TM–6 | 21.33 | 17.68 | 6.22 | – | 11.46 |
| TM–7 | 21.83 | 17.03 | 6.89 | 6.88 | 10.15 |
| TF–1 | 12.09 | 10.82 | 2.26 | – | 8.56 |
| TF–2 | NM | 10.13 | NM | NM | NM |
| TF–3 | 11.78 | 10.73 | 1.89 | – | 8.84 |
| TR–2R | NM | 14.66 | NM | NM | NM |
| TR–3R | NM | 12.93 | NM | NM | NM |
| TR–4 | NM | 14.71 | NM | NM | NM |

## LEGEND

- MONITORING WELL LOCATION
- RECOVERY WELL
- HISTORICAL SPILL SITES (APPROXIMATE LOCATION)
- GROUNDWATER TEMPORARY WELL – OCTOBER 2009
- GROUNDWATER TEMPORARY WELL – OCTOBER 2010
- GROUNDWATER TEMPORARY WELL – OCTOBER 2011
- GROUNDWATER TEMPORARY WELL – JUNE 2012
- GROUNDWATER TEMPORARY WELL – REFUSAL
- GROUNDWATER TEMPORARY WELL – PENDING
- SOIL BORING LOCATION – 2010
- SOIL BORING LOCATION– 2012
- LOCATION OF PROPOSED REMEDIAL MANAGEMENT UNIT
- LOCATION OF AOC OR SWMU
- SURFACE WATER

| | |
|---|---|
| DTB | DEPTH TO BOTTOM (ft) |
| TOC | TOP OF CASING (ft) |
| DTW | DEPTH TO WATER (ft) |
| DTP | DEPTH TO PRODUCT (ft) |
| GW EL | GROUNDWATER ELEVATION (ft) |
| NM | NOT MEASURED |

- TRANS CONTINENTAL PIPELINE
- BUCKEYE PIPELINE
- COLONIAL PIPELINE
- 12" TEXAS EASTERN
- 10" TEXAS EASTERN
- RAILROAD
- PROCESS/STORM SEWER LINE

**NOTES:**

1. AOC – AREA OF CONCERN
2. SWMU – SOLID WASTE MANAGEMENT UNIT
3. UST – UNDERGROUND STORAGE TANK
4. AST – ABOVCE GROUND STORAGE TANK
5. SOCONY/MOBILE LINE IS THE OLD COLONIAL LINE. THIS WAS A COLONIAL PIPELINE TIE IN FOR SOCONY MOBIL. IT WAS ABANDONED IN PLACE. IT WAS CAPPED OFF AT THE SOUTH DOCK. THE LINE UNDER ARTHUR KILL IS UNDER NITROGEN BLANKET.
6. AOC BORDERS WILL MODIFY IN ACCORDANCE WITH FIELD INVESTIGATION RESULTS
7. AOC 17 EXTENT UNKNOWN, BETTER DEFINED THROUGH INVESTIGATION
8. PER8 WAS NOT USED TO GENERATE GROUNDWATER CONTOUR LINES

# FIGURE 5

## GROUNDWATER CONTOUR MAP

AUGUST 25, 2011

HESS CORPORATION
750 CLIFF ROAD
PORT READING, NEW JERSEY

DRAWN BY: B.S.

DATE: 12/31/12

0 150
SCALE IN FEET

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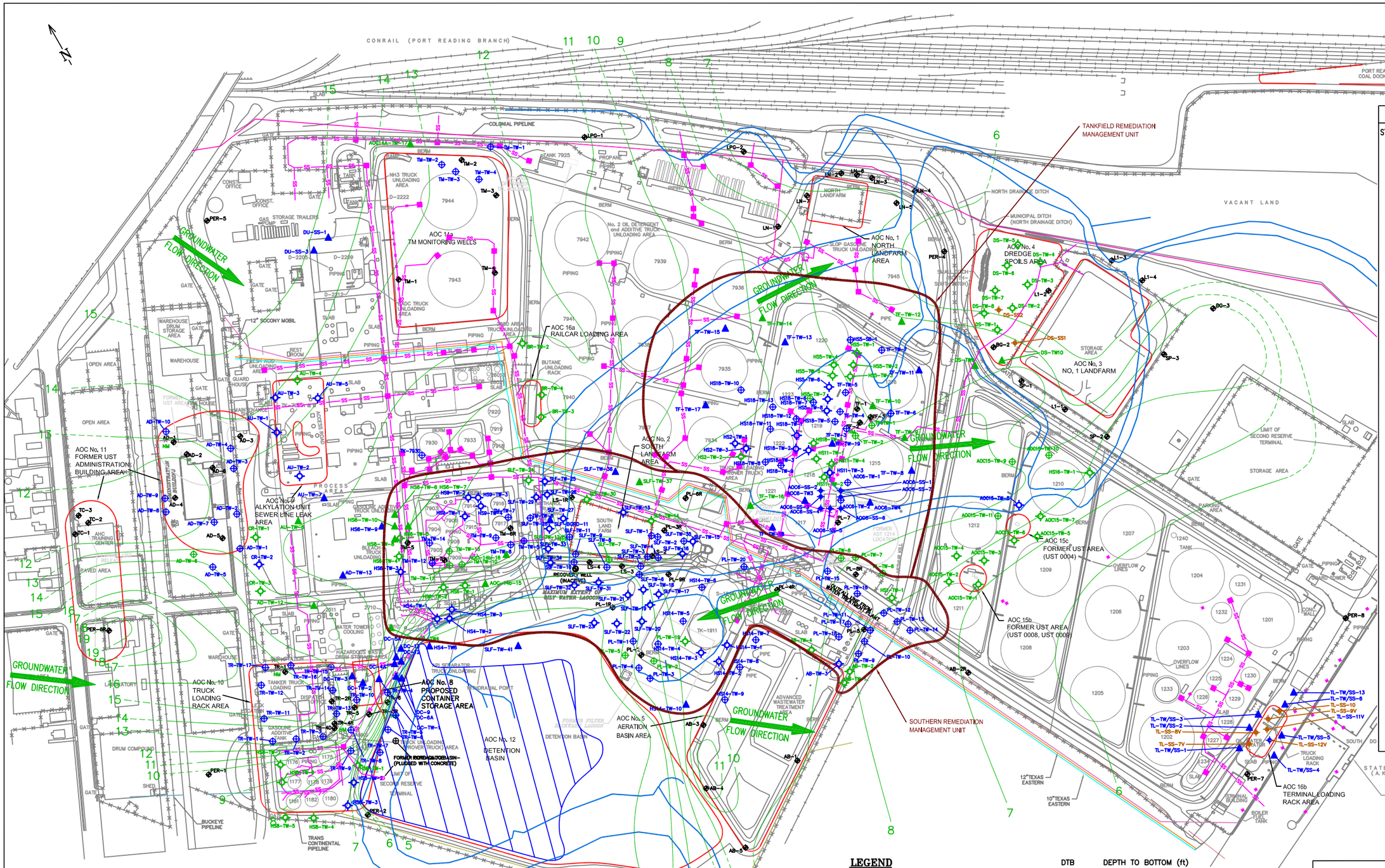
CONRAIL (PORT READING BRANCH)
COLONIAL PIPELINE
GROUNDWATER FLOW DIRECTION
AOC 14a TM MONITORING WELLS
AOC 16a RAILCAR LOADING AREA
AOC No. 1 NORTH LANDFARM AREA
AOC No. 2 SOUTH LANDFARM AREA
AOC No. 3 NO. 1 LANDFARM
AOC No. 4 DREDGE SPOILS AREA
AOC No. 5 AERATION BASIN AREA
AOC No. 8 PROPOSED CONTAINER STORAGE AREA
AOC No. 9 ALKYLATION UNIT SEWER LINE LEAK AREA
AOC No. 10 TRUCK LOADING RACK AREA
AOC No. 11 FORMER UST ADMINISTRATION BUILDING AREA
AOC No. 12 DETENTION BASIN
AOC 15b FORMER UST AREA (UST 0008, UST 0009)
AOC 15c FORMER UST AREA (UST 0004)
AOC 16b TERMINAL LOADING RACK AREA
AOC No.17
PORT READING COAL DOCK AREA
TANKFIELD REMEDIATION MANAGEMENT UNIT
SOUTHERN REMEDIATION MANAGEMENT UNIT
VACANT LAND
NORTH DRAINAGE DITCH
MUNICIPAL DITCH (NORTH DRAINAGE DITCH)
STAGING AREA (SOUTH DITCH)
STORAGE AREA
LIMIT OF SECOND RESERVE TERMINAL
STATEN ISLAND SOUND (A.K.A. ARTHUR KILL)
BULKHEAD
12" TEXAS EASTERN
10" TEXAS EASTERN
TRANS CONTINENTAL PIPELINE
BUCKEYE PIPELINE
RECOVERY WELL (INACTIVE)
MAXIMUM EXTENT OF OILY WATER LAGOON
FORMER BORED DAILOG BASIN (PLUGGED WITH CONCRETE)
DETENTION BASIN
ADVANCED WASTEWATER TREATMENT AREA
WATER TREATMENT TANK
TRUCK LOADING RACK
BOILER FUEL TANK
TERMINAL BUILDING
OVERFLOW LINES
PROCESS AREA
WAREHOUSE
OPEN AREA
PAVED AREA
GAS STORAGE TRAILERS
12" SOCONY MOBIL
BUTANE UNLOADING RACK
NH3 TRUCK UNLOADING AREA
SLOP GASOLINE TRUCK UNLOADING
No. 2 OIL DETERGENT and ADDITIVE TRUCK UNLOADING AREA
HAZARDOUS WASTE DRUM STORAGE AREA
WATER TOWER COOLING
TANKER TRUCK LOADING
GASOLINE ADDITIVE TANK
DRUM COMPOUND
TRUCK UNLOADING (OVERFLOW TRUCK) AREA
SEPARATOR TRUCK UNLOADING
DRAINAGE PORT
ADVANCED FILTER AREA LAGOON
TANK 7925
PROPANE PIPING
TANK 1911
TANK 1204
TANK 1201
TANK 1203
TANK 1205
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TANK 7904
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TANK 7902
TANK 7901
TANK 7900
TANK 7899
TANK

## TABLES

1. Soil Sampling Analytical Summary Table- HS-21
2. Temporary Well Analytical Summary Table- HS-21

**Table 1**
**Historic Spill 21- Soil Sampling Analytical Summary**
**Hess- Port Reading Refinery**
**750 Cliff Road**
**Port Reading, Middlesex County, New Jersey**

| Sample Location | Sample Date | Benzene | Toluene | Ethylbenzene | Total Xylene | Total Volatile TICs |
|---|---|---|---|---|---|---|
| NRDCSRS | | 5 | 91000 | 110000 | 170000 | - |
| RDCSRS | | 2 | 6300 | 7800 | 12000 | - |
| IGWSRS | | 0.005 | 4 | 8 | 12 | 100/500 |
| 7930 Sump PE-1 | June 2, 2009 | 0.707 | 5.120 | 2.330 | 15.700 | 64.300(10)J |

All samples in mg/kg unless otherwise noted.
NRDCSRS - Non-Residential Direct Contact Soil Remediation Standard
RDCSRS - Residential Direct Contact Soil Remediation Standard
IGWSRS - Impact to Ground Water Soil Remediation Standard (Default)
- Sample Above NRDCSRS
- Sample Above RDCSRS but Below NRDCSRS
- Sample Above IGWSRS but Below NRDCSRS and RDCSRS

**Table 2**
**Temporary Well Analytical Data Summary- Historic Spill 21**
**Hess Corporation- Port Reading Refinery**
**750 Cliff Rd**
**Port Reading, Middlesex County, New Jersey**

| | | Volatile Organics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID** | **Date** | **Acetone** | **Benzene** | **Bromodichloromethane** | **2-Butanone (MEK)** | **Carbon disulfide** | **Carbon tetrachloride** | **Chlorobenzene** | **Chloroethane** | **Chloroform** | **Cyclohexane** | **Dibromochloromethane** | **1,2-Dichlorobenzene** | **1,3-Dichlorobenzene** | **1,4-Dichlorobenzene** | **1,1-Dichloroethane** | **1,1-Dichloroethene** | **cis-1,2-Dichloroethene** | **trans-1,2-Dichloroethene** | **1,2 Dichloropropane** | **Ethylbenzene** | **Isopropylbenzene** | **Methyl Tert Butyl Ether** | **Methylene chloride** | **Methylcyclohexane** | **Tetrachloroethene** | **Tert Butyl Alcohol** | **Toluene** | **1,2,4-Trichlorobenzene** | **1,1,1-Trichloroethane** | **Trichloroethene** | **Vinyl chloride** | **Xylene (total)** | **Total Volatile (TIC)** |
| **NJDEP GWQS** | | **6,000** | **1** | **1** | **300** | **700** | **1** | **50** | **5** | **70** | **NA** | **1** | **600** | **600** | **75** | **50** | **1** | **70** | **100** | **1** | **700** | **700** | **70** | **3** | **NA** | **1** | **100** | **600** | **9** | **30** | **1** | **1** | **1,000** | **500** |
| TK-7930-TW1 | 10/26/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NA | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

| | | Base Neutrals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID** | **Date** | **Acenaphthene** | **Acenaphthylene** | **Anthracene** | **Acetophenone** | **Benzo(a)anthracene** | **Benzo(a)pyrene** | **Benzo(b)fluoranthene** | **Benzo(g,h,i)perylene** | **Benzo(k)fluoranthene** | **Bis(2-Ethylhexyl) phthalate** | **Chrysene** | **Carbazole** | **Caprolactam** | **2-Chloronaphthalene** | **Dibenzo(a,h)anthracene** | **Dibenzofuran** | **Fluoranthene** | **Fluorene** | **Indeno(1,2,3-cd)pyrene** | **Naphthalene** | **Phenanthrene** | **Pyrene** | **Butyl benzyl phthalate** | **1,1'-Biphenyl** | **4-Chloroaniline** | **Di-n-butyl phthalate** | **Di-n-octyl phthalate** | **Diethyl phthalate** | **bis(2-Ethylhexyl)phthalate** | **Isophorone** | **2-Methylnaphthalene** | **N-Nitroso-di-n-propylamine** | **Total Semi-Volatile (TIC)** |
| **NJDEP GWQS** | | **400** | **100** | **2,000** | **700** | **0.1** | **0.1** | **0.2** | **100** | **0.5** | **2** | **5** | **NA** | **5000** | **600** | **0.3** | **NA** | **300** | **300** | **0.2** | **300** | **100** | **200** | **100** | **400** | **30** | **700** | **100** | **6,000** | **3** | **40** | **30** | **10** | **500** |
| TK-7930-TW1 | 10/26/2009 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

All data is reported in ug/kg unless otherwise noted
ND- Not Detected
NA- Not Applicable

**Appendix I**

**Historic Aerial Photographs (1931-2007)**

750 Cliff Road, Port Reading, NJ » Overlays Compare Share Purchase

2007 T1962
2006 T1957
2002 T1947
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931

Historic Spill- 21

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750 Cliff Road, Port Reading, NJ » Overlays Compare Share Purchase

2007 T1962
2006 T1957
2002 T1947
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931

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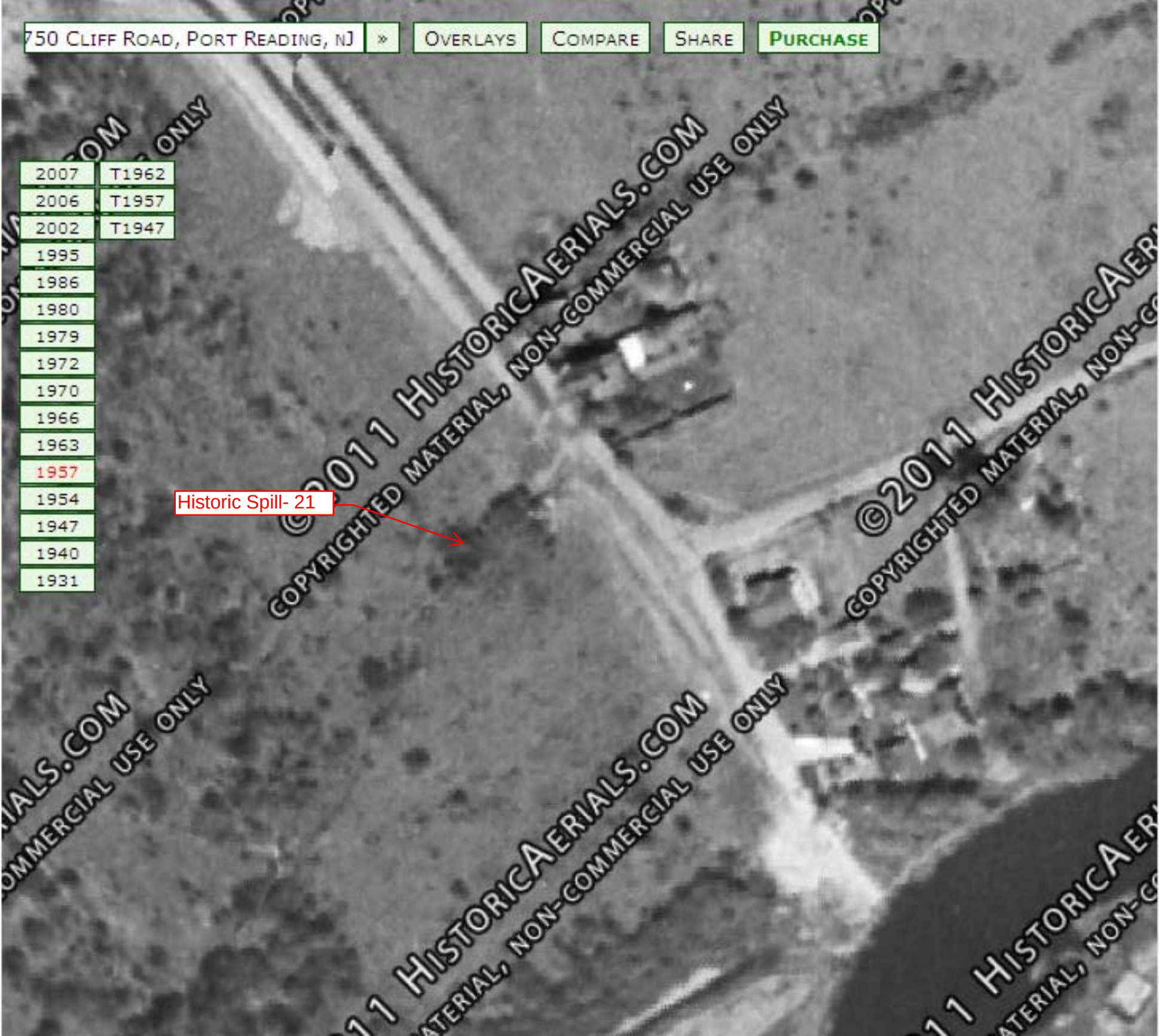
750 Cliff Road, Port Reading, NJ
»
Overlays
Compare
Share
Purchase
2007
T1962
2006
T1957
2002
T1947
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931
Historic Spill- 21
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750 Cliff Road, Port Reading, NJ » Overlays Compare Share Purchase

750 Cliff Road, Port Reading, NJ
»
Overlays
Compare
Share
Purchase
2007
T1962
2006
T1957
2002
T1947
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931
Historic Spill- 21
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750 Cliff Road, Port Reading, NJ
»
Overlays
Compare
Share
Purchase
2007
2006
2002
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931
T1962
T1957
T1947
Historic Spill- 21
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750 Cliff Road, Port Reading, NJ » Overlays Compare Share Purchase

| | |
|---|---|
| 2007 | T1962 |
| 2006 | T1957 |
| 2002 | T1947 |
| 1995 | |
| 1986 | |
| 1980 | |
| 1979 | |
| 1972 | |
| 1970 | |
| 1966 | |
| 1963 | |
| 1957 | |
| 1954 | |
| 1947 | |
| 1940 | |
| 1931 | |

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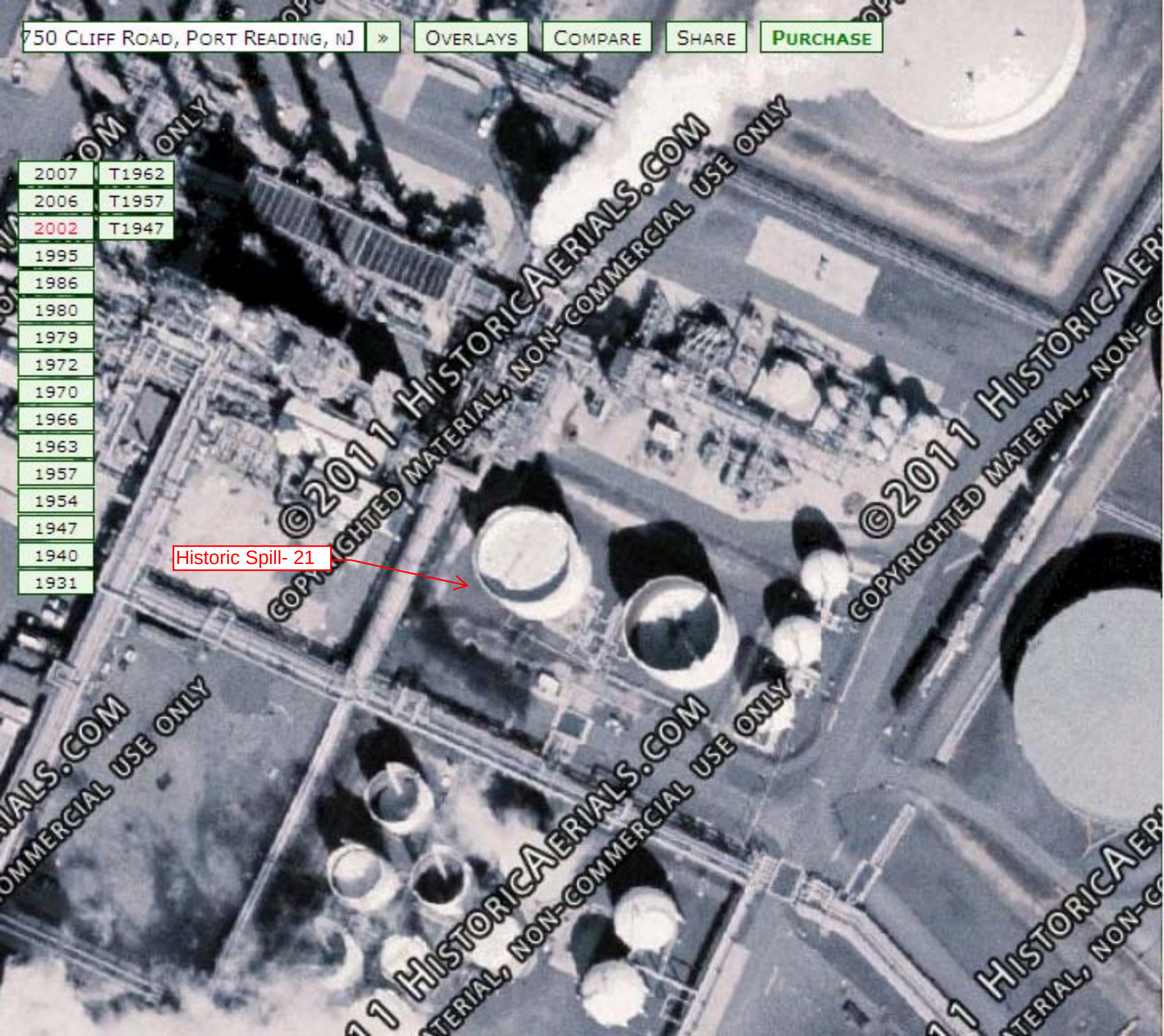
750 CLIFF ROAD, PORT READING, NJ
»
OVERLAYS
COMPARE
SHARE
PURCHASE
2007
T1962
2006
T1957
2002
T1947
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931
Historic Spill- 21
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750 Cliff Road, Port Reading, NJ
»
Overlays
Compare
Share
Purchase
2007
2006
2002
1995
1986
1980
1979
1972
1970
1966
1963
1957
1954
1947
1940
1931
T1962
T1957
T1947
Historic Spill- 21
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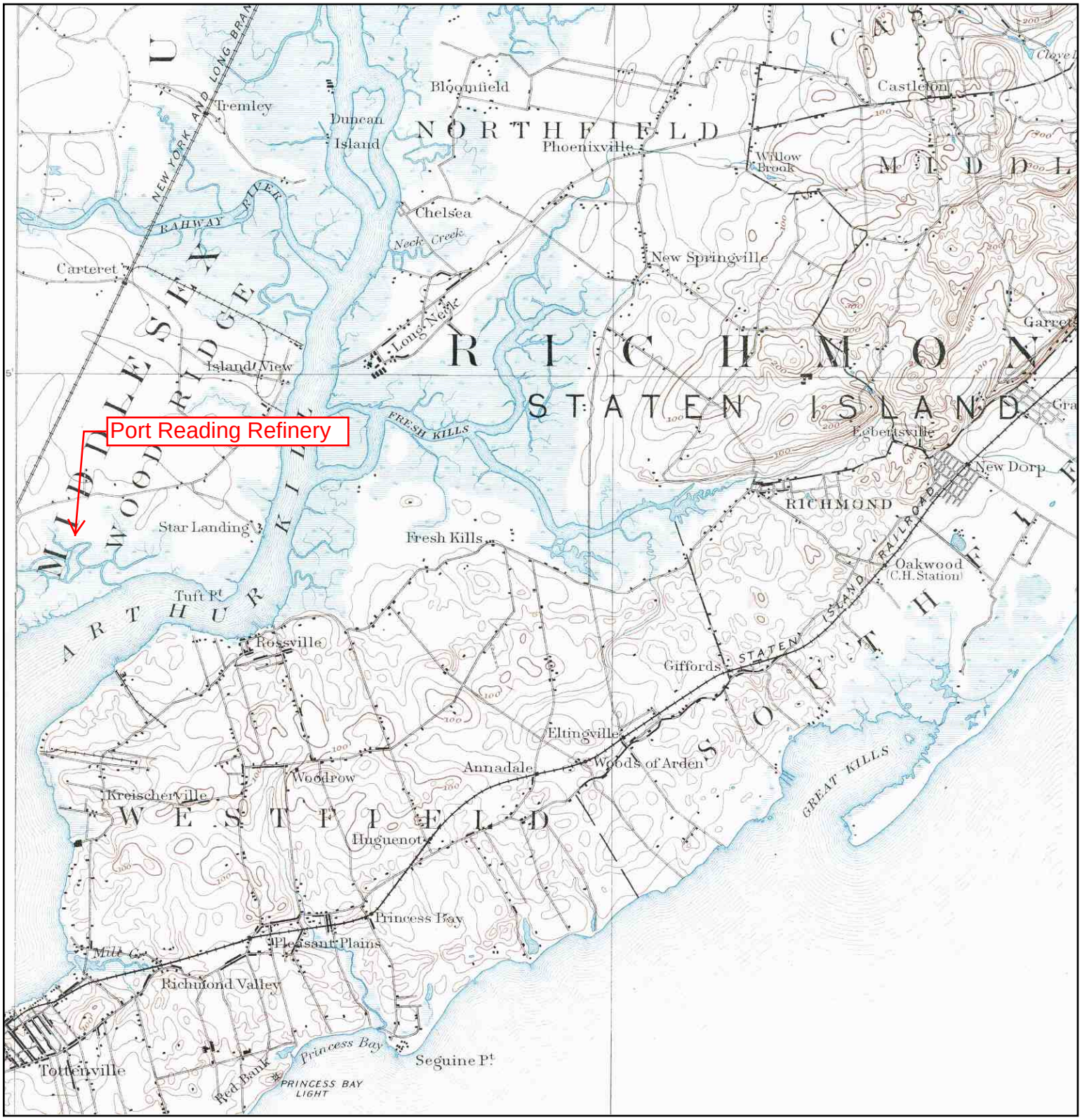
**Appendix II**

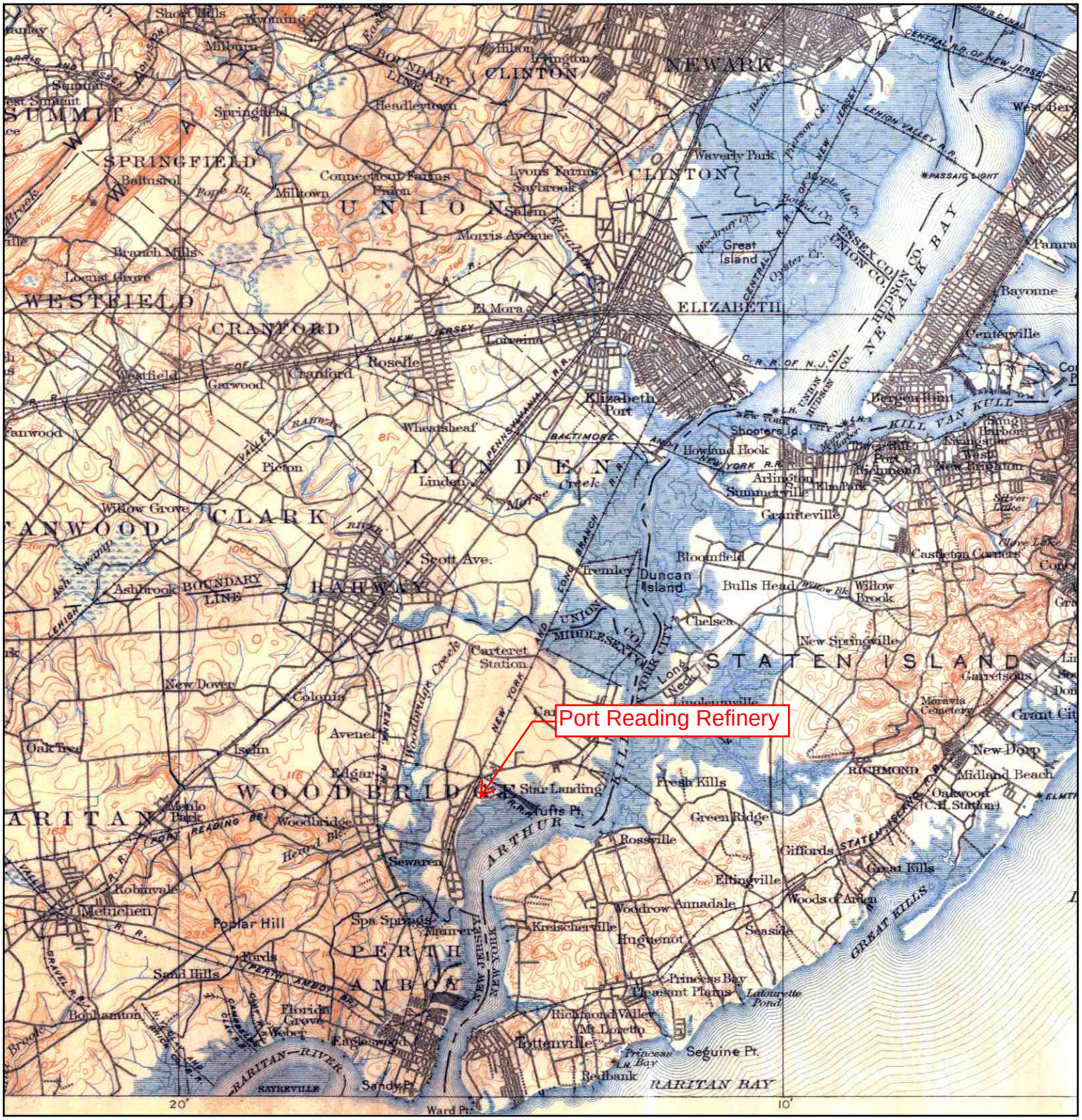
**Historic Topographic Maps (1891-1981)**

# Historical Topographic Map



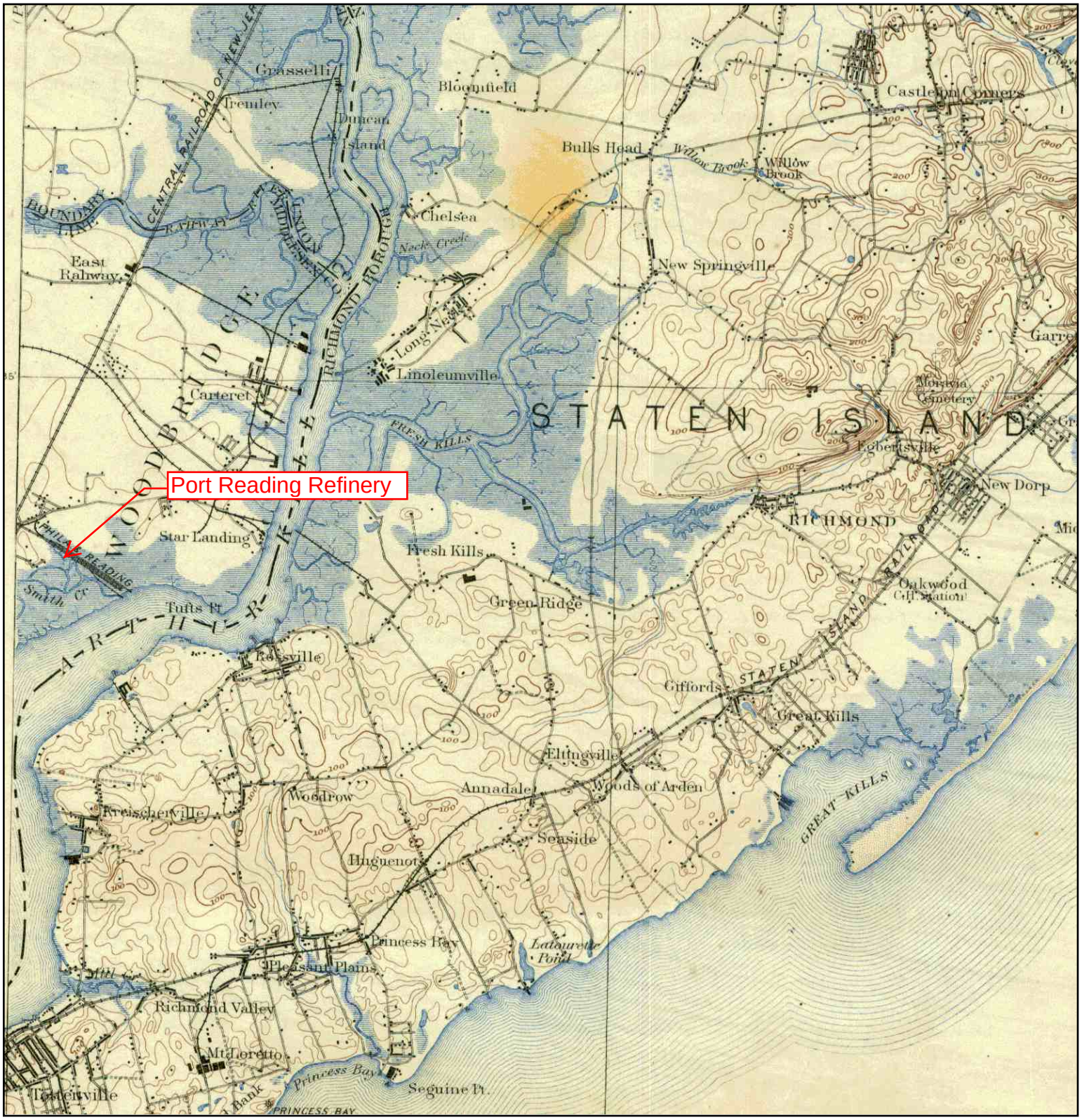

| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: STATEN ISLAND<br>MAP YEAR: 1891<br><br>SERIES: 15<br>SCALE: 1:62500 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br><br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map



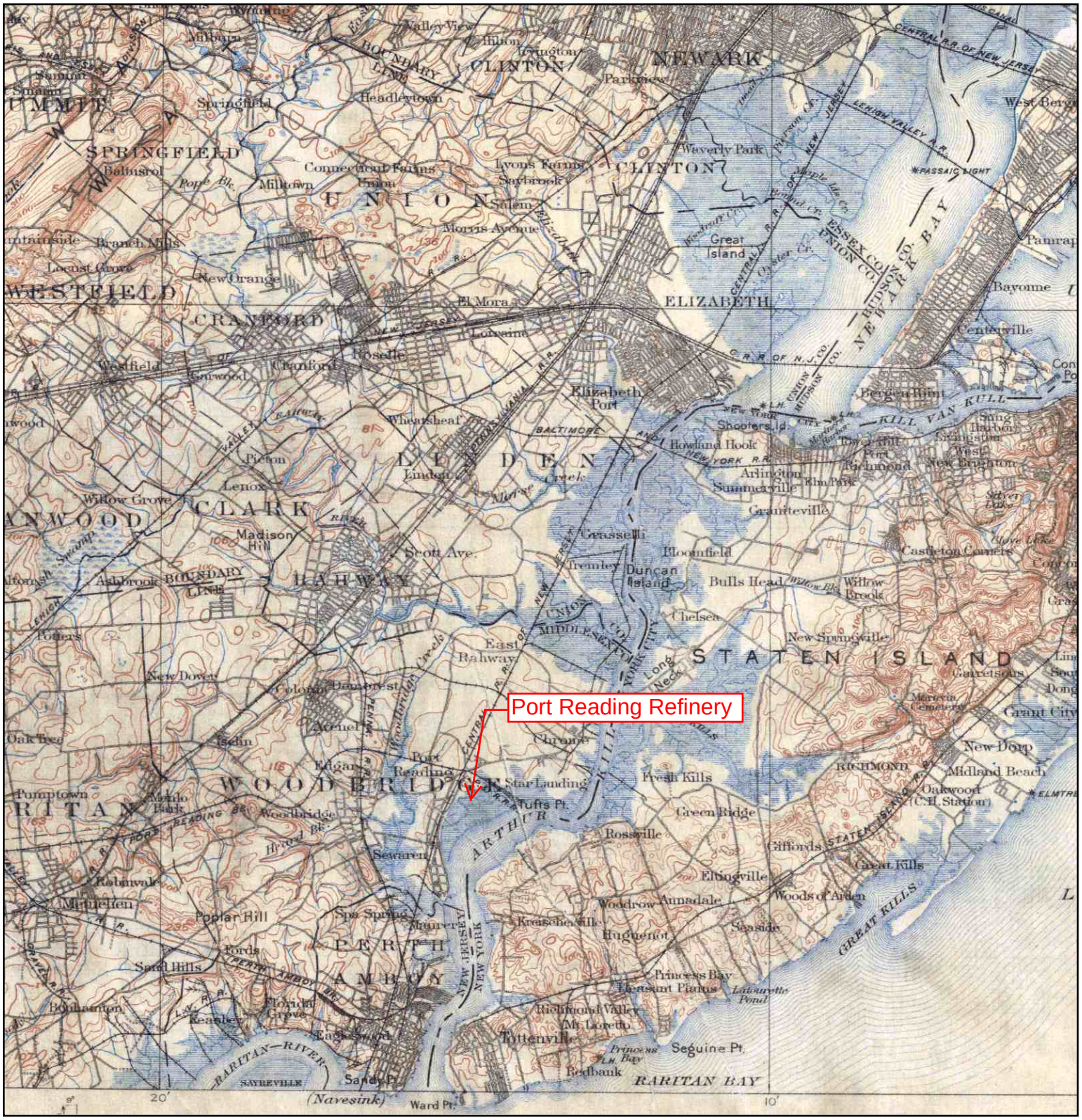

| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: PASSAIC<br>MAP YEAR: 1900<br><br>SERIES: 30<br>SCALE: 1:125000 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map




| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: STATEN ISLAND<br>MAP YEAR: 1900<br><br>SERIES: 15<br>SCALE: 1:62500 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br><br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map

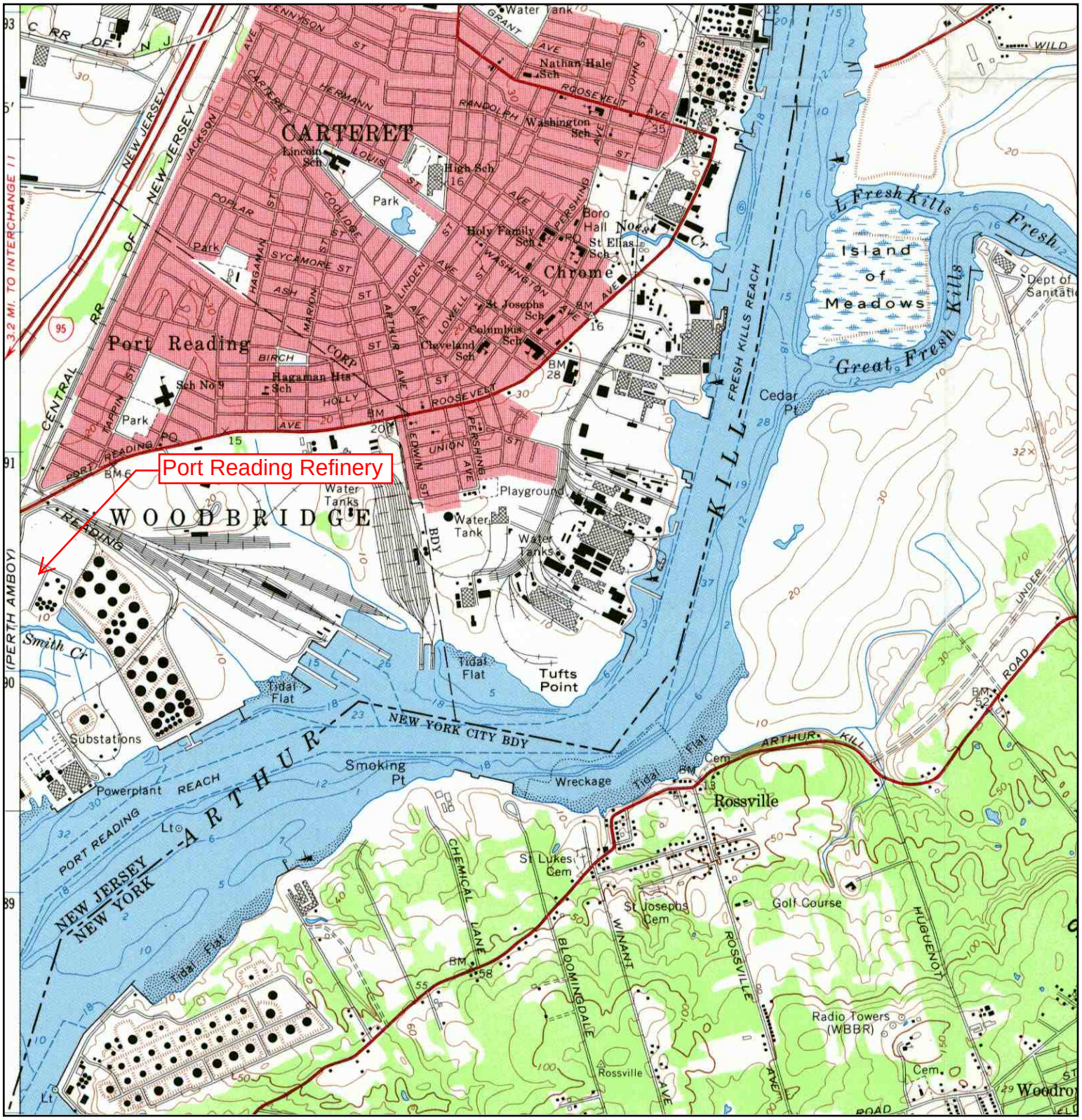



| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: PASSAIC<br>MAP YEAR: 1905<br><br>SERIES: 30<br>SCALE: 1:125000 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map

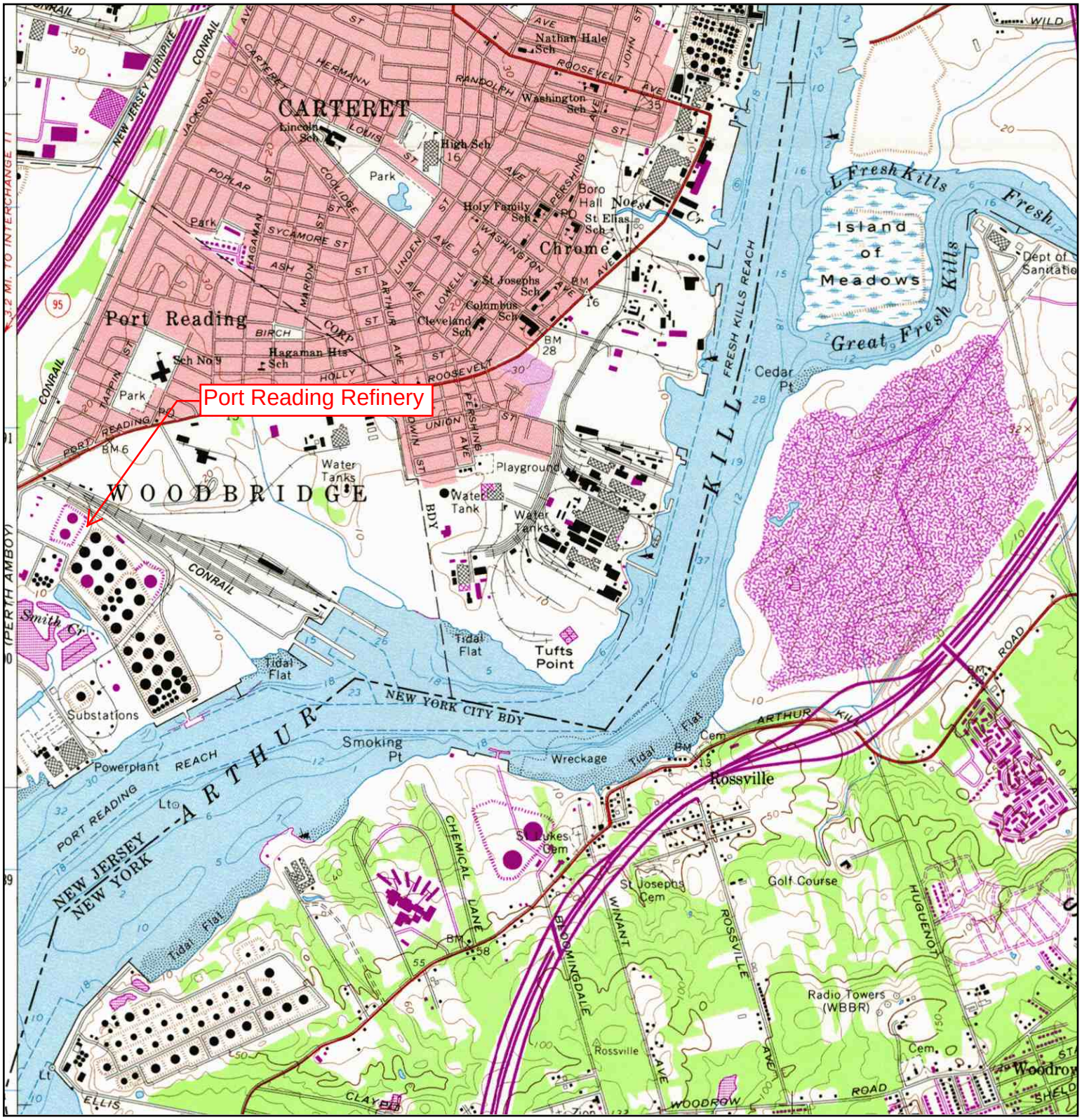
| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: ARTHUR KILL<br>MAP YEAR: 1947<br><br>SERIES: 7.5<br>SCALE: 1:25000 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map




| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: ARTHUR KILL<br>MAP YEAR: 1966<br><br>SERIES: 7.5<br>SCALE: 1:24000 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

# Historical Topographic Map



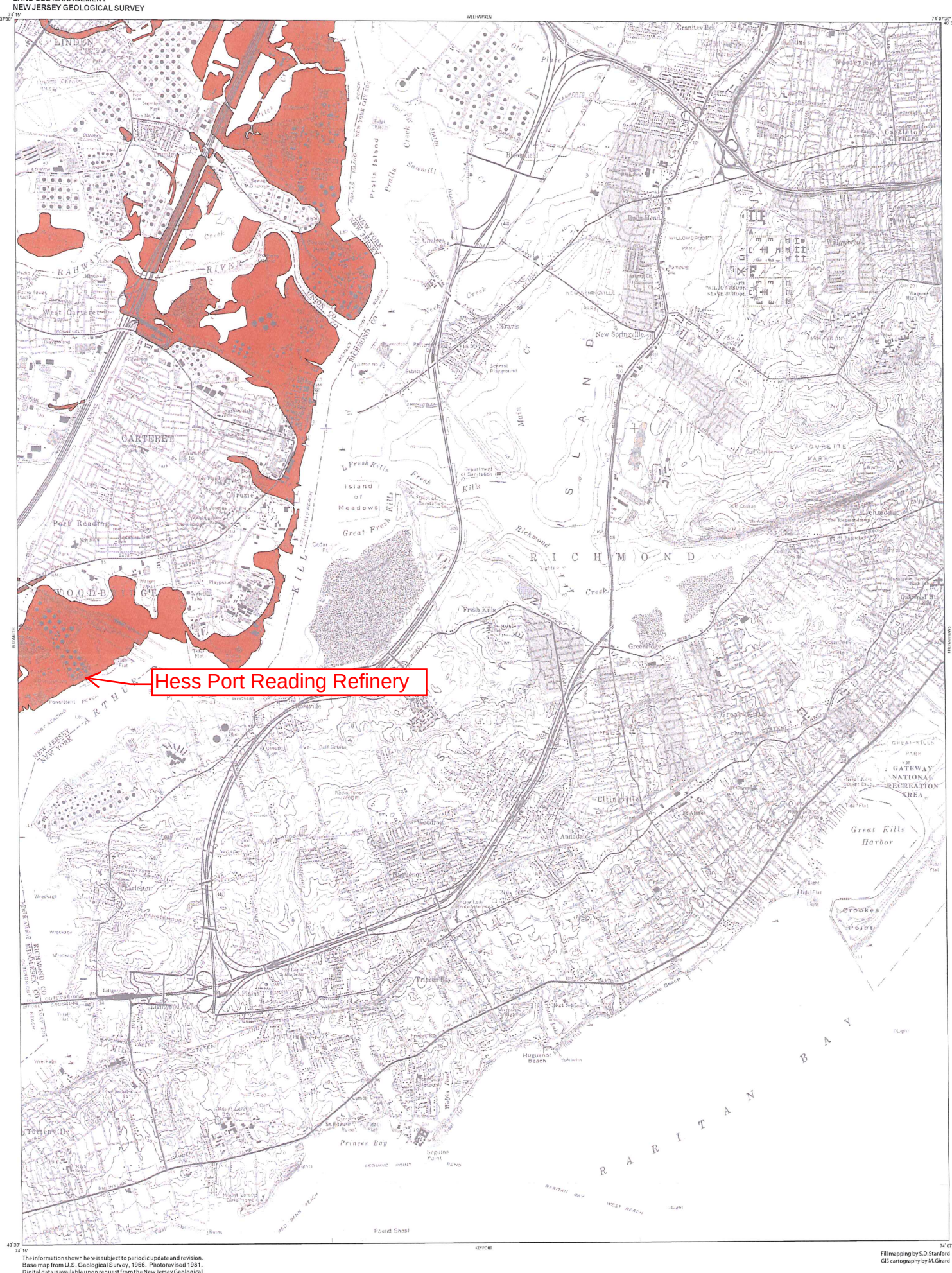

| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: ARTHUR KILL<br>MAP YEAR: 1981<br>PHOTOREVISED FROM:1966<br>SERIES: 7.5<br>SCALE: 1:24000 | SITE NAME: Coal Dock Area<br>ADDRESS: 1000 West Middlesex Avenue<br>Woodbridge, NJ 07077<br>LAT/LONG: 40.5644 / 74.24 | CLIENT: EnviroTrac Environmental Svcs.<br>CONTACT: Dave Carlson<br>INQUIRY#: 2445975.4<br>RESEARCH DATE: 03/19/2009 |

**Appendix III**

**Historic Fill Quadrangle Maps (Arthur Kill and Perth Amboy)**

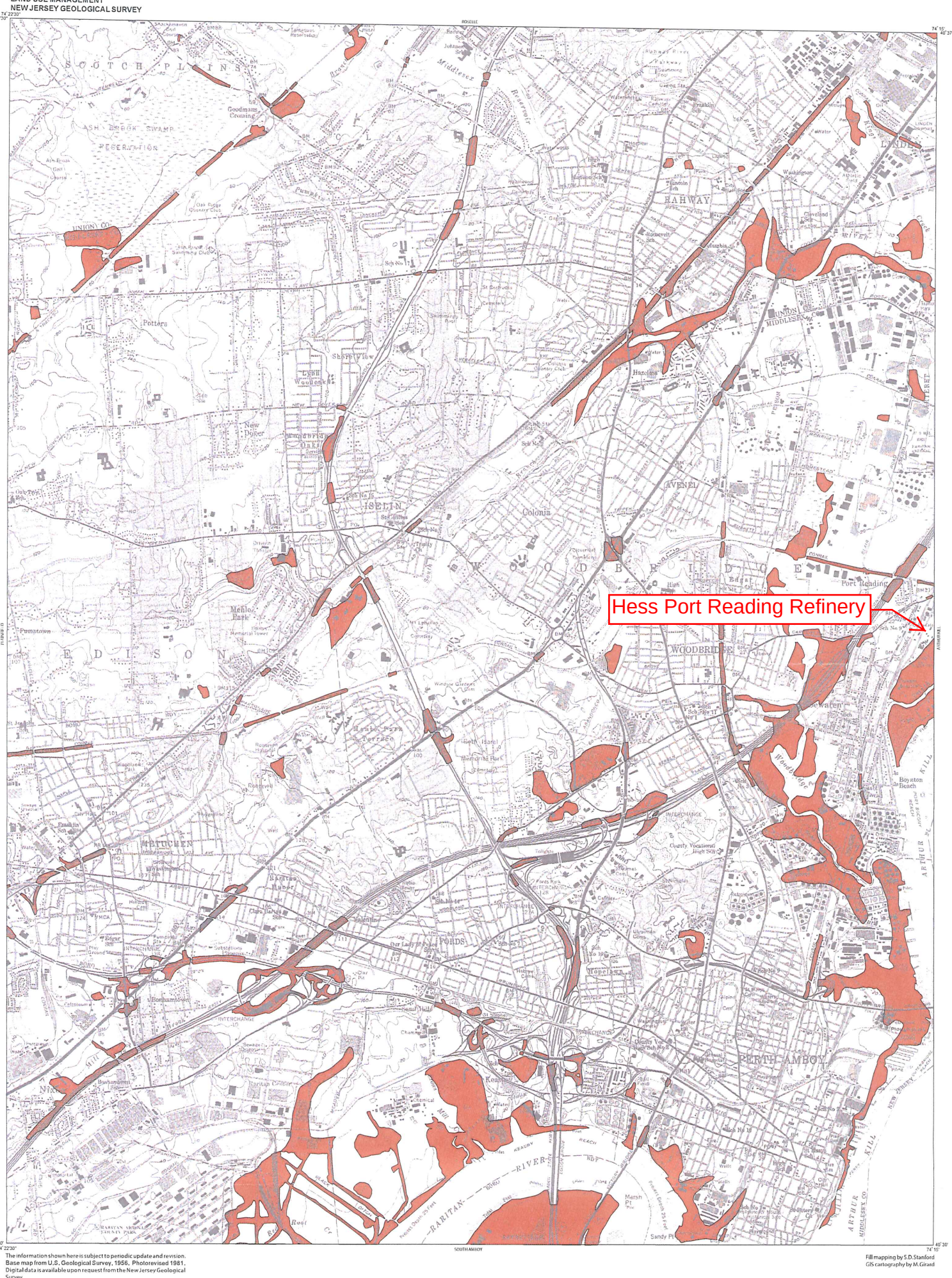
DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAND USE MANAGEMENT
NEW JERSEY GEOLOGICAL SURVEY

HISTORIC FILL OF THE ARTHUR KILL QUADRANGLE
HISTORIC FILL MAP HFM-63


Hess Port Reading Refinery
LINDEN
CARTERET
Port Reading
Chrome
Island of Meadows
Great Fresh Kills
Fresh Kills
Prolls Island
Prolls Creek
Sewaren
Chelsea
Travis
New Springville
Willowbrook
Richmond
RICHMOND
Graniteville
Bloomfield
Greenridge
Great Kills
Great Kills Harbor
GREAT KILLS PARK
GATEWAY NATIONAL RECREATION AREA
Annadale
Huguenot
Eltingville
Tottenville
Princes Bay
Huguenot Beach
Annadale Beach
Crookes Point
Seguine Point
Raritan Bay
Arthur Kill
Kill Van Kull
Kahway River
Rahway River
Round Shoal
Red Bank Beach
West Beach
Raritan Bay
Cedar Grove
Castleton Corners
Richmond Valley
Mount Loretto
Mount Dorothy
Ruins
Wreckage
Powerplant
Beach
Tidal Flat
Tidal Flat
Light
Light
Light

DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAND USE MANAGEMENT
NEW JERSEY GEOLOGICAL SURVEY

HISTORIC FILL OF THE PERTH AMBOY QUADRANGLE
HISTORIC FILL MAP HFM-62


Hess Port Reading Refinery
SCOTCH PLAINS
ROSELLE
RAHWAY
LINDEN
CLARK
ROSELLE PARK
UNION
MIDDLESEX
ISELIN
WOODBRIDGE
EDISON
METUCHEN
FORDS
PERTH AMBOY
SOUTH AMBOY
RARITAN RIVER
ARTHUR KILL
Port Reading
Colonia
Menlo Park
Hopelawn
Keasbey
Sewaren
Boynton Beach
Hazelwood
Pamptown
Potters
New Dover
Hornsmeadow
Bunkamutt
Sandy Pt
Matsh Pt
Fresh Ditch 25 Feet
Fresh Ditch 20 Feet
Rugt Cr
Mill Brook
Woodbridge Cr
Rahway River
Middlesex Reservoir
Ash Brook Swamp Preservation
Ash Brook Golf Course
Oak Ridge Country Club
Ash Brook Swimming Club
Goodmans Crossing
Lyons Woolworks
Shepherd Oaks
Colonia Country Club
Menlo Park Terrace
Raritan Arsenal County Park
Chemical
Hopelawn
Keasbey
Sewaren
Port Reading

**Appendix IV**

**Confirmation Report**

HESS CORPORATION
1 Hess Plaza
Woodbridge, NJ 07095

Howard S. Goldman
ENVIRONMENTAL MANAGER
(732) 750-7735/FAX (732) 636-0932
hgoldman@hess.com

REC'D JUN 22 2009

HSG/09/077
June 17, 2009
Certified Mail # 7007 1490 0000 2733 5800

Bureau of Release Prevention
New Jersey Department of Environmental Protection
P.O. Box 424
Trenton, NJ 08625-0424
Attention: Discharge Confirmation Report

**SUBJECT: Discharge Confirmation Report – NJDEP Case #09-05-19-1218-35**
**Hess Corporation – Port Reading Refinery**
**DIFF # 122500068000**

Dear Sir/Madam:

In accordance with N.J.A.C 7:1-E5.8, the following confirmation report is submitted for the above-referenced NJDEP Case Number.

1. Individual that reported the release:

   Mr. Howard Goldman
   Hess Corporation
   1 Hess Plaza
   Woodbridge, NJ 07095
   (732)750-6000

2. Individual submitting confirmation report:

   Mr. Howard Goldman
   Hess Corporation
   1 Hess Plaza
   Woodbridge, NJ 07095
   (732)750-6000

   Position in Organization: Environmental Manager

3. Owner/Operator of facility at which the release occurred:

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095
(732)750-6000

4. Name, address, and telephone number of each person in any way responsible for the discharge:

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

5. Source of discharge:

A hole (approximately ¼" in diameter) was discovered in the water-draw sump of gasoline tank 7930 at the Hess Port Reading Refinery. During an internal inspection of the tank, water with a gasoline odor was detected in the sump.

6. Location of the discharge:

| | | LOT | BLOCK | LOT | BLOCK |
|---|---|---|---|---|---|
| Hess Corporation | | 1 | 757 | 1 | 760-B |
| 750 Cliff Road | | 3 | 756 | 1 | 756-B |
| Port Reading, NJ 07064 | | 6 | 760 | 2 | 756-B |
| Arthur Kill | | 2 | 760-B | 3 | 756-B |
| NJ State Plane Coordinate Centroid: | | 2 | 760-A | 4A | 756-B |
| N-630-428-E-2115-390 | | 3 | 760-A | 4B | 756-B |
| X-Coordinate: 2,118,094.21 feet | | 3 | 760-B | 7 | 756-B |
| Y-Coordinate: 628,618.18 feet | | 6 | 1095 | | |

Please refer to the attached plot plan.

7. Substance discharged:

Gasoline.

8. Discharge quantity:

A trace amount of gasoline was present in tank bottom water that was released. The precise quantity of gasoline released is unknown. Minor localized contaminated soil was detected beneath the sump in the location of the hole. Based upon the low quantity of impacted soil at the location of the leak, it is estimated that the quantity of gasoline released is less than 5 gallons.

The groundwater will be assessed in the location of the tank to further assess site conditions.

Date and time summary:

| | | |
|---|---|---|
| a. Date and time discharge began: | unknown | |
| b. Date and time discharge confirmation: | 05/19/09 | 12:00 |
| c. Date and time discharge ended: | unknown | |
| d. Date and time NJDEP was notified: | 05/19/09 | 12:14 |

9. Description of measures taken to contain, cleanup and remove the discharge, including a summary of costs incurred:

The storage tank was taken out of service for an internal inspection. The metal sump, in which the hole was located, was cut out of the storage tank. A vacuum truck was used to remove water present in the sump area. Approximately 20 gallons of soil was removed for disposal. One post excavation sample was collected.

Approximate costs incurred: $4,000.

10. Preventive measures taken to minimize the possibility of recurrence:

The storage tank will inspected and repaired in accordance with API Standard 653 to prevent a reoccurrence. In addition, an assessment of ground water will be performed.

The name, addresses, and telephone numbers of all entities involved in containment, clean up or removal of the discharge:

| | |
|---|---|
| Howard Goldman, EH&S | Hess Corporation<br>1 Hess Plaza<br>Woodbridge, NJ 07095<br>732-750-6000 |
| Bill O'Mahoney | Conam, c/o Hess Corp. Port Reading Refinery<br>1 Hess Plaza<br>Woodbridge, NJ 07095<br>732-750-7885 |
| Tim Smith | Chicago Bridge and Iron, c/o Hess Corp. Port Reading Refinery<br>1 Hess Plaza<br>Woodbridge, NJ 07095<br>732-750-7791 |
| Bill Groeling | Envirotrac<br>400E Corporate Ct.<br>South Plainfield, NJ 07080<br>(908) 757-1900 |

11. A description of samples taken at or around the site of the discharge:

One post excavation sample was collected. The samples were in compliance with both NJ DEP Residential and Nonresidential soil remediation standards. Several parameters slightly exceeded the NJ DEP Impact to Ground Water soil remediation standards. Therefore, the groundwater will be assessed in the vicinity of the storage tank. The results of the investigation will be provided to the NJ DEP Bureau of Site Remediation and will be addressed with the ongoing groundwater investigation of the site.

12. Certification of financial responsibility:

Attached please find the current certification of financial responsibility pursuant to N.J.A.C. 7:1E-4.5.

13. Information supplementing any information previously provided to the Department:

N/A

14. Any other information concerning the discharge which the Department may request:

N/A

15. Certification:

"I certify under penalty of law that the information provided in this document is, to the best of my knowledge, true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fines or imprisonment or both, for submitting false, inaccurate or incomplete information."

H. S. Goldman
Environmental Manager

If you have any questions or require additional information, please call me at (732) 750-7735.

Sincerely,

H. S. Goldman
Environmental Manager

cc: P. Cole, NJ DEP
B. Howard
S. Freeman
B. Groeling, Envirotrac
Discharge Confirmation Report Binder

**Appendix V**

**NJDEP 2001 Geologic Survey Map**

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SCIENCE, RESEARCH AND TECHNOLOGY
NEW JERSEY GEOLOGICAL SURVEY

Prepared in cooperation with the
U. S. GEOLOGICAL SURVEY
NATIONAL GEOLOGIC MAPPING PROGRAM



## INTRODUCTION

Surficial materials in the Perth Amboy and Arthur Kill quadrangles consist of glacial, stream, wetland, and weathered bedrock sediment. The glacial sediment includes sand, gravel, silt, and clay laid down by meltwater in glacial lakes and river plains, and till laid down by glacial ice as a sheet on the bedrock surface and as the terminal moraine. The sand, gravel, silt, and clay, known collectively as stratified drift, are as much as 90 feet thick. Till is as much as 130 feet thick. The stream sediment includes sand, gravel, and silt deposited in floodplains, stream terraces, and former river plains. It is as much as 40 feet thick. The wetland sediment includes peat and organic silt and clay deposited in freshwater swamps and saltwater marshes and estuaries. It is as much as 100 feet thick. The weathered bedrock consists of silty clay and shale fragments formed by chemical and mechanical decomposition of shale bedrock of Triassic and Jurassic age. It is generally less than 10 feet thick.

The accompanying map and sections show the surface extent and subsurface relations of these deposits. Figure 1 shows the extent of glacial lakes and river plains, the terminal moraine, and recessional ice margins. Table 1 lists water well and test-boring logs used to plot bedrock-surface topography and to infer the subsurface distribution of deposits. Table 2 lists the composition of pebbles in the glacial deposits. The correlation chart shows the temporal relationships and age of the deposits.

## DESCRIPTION OF MAP UNITS

**Postglacial Deposits**—These include artificial fill, stream, wetland, and beach sediment deposited since retreat of the late Wisconsinan glacier. Although wetland/swamp deposits began to accumulate shortly after deglaciation, Estuarine and salt-marsh deposits began to accumulate as rising sea level entered the Raritan Valley. This occurred as early as 11,500 radiocarbon years before present (yrs B. P.) as indicated by a radiocarbon date of 11,420±160 yrs B. P. (GX-2403) on organic clay at the base of the estuarine deposit at a depth of 96.100 feet in a boring adjacent to boring 139 (table 1) (Lippmann, Jacobs, and Gonda Inc., 1993, boring B25).

af — **ARTIFICIAL FILL**—Excavated sand, silt, clay, gravel, rock, and till, and man-made materials (bricks, cinders, ash, slag, glass, construction materials) and minor amounts of trash. Color is variable, but generally gray to black. In orchard and road embankment, and made land. As much as 50 feet thick but generally less than 20 feet thick. Mapped only where it forms distinct landforms, as where it covers sub-marsh deposits and large floodplains. The extent of fill is based on aerial photographs taken in 1979 and 1986. The extent of fill over sub-marsh deposits and floodplains is based, in part, on the position of shoreline silt markers, and artificial depths shown on maps by Darton and others (1908) and Rice and Kummel (1908). Fill also occurs in all urban areas, and as most former clay and sand pits, as a thin layer generally less than 10 feet thick; of fill, or mixed fill and natural material, overlying the mapped surficial material.

ash — **TRASH FILL**—Trash and construction materials mixed and covered with excavated clay, silt, sand, gravel, rock, and till. As much as 50 feet thick.

Qb — **BEACH DEPOSITS**—Sand and pebble gravel. As much as 15 feet thick (estimated).

Qal — **ALLUVIUM**—Sand, silt, clay, pebble gravel, minor cobble gravel. Contains variable amounts of organic matter. Fine sediment is reddish-brown to dark brown. Gravel and sand composition similar to that of surficial deposits and underlying bedrock in the drainage basin. Fine sediment is deposited as overbank material on the floodplain and may be as much as 15 feet thick. It generally overlies sand and gravel deposited in the stream channel. The gravel is generally less than 5 feet thick.

Qs — **SWAMP AND MARSH DEPOSITS**—Gray to brown organic silt and clay overlain by dark-brown to black peat. As much as 15 feet thick (estimated).

Qse — **ESTUARINE AND SALT-MARSH DEPOSITS**—Peat and organic clay and silt, brown to dark gray; minor sand and shells. Locally, at base, may include alluvial sand and gravel deposited before sunken marshes. As much as 500 feet thick.

**Glacial Deposits**—These include till and stratified drift deposited by ice and meltwater during the late Wisconsinan glaciation. The till is a reddish-brown to reddish, poorly-sorted sediment consisting of pebbles, cobbles, and a few boulders scattered in a compact matrix of mixed silt, sand, and clay. It is deposited by glacial ice. Stratified drift includes reddish-brown to gray, moderately to well-sorted, cross- to plane-bedded sand and gravel deposited in deltas and fans in glacial lakes and in glacial river plains, and reddish-brown to gray, well-sorted, laminated to varved silt, clay, and fine sand deposited in the bottoms of glacial lakes. The sand fraction in both till and stratified drift is predominantly quartz and red and gray shale fragments. The composition of pebbles in these deposits is provided in table 2.

Late Wisconsinan ice advanced southerly to southeasterly across the map area to the southern edge of the terminal moraine. As the glacier advanced, a variable and thin ground till was deposited on the bedrock surface. Till was also deposited beneath the glacier as it retreated northward. Much of the till was deposited in contact with stagnant ice and as melt-out till. As the glacier retreated, meltwater was ponded between the glacier and the bedrock hills to the south and west, forming glacial lakes. Sediment was deposited in these lakes as deltas and fans and as bottom sediment. As the glacier retreated, the lake level lowered as new drainage routes were established. Lake sediment was deposited in the lake basins as the lake level lowered. Some of the lake sediment was deposited on the floodplain of the Raritan River as the river cut through the glacial lake sediment. Some of the lake sediment was also deposited in the Arthur Kill as the meltwater from the Raritan River lowered the base level of the Arthur Kill. The meltwater also deposited a thin veneer of sand and gravel on the floodplain of the Arthur Kill. The meltwater also deposited a thin veneer of sand and gravel on the floodplain of the Raritan River

Prepared in cooperation with the
U. S. GEOLOGICAL SURVEY
NATIONAL GEOLOGIC MAPPING PROGRAM



Table 1.--Selected Well Logs

| Well No. | Identifier[1] | Depth[2] | Driller's Log[3] Description |
|---|---|---|---|
| 1 | 25-21337 | 0-64 | clay and gravel co-predominant (Qmt) |
| | | 64-125 | red shale |
| 2 | 25-1203 | 0-14 | red sand clay (Qm) |
| | | 14-30 | boulders and heavy gravel (Qm) |
| | | 30-45 | hard red clay (Qm) |
| | | 45-60 | red hardpan (Qm) |
| | | 60-67 | red muddy sand (Qm) |
| | | 67-97 | red hard clay (Qmt or Qsw) |
| | | 97-125 | hard red sand rock |
| 3 | 25-627 | 0-5 | red sandy clay (Qt) |
| | | 5-15 | hard pan with streak of red sand (Qt) |
| | | 15-23 | hard red clay, heavy gravel (Qt) |
| | | 23-150 | red hard sand rock and streaks of red shale |
| 4 | 25-1299 | 0-25 | red sand and gravel mixed with red clay (Qm) |
| | | 25-75 | red hard pan with streaks of yellow dry sand (Qm) |
| | | 75-100 | red muddy sand (Qmt) |
| | | 100-110 | hard red clay (Qsw) |
| | | 110-170 | red sand rock |
| 5 | 25-28739 | 0-12 | brown coarse-to-fine sand, trace silt, clay, cobbles and boulders (Qm) |
| | | 12-40 | red-brown coarse-to-fine sand, trace silt (Qm?) |
| | | 40-60 | red-brown fine sand, trace silt (Qmt) |
| | | 60-76 | red-brown coarse-to-fine sand, fine coarse-to-fine gravel, trace silt (Qmt) |
| | | 76-170 | red shale |
| 6 | 25-6379 | 0-70 | sand (Qm over Qsw) |
| | | 70-135 | shale |
| 7 | 25-4681 | 0-50 | clay, red sand, some clay (Qm over Qsl) |
| | | 50-402 | red shale |
| 8 | 25-8432 | 0-41 | brown clay and stone (Qm) |
| | | 41-508 | red shale, some brownstone and clay seams |
| 9 | 25-5637 | 0-26 | fine red sand, few streaks of gravel (Qm) |
| | | 26-679 | red shale, some brownstone |
| 10 | 25-27174 | 0-39 | sand and gravel, stones (Qt) |
| | | 39-110 | red shale |
| 11 | 25-24653 | 0-41 | overburden (Qt) |
| | | 41-300 | red rock |
| 12 | 25-1675 | 0-25 | sand and clay (Qt) |
| | | 25-150 | shale |
| 13 | 25-1236 | 0-21 | sand and clay (Qt) |
| | | 25-640 | shale |
| 14 | 25-13152 | 0-31 | sand and gravel (Qt) |
| | | 30-125 | red shale |
| 15 | 25-12799 | 0-28 | sand and gravel (Qt) |
| | | 25-150 | red shale |
| 16 | 25-15967 | 0-20 | sand and gravel (Qt) |
| | | 20-145 | shale |
| 17 | 25-13040 | 0-30 | sand and gravel (Qt) |
| | | 30-150 | red shale |
| 18 | 25-20409 | 0-50 | overburden (Qt) |
| | | 50-300 | trap |
| 19 | 26-577 | 0-42 | sand and gravel (Qt) |
| | | 42-90 | rock |
| 20 | 26-556 | 0-32 | sand and clay (Qt) |
| | | 32-95 | shale |
| 21 | 26-320 | 0-23 | sand, clay, gravel (Qt) |
| | | 23-300 | rock |
| 22 | 25-12610 | 0-24 | sand and gravel (Qt) |
| | | 24-110 | red shale |
| 23 | 25-12799 | 0-28 | sand and gravel (Qt) |
| | | 28-150 | red shale |
| 24 | 25-15967 | 0-20 | sand and gravel (Qt) |
| | | 20-145 | shale |
| 25 | 25-13040 | 0-30 | sand and gravel (Qt) |
| | | 30-150 | red shale |
| 26 | 25-20409 | 0-50 | overburden (Qt) |
| | | 50-300 | trap |
| 27 | 26-577 | 0-42 | sand and gravel (Qt) |
| | | 42-90 | rock |
| 28 | 26-556 | 0-32 | sand and clay (Qt) |
| | | 32-95 | shale |
| 29 | 26-320 | 0-23 | sand, clay, gravel (Qt) |
| | | 23-300 | rock |
| 30 | 26-291 | 0-16 | clay and sand (Qt) |
| | | 18-96 | shale |
| 31 | 26-469 | 0-10 | red hard pan (Qt) |
| | | 10-20 | red muddy sand (Qt) |
| | | 20-27 | red hard clay (Qt or Qsw) |
| | | 27-100 | red sand rock |
| 32 | 26-275 | 0-5 | red hard pan (Qt) |
| | | 5-145 | red shale and red sand rock |
| 33 | 26-341 | 0-10 | red sandy clay, fine, hard, mixed with some fine gravel (Qt) |
| | | 10-30 | tough hard red clay (Qt) |
| | | 30-43 | red sand pan (Qt) |
| | | 43-150 | red sand rock |
| 34 | 26-460 | 0-22 | sand and clay (Qt) |
| | | 22-60 | rock |
| 35 | 26-8555 | 0-10 | red-brown clayey silt (Qt) |
| | | 10-19 | soft shale (Qsw) |
| | | 19-28 | red shale |
| 36 | 25-21970 | 0-10 | topsoil and clay (Qt) |
| | | 10-200 | shale |
| 37 | 25-1104 | 0-20 | sand and clay (Qt) |
| | | 20-90 | shale |
| 38 | 26-1155 | 0-70 | clay (Qt) |
| | | 70-320 | red shale |
| 39 | 25-16459 | 0-90 | sand (Qt, 53 feet of casing) |
| | | 90-304 | shale |
| 40 | 25-6563 | 0-5 | red-brown silty clay, trace medium-to-fine gravel (Qt) |
| | | 5-12 | red-brown silty clay (Qt or Qsw) |
| | | 12-13 | red rock |
| 41 | 25-62 | 0-43 | red dirt (Qm) |
| | | 43-102 | red shale |
| 42 | 25-21998 | 0-20 | sand and gravel clay (Qm over Qrt) |
| | | 20-200 | shale |
| 43 | 25-14787A | 0-50 | sand and gravel (Qm over Qrt?) |
| | | 50-190 | red shale |
| 44 | 25-21969 | 0-20 | sand and gravel (Qm) |
| | | 20-250 | red shale |
| 45 | 25-13343 | 0-40 | sand and gravel (Qm) |
| | | 40-50 | red clay (Qsw or Qm) |
| | | 50-100 | red shale |
| 46 | 25-13204 | 0-42 | sand and gravel (Qm) |
| | | 42-52 | red clay (Qsw or Qm) |
| | | 52-110 | red shale |
| 47 | 25-2214 | 0-105 | clay and sand (Qm over Qrt) |
| | | 105-126 | sand and gravel (Qrt) |
| | | 126-143 | shale |
| 48 | 25-27254 | 0-70 | red soil and clay with sandstone, shale, and siltstone fragments (Qm) |
| | | 70-79 | red shale |
| 49 | 25-13000 | 0-55 | sand and clay (Qm) |
| | | 55-100 | red shale |
| 50 | 25-16991 | 0-50 | clay (Qm) |
| | | 50-465 | red shale |
| 51 | 25-16771 | 0-95 | soil red shale and sandstone (Qf over Qsw) |
| | | 95-290 | red shale |
| 52 | 25-5278 | 0-26 | earth, sand, clay (Qm) |
| | | 26-35 | soft red shale rock (Qsw) |
| | | 35-221 | red shale rock |
| 53 | 25-6037 | 0-26 | sand and clay (Qt over Qsw) |
| | | 26-170 | red shale |
| 54 | N 25-44-361 | 0-15 | brown, gray, yellow clayey sand and gravel (Tp) |
| | | 15-27 | red clay (Qsw) |
| 55 | 25-42 | 0-70 | clay, stones, and hardpan (Tp) |
| | | 70-95 | red shale |
| | | 95-105 | gray clay |
| | | 105-437 | red rock |
| 56 | 25-38 | 0-5 | stones and sandy clay (Tp) |
| | | 5-10 | hardpan, stones (Tp) |
| | | 10-12 | yellow clay (Tp or Qsw) |
| | | 12-15 | pink clay (Qsw) |
| | | 15-32 | purple clay (Qsw) |
| | | 32-82 | brown and red rock |
| | | 82-92 | red and gray rock |
| | | 92-402 | red rock |
| 57 | 26-1026 | 0-10 | earth and clay (Qt) |
| | | 10-266 | red shale rock |
| 58 | 26-4661 | 0-6 | red-brown clayey silt, trace gravel (Qt) |
| | | 6-14 | red-brown quartzite-free sand, some fine gravel, little clayey silt (Qt) |
| 59 | 22-22013 | 0-7 | fill |
| | | 7-20 | red silty clay, little gravel, fragmented shale and gravel (Qt) |
| 60 | 25-9626 | 0-28 | coarse brown sand and gravel (Qm) |
| | | 28-40 | red and white clay, streaks of red shale (Qsw) |
| 61 | 26-20207 | abbreviated log | |
| | | 0-31 | red sandy clay, trace pebbles (Qt) |
| | | 31-35 | red clayey sand and gravel (Qt) |
| 62 | 26-16479 | abbreviated log | |
| | | 0-31 | reddish-brown sandy silt, little gravel and clay (Qt) |
| 63 | 25-22689 | 0-8 | red to light-brown clay, trace sand (Qm or alf) |
| | | 8-11 | brown sand and gravel, some clay, gravel is coated (Qm) |
| | | 11-23 | white, orange, brown fine sand; a little light green clay (K) |
| 64 | 26-20273 | 0-16 | fill |
| | | 16-28 | red-brown sand and clay (Qm over Qm) |
| | | 28-39 | red-brown clay (Qsw) |
| 65 | 26-12460 | abbreviated log | |
| | | 0-6 | brown and gray medium-to-fine sand, a little medium-to-fine gravel (Qm) |
| | | 6-25 | dark gray silt and clay with fertile soil profile (K) |
| | | 25-27 | light gray to buff medium to fine quartz sand (K) |
| 66 | 26-12462 | abbreviated log | |
| | | 0-4 | fill |
| | | 4-7 | light-gray to light-brown medium-to-fine sand (Qmg) |
| | | 7-32 | dark gray clay and silt, lignitic, with sand seams (K) |
| | | 32-42 | orange-brown to light gray medium-to-fine quartz sand (K) |
| 67 | 26-12 | 0-30 | clay and sand (Qm over K) |
| | | 30-90 | clay (K) |
| | | 90-93 | red rock |
| 68 | 26-6350 | abbreviated log | |
| | | 0-12 | red-brown clayey silt, trace sand and gravel (Qm) |
| 69 | N 26-31-794 | 0-75 | glacial drift (Qm) |
| | | 75-100 | yellow brown pebbly sand (Tp) |
| | | 100-160 | clay, sand, clayey sand (K) |
| | | 160-225 | red shale |
| 70 | 26-484 | 0-105 | red clay and red fine pan (Qm) |
| | | 105-165 | dirty, muddy, fine gray sand (K) |
| | | 165-195 | yellow hard clay (K) |
| | | 195-260 | gray clay and boulders (shale bedrock?) |
| 71 | 26-3000 | log by E. J. Markasky, NGS, abbreviated here | |
| | | 0-60 | reddish-brown, pale red, pale brown silty clayey fine to coarse sand with scattered pebbles (Qm) |
| | | 60-110 | yellowish-brown slightly clayey fine-to-medium arkosic sand with some pebbles (Tp) |
| | | 110-153 | dark-gray, light-gray, gray to black micaceous, lignitic clayey silt with some fine sand (K) |
| | | 153-157 | yellowish-gray fine-to-very coarse angular sand (K) |
| | | 157-170 | red clay (weathered shale) |
| | | 170-302 | dusky-red finely micaceous shale |
| 72 | N 26-31-791 | 0-11 | red clayey sand till (Qm) |
| | | 11-20 | yellow sand and gravel (Tp) |
| | | 20-80 | gray and white clay and sand (K) |
| 73 | 26-9929 | abbreviated log | |
| | | 0-45 | orange-brown and gray fine-to-coarse sand and tan to gray clay lenses (K) |
| 74 | 26-22490 | abbreviated log | |
| | | 0-47 | gray, brown, yellow medium to fine sand; some brown clay and silt (K) |
| | | 47-56 | gray marl (K or weathered shale) |
| | | 56-66 | dark gray shale rock |
| 75 | 26-19605 | abbreviated log | |
| | | 0-12 | olive-yellow, light-gray, yellowish-brown fine sand, silt, and white rounded medium-to-coarse quartz river gravel (Qm) |
| | | 12-38 | gray, brown very fine-to-medium quartz sand with some interbeds of gray clay (K) |
| | | 38-47 | greenish-gray clay with white mottling specks (weathered shale) |
| 76 | 26-22502 | abbreviated log | |
| | | 0-42 | brown fine-to-coarse sand, trace silt, some fine-to-coarse gravel (Qm) |
| | | 42-70 | gray very-fine-to-fine lignitic sand (K) |
| | | 70-72 | gray to green laminated clay (weathered shale) |
| 77 | 26-22474 | abbreviated log | |
| | | 0-25 | brown and gray fine-to-coarse sand, little fine-to-coarse gravel, trace silt (Qm) |
| | | 25-49 | dark-gray very-fine-to-coarse sand, trace pyrite and lignite; little silt (K) |
| | | 49-62 | olive, red, gray dense laminated clay (weathered shale) |
| | | 62-64 | bedrock, dark-green weathered shale |
| 78 | 26-3325 | 0-4 | fill (af) |
| | | 4-10 | gray silt, gray clay (Qm) |
| | | 10-19 | reddish-brown sand, gravel, samples of clay (Qm) |
| | | 19-40 | fine-to-medium lignitic gray sand (K) |
| | | 40-62 | fine-to-coarse light gray sand and fine gravel (K) |
| | | 62-77 | gray clay and shale |
| 79 | 26-25873 | 0-6 | fill (af) |
| | | 6-15 | interbedded brown silt soil black clay, and medium sand (Qm) |
| | | 15-17 | yellow clay (Qrt?) |
| | | 17-25 | fine silty light brown sand (Qrt or Qsl) |
| | | 25-42 | sandy light-gray clay (K) |
| | | 42-70 | weathered fine to coarse gray and white quartz sand with trace of clay (K) |
| | | 70-80 | decomposed gray shale with gray clay lenses |
| 80 | 26-452 | 0-25 | red hard pan (Qt) |
| | | 25-35 | brown muddy sand (Qm or Qt) |
| | | 35-50 | red hard packed fine clay (Qm or Qsw) |
| | | 50-60 | red quick sand (Qm or Qt) |
| | | 60-68 | red hard clay (Qsw) |
| | | 68-100 | red hard sand rock |
| 81 | 26-8002 | 0-45 | hardpan (Qt) |
| | | 45-115 | red shale |
| 82 | 26-4751 | 0-6 | fill |
| | | 6-24 | red dirt and clay (Qt) |
| | | 24-30 | clay, gravel, and boulders (Qt) |
| | | 30-35 | boulders and fine sand (Qt or Qm) |
| | | 35-59 | gravel and pebbles some fine sand (Qm) |
| | | 59-62 | red shale rock |
| | | 62-80 | sandstone 48-59, rock 59-80 |
| 83 | 26-2981 | 0-70 | sand (Qt over Qm) |
| | | 70-145 | shale |
| 84 | 26-482 | 0-8 | red sandy clay and gravel (Qt) |
| | | 8-12 | red hard pan (Qt) |
| | | 12-42 | boulders and heavy gravel, dry (Qt) |
| | | 42-52 | red hard pan (Qt) |
| | | 52-130 | hard red sand rock |
| 85 | 26-4166 | 0-5 | clay (Qt) |
| | | 5-45 | sand, gravel (Qt over Qm?) |
| | | 45-140 | shale |
| 86 | 26-114 | 0-7 | topsoil (Qt) |
| | | 7-65 | red shale |
| 87 | 25-7075 | 0-13 | sand (Qt) |
| | | 13-120 | red rock |
| 88 | 26-2419 | 0-9 | clay (Qt) |
| | | 9-22 | sand, gravel (Qt or Qm) |
| | | 22-70 | red shale |
| 89 | 26-220 | 0-12 | red sandy clay and gravel (Qt) |
| | | 12-22 | red hard pan (Qt) |
| | | 22-42 | hard red clay with streaks of white clay (Qt over Qsw) |
| | | 42-102 | red sand rock |
| 90 | 26-1836 | 0-22 | earth, clay, stones (Qt) |
| | | 22-315 | red shale |
| 91 | 25-13262 | 0-30 | sand, clay, gravel (Qt) |
| | | 30-120 | red shale |
| 92 | 26-1 | 0-5 | sand (Qm) |
| | | 5-20 | hardpan (Qt) |
| | | 20-102 | red shale |
| | | at 102 | red sand |
| | | 102-202 | red shale |
| 93 | 26-24439 | 0-16 | red-brown clayey sand and gravel (Qt) |
| | | 16-28 | orange-brown silty fine sand (K or Qm) |
| | | 28-45 | red-brown clayey sand and gravel (Qt) |
| 94 | 25-29969 | abbreviated log | |
| | | 0-13 | red clayey silt and sand, some pieces of bedrock (Qt) |
| | | 13-16 | decomposed shale (Qsw) |
| 95 | 26-22292 | abbreviated log | |
| | | 0-4 | fill |
| | | 4-24 | red silty clay, little sand, trace gravel (Qt) |
| | | 24-34 | brown fine-to-coarse sand and silty clay, occasional gravel and pebbles (Qm) |
| 96 | N 26-31-818 | section formally exposed in pit | |
| | | 0-10 | red clayey silt, boulders of baked shale, sandstone, and some gravel (Qm) |
| | | 10-60 | yellow medium sand with occasional small pebbles (Tp) |
| | | 60-80 | clay and sand (K) |
| | | at 80 | red shale |
| 97 | N 26-31-843 | section formally exposed in pit | |
| | | 0-10 | red clayey silt, boulders of gneiss and diabase (Qm) |
| | | 10-20 | yellow sand (Tp) |
| | | 20-75 | clay and sand (K) |
| | | 40-50 | sand and gravel mixed with red clay (Qt) |
| | | 50-64 | blue, yellow, white, red clay (K clay in Qt?) |
| | | 64-95 | red hard pan (Qt) |
| | | 95-150 | red muddy fine sand (Qt or Qm) |
| | | 150-165 | red hard clay (Qsw) |
| | | 165-200 | hard red sand rock |
| 98 | 26-5534 | 0-90 | sand, gravel (Qt over Qm or Tp) |
| | | 90-200 | red shale |
| 99 | 26-6392 | 0-3 | red clay and sand (Qt) |
| | | 3-15 | gray dense clay (K clay in Qt?) |
| | | 15-21 | red and brown coarse sand (Qt) |
| | | 21-65 | red glacial till—clay sand and boulders, decomposed form of reddish-brown clay (Qt) |
| | | 65-212 | Brunswick formation (shale) |
| 100 | 26-16457 | 0-17 | black to gray clay, trace silt (K) |
| 101 | 26-21694 | 0-12 | fill |
| | | 12-20 | black gray silty clay with some sand (K) |
| | | 20-35 | white gray varved clay (K) |
| 102 | 26-21693 | 0-10 | red-brown silty clay (af) |
| | | 10-25 | brown silty clay (K) |
| | | 25-30 | yellow-brown silt and sand (K) |
| | | 30-40 | fine silty sand (K) |
| | | 40-45 | red-brown silty clay (K) |
| 103 | 26-2618 | 0-10 | red-brown silty clay (af) |
| | | 10-75 | brown silty clay (K) |
| | | 75-80 | yellow-brown silt and sand (K) |
| | | 80-90 | fine silty sand (K) |
| | | 90-145 | red-brown silty clay (K) |
| 104 | 26-866 | 0-15 | reddish-brown sandy clay (Qm) |
| | | 15-30 | brown coarse sand and boulders (Qm) |
| | | 30-40 | yellow sandy clay (K) |
| | | 40-65 | gray clay (K) |
| | | 65-85 | black clay (K) |
| | | 85-93 | white silty clay (K) |
| | | 93-95 | fine white sand—muddy (K) |
| | | 95-98 | black clay (K) |
| | | 98-100 | gray metallic sand (K) |
| | | 100-160 | coarse gray sand (K) |
| 105 | 26-3166 | abbreviated log | |
| | | 0-15 | red hard clay (Qm) |
| | | 15-21 | sand and stones and rocks (Qm) |
| | | 21-90 | gray clay (K) |
| | | 90-118 | white, red, yellow clay (K) |
| | | 118-144 | coarse brown sand, some mixed clay and miscellaneous (K) |
| | | 144-147 | gray and red clay (K or weathered shale) |
| 106 | 26-5550 | abbreviated log | |
| | | 0-12 | red-brown silty clay with embedded angular gravel (Qm) |
| 107 | 26-23859 | abbreviated log | |
| | | 0-19 | red-brown silty sandy clay with some pebbles (Qm) |
| | | 19-21 | yellow-brown clayey sand, some silt (K) |
| 108 | NJGS files | Parkway bridge boring 100 | |
| | | 0-4 | fill, brick |
| | | 4-13 | silt, clay (K) |
| | | 13-43 | gray and brown sand (K) |
| | | 43-61 | gray clay (K) |
| | | 61-66 | sand, peat (probably lignite) |
| 109 | NJGS files | Parkway bridge boring 92 | |
| | | 0-11 | fill, ashes, brick (af) |
| | | 11-18 | organic silt (Qm) |
| | | 18-23 | brown sand, silt (Qm) |
| | | 23-55 | white, gray interbedded clay and sand (K) |
| | | 55-72 | white to brown medium-to-coarse sand (K) |
| | | 72-81 | decomposed rock (weathered diabase) |
| | | 81-90 | rock (diabase) |
| 110 | NJGS files | Parkway bridge boring 86 | |
| | | 0-27 | water |
| | | 27-40 | gray, brown coarse sand and gravel (Qm) |
| | | 40-52 | coarse gray sand (K) |
| | | 52-59 | disintegrated rock (weathered diabase) |
| | | 59-66 | diabase (probably diabase) |
| | | 66-82 | trap rock (diabase) |
| 111 | NJGS files | Parkway bridge boring 71 | |
| | | 0-6 | water |
| | | 6-49 | organic silt (Qm) |
| | | 49-59 | coarse brown sand and gravel (Qm) |
| | | 59-67 | disintegrated rock (weathered diabase) |
| | | 67-77 | rock (diabase) |
| 112 | NJGS files | Parkway bridge boring 62 | |
| | | 0-5 | water |
| | | 5-36 | organic silt and shells (Qm) |
| | | 36-69 | rock (diabase) |
| 113 | NJGS files | Parkway bridge boring 53 | |
| | | 0-6 | water |
| | | 6-40 | organic silt and shells (Qm) |
| | | 40-51 | fine gray sand, some silt (K) |
| | | 51-62 | disintegrated rock (weathered diabase) |
| | | 62-91 | rock (diabase) |
| 114 | NJGS files | Parkway bridge boring 40 | |
| | | 0-10 | organic silt (Qm) |
| | | 10-58 | coarse brown sand and gravel, trace clay (Qm) |
| | | 58-66 | rock (diabase) |
| 115 | NJGS files | Parkway bridge boring 19 | |
| | | 0-14 | clay and silt fill |
| | | 14-22 | silt, peat remains (Qm) |
| | | 22-26 | sand, silt, plant remains (Qm) |
| | | 26-45 | brown sand (Qm) |
| | | 45-50 | decomposed rock (weathered diabase) |
| 116 | NJGS files | Parkway bridge boring 9 | |
| | | 0-14 | silt and clay (af over Qm) |
| | | 14-35 | sand, gravel (Qm) |
| | | 35-44 | clay and silt (K) |
| | | 44-49 | clay, gravel (K) |
| | | 49-57 | decomposed rock (weathered diabase) |
| | | 57-87 | rock (diabase) |
| 117 | NJGS files | Route 9 bridge boring 2 | |
| | | 0-7 | water |
| | | 7-32 | river mud (Qm) |
| | | 32-37 | reddish sand and gravel (Qm) |
| | | 37-46 | brown sand and gravel (Qm) |
| | | 46-52 | serpentine (weathered diabase) |
| | | 52-57 | trap rock (diabase) |
| 118 | NJGS files | Route 9 bridge boring 26 | |
| | | 0-9 | water |
| | | 9-53 | black river mud and shells (Qm) |
| | | 53-57 | clayey brown sand and gravel (Qt) |
| | | 57-71 | clay (K over weathered diabase) |
| | | 71-77 | disintegrated rock (weathered diabase) |
| | | 77-81 | rock (diabase) |
| 119 | NJGS files | Route 9 bridge boring 14 | |
| | | 0-12 | water |
| | | 12-58 | river mud (Qm) |
| | | 58-70 | dirty brown sand and gravel (Qm) |
| | | 70-76 | serpentine (weathered diabase) |
| | | 76-78 | trap rock (diabase) |
| 120 | NJGS files | Route 9 bridge boring 16 | |
| | | 0-10 | water |
| | | 10-40 | river mud (Qm) |
| | | 40-63 | fine-to-coarse light-gray sand (K) |
| | | 63-70 | decomposed basaltic (weathered diabase) |
| | | 70-73 | trap rock (diabase) |
| 121 | NJGS files | Route 9 bridge boring 20 | |
| | | 0-17 | water |
| | | 17-21 | mud (Qm) |
| | | 21-27 | medium-brown clayey sand and gravel (Qm) |
| | | 27-63 | very-fine-to-fine light-gray sand and some clay (K) |
| | | 63-72 | decomposed basaltic (weathered diabase) |
| | | 72-75 | trap rock (diabase) |
| 122 | N 26-41-511 | 0-2 | silt (Qm) |
| | | 2-8 | sand (Qm) |
| | | 8-25 | sand and gravel (Qm) |
| | | 25-33 | silty clay (K) |
| | | 33-42 | sand (K) |
| | | 42-50 | clay black clay (K) |
| 123 | N 26-41-512 | 0-11 | sand and silt fill over Qm) |
| | | 11-25 | sand (Qm) |
| | | 25-39 | sand and gravel (Qm) |
| | | 39-51 | gray clay (K) |
| | | 51-65 | sand and clay (K) |
| | | 65-75 | gray and brown clay (K) |
| | | 75-85 | red brown clay (K) |
| | | 85-100 | brown and white clay (K or weathered rock) |
| 124 | N 26-41-278 | 0-59 | silt (Qm) |
| | | 59-65 | sand (Qm) |
| | | 65-75 | sandy silt (Qm) |
| | | 75-83 | sand and gravel (Qm) |
| | | 83-86 | hard clay (weathered diabase) |
| | | at 86 | trap rock (diabase) |
| 125 | N 26-41-275 | 0-69 | silt (Qm) |
| | | 69-92 | sand, gravel at base (Qm) |
| | | 92-126 | clay and sand (K) |
| | | at 126 | trap rock (diabase) |
| 126 | N 26-41-276 | 0-8 | water |
| | | 8-83 | silt (Qm) |
| | | 83-88 | gravel (Qm) |
| | | 88-112 | mixed clay (K) |
| | | at 112 | rock (diabase) |
| 127 | N 26-41-276 | 0-6 | water |
| | | 6-94 | silt (Qm) |
| | | 94-112 | mixed clay (K) |
| | | at 112 | rock (diabase) |
| 128 | N 26-41-273 | 0-27 | water |
| | | 27-45 | silt and sand (Qm) |
| | | 45-55 | sand and gravel (Qm) |
| | | 55-61 | silt (Qm) |
| | | 61-66 | clay (Qm) |
| | | 66-74 | silt and sand (Qm) |
| | | 74-80 | boulders (Qm) |
| | | at 80 | rock (diabase) |
| 129 | N 26-41-273 | 0-1 | water |
| | | 1-20 | silt and gravel (Qm over Qm) |
| | | 20-53 | sand (Qm) |
| | | 53-66 | clay (K) |
| | | 66-96 | mixed clay (K) |
| | | at 96 | rock (diabase) |
| 130 | 26-9460 | 0-30 | metal, glass, wood, paper, sand, etc. fill (af) |
| | | 30-76 | dark gray to olive clay with layers of fine-gray medium-to-fine sand (K) |
| 131 | 25-9086 | abbreviated log | |
| | | 0-40 | sand, brick, metal, soil fill (af) |
| | | 40-45 | red-brown clayey silty gravelly medium-to-fine sand (Qm) |
| | | 45-57 | brown, gray, white fine sand and clay (K) |
| 132 | 26-28414 | 0-19 | yellow sand and gravel with clay lenses (Qm) |
| | | 19-97 | soft gray clay (K) |
| | | 97-104 | medium-to-coarse weathered white coarse sand (K) |
| | | 104-114 | gray clay (K) |
| | | 113-140 | medium-to-coarse weathered gray quartz sand with some clay lense (K) |
| | | 140-145 | gray clay (K weathered shale) |
| 133 | 26-10571 | abbreviated log | |
| | | 0-20 | red-brown sand, little silt and clay, trace gravel (Qm) |
| | | 20-32 | dark gray medium-to-fine sand, little clayey silt, trace fine gravel (K) |
| 134 | 26-7096 | abbreviated log | |
| | | 0-30 | red-brown silty clayey sand with some gravel (Qm) |
| | | 30-47 | brown-yellow sand and gravel (Qm) |
| | | 47-54 | dark gray plastic silty clay (K) |
| 135 | 26-30098 | 0-2 | fill material |
| | | 2-5 | brown silt, sand, gravel (Qm) |
| | | 5-15 | brown sand, gravel (Qm) |
| | | 15-20 | white sand (Qm) |
| | | 20-35 | gray sand and gravel (Qm?) |
| | | 35-40 | brown medium-to-fine sand and gravel (Qm?) |
| | | 40-45 | red-brown clayey sand and gravel (Qm) |
| | | 45-52 | gray silty clay with mica (K) |
| 136 | 26-7280 | abbreviated log | |
| | | 0-5 | modern on gray-green silty clay till over Qm) |
| | | 5-15 | red-brown clayey silty sand with gravel (Qm) |
| | | 15-42 | red-brown, yellow-orange sand and gravel (Qm) |
| | | 42-48 | light-gray silty very micaceous clay (K) |
| 137 | 26-3267 | 0-12 | fill of cement, cinder, sand, clay, gravel (af) |
| | | 17-21 | gray clay with peat moss (Qm) |
| | | 21-39 | brown coarse-to-fine sand and gravel (Qm) |
| | | 39-111 | gray silty clay with layers of gray fine sand and some wood (K with lignite) |
| | | 111-137 | pure coarse-to-medium sand with some wood (K with lignite) |
| | | 137-146 | gray clay, layer of gray medium-to-fine sand (K) |
| 138 | 26-12587 | abbreviated log | |
| | | 0-5 | fill (af) |
| | | 5-42 | gray and red silt, sand, and clay (Qm) |
| | | 42-60 | brown and gray clay and fine sand (K) |
| 139 | NJGS files | Boring B1 bridge 1 (pointer, Jacobs, and Goudis 1969) | |
| | | 0-12 | black river mud (Qm) |
| | | 12-41 | reddish-brown coarse-to-fine sand, trace silt, little gravel (Qm) |
| | | 41-105 | dark gray silty clay with organic matter, trace fine sand (Qm) |
| | | 105-116 | gravel (Qm) |
| | | 116-118 | refusal on soil or bedrock |
| 140 | NJGS files | Boring B2 bridge 1 (pointer, Jacobs, and Goudis 1969) | |
| | | 0-11 | black river mud (Qm) |
| | | 11-22 | black, grays to reddish-brown coarse-to-fine sand, trace silt and fine gravel (Qm) |
| | | 22-41 | intermixed black organic silty clay and reddish-brown coarse-to-fine sand (Qm) |
| | | 41-110 | dark gray silty clay, some peat and wood fragments (Qm) |
| | | 110-120 | gravel with alternating layers of sand, silt, clay (Qm) |
| | | at 120 | refusal on cobble or bedrock |
| 141 | 26-25868 | abbreviated log | |
| | | 0-51 | red-brown fine-to-medium sand, some silt and clay and fine-to-medium gravel (Qm) |
| | | 51-57 | gray clayey silt with mica (K) |
| 142 | 26-16641 | abbreviated log | |
| | | 0-20 | red-brown, brown silty, clayey, gravelly sand (Qm) |
| | | 20-32 | yellow-brown silty coarse-to-fine sand (K or Qm) |
| | | 32-38 | yellow-tan sandy silty clay (K) |
| 143 | 26-21042 | abbreviated log | |
| | | 0-20 | red-brown sandy silty clay, trace medium-to-fine gravel (Qm) |
| | | 20-40 | yellow sandy clay (K) |
| 144 | 26-10268 | 0-24 | red medium sand (Qm) |
| | | 24-46 | red weathered shale (Qm or K, Qsw unlikely) |
| 145 | 26-5842 | abbreviated log | |
| | | 0-36 | fill |
| | | 36-56 | red-brown clayey sandy till, trace fine gravel (Qm) |
| 146 | 26-4071 | 0-250 | sand and clay (Qm over K) |
| | | 250-600 | clay (Qsw) |
| 147 | N 26-41-266 | 0-11 | fill |
| | | 11-50 | red clay and coarse gravel (Qm) |
| | | 50-190 | brown to dark-brown clay, medium sand (K) |
| | | 190-525 | weathered rock (possible formation rock) |
| 148 | 26-15929 | abbreviated log | |
| | | 0-20 | red clay, trace medium-to-fine red sand (Qm) |
| 149 | 26-22638 | 0-3 | fill |
| | | 3-12 | sand, fine, silty with clay (Qm) |
| | | 12-20 | sand, fine, silty with fractured shale (Qm) |
| | | 20-43 | weathered shale (K, Qsw unlikely) |
| 150 | 26-24612 | abbreviated log | |
| | | 0-14 | gravel, wood, concrete fill |
| | | 14-31 | red-brown silty sand, some gravel (Qm) |
| | | 31-39 | dark gray micaceous clayey silt (K) |
| 151 | 26-23061 | 0-29 | reddish-brown silty sand with some gravel and pebbles stained (Qm) |
| | | 29-40 | reddish-brown sand and silt (Qm?) |
| 152 | 26-5219 | 0-20 | silty clay (Qt) |
| | | 20-22 | silty clay and gravel (Qt) |
| | | 22-43 | gray clay (K) |
| | | 43-60 | gray silty sand and clay (K) |
| 153 | 26-5213 | 0-12 | clay, sand, gravel (Qt) |
| | | 12-19 | silty clay, trace of sand (Qt) |
| | | 19-22 | silty sand, some clay (Qt) |
| | | 22-39 | gray silty sandy clay (K) |
| | | 39-61 | clay and sand (K) |
| | | 61-96 | gray clay (K) |
| | | 96-123 | gray clay and sand (K) |
| | | 123-138 | green clay (weathered diabase) |
| | | 138-139 | basalt (diabase) |
| 154 | NJGS files | Guttenberg Crossing Boring 14+23 | |
| | | 0-15 | red clay and sand (Qm) |
| | | 15-75 | gray clay and sand (K) |
| 155 | NJGS files | Guttenberg Crossing Boring 25+60 | |
| | | 0-5 | fill |
| | | 5-22 | soft mud, clay, and sand (Qm) |
| | | 22-44 | blue clay (K) |
| | | 44-56 | fine sand, stiff gray clay (K) |
| 156 | 26-4934 | 0-6 | brown silty sand, little clay (Qm) |
| | | 6-12 | brown and gray silty clay (K) |
| | | 12-20 | gray-black silty clay with partings of mica and fine sand, some lignite (K) |
| 157 | 26-19877 | abbreviated log | |
| | | 0-11 | brown silty clayey sand, some gravel (Qm) |
| | | 11-18 | brown silty clay, trace fine sand (Qm) |
| | | 18-36 | brown fine-to-medium sand, trace fine gravel (Qm) |
| | | 36-50 | gray silty clay, trace fine sand and lignite (K) |
| 158 | NJGS files | Guttenberg Crossing Boring 38+82 | |
| | | 0-22 | yellow clay (Qm) |
| | | 22-39 | brown sand and gravel (Qm) |
| | | 39-125 | black, gray, red clay, some fine white sand (K) |
| 159 | NJGS files | Guttenberg Crossing Boring 58+86 | |
| | | 0-48 | fill (Qm) |
| | | 48-60 | gray sand (Qm over Qm) |
| | | 60-90 | coarse brown sand (Qm) |
| | | 90-95 | clay, sand, gravel (Qm) |
| | | 95-105 | hardpan (Qm?) |
| | | 105-110 | brown sand (Qm or Qm) |
| | | 110-119 | gray fine-to-coarse sand and clay, some fresh sand (K) |
| 160 | 26-13966 | abbreviated log | |
| | | 0-10 | water |
| | | 10-40 | gray soft silt, some sand and shells (Qm) |
| | | 40-43 | gray sandy silt (Qm) |
| | | 43-50 | brown fine sand and gravel (Qm) |
| | | 50-70 | gray and red silt, clay, and sand, very firm (K) |
| 161 | 26-7230 | 0-7 | fill (af) |
| | | 7-35 | organic silt (Qm) |
| | | 35-55 | gray silty clay (Qm) |
| | | 55-57 | gray silty clay with yellow sand seams and lignite (K) |
| 162 | 26-4658 | 0-16 | clay brown clay (Qt) |
| | | 16-76 | dark gray clay (K) |
| | | 76-96 | sand, fine gray clay, streaks of lignite (K) |
| | | 96-122 | red shale |
| | | 122-134 | brown soft rock |
| | | 134-146 | red and gray shale rock |
| | | 146-402 | gray to black hard rock (diabase) |
| 163 | 26-9667 | abbreviated log | |
| | | 0

**APPENDIX VI**

**Cross Section Boring Logs**

DWR-133M (9/89) SERIAL # 05883

Mail to

Water Allocation
CN 029
Trenton, N.J. 08625

**STATE OF NEW JERSEY**
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**DIVISION OF WATER RESOURCES**
**TRENTON, N.J.**

## PERMIT TO DRILL WELL

25

*VALID ONLY AFTER APPROVAL BY THE D.E.P.*

Permit No. 26196113 ~~26196113-1~~

COORD #: 26319115

Owner: Amerada Hess Corp.
Address: 1 Hess Plaza
Woodbridge N.J. 07095

Name of Facility: Port Reading Refinery
Address: 750 Cliff Road
Port Reading N.J. 07064

Driller: Warren George Inc.
Address: P.O. Box 443
Jersey City, N.J. 07303

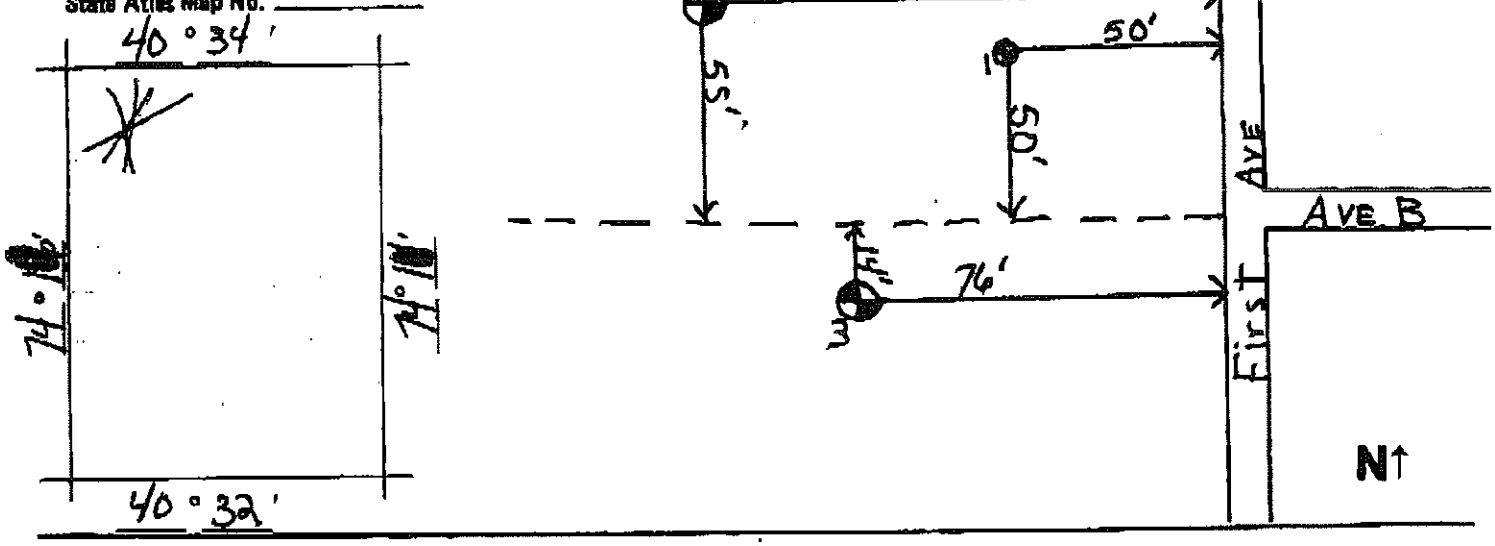
| | | | |
|---|---|---|---|
| Diameter of Well(s) | 4" Inches | Proposed Depth of Well(s) | 60' Feet |
| # of Wells Applied for (max. 10) | 3 | Will pumping equipment be installed? YES ☐ NO ☒ | |
| Type of Well (see reverse) | monitoring | If yes, give pump capacity | GPM |

## LOCATION OF WELL(S)

| Lot # | Block # | Municipality | County |
|---|---|---|---|
| 3 | 756 | Woodbridge | Middlesex |

Draw sketch of well(s) to nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.

State Atlas Map No.




☐ Issuance of this permit is subject to the conditions attached. (see next page)
☒ For monitoring purposes only
☐ Only pure bentonite drilling muds are to be used for installation

FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED

☐ Spill Fund Case
☐ ECRA Case
☐ CERCLA (Superfund) Site
☐ RCRA Site
☐ Underground Storage Tank
☐ NJPDES Municipal Discharge Permit
☐ NJPDES Industrial Discharge Permit
☐ Div. Hazardous Waste Mgmt. Enforcement Case
☐ Div. Water Resources Enforcement Case
☐ Aquifer Test Observation Well
☒ Other (explain) Owners monitoring purposes

Case I.D. Number:

This Space for Approval Stamp

[illegible] 13 1990

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.

In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 3-7-90

Signature of Driller Frank Gregory #0825

Signature of Owner Amerada Hess Corp - (J.D.)

COPIES: Water Allocation—White and Pink Health Dept.—Yellow Owner—Blue Driller—White

WELPMT 069 1900

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

# MONITORING WELL RECORD

Well Permit No. 28 - 19611
Atlas Sheet Coordinates 28 : 31 : 915

OWNER IDENTIFICATION - Owner AMERADA HESS CORP.
Address 1 HESS PLAZA
City WOODBRIDGE State NJ Zip Code 07095

WELL LOCATION - If not the same as owner please give address. Owner's Well No. B-1
County Middlesex Municipality WOODBRIDGE TWP Lot No. 3 Block No. 756
Address

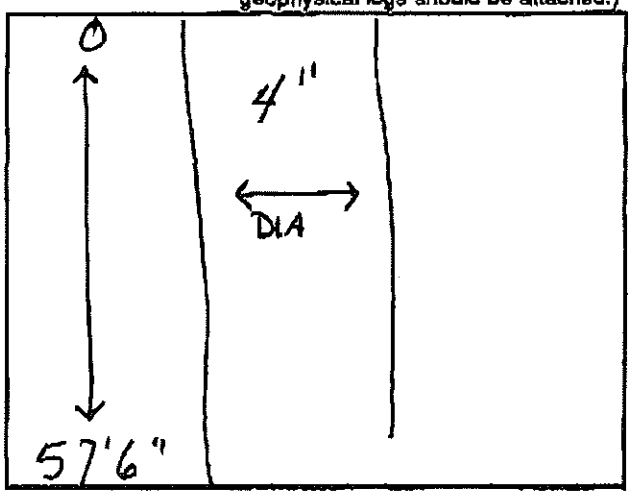
TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 2/15/90
Regulatory Program Requiring Well Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) N/A Tele. # N/A

WELL CONSTRUCTION
Total depth drilled 57'6" ft.
Well finished to 57'6" ft.
Borehole diameter:
Top 8" in.
Bottom 8" in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface N/A ft.
Was steel protective casing installed? ☐ Yes ☑ No

| | Depth to Top (ft.) [From land surface] | Depth to Bottom (ft.) | Diameter (inches) | Type and Material |
|---|---|---|---|---|
| Inner Casing | 0 | 57'6" | 4" | Steel casing |
| Outer Casing (Not Protective Casing) | | | | |
| Screen (Note slot size) | | | | |
| Tail Piece | | | | |
| Gravel Pack | | | | |
| Annular Seal/Grout | | | | |
| Method of Grouting | Tremie | | | |

Static water level after drilling NONE ft.
Water level was measured using N/A
Well was developed for N/A hours at N/A gpm
Method of development N/A
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method ROTARY
Drilling Fluid N/A Type of Rig Mobil 61
Name of Driller G. Marney
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1218
Name of Drilling Company WARREN GEORGE INC.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)




I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable State rules and regulations.

Driller's Signature G. Marney Date 4-4-90

*COPIES: White & Green - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.*

WELREC 116 3037

N.Y. TEL. 267-3215

Permit # - 2619611-5
Board # - 2631915

# WARREN GEORGE, INC.

FOOT OF JERSEY AVENUE
P. O. BOX 413
JERSEY CITY, N.J. 07303

N. J. TEL. (201) 433-9797

## TEST BORINGS

Project Hess Plant - Port Reading N.J.

Boring No. B-1 Job No. _____ Rig No. CHE-75 Date February 15 19 90

| BORING LOG | | SPOON SAMPLE AND CORE DATA | | | | BLOWS ON CASING | |
|---|---|---|---|---|---|---|---|
| DEPTH FROM TO | DESCRIPTION OF MATERIAL | SAMPLE NUMBER | DEPTH FROM - TO | BLOWS PER FT. / CORE RECOV'D. INCHES | D=DRY U=UNDISTURBED T=TARP W=WASH R=ROD C=CORE / CORE RECOV'D. NO. PCS. Remarks | | |
| 0 / 4" | Concrete | 1 | 6"-2' | | 4-2-2 | 0-1 | 59-60 |
| | | 2 | 2'-4' | | 2-4-9-10 | 1-2 | 60-61 |
| 4" / 5' | Fill | 3 | 4'-6' | | 11-14-16-13 | 2-3 | 61-62 |
| | | 4 | 6'-8' | | 10-15-22-20 | 3-4 | 62-63 |
| 5' / 9' | Reddish, Clayey Gravel | 5 | 8'-10' | | 12-52-48-23 | 4-5 | 63-64 |
| | | 6 | 10'-12' | | 24-27-35-35 | 5-6 | 64-65 |
| 9' / 40' | FMC Sand w/Some Clay + Gravel | 7 | 15'-17' | | 17-27-35 30 | 6-7 | 65 66 |
| | | 8 | 20'-22' | | 20-30-42-30 | 7-8 | 66-67 |
| 40' / 50' | Reddish Brown FMC Sand w/ Some Clay + Gravel | 9 | 25'-27' | | 18-27-34-35 | 8-9 | 67 68 |
| | | 10 | 30'-32' | | 15-19-30-100 | 9-10 | 68-69 |
| 50' / 57'6" | Greyish Clay | 11 | 35'-37' | | 18-30-38-30 | 10-11 | 69 70 |
| | | 12 | 40'-42' | | 33-44-100 | 11-12 | 70 71 |
| | | 13 | 45'-47' | | 65-100 | 12-13 | 71-72 |
| | | 14 | 50'-52' | | 11-15-27-33 | 13-14 | 72-73 |
| | | 15 | 55'-57' | | 38-38-100/3" | 14-15 | 73-74 |
| | | 16 | 57'6" | | 100/0" | 15-16 | 74-75 |
| | | | | | | 16-17 | 75 76 |
| | | | | | | 17-18 | 76-77 |
| | | | | | | 18-19 | 77-78 |
| | | | | | | 19-20 | 78-79 |
| | | | | | | 20-21 | 79-80 |
| | | | | | | 21-22 | 80-81 |
| | | | | | | 22-23 | 81-82 |
| | | | | | | 23-24 | 82-83 |
| | | | | | | 24-25 | 83-84 |
| | | | | | | 25-26 | [illegible] |
| | | | | | | 26-27 | 85-86 |
| | | | | | | 27-28 | 86-87 |
| | | | | | | 28-29 | 87-88 |
| | | | | | | 29-30 | 88-89 |
| | | | | | | 30-31 | 89-90 |
| | | | | | | 31-32 | 90-91 |
| | | | | | | 32-33 | 91-92 |
| | | | | | | 33-34 | 92-93 |
| | | | | | | 34-35 | 93-94 |
| | | | | | | 35 36 | 94-95 |
| | | | | | | 36-37 | 95 96 |
| | | | | | | 37-38 | 96-97 |
| | | | | | | 38-39 | 97-98 |
| | | | | | | 39-40 | 98-99 |
| | | | | | | 40 41 | 99-100 |
| | | | | | | 41-42 | 100-101 |
| | | | | | | 42-43 | 101-102 |
| | | | | | | 43-44 | 102-103 |
| | | | | | | 44-45 | 103-104 |
| | | | | | | 45 46 | 104-105 |
| | | | | | | 46 47 | 105 106 |
| | | | | | | 47 48 | 106-107 |
| | | | | | | 48 49 | 107-108 |
| | | | | | | 49 50 | 108-109 |
| | | | | | | 50-51 | 109-110 |
| | | | | | | 51-52 | 110-111 |

DWR-133 (5/85)

Mail to

Water Allocation
CN 029
Trenton, N.J. 08625

**STATE OF NEW JERSEY**
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
TRENTON, N.J.

Permit No. 26-9325

## PERMIT TO DRILL WELL 25

*VALID ONLY AFTER APPROVAL BY THE D.E.P.* 26 31 9 23

Owner AMERADA HESS
Address 1 HESS PLAZA
WOODBURY, N.J.

Name of Facility PORT READING REFINERY
Address STATE STREET
PORT READING, N.J.

Driller JOSEPH TABASCO
Address c/o LIPPINCOTT ENGINEERING
501 BURLINGTON AVE.
DELANCO, N.J. 08075

| | | | |
|---|---|---|---|
| Diameter of Well | 4 Inches | Proposed Depth of Well | 25 to 30 Feet |
| Proposed Capacity of Pump | N.A. GPM | Method of Drilling (cable-tool, rotary, etc.) | ROTARY (AUGER) |
| Use of Well (See Reverse) | GROUND WATER MONITORING | | |

LEA 3929 B1

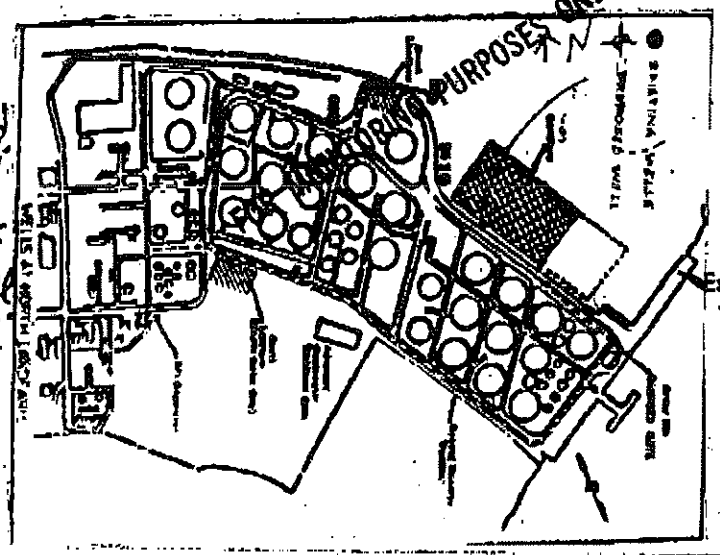
### LOCATION OF WELL

| Lot # | Block # | Municipality | County |
|---|---|---|---|
| — | — | Woodbridge Twp. ~~Port Reading~~ | Middlesex |

Draw sketch showing distance and relations of well site to nearest public roads, streets, septic systems, etc.

State Atlas Map No. 26

Cuff Rd. 2400' east of West Block




No sewer or septics

SEE REVERSE SIDE for IMPORTANT PROVISIONS AND REGULATIONS pertaining to this permit. APPROVAL of this permit is made SUBJECT TO acceptance of and compliance with the following ADDITIONAL CONDITIONS.

- ☐ Pinelands - Well must be drilled over 100' deep or a clay layer at least 4' in thickness must be encountered.
- ☐ It is necessary that Geophysical Logs of this well be made. Permanent pumping equipment SHALL NOT be installed until such logs are made.
- ☐ Authorization by rule under N.J.A.C. 7:14A-1 et seq.
- ☐ Samples of cuttings required every _____ feet or change in material.
- ☐ The results of a volatile organic scan must be obtained prior to using the water and submitted to _____.
- ☐ **Domestic Potable Water Supply** - The service line for water from the public community water supply system shall be turned off at the curb cock, and the meter shall be removed by the water purveyor.
- ☐ **Domestic Irrigation Supply** - No piping from the well for which the permit applies shall enter any building.
- ☐ **Industrial/Commercial Supply** - A physical connection permit shall be obtained pursuant to the provisions of N.J.A.C. 7:10-10-1 et seq., and a vigorous cross connections control program shall be instituted and maintained within the premises.
- ☐ **Heat Pump Wells** - Wells must be 50 feet apart and the water must be returned to the same aquifer as the production well.
- ☐ _____

This Space for Approval Stamp

WELL PERMIT
APPROVED
JUN 25 1986
DEPT. ENV. PROTECTION
DIV. OF WATER RESOURCES
WATER ALLOCATION

WELL SEALED 1/4/91

**In compliance with R.S. 58:4A-14, application is made for a permit to drill a well as described above.**

Date _____ Signature of Owner _____

*COPIES: Water Allocation — White* *Health Dept. — Yellow* *Owner — Blue* *Driller — White*

WELPMT 068 1187

DNR-020
8/89

N

New Jersey Department of Environmental Protection
Division of Water Resources — Bureau of Water Allocation

# WELL ABANDONMENT REPORT

WELL PERMIT # 26-9305
of well sealed

MAIL TO:

Bureau of Water Allocation
CN 029
Trenton, NJ 08625

DATE WELL SEALED 1/04/91

26 31 923

PROPERTY OWNER: Amerada Hess Coropration

ADDRESS: 250 Cliff Road, Port Reading, N.J.

WELL LOCATION: 250 Cliff Road, Port Reading, N.J. Middlesex
Street & No., Township, County

BG-1, L-3, BL-75 74°15'W 40°34'N
Well No., Lot & Block No., Longitude & Latitude (N.J. Grid # may be substituted for longitude & latitude)

TYPE OF WELL ABANDONED: Monitoring

REASON FOR ABANDONMENT: Request of Client

WAS A NEW WELL DRILLED? ☐ YES ☒ NO PERMIT # OF NEW WELL:

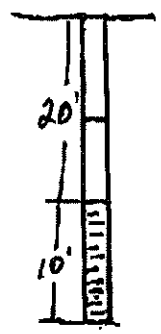
TOTAL DEPTH OF WELL: 30'
DIAMETER: 4"
CASING LENGTH: 20'
SCREEN LENGTH: 10'
NUMBER OF CASINGS: 1

MATERIAL USED TO SEAL WELL:

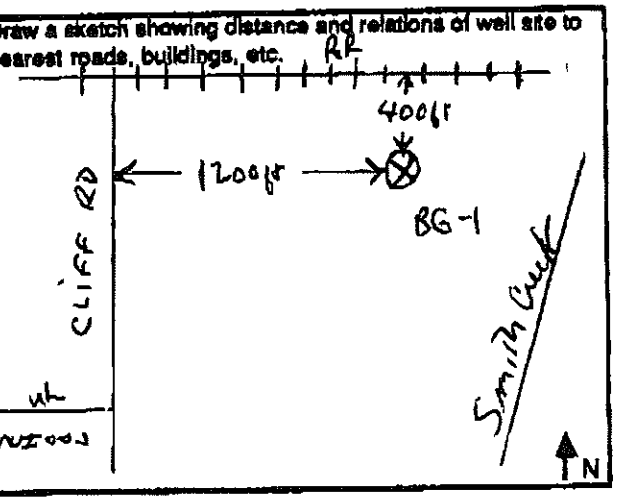
7 Gallons of Water
94 Lbs. of Cement
5 Lbs. of Bentonite
0 Lbs. of Sand/Gravel
(none if well is contaminated)

FORMATION: ____ Consolidated
XX Unconsolidated

Cross-section of sealed well




Draw a sketch showing distance and relations of well site to nearest roads, buildings, etc.




To permit adequate grouting, the casing should remain in place, but ungrouted liner pipes or any other obstructions must be removed. Pressure grouting is the only accepted method.

WAS CASING LEFT IN PLACE? ☒ YES ☐ NO CASING MATERIAL: PVC

WERE OTHER OBSTRUCTIONS REMOVED? ☐ YES ☒ NO WHAT WERE THE OBSTRUCTIONS:

I certify that this well was sealed in accordance with N.J.A.C. 7:9-9.1 et seq.

Earl Hauge EDI 328 Stafford Forge Rd., West Creek, New Jersey 2/20/91
Name of Person Doing Sealing Work (Print or Type) Address Mailing Date

E. Hauge
Signature of Person Doing Sealing Work

1130
License #

COPIES White - Water Allocation Yellow - Owner Pink - Health Dept Goldenrod - Driller

26-31-926

26-31-926

26-9305

# LIPPINCOTT ENGINEERING ASSOCIATES

501 BURLINGTON AVENUE DELANCO, N.J. 08075

PROJECT NO. 3929.B1

DATE 6/26/86

SHEET 1 OF 2

SURFACE ELEV 9.73

PROJECT MONITORING WELL INSTALLATION

CLIENT AMERADA HESS

LOCATION PORT READING, NJ

LOG OF BORING NO. BG-1 Deep Well

JJT/mk

| DEPTH | SAMPLE NUMBER | TYPE* | SAMPLE DEPTH | NUMBER OF BLOWS PER 6" | CLASSIFICATION OF MATERIALS BASED ON SAMPLES RECOVERED PLUS OBSERVATION OF MATERIAL RETURNED BETWEEN SAMPLES | MOISTURE CONTENT |
|---|---|---|---|---|---|---|
| 0 | S-1 | A | 0/2 | 5-8-12-14 | Reddish brown coarse SAND. | |
| | S-2 | A | 2/4 | 17-19-17-18 | Same. | |
| 5 | S-3 | A | 4/6 | 1-1-1-8 | Dark brown medium-coarse SAND. | |
| | S-4 | A | 6/8 | 10-17-17-16 | Same. | |
| | S-5 | A | 8/10 | 8-3-3-2 | PEAT. | |
| 10 | | | | | | |
| 15 | S-6 | A | 14/16 | 1-1-1-1 | Grey SILT & PEAT. | |
| 20 | S-7 | A | 19/21 | 2-2-2-3 | Same. | |
| 25 | S-8 | A | 24/26 | 3-3-3-6 | Grey SILT. | |
| 30 | S-9 | A | 29/31 | 6-12-15-23 | Reddish brown medium-coarse SAND. | |
| 35 | S-10 | A | 34/36 | 1-3-6-10 | Same. | |
| | S-11 | A | 38/40 | 1-3-8-9 | Same. | |
| 40 | | | | | | |

R-106 Rev.

GROUND WATER DATA

| DEPTH | HOUR | DATE |
|---|---|---|
| 6'-2" | | 6/26/86 |
| | | |
| | | |
| | | |

* A. STANDARD PENETRATION TEST (ASTM-D 1586)
B. STANDARD THIN-WALLED 3" TUBE (ASTM-D 1587)
C. CORE DRILLING

DRILLER R. DORON HELPER J. GRABITZ EQUIPMENT CME

WELREC 116 3047

26.31.926

26.31.926

26-9305

# LIPPINCOTT ENGINEERING ASSOCIATES

801 BURLINGTON AVENUE DELANCO, N.J. 08075

PROJECT NO. 3929.B1

DATE 6/26/86

SHEET 2 OF 2

SURFACE ELEV 9.73

PROJECT MONITORING WELL INSTALLATION

CLIENT AMERADA HESS

LOCATION PORT READING, NJ

LOG OF BORING NO. BG-1 Deep Well

JJT/mk

| DEPTH | SAMPLE NUMBER | TYPE* | SAMPLE DEPTH | NUMBER OF BLOWS PER 6" | CLASSIFICATION OF MATERIALS BASED ON SAMPLES RECOVERED PLUS OBSERVATION OF MATERIAL RETURNED BETWEEN SAMPLES | MOISTURE CONTENT |
|---|---|---|---|---|---|---|
| 45 | S-12 | A | 44/46 | 7-7-10-10 | Reddish brown medium-coarse SAND. | |
| | S-13 | A | 48/50 | 12-18-12-23 | Same. | |
| 50 | | | | | EOB 50'-0" | |

R-106 Rev.2/77

GROUND WATER DATA

| DEPTH | HOUR | DATE |
|---|---|---|
| 6'-2" | | 6/26/86 |
| | | |
| | | |
| | | |

* A. STANDARD PENETRATION TEST (ASTM-D 1586)

B. STANDARD THIN-WALLED 3" TUBE (ASTM-D 1587)

C. CORE DRILLING

DRILLER E. DORON HELPER J. GRABITZ EQUIPMENT CME-55

THIS FORM [illegible]

26-31-926

GROUND WATER
MONITORING WELL CERTIFICATION - FORM A - AS-BUILT CERTIFICATION 26-9305
(One form must be completed for each well)

Name of Permittee: AMERADA HESS
Name of Facility: PORT READING REFINERY
Location: STATE STREET PORT READING, N.J.

NJPDES Permit No: NJ

ENGINEER'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section (609-984-6831): This number must be permanently affixed to the well casing. 26-9305

Owner's Well Number (As shown on the application or plans): BG-1 (DEEP WELL)
Well Completion Date: JUNE 27, 1986
Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot): 1.26
Total Depth of Well (one-tenth of a foot): 45.29
Depth to Top of Screen From Top of Casing (one-tenth of a foot): 25.29
Screen Length (feet): 20'
Screen or Slot Size: .020 IN.
Screen Material: PVC
Casing Material: (PVC, Steel or Other-Specify): PVC
Casing Diameter (Inches): 4.0
Static Water Level From Top of Casing at The Time of Certification (one-hundredth of a foot): 6.17
Yield (Gallons per Minute): 15
Length of time Well Pumped or Bailed: 2 Hours 0 Minutes
Lithologic Log: ATTACH ON BACK

AUTHENTICATION:
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information including the possibility of fine and imprisonment.

Mousta A. Gouda
Professional Engineer's Signature

Moustafa A. Gouda
Professional Engineer's Name
(Please type or print)

# 20848
Professional Engineer's License #

SEAL

26.31.926
26.9305

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

## GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATION

Name of Permittee: AMERADA HESS
Name of Facility: PORT READING REFINERY
Location: STATE STREET PORT READING N.J.

NJPDES Number: NJ

## LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): 26-9305 - -
This number must be permanently affixed to the well casing.

Longitude (one-tenth of a second): West 74-14-31.85
Latitude (one-tenth of a second): North 40-33-43.32
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 10.99
Owners Well Number (As shown on the application or plans): BG-1 (DEEP WELL)

## AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Vincent Schulte
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Vincent Schulte
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

7071
PROFESSIONAL LAND SURVEYOR'S LICENSE #

The Department reserves the right in cases of violation of permit specified ground water limits or Ground Water Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be surveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to require a major modification of the permit.

Coord # 26.31.926

WELL SEALED 1/4/91

Form DWR-138
1/80 LEA# 3929B1

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 26-9305

APPLICATION NO. _____

COUNTY Middlesex

**FOR MONITORING PURPOSES ONLY**

## WELL RECORD

1. OWNER Amerada Hess ADDRESS 1 Hess Plaza, Woodbury, N.J.
   Owner's Well No. MW-1, BG-1, Deep Well SURFACE ELEVATION 9.73 Feet (Above mean sea level)
2. LOCATION State Street, Port Reading, N.J. (Woodbridge Twp.)
3. DATE COMPLETED June-27, 1986 DRILLER Mr. Ed Doron
4. DIAMETER: Top 4 inches Bottom 4 inches TOTAL DEPTH 45' 3½" Feet
5. CASING: Type PVC Diameter 4 Inches Length 25' 3½" Feet
6. SCREEN: Type PVC Size of Opening .020" Diameter 4 Inches Length 20 Feet
   Range in Depth { Top _____ Feet, Bottom _____ Feet } Geologic Formation Raritan-Magothy
   Tail Piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface
   Water rises to _____ Feet above surface
8. RECORD OF TEST: Date June-27, 1986 Yield 15 Gallons per minute
   Static water level before pumping 6' 2" Feet below surface
   Pumping level 6' 5" feet below surface after 2 hours pumping
   Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
   How pumped SHALLOW WELL JET How measured VOLUMETRICALLY
   Observed effect on nearby wells NONE
9. PERMANENT PUMPING EQUIPMENT:
   Type N/A Mfrs. Name _____
   Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
   Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
   Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR Ground Water Monitoring AMOUNTS { Average _____ Gallons Daily, Maximum _____ Gallons Daily }
11. QUALITY OF WATER N/A Sample: Yes ____ No ____
    Taste _____ Odor _____ Color _____ Temp. _____ °F
    LOG See Attached Boring Log Are samples available? YES - Anna Cavalusk of Amerada Hess. COLLECTED By
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
    SOURCE OF DATA Driller's Observations
    DATA OBTAINED BY Mr. Ed Doron Date June 26, 1986

(NOTE: Use other side of this sheet for additional information such as log of materials ...)

WELREC 116 3046

TR40

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-03 PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201207156**

# WELL PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** ROGER LOGEL, MASTER LICENSE # 0001590

**Permit Issued to:** SUMMIT DRILLING CO INC

**Company Address:** CENTRAL JERSEY INDUSTRIAL PARK 9W CHIMNEY ROCK RD BOUND BROOK, NJ 08805

**PROPERTY OWNER**

Name: N/A HESS CORPORATION

Organization: Hess Corporation

Address: One Hess Plaza

City: Woodbridge State: New Jersey Zip Code: 07095

**PROPOSED WELL LOCATION**

Facility Name: Hess Port Reading Refinery

Address: 750 Cliff Road

County: Middlesex Municipality: Woodbridge Twp Lot: 3 Block: 756

Easting (X): 561351 Northing (Y): 629752
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** TR-4D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings: Envirotrac

Depth (ft.): 25

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** May 14, 2012
**Expiration Date:** May 14, 2013

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201207156**

# WELL PERMIT

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

TR4D

# TR-4D

| | | | |
|---|---|---|---|
| Client: Hess Corporation | Incident # | Depth to Water (ft. from measuring pt.) | Site Elevation Datum |
| Site Name: Port Reading | Address: 750 Cliff Rd., Port Reading, NJ | Date: 6/28/2012 / DTW: NA | Ground Elevation |
| Drilling Company: Summit Drilling | | | Measuring Point Elevation |
| Date Started: 6/28/2012 | Date Completed: 6/28/2012 / Well Diameter: 4" | | |
| Completion Depth: 30' | Hydrogeologist/Engineer: Sarah Dyson/EnviroTrac | Permit #: n/a | |

| SOIL BORING TM-4D (Not To Scale) | DEPTH (ft. below grade) | SAMPLES Sample ID | Collection Depth | OVM (ppm) | SOIL DESCRIPTION |
|---|---|---|---|---|---|
| | 0 | | | | 0.0'-0.5' CONCRETE with Rebar |
| | | | | 51.6 | 0.5'-1.0' Black Clay, white SAND, asphalt |
| | 1 | | | 15.2 | 1.0'-2.0' Dark brown fine Clayey SAND with Gravel and Stone fill |
| | 2 | | | 0 | 2.0'-3.0' Red CLAY with angular Gravel |
| | 3 | | | 0 | 3.0'-4.0' Dark brown fine Clayey SAND |
| | 4 | | | 0 | 4.0'-4.5' Brown fine SAND with organic material |
| | | | | 14.2 | 4.5'-5.0' Light brown Sandy CLAY |
| | 5 | | | 29.3 | 5.0'-6.5' No recovery |
| | 6 | | | 877 | 6.5'-10.0' Red CLAY, some Gravel (tight) |
| | 7 | | | 505 | |
| | | | | 809 | |
| | 8 | | | 666 | |
| | | | | 244 | |
| | 9 | | | 501 | |
| | | | | 15.2 | |
| | 10 | | | 93.5 | 10.0'-12.0' Red CLAY |
| | | | | 557 | |
| | 11 | | | 1,000 | |
| | | | | 4,266 | |
| | 12 | | | 1,888 | 12.0'-12.5' Red Silty SAND |
| | | | | 44.8 | 12.5'-14.0' Red CLAY, some Gravel |
| | 13 | | | 28.2 | |
| | | | | 388 | |
| | 14 | | | 808 | 14.0'-15.0' Red CLAY, some Gravel, traces of red and tan medium Sand |
| | | | | 1,426 | |
| | 15 | | | 2,220 | 15.0'-16.0' No recovery |
| | 16 | | | 170 | 16.0'-17.0' Red fine SAND |
| | | | | 131 | |
| | 17 | | | 142 | 17.0'-18.5 Red medium Silty SAND |
| | | | | 1,238 | |
| | 18 | | | 547 | |
| | | | | 419 | 18.5'-19.0' Red fine Silty SAND (tight) |
| | 19 | | | 252 | 19.0'-19.5' Light gray fine SAND |
| | | | | 42.8 | 19.5'-20.0' Yellow fine SAND |
| | 20 | | | 0.0 | 20.0'-22.0' Dark gray SILT |
| | | | | 18.1 | |
| | 21 | | | 8.3 | |
| | | | | 6.2 | |
| | 22 | | | 47.8 | 22.0'-23.0' Dark gray fine Silty SAND |
| | | | | 115 | |
| | 23 | | | 495 | 23.0'-24.5' Gray fine/medium Silty SAND, some black |
| | | | | 53.2 | |
| | 24 | | | 29.7 | |
| | | | | 41.8 | 24.5'-25.0' Dark gray SILT |
| | 25 | | | 83.4 | 25.0'-28.0' Gray Silty SAND |
| | | | | 0.0 | |
| | 26 | | | 0.0 | |
| | | | | 0.0 | |
| | 27 | | | 0.0 | |
| | | | | 0.0 | |
| | 28 | | | 0.0 | 28.0'-29.0' Dark gray Sandy SILT |
| | | | | 0.0 | |
| | 29 | | | 0.0 | 29.0'-30.0' Dark gray Silty SAND |
| | | | | 0.0 | |
| | 30 | | | 0.0 | |

Cement/Bentonite Slurry

Morie Sand

PVC Riser

PVC Screen

Bentonite Seal

# MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: Hess Corporation

Name of Facility: Hess Port Reading Refinery

Location: 750 Cliff Road, Woodbridge Township, NJ 07095

Case Number(s): 93-10-21-1435-21

**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: E201207156
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): TR-4D
Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°15'02.9" Latitude: North 40°33'43.6"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 629770 East 561360

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 12.37 ft.

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)
NAVD 88 by GPS

Significant observations and notes:

**AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

8/30/12
DATE

Donald L. MacKay 24GS03127100
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

Taylor Wiseman & Taylor, 124 Gaither Drive, Suite 150, Mt. Laurel NJ, 08054 Phone 856-235-7200
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

**SOIL BORING LOG**

**Boring Name: DC-SS-4A**

Permit No: NA

| | | |
|---|---|---|
| Client: Hess | Site Name: Port Reading Refinery | Latitude: 40°33'44.163" |
| Site Address: 750 Cliff Road, Port Reading, New Jersey | | Longitude: 74°14'59.212" |
| Drilling Company: Summit Drilling | | Method: Direct Push |
| Start Date: 6/22/12 | Complete Date: 6/25/12 | Soil Logger/Company: SD/ET |
| Boring Diameter: 2" | Completion Depth: 35.0' | Depth to Water: 8.0' |

| Soil Boring Lithology | Depth (feet) | Samples ID | Samples Depth | PID | SOIL DESCRIPTION |
|---|---|---|---|---|---|
| | 0 | | | | 0.0'-0.5' STONE/Gravel (packed) |
| | | | | | 0.5'-5.0' Brown SAND some Stone |
| | | | | 0.0 | |
| | 1 | DC-SS-4A | 1.0'-1.5' | 0.0 | |
| | 2 | | | 0.0 | |
| | | | | 0.0 | |
| | 3 | | | 0.0 | |
| | 4 | | | | |
| | 5 | | | | 5.0'-7.5' No Recovery |
| | 6 | | | | |
| | 7 | | | | |
| | | | | 0.0 | 7.5-8.0 Red CLAY |
| | 8 | | | 0.0 | 8.0'-8.5' Dark gray SILT |
| | | | | 0.0 | 8.5'-9.0' Brown CLAY |
| | 9 | | | 0.0 | 9.0'-10.0' Gray-brown SILT (peat) some Organics |
| | | DC-SS-4A | 9.5'-10.0' | 3.8 | |
| | 10 | | | 0.0 | 10.0'-11.0' No recovery |
| | 11 | | | | 11.0'-15.0' Red CLAY some Gravel trace gray Sand |
| | | | | 0.0 | |
| | 12 | | | 0.0 | |
| | | | | 0.0 | |
| | 13 | | | 0.0 | |
| | | | | 0.0 | |
| | 14 | | | 0.0 | |
| | | | | 0.0 | |
| | 15 | | | | 15.0'-16.0' No Recovery |
| | 16 | | | 0.0 | 16.0'-17.0' Tanish orange some light gray medium Silty SAND |
| | 17 | | | 0.0 | 17.0'-17.5' Gray SANDY silt |
| | | | | 0.0 | 17.5'-18.5' Gray fine SAND |
| | 18 | | | 0.0 | |
| | | | | 0.0 | 18.5'-20.0' Gray fine SAND |
| | 19 | | | 0.0 | |
| | | | | 0.0 | |
| | 20 | | | 0.0 | 20.0'-21.5' Tan medium SAND trace yellow |
| | 21 | | | 0.0 | |
| | | | | 0.0 | 21.5'-23.0' Tan medium SAND with orange striations |
| | 22 | | | | |
| | | | | 0.0 | |
| | 23 | | | 0.0 | 23.0'-25.0' Orange/yellow fine to medium SAND |
| | 24 | | | 0.0 | |
| | | | | 0.0 | |
| | 25 | | | | 25.0'-28.5' No recovery |
| | 26 | | | | |
| | 27 | | | | |
| | 28 | | | | |
| | | | | 0.0 | 28.5'-29.0' Dark gray CLAY |
| | 29 | | | 0.0 | 29.0'-30.0' Light gray, orange and tan medium SAND |
| | 30 | | | 0.0 | 30.0'-32.0' No recovery |
| | 31 | | | 0.0 | |
| | 32 | | | 0.0 | 32.0'-33.5' Tan and yellow medium to coarse SAND |
| | | | | 0.0 | |
| | 33 | | | 0.0 | 33.5'-35.0' Light gray coarse SAND, ribbons of Clayey SAND |
| | 34 | | | 0.0 | |
| | 35 | | | | |

**SOIL BORING LOG**
**Boring Name: DU-SS-1**
Permit No: NA

| | | |
|---|---|---|
| Client: Hess | Site Name: Port Reading Refinery | Latitude: 40°33'57.046" |
| Site Address: 750 Cliff Road, Port Reading, New Jersey | | Longitude: 74°14'53.072" |
| Drilling Company: Summit Drilling | | Method: Direct Push |

Start Date: 6/14/12 | Complete Date: 6/29/12 | Soil Logger/Company: SD/ET

Boring Diameter: 2" | Completion Depth: 24.0' | Depth to Water: NA

| Soil Boring Lithology | Depth (feet) | Samples ID | Samples Depth | PID | SOIL DESCRIPTION |
|---|---|---|---|---|---|
| | 0 | | | | 0.0'-0.5' GRAVEL/Stone |
| | | | | | 0.5'-2.5' Brown medium SAND with some Gravel |
| | 1 | | | | |
| | | | | 0.0 | |
| | 2 | DU-SS-1 | 2.0'-2.5' | | |
| | | | | 0.0 | 2.5'-5.5' Very dark gray-black CLAY |
| | 3 | DU-SS-1 | 3.0'-3.5' | | |
| | | | | 0.0 | |
| | 4 | | | 0.0 | |
| | | | | 0.0 | |
| | 5 | | | 0.0 | |
| | | | | 0.0 | 5.5'-12.0' Red CLAY and angular Gravel |
| | 6 | | | 0.0 | |
| | | | | 0.0 | |
| | 7 | DU-SS-1 | 7.0'-7.5' | 0.0 | |
| | | | | 0.0 | |
| | 8 | | | 0.0 | |
| | | | | 0.0 | |
| | 9 | | | 0.0 | |
| | | | | 0.0 | |
| | 10 | | | 0.0 | |
| | | | | 0.0 | |
| | 11 | | | 0.0 | |
| | | | | 0.0 | |
| | 12 | | | 0.0 | 12.0'-12.5' Granite GRAVEL |
| | | | | 0.0 | 12.5'-14.0' Red CLAY with angular Gravel |
| | 13 | | | 0.0 | |
| | | | | 0.0 | |
| | 14 | | | 0.0 | 14.0'-18.5' Reddish brown fine Clayey SAND |
| | | | | 0.0 | |
| | 15 | | | 0.0 | |
| | | | | 0.0 | |
| | 16 | | | 0.0 | |
| | | | | 0.0 | |
| | 17 | | | 0.0 | |
| | | | | 0.0 | |
| | 18 | | | 0.0 | |
| | | | | 0.0 | 18.5'-21.0' Red CLAY with angular Gravel |
| | 19 | | | 0.0 | |
| | | | | 0.0 | |
| | 20 | | | 0.0 | |
| | | | | 0.0 | |
| | 21 | | | 0.0 | 21.0'-22.0' Red Clayey SAND |
| | | | | 0.0 | |
| | 22 | | | 0.0 | 22.0'-23.0'- Red CLAY with Gravel |
| | | | | 0.0 | |
| | 23 | | | 0.0 | 23.0'-23.5' Stone (Granite) |
| | | | | 0.0 | |
| | 24 | | | 0.0 | 24.0' Refusal |

**APPENDIX VII**

**Laboratory Analytical Data Package- Soil Sample – 7930 Sump (PE-1)—June 2, 2009**

New Jersey
ACCUTEST LABORATORIES

12/21/12

# Technical Report for

EnviroTrac, Ltd.

Hess-Port Reading, NJ

Accutest Job Number: JA19940

Sampling Date: 06/02/09

Report to:

EnviroTrac

sarahd@envirotrac.com

ATTN: Sarah Dyson

Total number of pages in report: **63**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV

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Accutest LabLink@704161 09:48 21-Dec-2012

# Sample Summary

EnviroTrac, Ltd.

Hess-Port Reading, NJ

**Job No:** JA19940

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| JA19940-1 | 06/02/09 | 13:00 | PA | 06/02/09 | SO | Soil | 7930 SUMP(PE-1) |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# CASE NARRATIVE / CONFORMANCE SUMMARY

| | | | |
|---|---|---|---|
| **Client:** | EnviroTrac, Ltd. | **Job No** | JA19940 |
| **Site:** | Hess-Port Reading, NJ | **Report Date** | 6/12/2009 8:51:08 AM |

On 06/02/2009, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 5.3 C. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA19940 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## Volatiles by GCMS By Method SW846 8260B

**Matrix** SO **Batch ID:** VD6254

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA19738-12MS, JA19738-12MSD were used as the QC samples indicated.
- JA19940-1: Dilution required due to matrix interference.

## Wet Chemistry By Method ASTM 4643-00

**Matrix** SO **Batch ID:** GN26841

- The data for ASTM 4643-00 meets quality control requirements.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

# Summary of Hits

**Job Number:** JA19940
**Account:** EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ
**Collected:** 06/02/09

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **JA19940-1** | **7930 SUMP(PE-1)** | | | | | |
| Benzene [a] | | 707 | 58 | 20 | ug/kg | SW846 8260B |
| Ethylbenzene [a] | | 2330 | 58 | 21 | ug/kg | SW846 8260B |
| Toluene [a] | | 5120 | 58 | 17 | ug/kg | SW846 8260B |
| Xylene (total) [a] | | 15700 | 120 | 27 | ug/kg | SW846 8260B |
| Total TIC, Volatile | | 64300 J | | | ug/kg | |

(a) Dilution required due to matrix interference.

New Jersey

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## Sample Results

Report of Analysis

Accutest LabLink@704161 09:48 21-Dec-2012

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 7930 SUMP(PE-1) | | |
| **Lab Sample ID:** | JA19940-1 | **Date Sampled:** | 06/02/09 |
| **Matrix:** | SO - Soil | **Date Received:** | 06/02/09 |
| **Method:** | SW846 8260B SW846 5035 | **Percent Solids:** | 82.7 |
| **Project:** | Hess-Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | D155668.D | 1 | 06/03/09 | TDN | 06/02/09 04:00 | n/a | VD6254 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 6.4 g | 5.0 ml | 100 ul |
| Run #2 | | | |

**VOA PPL List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 107-02-8 | Acrolein | ND | 2900 | 830 | ug/kg | |
| 107-13-1 | Acrylonitrile | ND | 2900 | 48 | ug/kg | |
| 71-43-2 | Benzene | 707 | 58 | 20 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 290 | 15 | ug/kg | |
| 75-25-2 | Bromoform | ND | 290 | 8.7 | ug/kg | |
| 74-83-9 | Bromomethane | ND | 290 | 23 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | ND | 290 | 32 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 290 | 20 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 290 | 66 | ug/kg | |
| 110-75-8 | 2-Chloroethyl vinyl ether | ND | 1400 | 24 | ug/kg | |
| 67-66-3 | Chloroform | ND | 290 | 18 | ug/kg | |
| 74-87-3 | Chloromethane | ND | 290 | 9.5 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 290 | 6.3 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 290 | 16 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 290 | 16 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 290 | 19 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 290 | 55 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 290 | 8.0 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 58 | 20 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethene | ND | 290 | 38 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 290 | 14 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 290 | 26 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 290 | 7.5 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 290 | 7.7 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 290 | 5.5 | ug/kg | |
| 100-41-4 | Ethylbenzene | 2330 | 58 | 21 | ug/kg | |
| 75-09-2 | Methylene chloride | ND | 290 | 13 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 290 | 17 | ug/kg | |
| 127-18-4 | Tetrachloroethene | ND | 290 | 8.4 | ug/kg | |
| 108-88-3 | Toluene | 5120 | 58 | 17 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 290 | 7.4 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 290 | 11 | ug/kg | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 7930 SUMP(PE-1) | | |
| **Lab Sample ID:** | JA19940-1 | **Date Sampled:** | 06/02/09 |
| **Matrix:** | SO - Soil | **Date Received:** | 06/02/09 |
| **Method:** | SW846 8260B SW846 5035 | **Percent Solids:** | 82.7 |
| **Project:** | Hess-Port Reading, NJ | | |

**VOA PPL List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 79-01-6 | Trichloroethene | ND | 290 | 30 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 290 | 13 | ug/kg | |
| 75-01-4 | Vinyl chloride | ND | 290 | 10 | ug/kg | |
| 1330-20-7 | Xylene (total) | 15700 | 120 | 27 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 90% | | 67-127% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 93% | | 65-132% |
| 2037-26-5 | Toluene-D8 | 101% | | 74-129% |
| 460-00-4 | 4-Bromofluorobenzene | 107% | | 62-138% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | cycloalkane/alkene | 7.77 | 5800 | ug/kg | J |
| | cycloalkane/alkene | 8.64 | 7000 | ug/kg | J |
| | C3 alkyl benzene | 15.67 | 9100 | ug/kg | J |
| 108-67-8 | Benzene, 1,3,5-trimethyl- | 15.76 | 4100 | ug/kg | JN |
| | Benzene, 1,2,4-trimethyl- | 16.20 | 15000 | ug/kg | J |
| | C3 alkyl benzene | 16.69 | 4500 | ug/kg | J |
| | unknown Indane | 16.95 | 7400 | ug/kg | J |
| | C4 alkyl benzene | 17.38 | 3800 | ug/kg | J |
| | 1H-indene-dihydro-methyl | 18.21 | 3400 | ug/kg | J |
| | 1H-indene-dihydro-methyl | 18.41 | 4200 | ug/kg | J |
| | Total TIC, Volatile | | 64300 | ug/kg | J |

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

New Jersey

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## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

ACCUTEST Laboratories
SLL

# CHAIN OF CUSTODY

PAGE 1 OF 1

2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: JA19940

**Client / Reporting Information**

Company Name: EnviroTrac
Street Address: 400 Corporate Ct.
City / State / Zip: South Plainfield, NJ
Project Contact: Bill Groeling
E-mail:
Phone #: 908-757-1900
Fax #:
Sampler(s) Name(s): Phil Allegro
Phone #:

**Project Information**

Project Name: Hess Port Reading
Street: 750 Cliff Rd.
City / State: Port Reading, NJ
Project #:
Client Purchase Order #:
Project Manager:

**Billing Information ( If different from Report to)**

Company Name:
Street Address:
City / State / Zip:
Attention:

**Requested Analysis ( see TEST CODE sheet)**

VOA + 10 V8260PPL+10

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

| Accutest Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7930 Sump (PE-1) | -1 | 6/2/09 | 1300 | PA | SO | 4 | | | | | 1 | | | 3 | 8 | 0151, 1446, 1947 |

Turnaround Time ( Business days)

- Std. 15 Business Days
- Std. 10 Business Days ( by Contract only)
- 10 Day *RUSH*
- 5 Day *RUSH*
- 3 Day *EMERGENCY*
- 2 Day *EMERGENCY*
- 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- Commercial "A" (Level 1)
- Commercial "B" ( Level 2)
- FULLT1 ( Level 3+4 )
- NJ Reduced
- Commercial "C"
- NYASP Category A
- NYASP Category B
- State Forms
- EDD Format
- Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions: 300/5pX.

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 | 6/2/09 1545 | 1 | 2 | | 2 |
| Relinquished by Sampler: 3 | Date Time: | Received By: 3 | Relinquished By: 4 | Date Time: | Received By: 4 |
| Relinquished by: 5 | Date Time: | Received By: 5 | | | |

Custody Seal #: ☐ Intact ☐ Not intact
Preserved where applicable: ☐
On Ice: ☑
Cooler Temp: 5.3-C

**JA19940: Chain of Custody**
**Page 1 of 2**

# Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** JA19940 **Client:** **Immediate Client Services Action Required:** No

**Date / Time Received:** 6/2/2009 **Delivery Method:** **Client Service Action Required at Login:** No

**Project:** **No. Coolers:** 1 **Airbill #'s:**

| Cooler Security | Y | N | | Y | N |
|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☑ | ☐ | 3. COC Present: | ☑ | ☐ |
| 2. Custody Seals Intact: | ☑ | ☐ | 4. Smpl Dates/Time OK | ☑ | ☐ |

| Cooler Temperature | Y | N |
|---|---|---|
| 1. Temp criteria achieved: | ☑ | ☐ |
| 2. Cooler temp verification: | Infared gun | |
| 3. Cooler media: | Ice (bag) | |

| Quality Control Preservatio | Y | N | N/A |
|---|---|---|---|
| 1. Trip Blank present / cooler: | ☑ | ☐ | |
| 2. Trip Blank listed on COC: | ☑ | ☐ | |
| 3. Samples preserved properly: | ☑ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☑ |

| Sample Integrity - Documentation | Y | N |
|---|---|---|
| 1. Sample labels present on bottles: | ☑ | ☐ |
| 2. Container labeling complete: | ☑ | ☐ |
| 3. Sample container label / COC agree: | ☑ | ☐ |

| Sample Integrity - Condition | Y | N |
|---|---|---|
| 1. Sample recvd within HT: | ☑ | ☐ |
| 2. All containers accounted for: | ☑ | ☐ |
| 3. Condition of sample: | Intact | |

| Sample Integrity - Instructions | Y | N | N/A |
|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☑ |

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com



**JA19940: Chain of Custody**
**Page 2 of 2**

# Internal Sample Tracking Chronicle

EnviroTrac, Ltd.

Hess-Port Reading, NJ

**Job No:** JA19940



| Sample Number | Method | Analyzed | By | Prepped | By | Test Codes |
|---|---|---|---|---|---|---|
| JA19940-1 | Collected: 02-JUN-09 13:00 By: PA | | Received: 02-JUN-09 By: | | | |
| 7930 SUMP(PE-1) | | | | | | |
| JA19940-1 | ASTM 4643-00 | 03-JUN-09 | KD | | | %SOL |
| JA19940-1 | SW846 8260B | 03-JUN-09 13:47 | TDN | | | V8260PPL+ 10 |

# Accutest Internal Chain of Custody



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ
**Received:** 06/02/09

| Sample.Bottle Number | Transfer FROM | Transfer TO | Date/Time | Reason |
|---|---|---|---|---|
| JA19940-1.1 | Secured Storage | Jayna Patel | 06/03/09 09:11 | Retrieve from Storage |
| JA19940-1.1 | Jayna Patel | Secured Storage | 06/03/09 09:20 | Return to Storage |
| JA19940-1.1 | Secured Storage | John Thomas | 06/03/09 12:31 | Retrieve from Storage |
| JA19940-1.1 | John Thomas | Kathleen Dwyer | 06/03/09 12:33 | Custody Transfer |
| JA19940-1.1 | Kathleen Dwyer | Secured Storage | 06/03/09 16:55 | Return to Storage |
| JA19940-1.1 | Dave Hunkele | | 07/02/09 06:52 | Disposed |
| JA19940-1.3 | Secured Storage | Clare Tang | 06/02/09 16:26 | Retrieve from Storage |
| JA19940-1.3 | Clare Tang | Secured Storage | 06/02/09 16:31 | Return to Storage |
| JA19940-1.3 | Secured Storage | Thien Nguyen | 06/03/09 13:18 | Retrieve from Storage |
| JA19940-1.3 | Thien Nguyen | Secured Storage | 06/03/09 16:36 | Return to Storage |
| JA19940-1.3 | Dave Hunkele | | 07/02/09 06:52 | Disposed |
| JA19940-1.4 | Secured Storage | Clare Tang | 06/02/09 16:26 | Retrieve from Storage |
| JA19940-1.4 | Clare Tang | Secured Storage | 06/02/09 16:31 | Return to Storage |
| JA19940-1.4 | Dave Hunkele | | 07/02/09 06:52 | Disposed |
| JA19940-1.5 | Secured Storage | Clare Tang | 06/02/09 16:26 | Retrieve from Storage |
| JA19940-1.5 | Clare Tang | Secured Storage | 06/02/09 16:31 | Return to Storage |
| JA19940-1.5 | Dave Hunkele | | 07/02/09 06:52 | Disposed |

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# GC/MS Volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

# Method Blank Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VD6254-MB1 | D155661.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 107-02-8 | Acrolein | ND | 2500 | 720 | ug/kg | |
| 107-13-1 | Acrylonitrile | ND | 2500 | 41 | ug/kg | |
| 71-43-2 | Benzene | ND | 50 | 17 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 250 | 13 | ug/kg | |
| 75-25-2 | Bromoform | ND | 250 | 7.6 | ug/kg | |
| 74-83-9 | Bromomethane | ND | 250 | 20 | ug/kg | |
| 56-23-5 | Carbon tetrachloride | ND | 250 | 28 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 250 | 17 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 250 | 57 | ug/kg | |
| 110-75-8 | 2-Chloroethyl vinyl ether | ND | 1300 | 21 | ug/kg | |
| 67-66-3 | Chloroform | ND | 250 | 16 | ug/kg | |
| 74-87-3 | Chloromethane | ND | 250 | 8.3 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 250 | 5.5 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 250 | 14 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 250 | 14 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 250 | 17 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 250 | 47 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 250 | 6.9 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 50 | 17 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethene | ND | 250 | 33 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 250 | 12 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 250 | 22 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 250 | 6.5 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 250 | 6.7 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 250 | 4.8 | ug/kg | |
| 100-41-4 | Ethylbenzene | ND | 50 | 19 | ug/kg | |
| 75-09-2 | Methylene chloride | ND | 250 | 11 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 250 | 15 | ug/kg | |
| 127-18-4 | Tetrachloroethene | ND | 250 | 7.3 | ug/kg | |
| 108-88-3 | Toluene | ND | 50 | 15 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 250 | 6.4 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 250 | 9.3 | ug/kg | |
| 79-01-6 | Trichloroethene | ND | 250 | 26 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 250 | 11 | ug/kg | |
| 75-01-4 | Vinyl chloride | ND | 250 | 8.9 | ug/kg | |
| 1330-20-7 | Xylene (total) | ND | 100 | 23 | ug/kg | |

# Method Blank Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VD6254-MB1 | D155661.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 93% | 67-127% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 99% | 65-132% |
| 2037-26-5 | Toluene-D8 | 97% | 74-129% |
| 460-00-4 | 4-Bromofluorobenzene | 108% | 62-138% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Volatile | | 0 | ug/kg | |

# Blank Spike Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VD6254-BS | D155662.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 107-02-8 | Acrolein | 25000 | 30200 | 121 | 20-198 |
| 107-13-1 | Acrylonitrile | 12500 | 11900 | 95 | 61-140 |
| 71-43-2 | Benzene | 2500 | 2390 | 96 | 78-120 |
| 75-27-4 | Bromodichloromethane | 2500 | 2680 | 107 | 76-129 |
| 75-25-2 | Bromoform | 2500 | 2790 | 112 | 70-141 |
| 74-83-9 | Bromomethane | 2500 | 2810 | 112 | 57-142 |
| 56-23-5 | Carbon tetrachloride | 2500 | 2660 | 106 | 66-151 |
| 108-90-7 | Chlorobenzene | 2500 | 2510 | 100 | 80-117 |
| 75-00-3 | Chloroethane | 2500 | 2750 | 110 | 60-142 |
| 110-75-8 | 2-Chloroethyl vinyl ether | 12500 | 11400 | 91 | 67-140 |
| 67-66-3 | Chloroform | 2500 | 2330 | 93 | 75-122 |
| 74-87-3 | Chloromethane | 2500 | 2930 | 117 | 56-140 |
| 124-48-1 | Dibromochloromethane | 2500 | 2730 | 109 | 76-136 |
| 95-50-1 | 1,2-Dichlorobenzene | 2500 | 2720 | 109 | 77-117 |
| 541-73-1 | 1,3-Dichlorobenzene | 2500 | 2630 | 105 | 77-116 |
| 106-46-7 | 1,4-Dichlorobenzene | 2500 | 2540 | 102 | 76-113 |
| 75-71-8 | Dichlorodifluoromethane | 2500 | 2570 | 103 | 46-156 |
| 75-34-3 | 1,1-Dichloroethane | 2500 | 2350 | 94 | 73-124 |
| 107-06-2 | 1,2-Dichloroethane | 2500 | 2500 | 100 | 75-137 |
| 75-35-4 | 1,1-Dichloroethene | 2500 | 2330 | 93 | 66-130 |
| 156-59-2 | cis-1,2-Dichloroethene | 2500 | 2340 | 94 | 73-121 |
| 156-60-5 | trans-1,2-Dichloroethene | 2500 | 2240 | 90 | 74-123 |
| 78-87-5 | 1,2-Dichloropropane | 2500 | 2360 | 94 | 78-121 |
| 10061-01-5 | cis-1,3-Dichloropropene | 2500 | 2500 | 100 | 81-124 |
| 10061-02-6 | trans-1,3-Dichloropropene | 2500 | 2550 | 102 | 78-130 |
| 100-41-4 | Ethylbenzene | 2500 | 2650 | 106 | 81-121 |
| 75-09-2 | Methylene chloride | 2500 | 2140 | 86 | 69-123 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 2500 | 2540 | 102 | 71-123 |
| 127-18-4 | Tetrachloroethene | 2500 | 2680 | 107 | 73-134 |
| 108-88-3 | Toluene | 2500 | 2430 | 97 | 79-122 |
| 71-55-6 | 1,1,1-Trichloroethane | 2500 | 2450 | 98 | 72-136 |
| 79-00-5 | 1,1,2-Trichloroethane | 2500 | 2350 | 94 | 76-123 |
| 79-01-6 | Trichloroethene | 2500 | 2430 | 97 | 80-124 |
| 75-69-4 | Trichlorofluoromethane | 2500 | 2760 | 110 | 55-152 |
| 75-01-4 | Vinyl chloride | 2500 | 2810 | 112 | 59-145 |
| 1330-20-7 | Xylene (total) | 7500 | 8120 | 108 | 80-121 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VD6254-BS | D155662.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 94% | 67-127% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 97% | 65-132% |
| 2037-26-5 | Toluene-D8 | 99% | 74-129% |
| 460-00-4 | 4-Bromofluorobenzene | 106% | 62-138% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| JA19738-12MS | D155680.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |
| JA19738-12MSD | D155681.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |
| JA19738-12 | D155664.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Compound | JA19738-12 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 107-02-8 | Acrolein | ND | | 30900 | 31100 | 101 | 30500 | 99 | 2 | 1-182/41 |
| 107-13-1 | Acrylonitrile | ND | | 15500 | 13000 | 84 | 13000 | 84 | 0 | 37-147/26 |
| 71-43-2 | Benzene | ND | | 3090 | 2750 | 89 | 2640 | 85 | 4 | 41-136/24 |
| 75-27-4 | Bromodichloromethane | ND | | 3090 | 2810 | 91 | 2730 | 88 | 3 | 37-150/23 |
| 75-25-2 | Bromoform | ND | | 3090 | 2890 | 93 | 2920 | 94 | 1 | 31-153/24 |
| 74-83-9 | Bromomethane | ND | | 3090 | 2900 | 94 | 2690 | 87 | 8 | 4-154/32 |
| 56-23-5 | Carbon tetrachloride | ND | | 3090 | 2830 | 91 | 2700 | 87 | 5 | 27-165/26 |
| 108-90-7 | Chlorobenzene | ND | | 3090 | 2760 | 89 | 2670 | 86 | 3 | 33-140/26 |
| 75-00-3 | Chloroethane | ND | | 3090 | 2630 | 85 | 2460 | 80 | 7 | 5-151/33 |
| 110-75-8 | 2-Chloroethyl vinyl ether | ND | | 15500 | 14400 | 93 | 14200 | 92 | 1 | 36-150/27 |
| 67-66-3 | Chloroform | ND | | 3090 | 2530 | 82 | 2430 | 79 | 4 | 44-135/24 |
| 74-87-3 | Chloromethane | ND | | 3090 | 2950 | 95 | 3160 | 102 | 7 | 27-149/27 |
| 124-48-1 | Dibromochloromethane | ND | | 3090 | 2980 | 96 | 2940 | 95 | 1 | 35-154/23 |
| 95-50-1 | 1,2-Dichlorobenzene | ND | | 3090 | 2860 | 92 | 2800 | 90 | 2 | 20-146/29 |
| 541-73-1 | 1,3-Dichlorobenzene | ND | | 3090 | 2800 | 90 | 2730 | 88 | 3 | 19-147/30 |
| 106-46-7 | 1,4-Dichlorobenzene | ND | | 3090 | 2710 | 88 | 2640 | 85 | 3 | 19-143/30 |
| 75-71-8 | Dichlorodifluoromethane | ND | | 3090 | 3020 | 98 | 2900 | 94 | 4 | 17-170/25 |
| 75-34-3 | 1,1-Dichloroethane | ND | | 3090 | 2600 | 84 | 2490 | 80 | 4 | 45-135/24 |
| 107-06-2 | 1,2-Dichloroethane | ND | | 3090 | 2680 | 87 | 2620 | 85 | 2 | 44-143/23 |
| 75-35-4 | 1,1-Dichloroethene | ND | | 3090 | 2700 | 87 | 2560 | 83 | 5 | 32-149/26 |
| 156-59-2 | cis-1,2-Dichloroethene | ND | | 3090 | 2600 | 84 | 2500 | 81 | 4 | 42-135/25 |
| 156-60-5 | trans-1,2-Dichloroethene | ND | | 3090 | 2610 | 84 | 2470 | 80 | 6 | 37-140/25 |
| 78-87-5 | 1,2-Dichloropropane | ND | | 3090 | 2680 | 87 | 2620 | 85 | 2 | 45-136/23 |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | | 3090 | 2750 | 89 | 2670 | 86 | 3 | 37-143/26 |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | | 3090 | 2790 | 90 | 2720 | 88 | 3 | 34-148/26 |
| 100-41-4 | Ethylbenzene | ND | | 3090 | 2990 | 97 | 2910 | 94 | 3 | 28-147/27 |
| 75-09-2 | Methylene chloride | ND | | 3090 | 2470 | 80 | 2390 | 77 | 3 | 39-138/24 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | | 3090 | 2740 | 89 | 2680 | 87 | 2 | 35-136/25 |
| 127-18-4 | Tetrachloroethene | ND | | 3090 | 2960 | 96 | 2840 | 92 | 4 | 27-164/28 |
| 108-88-3 | Toluene | ND | | 3090 | 2840 | 92 | 2710 | 88 | 5 | 32-145/26 |
| 71-55-6 | 1,1,1-Trichloroethane | ND | | 3090 | 2660 | 86 | 2530 | 82 | 5 | 36-150/24 |
| 79-00-5 | 1,1,2-Trichloroethane | ND | | 3090 | 2580 | 83 | 2510 | 81 | 3 | 37-147/23 |
| 79-01-6 | Trichloroethene | ND | | 3090 | 2710 | 88 | 2600 | 84 | 4 | 34-149/25 |
| 75-69-4 | Trichlorofluoromethane | ND | | 3090 | 3440 | 111 | 3260 | 105 | 5 | 25-160/27 |
| 75-01-4 | Vinyl chloride | ND | | 3090 | 3320 | 107 | 3200 | 103 | 4 | 29-152/26 |
| 1330-20-7 | Xylene (total) | ND | | 9280 | 8990 | 97 | 8770 | 94 | 2 | 24-150/28 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| JA19738-12MS | D155680.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |
| JA19738-12MSD | D155681.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |
| JA19738-12 | D155664.D | 1 | 06/03/09 | TDN | n/a | n/a | VD6254 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA19940-1

| CAS No. | Surrogate Recoveries | MS | MSD | JA19738-12 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 92% | 92% | 92% | 67-127% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 92% | 91% | 98% | 65-132% |
| 2037-26-5 | Toluene-D8 | 100% | 99% | 97% | 74-129% |
| 460-00-4 | 4-Bromofluorobenzene | 106% | 103% | 107% | 62-138% |

* = Outside of Control Limits.

# Instrument Performance Check (BFB)



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6218-BFB
**Lab File ID:** D154831.D
**Instrument ID:** GCMSD
**Injection Date:** 05/12/09
**Injection Time:** 10:33

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 21845 | 21.9 | | Pass |
| 75 | 30.0 - 60.0% of mass 95 | 52048 | 52.2 | | Pass |
| 95 | Base peak, 100% relative abundance | 99640 | 100.0 | | Pass |
| 96 | 5.0 - 9.0% of mass 95 | 6810 | 6.8 | | Pass |
| 173 | Less than 2.0% of mass 174 | 0 | 0.0 | (0.0) [a] | Pass |
| 174 | 50.0 - 120.0% of mass 95 | 85808 | 86.1 | | Pass |
| 175 | 5.0 - 9.0% of mass 174 | 6131 | 6.2 | (7.1) [a] | Pass |
| 176 | 95.0 - 101.0% of mass 174 | 83667 | 84.0 | (97.5) [a] | Pass |
| 177 | 5.0 - 9.0% of mass 176 | 5533 | 5.6 | (6.6) [b] | Pass |

(a) Value is % of mass 174
(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| VD6218-IC6218 | D154832.D | 05/12/09 | 11:00 | 00:27 | Initial cal 0.5 |
| VD6218-IC6218 | D154833.D | 05/12/09 | 11:30 | 00:57 | Initial cal 1 |
| VD6218-IC6218 | D154835.D | 05/12/09 | 12:28 | 01:55 | Initial cal 5 |
| VD6218-IC6218 | D154836.D | 05/12/09 | 12:57 | 02:24 | Initial cal 20 |
| VD6218-ICC6218 | D154837.D | 05/12/09 | 13:27 | 02:54 | Initial cal 50 |
| VD6218-IC6218 | D154838.D | 05/12/09 | 13:56 | 03:23 | Initial cal 100 |
| VD6218-IC6218 | D154839.D | 05/12/09 | 14:25 | 03:52 | Initial cal 200 |
| VD6218-IC6218 | D154843.D | 05/12/09 | 16:22 | 05:49 | Initial cal 2 |

# Instrument Performance Check (BFB)



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6254-BFB
**Lab File ID:** D155658.D
**Instrument ID:** GCMSD
**Injection Date:** 06/03/09
**Injection Time:** 08:41

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18544 | 23.0 | | Pass |
| 75 | 30.0 - 60.0% of mass 95 | 43435 | 53.9 | | Pass |
| 95 | Base peak, 100% relative abundance | 80579 | 100.0 | | Pass |
| 96 | 5.0 - 9.0% of mass 95 | 5379 | 6.7 | | Pass |
| 173 | Less than 2.0% of mass 174 | 0 | 0.0 | (0.0) [a] | Pass |
| 174 | 50.0 - 120.0% of mass 95 | 67544 | 83.8 | | Pass |
| 175 | 5.0 - 9.0% of mass 174 | 5139 | 6.4 | (7.6) [a] | Pass |
| 176 | 95.0 - 101.0% of mass 174 | 65555 | 81.4 | (97.1) [a] | Pass |
| 177 | 5.0 - 9.0% of mass 176 | 4362 | 5.4 | (6.7) [b] | Pass |

(a) Value is % of mass 174
(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| VD6254-CC6218 | D155659.D | 06/03/09 | 09:09 | 00:28 | Continuing cal 20 |
| VD6254-MB1 | D155661.D | 06/03/09 | 10:14 | 01:33 | Method Blank |
| VD6254-BS | D155662.D | 06/03/09 | 10:50 | 02:09 | Blank Spike |
| JA19738-12 | D155664.D | 06/03/09 | 11:49 | 03:08 | (used for QC only; not part of job JA19940) |
| ZZZZZZ | D155665.D | 06/03/09 | 12:19 | 03:38 | (unrelated sample) |
| ZZZZZZ | D155666.D | 06/03/09 | 12:48 | 04:07 | (unrelated sample) |
| JA19940-1 | D155668.D | 06/03/09 | 13:47 | 05:06 | 7930 SUMP(PE-1) |
| ZZZZZZ | D155669.D | 06/03/09 | 14:16 | 05:35 | (unrelated sample) |
| ZZZZZZ | D155670.D | 06/03/09 | 14:45 | 06:04 | (unrelated sample) |
| ZZZZZZ | D155671.D | 06/03/09 | 15:15 | 06:34 | (unrelated sample) |
| ZZZZZZ | D155673.D | 06/03/09 | 16:14 | 07:33 | (unrelated sample) |
| ZZZZZZ | D155674.D | 06/03/09 | 16:43 | 08:02 | (unrelated sample) |
| ZZZZZZ | D155675.D | 06/03/09 | 17:12 | 08:31 | (unrelated sample) |
| ZZZZZZ | D155676.D | 06/03/09 | 17:42 | 09:01 | (unrelated sample) |
| ZZZZZZ | D155677.D | 06/03/09 | 18:11 | 09:30 | (unrelated sample) |
| ZZZZZZ | D155678.D | 06/03/09 | 18:40 | 09:59 | (unrelated sample) |
| ZZZZZZ | D155679.D | 06/03/09 | 19:09 | 10:28 | (unrelated sample) |
| JA19738-12MS | D155680.D | 06/03/09 | 19:39 | 10:58 | Matrix Spike |
| JA19738-12MSD | D155681.D | 06/03/09 | 20:08 | 11:27 | Matrix Spike Duplicate |
| ZZZZZZ | D155682.D | 06/03/09 | 20:37 | 11:56 | (unrelated sample) |

# Volatile Internal Standard Area Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | VD6254-CC6218 | **Injection Date:** | 06/03/09 |
| **Lab File ID:** | D155659.D | **Injection Time:** | 09:09 |
| **Instrument ID:** | GCMSD | **Method:** | SW846 8260B |

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|
| Check Std | 137819 | 7.55 | 228068 | 9.80 | 326186 | 10.71 | 298618 | 14.05 | 182716 | 16.63 |
| Upper Limit [a] | 275638 | 8.05 | 456136 | 10.30 | 652372 | 11.21 | 597236 | 14.55 | 365432 | 17.13 |
| Lower Limit [b] | 68910 | 7.05 | 114034 | 9.30 | 163093 | 10.21 | 149309 | 13.55 | 91358 | 16.13 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|
| VD6254-MB1 | 130620 | 7.56 | 229210 | 9.80 | 327288 | 10.71 | 296904 | 14.05 | 174894 | 16.63 |
| VD6254-BS | 155211 | 7.56 | 231513 | 9.81 | 334214 | 10.71 | 307470 | 14.05 | 187210 | 16.63 |
| JA19738-12 | 139314 | 7.56 | 234302 | 9.80 | 335223 | 10.71 | 302468 | 14.05 | 178738 | 16.64 |
| ZZZZZZ | 140401 | 7.56 | 226317 | 9.81 | 326019 | 10.71 | 320640 | 14.05 | 197638 | 16.64 |
| ZZZZZZ | 151842 | 7.55 | 228439 | 9.81 | 327381 | 10.71 | 314173 | 14.05 | 200423 | 16.63 |
| JA19940-1 [c] | 122660 | 7.56 | 239448 | 9.80 | 336856 | 10.71 | 319847 | 14.05 | 199460 | 16.63 |
| ZZZZZZ | 145683 | 7.59 | 238413 | 9.80 | 341303 | 10.71 | 329168 | 14.05 | 210637 | 16.64 |
| ZZZZZZ | 156953 | 7.55 | 231327 | 9.81 | 333815 | 10.71 | 322925 | 14.05 | 212590 | 16.64 |
| ZZZZZZ | 155599 | 7.55 | 236272 | 9.81 | 332030 | 10.71 | 320173 | 14.05 | 209929 | 16.64 |
| ZZZZZZ | 152190 | 7.56 | 239092 | 9.80 | 345212 | 10.71 | 326887 | 14.05 | 212911 | 16.63 |
| ZZZZZZ | 151123 | 7.56 | 238488 | 9.80 | 344422 | 10.71 | 330737 | 14.05 | 207111 | 16.64 |
| ZZZZZZ | 154109 | 7.56 | 234691 | 9.80 | 337748 | 10.71 | 323378 | 14.05 | 212468 | 16.64 |
| ZZZZZZ | 156688 | 7.56 | 234078 | 9.80 | 338638 | 10.71 | 323633 | 14.05 | 215818 | 16.64 |
| ZZZZZZ | 154866 | 7.56 | 238118 | 9.81 | 344999 | 10.71 | 342367 | 14.05 | 213248 | 16.64 |
| ZZZZZZ | 157022 | 7.55 | 244134 | 9.80 | 353013 | 10.71 | 337179 | 14.05 | 219614 | 16.63 |
| ZZZZZZ | 158629 | 7.55 | 244660 | 9.80 | 354570 | 10.71 | 340034 | 14.05 | 210344 | 16.64 |
| JA19738-12MS | 157005 | 7.56 | 251535 | 9.80 | 363257 | 10.71 | 339868 | 14.05 | 208105 | 16.64 |
| JA19738-12MSD | 156345 | 7.56 | 252864 | 9.81 | 364499 | 10.71 | 335467 | 14.05 | 210989 | 16.64 |
| ZZZZZZ | 160810 | 7.55 | 245844 | 9.81 | 353388 | 10.71 | 337013 | 14.05 | 211068 | 16.64 |

**IS 1** = Tert Butyl Alcohol-D9
**IS 2** = Pentafluorobenzene
**IS 3** = 1,4-Difluorobenzene
**IS 4** = Chlorobenzene-D5
**IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Dilution required due to matrix interference.

# Volatile Surrogate Recovery Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Method:** SW846 8260B **Matrix:** SO

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|
| JA19940-1 | D155668.D | 90.0 | 93.0 | 101.0 | 107.0 |
| JA19738-12MS | D155680.D | 92.0 | 92.0 | 100.0 | 106.0 |
| JA19738-12MSD | D155681.D | 92.0 | 91.0 | 99.0 | 103.0 |
| VD6254-BS | D155662.D | 94.0 | 97.0 | 99.0 | 106.0 |
| VD6254-MB1 | D155661.D | 93.0 | 99.0 | 97.0 | 108.0 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = Dibromofluoromethane | 67-127% |
| **S2** = 1,2-Dichloroethane-D4 | 65-132% |
| **S3** = Toluene-D8 | 74-129% |
| **S4** = 4-Bromofluorobenzene | 62-138% |

# Initial Calibration Summary

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6218-ICC6218
**Lab FileID:** D154837.D

Response Factor Report MSD

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Wed May 13 09:50:38 2009
Response via : Initial Calibration

Calibration Files
5 =D154835.D 2 =D154843.D 0.5 =D154832.D 50 =D154837.D
100 =D154838.D 1 =D154833.D 200 =D154839.D 20 =D154836.D

| Compound | 5 | 2 | 0.5 | 50 | 100 | 1 | 200 | 20 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) I Tert Butyl Alcohol-d9 | | | | | ISTD | | | | | |
| 2) 1,4-dioxane | 0.141 | 0.119 | | 0.116 | 0.124 | 0.135 | 0.124 | 0.128 | 0.127 | 6.88 |
| 3) tertiary but | 1.434 | 1.681 | | 1.208 | 1.252 | | 1.268 | 1.231 | 1.346 | 13.60 |
| 4) I pentafluorobenzene | | | | | ISTD | | | | | |
| 5) 1,2-dichloro | | | | | | | | | 0.000# | -1.00 |
| 6) chlorodifluo | 0.850 | 0.837 | | 0.683 | 0.675 | | 0.657 | 0.697 | 0.733 | 11.82 |
| 7) dichlorodifl | 1.013 | 1.193 | | 1.029 | 1.055 | 1.076 | 0.912 | 1.007 | 1.041 | 8.16 |
| 8) chloromethan | 1.233 | | | 1.069 | 1.139 | | 0.962 | 1.096 | 1.100 | 9.00 |
| 9) vinyl chlori | 1.101 | | | 1.047 | 1.130 | | 1.013 | 1.054 | 1.069 | 4.33 |
| 10) bromomethane | 0.714 | | | 0.653 | 0.677 | | 0.494 | 0.674 | 0.643 | 13.37 |
| 11) chloroethane | 0.688 | | | 0.601 | 0.627 | | 0.502 | 0.636 | 0.611 | 11.24 |
| 12) trichloroflu | 1.180 | | | 1.207 | 1.310 | | 1.192 | 1.190 | 1.216 | 4.42 |
| 13) ethyl ether | 0.501 | 0.542 | 0.479 | 0.413 | 0.433 | 0.532 | 0.439 | 0.439 | 0.472 | 10.27 |
| 14) acrolein | 0.193 | 0.193 | 0.187 | 0.138 | | 0.190 | | 0.169 | 0.178 | 12.21 |
| 15) chlorotriflu | | | | | | | | | 0.000# | -1.00 |
| 16) 1,1-dichloro | 0.671 | 0.720 | 0.609 | 0.572 | 0.626 | 0.665 | 0.619 | 0.606 | 0.636 | 7.39 |
| 17) acetone | 0.092 | | | 0.072 | 0.073 | | 0.076 | 0.072 | 0.077 | 10.86 |
| 18) allyl chlori | 1.419 | 1.717 | 1.479 | 1.204 | 1.288 | 1.569 | 1.332 | 1.260 | 1.408 | 12.30 |
| 19) acetonitrile | 0.074 | | | 0.058 | 0.058 | | 0.057 | 0.060 | 0.061 | 11.63 |
| 20) acetaldehyde | | | | | | | | | 0.000# | -1.00 |
| 21) iodomethane | 1.145 | 1.230 | 1.158 | 1.002 | 1.087 | 1.181 | 1.078 | 1.074 | 1.119 | 6.49 |
| 22) iso-butyl al | 0.102 | 0.096 | | 0.094 | 0.109 | 0.093 | 0.107 | 0.102 | 0.100 | 6.25 |
| 23) carbon disul | 2.440 | 2.510 | 2.478 | 2.106 | 2.265 | 2.420 | 2.233 | 2.233 | 2.336 | 6.22 |
| 24) methylene ch | 0.915 | | | 0.733 | 0.779 | | 0.763 | 0.812 | 0.800 | 8.76 |
| 25) methyl aceta | 0.589 | 0.622 | | 0.582 | 0.590 | 0.664 | 0.606 | 0.587 | 0.606 | 4.81 |
| 26) methyl tert | 2.369 | 2.612 | 2.426 | 2.105 | 2.231 | 2.443 | 2.227 | 2.195 | 2.326 | 7.13 |
| 27) trans-1,2-di | 0.727 | 0.760 | 0.728 | 0.606 | 0.651 | 0.729 | 0.641 | 0.642 | 0.686 | 8.25 |
| 28) di-isopropyl | 2.487 | 2.726 | | 2.230 | 2.274 | 2.758 | 2.279 | 2.286 | 2.434 | 9.27 |
| 29) ethyl tert-b | 2.303 | 2.451 | 1.675 | 2.156 | 2.255 | 2.563 | 2.256 | 2.157 | 2.227 | 11.81 |
| 30) 2-butanone | 0.087 | 0.102 | | 0.084 | 0.089 | | 0.091 | 0.089 | 0.090 | 6.90 |
| 31) 1,1-dichloro | 1.358 | 1.455 | 1.438 | 1.148 | 1.216 | 1.335 | 1.197 | 1.227 | 1.297 | 8.93 |
| 32) chloroprene | 1.056 | 1.098 | | 1.003 | 1.042 | 1.124 | 1.047 | 0.999 | 1.053 | 4.35 |
| 33) acrylonitril | 0.355 | 0.360 | | 0.292 | 0.303 | 0.379 | 0.309 | 0.307 | 0.330 | 10.39 |
| 34) vinyl acetat | 0.104 | | | 0.118 | 0.137 | | 0.142 | 0.124 | 0.125 | 12.03 |
| 35) ethyl acetat | 0.122 | | | 0.087 | 0.091 | | 0.093 | 0.090 | 0.097 | 14.96 |
| 36) 2,2-dichloro | 1.167 | 1.180 | 1.074 | 0.972 | 1.054 | 1.124 | 1.014 | 1.030 | 1.077 | 6.91 |
| 37) cis-1,2-dich | 0.744 | 0.820 | 0.726 | 0.647 | 0.682 | 0.768 | 0.685 | 0.676 | 0.719 | 7.96 |
| 38) propionitril | 0.140 | 0.155 | | 0.114 | 0.117 | 0.145 | 0.120 | 0.120 | 0.130 | 12.45 |
| 39) bromochlorom | 0.367 | 0.395 | 0.331 | 0.312 | 0.330 | 0.379 | 0.331 | 0.329 | 0.347 | 8.49 |
| 40) tetrahydrofu | 0.340 | 0.277 | | 0.274 | 0.276 | | 0.287 | 0.281 | 0.289 | 8.80 |
| 41) chloroform | 1.255 | 1.369 | 1.335 | 1.059 | 1.117 | 1.276 | 1.093 | 1.119 | 1.203 | 9.95 |
| 42) dibromofluor | 0.625 | 0.559 | | 0.490 | 0.554 | 0.676 | 0.560 | 0.522 | 0.569 | 10.98 |
| 43) 1,2-dichloro | 0.857 | 0.784 | | 0.671 | 0.748 | 0.911 | 0.737 | 0.712 | 0.774 | 10.84 |
| 44) freon 113 | 0.556 | 0.600 | | 0.498 | 0.523 | 0.633 | 0.514 | 0.494 | 0.546 | 9.79 |
| 45) methacryloni | 0.517 | 0.543 | | 0.465 | 0.492 | 0.461 | 0.501 | 0.480 | 0.494 | 5.91 |

# Initial Calibration Summary

**Job Number:** JA19940 **Sample:** VD6218-ICC6218
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** D154837.D
**Project:** Hess-Port Reading, NJ

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46) | t-butyl form | 0.587 | 0.620 | | 0.599 | 0.633 | 0.677 | 0.653 | 0.580 | 0.621 | 5.74 |
| 47) | 1,1,1-trichl | 1.095 | 1.189 | 1.036 | 0.963 | 1.029 | 1.098 | 0.984 | 0.995 | 1.049 | 7.15 |
| 48) | tert-amyl me | 2.128 | 2.408 | 1.601 | 1.987 | 2.100 | 2.477 | 2.110 | 1.992 | 2.100 | 12.87 |
| 49) | I 1,4-difluorobenzene | ----------ISTD---------- | | | | | | | | | |
| 50) | Di-isobutyle | | | | | | | | | 0.000# | -1.00 |
| 51) | tert amyl al | 0.149 | 0.146 | | 0.119 | 0.123 | 0.129 | 0.116 | 0.136 | 0.131 | 10.02 |
| 52) | 2,2,4-trimet | | | | | | | | | 0.000# | -1.00 |
| 53) | epichlorohyd | 0.062 | | | 0.056 | 0.056 | | 0.059 | 0.056 | 0.058 | 4.68 |
| 54) | n-butyl alco | 0.015 | 0.012 | | 0.015 | 0.015 | 0.015 | 0.017 | 0.015 | 0.015 | 10.51 |
| 55) | carbon tetra | 0.609 | 0.634 | 0.567 | 0.561 | 0.600 | 0.611 | 0.585 | 0.569 | 0.592 | 4.35 |
| 56) | 1,1-dichloro | 0.636 | 0.660 | 0.598 | 0.563 | 0.598 | 0.619 | 0.592 | 0.583 | 0.606 | 5.11 |
| 57) | hexane | 0.604 | 0.612 | | 0.580 | 0.613 | 0.626 | 0.600 | 0.564 | 0.600 | 3.55 |
| 58) | benzene | 1.918 | 1.989 | 1.893 | 1.603 | 1.694 | 1.898 | 1.673 | 1.695 | 1.795 | 8.01 |
| 59) | heptane | 0.327 | 0.353 | | 0.309 | 0.337 | 0.332 | 0.325 | 0.307 | 0.327 | 4.92 |
| 60) | isopropyl ac | 0.904 | 0.955 | 0.683 | 0.867 | 0.887 | 0.980 | 0.918 | 0.856 | 0.881 | 10.25 |
| 61) | 1,2-dichloro | 0.716 | 0.763 | 0.741 | 0.610 | 0.634 | 0.738 | 0.630 | 0.635 | 0.683 | 9.04 |
| 62) | trichloroeth | 0.453 | 0.475 | 0.528 | 0.390 | 0.421 | 0.460 | 0.421 | 0.410 | 0.445 | 9.87 |
| 63) | 2-nitropropa | 0.122 | | | 0.126 | 0.141 | | 0.151 | 0.113 | 0.131 | 11.62 |
| 64) | 2-chloroethy | 0.355 | 0.353 | | 0.330 | 0.327 | 0.358 | 0.322 | 0.333 | 0.340 | 4.38 |
| 65) | methyl metha | 0.554 | 0.537 | | 0.541 | 0.569 | 0.512 | 0.571 | 0.536 | 0.546 | 3.79 |
| 66) | tert-amyl et | 0.630 | 0.593 | | 0.603 | 0.710 | 0.477 | 0.656 | 0.633 | 0.615 | 11.67 |
| 67) | 1,2-dichloro | 0.523 | 0.554 | 0.514 | 0.446 | 0.476 | 0.528 | 0.470 | 0.473 | 0.498 | 7.39 |
| 68) | methylcycloh | 0.790 | 0.832 | | 0.741 | 0.785 | 0.831 | 0.778 | 0.727 | 0.783 | 5.12 |
| 69) | dibromometha | 0.304 | 0.310 | 0.303 | 0.261 | 0.275 | 0.309 | 0.276 | 0.279 | 0.289 | 6.53 |
| 70) | bromodichlor | 0.577 | 0.608 | 0.586 | 0.541 | 0.577 | 0.583 | 0.577 | 0.556 | 0.576 | 3.52 |
| 71) | cis-1,3-dich | 0.783 | 0.803 | 0.784 | 0.719 | 0.760 | 0.737 | 0.753 | 0.753 | 0.762 | 3.59 |
| 72) | toluene-d8 ( | 1.577 | 1.347 | | 1.294 | 1.453 | 1.686 | 1.446 | 1.352 | 1.451 | 9.60 |
| 73) | 4-methyl-2-p | 0.226 | 0.234 | | 0.205 | 0.211 | 0.194 | 0.218 | 0.214 | 0.214 | 6.10 |
| 74) | toluene | 1.183 | 1.197 | 0.969 | 1.033 | 1.093 | 1.045 | 1.072 | 1.083 | 1.084 | 6.98 |
| 75) | 3-methyl-1-b | 0.014 | 0.013 | | 0.015 | 0.015 | 0.013 | 0.017 | 0.014 | 0.014 | 9.09 |
| 76) | trans-1,3-di | 0.752 | 0.801 | 0.657 | 0.723 | 0.762 | 0.696 | 0.753 | 0.732 | 0.735 | 5.97 |
| 77) | ethyl methac | 0.520 | 0.505 | | 0.570 | 0.598 | | 0.608 | 0.553 | 0.559 | 7.38 |
| 78) | 1,1,2-trichl | 0.385 | 0.423 | 0.381 | 0.335 | 0.346 | 0.377 | 0.346 | 0.350 | 0.368 | 7.93 |
| 79) | 2-hexanone | 0.170 | 0.162 | | 0.187 | 0.197 | | 0.212 | 0.179 | 0.184 | 10.00 |
| 80) | I chlorobenzene-d5 | ----------ISTD---------- | | | | | | | | | |
| 81) | tetrachloroe | 0.523 | 0.533 | 0.481 | 0.437 | 0.467 | 0.514 | 0.457 | 0.468 | 0.485 | 7.11 |
| 82) | 1,3-dichloro | 0.825 | 0.852 | 0.761 | 0.703 | 0.729 | 0.780 | 0.717 | 0.738 | 0.763 | 6.94 |
| 83) | butyl acetat | 0.273 | 0.238 | | 0.310 | 0.322 | | 0.337 | 0.292 | 0.295 | 12.25 |
| 84) | 3,3-dimethyl | 0.041 | 0.044 | | 0.048 | 0.051 | 0.047 | 0.059 | 0.045 | 0.048 | 11.88 |
| 85) | dibromochlor | 0.458 | 0.447 | 0.403 | 0.427 | 0.462 | 0.434 | 0.464 | 0.439 | 0.442 | 4.66 |
| 86) | 1,2-dibromoe | 0.467 | 0.477 | 0.401 | 0.403 | 0.424 | 0.417 | 0.427 | 0.416 | 0.429 | 6.61 |
| 87) | chlorobenzen | 1.367 | 1.442 | 1.346 | 1.140 | 1.206 | 1.396 | 1.204 | 1.213 | 1.289 | 8.60 |
| 88) | 1,1,1,2-tetr | 0.466 | 0.499 | 0.427 | 0.418 | 0.455 | 0.465 | 0.465 | 0.440 | 0.454 | 5.69 |
| 89) | ethylbenzene | 2.305 | 2.339 | 1.965 | 2.029 | 2.181 | 2.106 | 2.136 | 2.141 | 2.150 | 5.88 |
| 90) | m,p-xylene | 0.883 | 0.896 | 0.708 | 0.776 | 0.838 | 0.781 | 0.845 | 0.817 | 0.818 | 7.55 |
| 91) | o-xylene | 0.864 | 0.858 | 0.616 | 0.770 | 0.835 | 0.725 | 0.856 | 0.808 | 0.792 | 10.86 |
| 92) | styrene | 1.325 | 1.271 | | 1.346 | 1.479 | 1.051 | 1.512 | 1.368 | 1.336 | 11.36 |
| 93) | bromoform | 0.327 | 0.348 | | 0.329 | 0.362 | | 0.379 | 0.329 | 0.346 | 6.26 |
| 94) | I 1,4-dichlorobenzene-d | ----------ISTD---------- | | | | | | | | | |
| 95) | isopropylben | 3.606 | 3.565 | 2.661 | 3.337 | 3.583 | 2.911 | 3.630 | 3.448 | 3.343 | 10.86 |
| 96) | 4-bromofluor | 1.099 | 0.901 | | 0.888 | 1.025 | 1.031 | 1.090 | 0.917 | 0.993 | 9.04 |
| 97) | bromobenzene | 1.019 | 1.067 | 0.901 | 0.888 | 0.946 | 1.009 | 0.989 | 0.922 | 0.968 | 6.53 |
| 98) | cyclohexanon | 0.031 | 0.033 | | 0.033 | 0.037 | | 0.039 | 0.033 | 0.034 | 9.33 |
| 99) | 1,1,2,2-tetr | 1.177 | 1.279 | 1.052 | 0.972 | 1.008 | 1.161 | 1.053 | 1.000 | 1.088 | 9.81 |
| 100) | trans-1,4-di | 0.337 | 0.369 | | 0.323 | 0.342 | 0.329 | 0.365 | 0.326 | 0.341 | 5.47 |
| 101) | 1,2,3-trichl | 0.321 | 0.357 | 0.318 | 0.264 | 0.272 | 0.316 | 0.285 | 0.273 | 0.301 | 10.79 |
| 102) | n-propylbenz | 4.536 | 4.597 | 3.442 | 4.084 | 4.379 | 3.791 | 4.359 | 4.235 | 4.178 | 9.41 |

# Initial Calibration Summary

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6218-ICC6218
**Lab FileID:** D154837.D

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 103) | p-ethyltolue | 3.696 | 3.626 | 3.062 | 3.284 | 3.901 | 2.711 | 3.579 | 3.617 | 3.435 | 11.34 |
| 104) | 2-chlorotolu | 0.977 | 1.014 | 0.812 | 0.827 | 0.903 | 0.873 | 0.942 | 0.854 | 0.900 | 8.05 |
| 105) | 4-chlorotolu | 2.947 | 3.164 | 2.619 | 2.542 | 2.725 | 2.792 | 2.754 | 2.675 | 2.777 | 7.11 |
| 106) | 1,3,5-trimet | 3.387 | 3.475 | 2.814 | 2.956 | 3.127 | 3.025 | 3.166 | 3.037 | 3.123 | 7.01 |
| 107) | tert-butylbe | 2.671 | 2.703 | 2.018 | 2.432 | 2.634 | 2.177 | 2.690 | 2.512 | 2.480 | 10.37 |
| 108) | pentachloroe | 0.618 | 0.620 | 0.503 | 0.575 | 0.633 | 0.528 | 0.672 | 0.576 | 0.591 | 9.47 |
| 109) | 1,2,4-trimet | 3.406 | 3.470 | 2.452 | 3.048 | 3.307 | 2.847 | 3.373 | 3.163 | 3.133 | 10.98 |
| 110) | sec-butylben | 4.118 | 4.238 | 3.241 | 3.700 | 3.994 | 3.546 | 3.911 | 3.848 | 3.824 | 8.43 |
| 111) | 1,3-dichloro | 1.962 | 2.137 | 2.017 | 1.684 | 1.788 | 2.064 | 1.813 | 1.754 | 1.902 | 8.63 |
| 112) | p-isopropylt | 3.333 | 3.353 | 2.335 | 3.076 | 3.330 | 2.805 | 3.329 | 3.179 | 3.092 | 11.61 |
| 113) | 1,4-dichloro | 2.139 | 2.397 | 2.240 | 1.756 | 1.848 | 2.277 | 1.866 | 1.856 | 2.047 | 11.89 |
| 114) | p-diethylben | 2.013 | 1.880 | | 1.861 | 2.191 | 1.417 | 1.991 | 1.996 | 1.907 | 12.67 |
| 115) | 1,2-dichloro | 1.924 | 2.097 | 1.831 | 1.609 | 1.695 | 1.953 | 1.714 | 1.710 | 1.817 | 9.03 |
| 116) | n-butylbenze | 1.959 | 1.965 | 1.413 | 1.711 | 1.847 | 1.647 | 1.830 | 1.788 | 1.770 | 10.23 |
| 117) | 1,2,4,5-tetr | 2.905 | 2.596 | | 2.804 | 3.298 | | 3.037 | 2.975 | 2.936 | 8.01 |
| 118) | 1,2-dibromo- | 0.183 | 0.201 | 0.128 | 0.175 | 0.184 | 0.186 | 0.195 | 0.173 | 0.178 | 12.54 |
| 119) | 1,2,4-trichl | 1.184 | 1.324 | 1.228 | 1.128 | 1.227 | 1.165 | 1.285 | 1.143 | 1.210 | 5.68 |
| 120) | hexachlorobu | 0.681 | 0.768 | 0.743 | 0.606 | 0.666 | 0.737 | 0.681 | 0.629 | 0.689 | 8.26 |
| 121) | naphthalene | 2.513 | 2.665 | 2.457 | 2.426 | 2.559 | 2.494 | 2.706 | 2.396 | 2.527 | 4.38 |
| 122) | 1,2,3-trichl | 0.993 | 1.118 | 1.047 | 0.915 | 0.986 | 1.013 | 1.041 | 0.920 | 1.004 | 6.70 |
| 123) | hexachloroet | 0.546 | 0.599 | 0.526 | 0.531 | 0.595 | 0.528 | 0.620 | 0.540 | 0.561 | 6.73 |
| 124) | Cyclohexane | 1.206 | 1.243 | 1.111 | 1.068 | 1.157 | 1.118 | 1.137 | 1.091 | 1.141 | 5.15 |

(#) = Out of Range ### Number of calibration levels exceeded format ###

MD6218.M Fri May 15 08:56:38 2009 MSD

6.7.1

6

# Initial Calibration Verification

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6220-ICV6218
**Lab FileID:** D154876.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\D154876.D  Vial: 6
Acq On : 13 May 2009 11:49 am  Operator: thienn
Sample : icv6218-50  Inst : MSD
Misc : MS79702,VD6220,5,,100,5,1  Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Wed May 13 09:50:38 2009
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Tert Butyl Alcohol-d9 | 1.000 | 1.000 | 0.0 | 110 | 0.00 | 7.57 |
| 2 | M | 1,4-dioxane | 0.127 | 0.114 | 10.2 | 109 | 0.00 | 11.42 |
| 3 | M | tertiary butyl alcohol | 1.346 | 1.233 | 8.4 | 113 | 0.00 | 7.67 |
| 4 | I | pentafluorobenzene | 1.000 | 1.000 | 0.0 | 99 | 0.00 | 9.80 |
| 5 | M | 1,2-dichloro-1,2,2-triflu | | ----------NA---------- | | | | |
| 6 | M | chlorodifluoromethane | 0.733 | 0.695 | 5.2 | 101 | 0.00 | 4.24 |
| 7 | M | dichlorodifluoromethane | 1.041 | 1.002 | 3.7 | 96 | 0.00 | 4.25 |
| 8 | M | chloromethane | 1.100 | 1.052 | 4.4 | 98 | 0.00 | 4.56 |
| 9 | M | vinyl chloride | 1.069 | 1.047 | 2.1 | 99 | 0.00 | 4.82 |
| 10 | M | bromomethane | 0.643 | 0.650 | -1.1 | 99 | 0.00 | 5.47 |
| 11 | M | chloroethane | 0.611 | 0.602 | 1.5 | 99 | 0.00 | 5.66 |
| 12 | M | trichlorofluoromethane | 1.216 | 1.229 | -1.1 | 101 | 0.00 | 6.16 |
| 13 | M | ethyl ether | 0.472 | 0.452 | 4.2 | 108 | 0.00 | 6.55 |
| 14 | M | acrolein | 0.178 | 0.160 | 10.1 | 116 | 0.00 | 6.71 |
| 15 | M | chlorotrifluoroethene | | ----------NA---------- | | | | |
| 16 | M | 1,1-dichloroethene | 0.636 | 0.602 | 5.3 | 104 | 0.00 | 6.96 |
| 17 | M | acetone | 0.077 | 0.090 | -16.9 | 123 | 0.01 | 6.94 |
| 18 | M | allyl chloride | 1.408 | 1.378 | 2.1 | 114 | 0.00 | 7.45 |
| 19 | M | acetonitrile | 0.061 | 0.062 | -1.6 | 107 | 0.01 | 7.31 |
| 20 | M | acetaldehyde | | ----------NA---------- | | | | |
| 21 | M | iodomethane | 1.119 | 1.092 | 2.4 | 108 | 0.00 | 7.21 |
| 22 | M | iso-butyl alcohol | 0.100 | 0.112 | -12.0 | 118 | 0.00 | 10.01 |
| 23 | M | carbon disulfide | 2.336 | 2.073 | 11.3 | 98 | 0.00 | 7.37 |
| 24 | M | methylene chloride | 0.800 | 0.784 | 2.0 | 106 | 0.00 | 7.61 |
| 25 | M | methyl acetate | 0.606 | 0.624 | -3.0 | 106 | 0.00 | 7.42 |
| 26 | M | methyl tert butyl ether | 2.326 | 2.306 | 0.9 | 109 | 0.00 | 8.01 |
| 27 | M | trans-1,2-dichloroethene | 0.686 | 0.649 | 5.4 | 106 | 0.00 | 8.02 |
| 28 | M | di-isopropyl ether | 2.434 | 2.379 | 2.3 | 106 | 0.00 | 8.62 |
| 29 | M | ethyl tert-butyl ether | 2.227 | 2.294 | -3.0 | 105 | 0.00 | 9.08 |
| 30 | M | 2-butanone | 0.090 | 0.092 | -2.2 | 108 | 0.00 | 9.21 |
| 31 | M | 1,1-dichloroethane | 1.297 | 1.273 | 1.9 | 110 | 0.00 | 8.55 |
| 32 | M | chloroprene | 1.053 | 1.060 | -0.7 | 105 | 0.00 | 8.69 |
| 33 | M | acrylonitrile | 0.330 | 0.339 | -2.7 | 115 | 0.00 | 7.87 |
| 34 | M | vinyl acetate | 0.125 | 0.135 | -8.0 | 114 | 0.00 | 8.55 |
| 35 | M | ethyl acetate | 0.097 | 0.095 | 2.1 | 109 | 0.00 | 9.27 |
| 36 | M | 2,2-dichloropropane | 1.077 | 1.126 | -4.5 | 115 | 0.00 | 9.31 |
| 37 | M | cis-1,2-dichloroethene | 0.719 | 0.731 | -1.7 | 112 | 0.00 | 9.27 |
| 38 | M | propionitrile | 0.130 | 0.133 | -2.3 | 115 | 0.00 | 9.24 |
| 39 | M | bromochloromethane | 0.347 | 0.348 | -0.3 | 110 | 0.00 | 9.56 |
| 40 | M | tetrahydrofuran | 0.289 | 0.307 | -6.2 | 111 | 0.00 | 9.64 |
| 41 | M | chloroform | 1.203 | 1.173 | 2.5 | 110 | 0.00 | 9.62 |

# Initial Calibration Verification

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6220-ICV6218
**Lab FileID:** D154876.D

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 42 | S | dibromofluoromethane (s) | 0.569 | 0.567 | 0.4 | 115 | 0.00 | 9.81 |
| 43 | S | 1,2-dichloroethane-d4 (s) | 0.774 | 0.764 | 1.3 | 113 | 0.00 | 10.23 |
| 44 | M | freon 113 | 0.546 | 0.518 | 5.1 | 103 | 0.00 | 6.97 |
| 45 | M | methacrylonitrile | 0.494 | 0.512 | -3.6 | 109 | 0.00 | 9.47 |
| 46 | m | t-butyl formate | 0.621 | 0.668 | -7.6 | 111 | 0.00 | 9.70 |
| 47 | M | 1,1,1-trichloroethane | 1.049 | 1.048 | 0.1 | 108 | 0.00 | 9.94 |
| 48 | M | tert-amyl methyl ether | 2.100 | 2.371 | -12.9 | 118 | 0.00 | 10.43 |
| 49 | I | 1,4-difluorobenzene | 1.000 | 1.000 | 0.0 | 98 | 0.00 | 10.71 |
| 50 | M | Di-isobutylene | | ----------NA---------- | | | | |
| 51 | | tert amyl alcohol | 0.131 | 0.137 | -4.6 | 113 | 0.00 | 10.19 |
| 52 | M | 2,2,4-trimethylpentane | | ----------NA---------- | | | | |
| 53 | M | epichlorohydrin | 0.058 | 0.062 | -6.9 | 107 | 0.00 | 11.93 |
| 54 | M | n-butyl alcohol | 0.015 | 0.017 | -13.3 | 108 | 0.00 | 10.78 |
| 55 | M | carbon tetrachloride | 0.592 | 0.617 | -4.2 | 108 | 0.00 | 10.16 |
| 56 | M | 1,1-dichloropropene | 0.606 | 0.623 | -2.8 | 109 | 0.00 | 10.11 |
| 57 | M | hexane | 0.600 | 0.637 | -6.2 | 108 | 0.00 | 8.40 |
| 58 | M | benzene | 1.795 | 1.781 | 0.8 | 109 | 0.00 | 10.36 |
| 59 | M | heptane | 0.327 | 0.350 | -7.0 | 111 | 0.00 | 10.61 |
| 60 | M | isopropyl acetate | 0.881 | 0.956 | -8.5 | 108 | 0.00 | 10.27 |
| 61 | M | 1,2-dichloroethane | 0.683 | 0.670 | 1.9 | 108 | 0.00 | 10.32 |
| 62 | M | trichloroethene | 0.445 | 0.438 | 1.6 | 110 | 0.00 | 11.08 |
| 63 | M | 2-nitropropane | 0.131 | 0.155 | -18.3 | 121 | 0.00 | 11.76 |
| 64 | M | 2-chloroethyl vinyl ether | 0.340 | 0.347 | -2.1 | 103 | 0.00 | 11.84 |
| 65 | M | methyl methacrylate | 0.546 | 0.567 | -3.8 | 103 | 0.00 | 11.34 |
| 66 | M | tert-amyl ethyl ether | 0.615 | 0.679 | -10.4 | 110 | 0.00 | 11.29 |
| 67 | M | 1,2-dichloropropane | 0.498 | 0.499 | -0.2 | 110 | 0.00 | 11.31 |
| 68 | M | methylcyclohexane | 0.783 | 0.820 | -4.7 | 108 | 0.00 | 11.37 |
| 69 | M | dibromomethane | 0.289 | 0.293 | -1.4 | 110 | 0.00 | 11.45 |
| 70 | M | bromodichloromethane | 0.576 | 0.619 | -7.5 | 112 | 0.00 | 11.58 |
| 71 | M | cis-1,3-dichloropropene | 0.762 | 0.815 | -7.0 | 111 | 0.00 | 12.08 |
| 72 | S | toluene-d8 (s) | 1.451 | 1.510 | -4.1 | 114 | 0.00 | 12.43 |
| 73 | M | 4-methyl-2-pentanone | 0.214 | 0.236 | -10.3 | 112 | 0.00 | 12.18 |
| 74 | M | toluene | 1.084 | 1.130 | -4.2 | 107 | 0.00 | 12.51 |
| 75 | M | 3-methyl-1-butanol | 0.014 | 0.017 | -21.4# | 111 | 0.00 | 12.18 |
| 76 | M | trans-1,3-dichloropropene | 0.735 | 0.802 | -9.1 | 109 | 0.00 | 12.65 |
| 77 | M | ethyl methacrylate | 0.559 | 0.726 | -29.9# | 125 | 0.00 | 12.70 |
| 78 | M | 1,1,2-trichloroethane | 0.368 | 0.373 | -1.4 | 109 | 0.00 | 12.88 |
| 79 | M | 2-hexanone | 0.184 | 0.224 | -21.7# | 118 | 0.00 | 13.09 |
| 80 | I | chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 95 | 0.00 | 14.05 |
| 81 | M | tetrachloroethene | 0.485 | 0.492 | -1.4 | 107 | 0.00 | 13.16 |
| 82 | M | 1,3-dichloropropane | 0.763 | 0.792 | -3.8 | 107 | 0.00 | 13.08 |
| 83 | M | butyl acetate | 0.295 | 0.343 | -16.3 | 105 | 0.00 | 13.20 |
| 84 | m | 3,3-dimethyl-1-butanol | 0.048 | 0.058 | -20.8# | 114 | 0.00 | 13.27 |
| 85 | M | dibromochloromethane | 0.442 | 0.467 | -5.7 | 104 | 0.00 | 13.37 |
| 86 | M | 1,2-dibromoethane | 0.429 | 0.451 | -5.1 | 106 | 0.00 | 13.54 |
| 87 | M | chlorobenzene | 1.289 | 1.297 | -0.6 | 108 | 0.00 | 14.09 |
| 88 | M | 1,1,1,2-tetrachloroethane | 0.454 | 0.481 | -5.9 | 109 | 0.00 | 14.14 |
| 89 | M | ethylbenzene | 2.150 | 2.257 | -5.0 | 106 | 0.00 | 14.17 |
| 90 | M | m,p-xylene | 0.818 | 0.876 | -7.1 | 107 | 0.00 | 14.29 |
| 91 | M | o-xylene | 0.792 | 0.886 | -11.9 | 109 | 0.00 | 14.75 |
| 92 | M | styrene | 1.336 | 1.498 | -12.1 | 106 | 0.00 | 14.75 |
| 93 | M | bromoform | 0.346 | 0.379 | -9.5 | 109 | 0.00 | 14.99 |
| 94 | I | 1,4-dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 97 | 0.00 | 16.63 |
| 95 | M | isopropylbenzene | 3.343 | 3.138 | 6.1 | 91 | 0.00 | 15.14 |
| 96 | S | 4-bromofluorobenzene (s) | 0.993 | 1.006 | -1.3 | 110 | 0.00 | 15.33 |
| 97 | M | bromobenzene | 0.968 | 0.962 | 0.6 | 105 | 0.00 | 15.55 |
| 98 | M | cyclohexanone | 0.034 | 0.053 | -55.9# | 158 | 0.00 | 15.24 |

# Initial Calibration Verification

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6220-ICV6218
**Lab FileID:** D154876.D

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 99 | M | 1,1,2,2-tetrachloroethane | 1.088 | 1.081 | 0.6 | 108 | 0.00 | 15.39 |
| 100 | M | trans-1,4-dichloro-2-bute | 0.341 | 0.401 | -17.6 | 121 | 0.00 | 15.45 |
| 101 | M | 1,2,3-trichloropropane | 0.301 | 0.324 | -7.6 | 120 | 0.00 | 15.48 |
| 102 | M | n-propylbenzene | 4.178 | 4.375 | -4.7 | 104 | 0.00 | 15.59 |
| 103 | M | p-ethyltoluene | 3.435 | 3.495 | -1.7 | 103 | 0.00 | 15.71 |
| 104 | M | 2-chlorotoluene | 0.900 | 0.919 | -2.1 | 108 | 0.00 | 15.74 |
| 105 | M | 4-chlorotoluene | 2.777 | 2.814 | -1.3 | 108 | 0.00 | 15.84 |
| 106 | M | 1,3,5-trimethylbenzene | 3.123 | 3.196 | -2.3 | 105 | 0.00 | 15.76 |
| 107 | M | tert-butylbenzene | 2.480 | 2.744 | -10.6 | 110 | 0.00 | 16.16 |
| 108 | M | pentachloroethane | 0.591 | 0.658 | -11.3 | 111 | 0.00 | 16.21 |
| 109 | M | 1,2,4-trimethylbenzene | 3.133 | 3.369 | -7.5 | 107 | 0.00 | 16.20 |
| 110 | M | sec-butylbenzene | 3.824 | 4.144 | -8.4 | 109 | 0.00 | 16.40 |
| 111 | M | 1,3-dichlorobenzene | 1.902 | 1.923 | -1.1 | 111 | 0.00 | 16.58 |
| 112 | M | p-isopropyltoluene | 3.092 | 3.544 | -14.6 | 112 | 0.00 | 16.53 |
| 113 | M | 1,4-dichlorobenzene | 2.047 | 2.000 | 2.3 | 111 | 0.00 | 16.67 |
| 114 | M | p-diethylbenzene | 1.907 | 2.041 | -7.0 | 107 | 0.00 | 16.95 |
| 115 | M | 1,2-dichlorobenzene | 1.817 | 1.850 | -1.8 | 112 | 0.00 | 17.09 |
| 116 | M | n-butylbenzene | 1.770 | 1.945 | -9.9 | 111 | 0.00 | 16.99 |
| 117 | M | 1,2,4,5-tetramethylbenzen | 2.936 | 3.099 | -5.6 | 108 | 0.00 | 17.82 |
| 118 | M | 1,2-dibromo-3-chloropropa | 0.178 | 0.216 | -21.3# | 120 | 0.00 | 17.90 |
| 119 | M | 1,2,4-trichlorobenzene | 1.210 | 1.316 | -8.8 | 113 | 0.00 | 18.87 |
| 120 | M | hexachlorobutadiene | 0.689 | 0.676 | 1.9 | 109 | 0.00 | 19.05 |
| 121 | M | naphthalene | 2.527 | 2.976 | -17.8 | 119 | 0.00 | 19.18 |
| 122 | M | 1,2,3-trichlorobenzene | 1.004 | 1.150 | -14.5 | 122 | 0.00 | 19.46 |
| 123 | M | hexachloroethane | 0.561 | 0.637 | -13.5 | 117 | 0.00 | 17.42 |
| 124 | M | Cyclohexane | 1.141 | 1.213 | -6.3 | 110 | 0.00 | 10.06 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
D154837.D MD6218.M Fri May 15 09:12:11 2009 MSD

6.7.2

6

# Continuing Calibration Summary

**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** VD6254-CC6218
**Lab FileID:** D155659.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\D155659.D  Vial: 2
Acq On : 3 Jun 2009 9:09 am  Operator: thienn
Sample : cc6218-20  Inst : MSD
Misc : MS80849,VD6254,5,,100,5,1  Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue May 26 17:16:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Tert Butyl Alcohol-d9 | 1.000 | 1.000 | 0.0 | 77 | -0.01 | 7.55 |
| 2 | M | 1,4-dioxane | 0.127 | 0.085 | 33.1# | 51 | 0.00 | 11.42 |
| 3 | M | tertiary butyl alcohol | 1.346 | 1.315 | 2.3 | 82 | 0.00 | 7.67 |
| 4 | I | pentafluorobenzene | 1.000 | 1.000 | 0.0 | 86 | 0.00 | 9.80 |
| 5 | M | 1,2-dichloro-1,2,2-triflu | | ----------NA---------- | | | | |
| 6 | M | chlorodifluoromethane | 0.733 | 0.776 | -5.9 | 96 | 0.00 | 4.24 |
| 7 | M | dichlorodifluoromethane | 1.041 | 1.059 | -1.7 | 91 | 0.00 | 4.24 |
| 8 | M | chloromethane | 1.100 | 1.367 | -24.3# | 108 | 0.00 | 4.56 |
| 9 | M | vinyl chloride | 1.069 | 1.239 | -15.9 | 102 | 0.00 | 4.82 |
| 10 | M | bromomethane | 0.643 | 0.728 | -13.2 | 93 | 0.02 | 5.48 |
| 11 | M | chloroethane | 0.611 | 0.695 | -13.7 | 94 | 0.01 | 5.67 |
| 12 | M | trichlorofluoromethane | 1.216 | 1.316 | -8.2 | 96 | 0.00 | 6.17 |
| 13 | M | ethyl ether | 0.472 | 0.403 | 14.6 | 79 | 0.00 | 6.55 |
| 14 | M | acrolein | 0.178 | 0.240 | -34.8# | 123 | 0.00 | 6.72 |
| 15 | M | chlorotrifluoroethene | | ----------NA---------- | | | | |
| 16 | M | 1,1-dichloroethene | 0.636 | 0.553 | 13.1 | 79 | 0.00 | 6.96 |
| 17 | M | acetone | 0.077 | 0.066 | 14.3 | 79 | 0.00 | 6.94 |
| 18 | M | allyl chloride | 1.408 | 1.238 | 12.1 | 85 | 0.00 | 7.45 |
| 19 | M | acetonitrile | 0.061 | 0.052 | 14.8 | 75 | 0.02 | 7.32 |
| 20 | M | acetaldehyde | | ----------NA---------- | | | | |
| 21 | M | iodomethane | 1.119 | 0.951 | 15.0 | 77 | 0.00 | 7.21 |
| 22 | M | iso-butyl alcohol | 0.100 | 0.088 | 12.0 | 75 | 0.00 | 10.01 |
| 23 | M | carbon disulfide | 2.336 | 2.069 | 11.4 | 80 | 0.00 | 7.37 |
| 24 | M | methylene chloride | 0.800 | 0.673 | 15.9 | 72 | 0.00 | 7.61 |
| 25 | M | methyl acetate | 0.606 | 0.600 | 1.0 | 88 | 0.00 | 7.43 |
| 26 | M | methyl tert butyl ether | 2.326 | 1.960 | 15.7 | 77 | 0.00 | 8.01 |
| 27 | M | trans-1,2-dichloroethene | 0.686 | 0.598 | 12.8 | 81 | 0.00 | 8.03 |
| 28 | M | di-isopropyl ether | 2.434 | 2.238 | 8.1 | 85 | 0.00 | 8.61 |
| 29 | M | ethyl tert-butyl ether | 2.227 | 2.050 | 7.9 | 82 | 0.00 | 9.07 |
| 30 | M | 2-butanone | 0.090 | 0.074 | 17.8 | 72 | 0.01 | 9.22 |
| 31 | M | 1,1-dichloroethane | 1.297 | 1.131 | 12.8 | 80 | 0.00 | 8.55 |
| 32 | M | chloroprene | 1.053 | 1.027 | 2.5 | 89 | 0.00 | 8.69 |
| 33 | M | acrylonitrile | 0.330 | 0.275 | 16.7 | 77 | 0.00 | 7.87 |
| 34 | M | vinyl acetate | 0.125 | 0.119 | 4.8 | 83 | 0.00 | 8.55 |
| 35 | M | ethyl acetate | 0.097 | 0.078 | 19.6 | 75 | 0.00 | 9.28 |
| 36 | M | 2,2-dichloropropane | 1.077 | 0.967 | 10.2 | 81 | 0.00 | 9.31 |
| 37 | M | cis-1,2-dichloroethene | 0.719 | 0.612 | 14.9 | 78 | 0.00 | 9.27 |
| 38 | M | propionitrile | 0.130 | 0.104 | 20.0# | 75 | 0.00 | 9.25 |
| 39 | M | bromochloromethane | 0.347 | 0.293 | 15.6 | 77 | 0.00 | 9.56 |
| 40 | M | tetrahydrofuran | 0.289 | 0.245 | 15.2 | 75 | 0.00 | 9.64 |
| 41 | M | chloroform | 1.203 | 1.034 | 14.0 | 80 | 0.00 | 9.62 |

# Continuing Calibration Summary

**Job Number:** JA19940 **Sample:** VD6254-CC6218
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** D155659.D
**Project:** Hess-Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 42 | S | dibromofluoromethane (s) | 0.569 | 0.546 | 4.0 | 90 | 0.00 | 9.81 |
| 43 | S | 1,2-dichloroethane-d4 (s) | 0.774 | 0.752 | 2.8 | 91 | 0.00 | 10.23 |
| 44 | M | freon 113 | 0.546 | 0.480 | 12.1 | 84 | 0.00 | 6.97 |
| 45 | M | methacrylonitrile | 0.494 | 0.429 | 13.2 | 77 | 0.00 | 9.47 |
| 46 | m | t-butyl formate | 0.621 | 0.544 | 12.4 | 81 | 0.00 | 9.70 |
| 47 | M | 1,1,1-trichloroethane | 1.049 | 0.944 | 10.0 | 82 | 0.00 | 9.93 |
| 48 | M | tert-amyl methyl ether | 2.100 | 1.817 | 13.5 | 79 | 0.00 | 10.44 |
| 49 | I | 1,4-difluorobenzene | 1.000 | 1.000 | 0.0 | 82 | 0.00 | 10.71 |
| 50 | M | Di-isobutylene | | ----------NA---------- | | | | |
| 51 | | tert amyl alcohol | | ----------NA---------- | | | | |
| 52 | M | 2,2,4-trimethylpentane | | ----------NA---------- | | | | |
| 53 | M | epichlorohydrin | 0.058 | 0.054 | 6.9 | 78 | 0.00 | 11.94 |
| 54 | M | n-butyl alcohol | 0.015 | 0.014 | 6.7 | 78 | 0.00 | 10.78 |
| 55 | M | carbon tetrachloride | 0.592 | 0.571 | 3.5 | 82 | 0.00 | 10.16 |
| 56 | M | 1,1-dichloropropene | 0.606 | 0.561 | 7.4 | 78 | 0.00 | 10.12 |
| 57 | M | hexane | 0.600 | 0.579 | 3.5 | 84 | 0.00 | 8.40 |
| 58 | M | benzene | 1.795 | 1.613 | 10.1 | 78 | 0.00 | 10.36 |
| 59 | M | heptane | 0.327 | 0.291 | 11.0 | 77 | 0.00 | 10.61 |
| 60 | M | isopropyl acetate | 0.881 | 0.837 | 5.0 | 80 | 0.00 | 10.27 |
| 61 | M | 1,2-dichloroethane | 0.683 | 0.635 | 7.0 | 81 | 0.00 | 10.32 |
| 62 | M | trichloroethene | 0.445 | 0.392 | 11.9 | 78 | 0.00 | 11.08 |
| 63 | M | 2-nitropropane | 0.131 | 0.124 | 5.3 | 89 | 0.00 | 11.77 |
| 64 | M | 2-chloroethyl vinyl ether | 0.340 | 0.300 | 11.8 | 73 | 0.00 | 11.85 |
| 65 | M | methyl methacrylate | 0.546 | 0.471 | 13.7 | 72 | 0.00 | 11.34 |
| 66 | M | tert-amyl ethyl ether | | ----------NA---------- | | | | |
| 67 | M | 1,2-dichloropropane | 0.498 | 0.424 | 14.9 | 73 | 0.00 | 11.31 |
| 68 | M | methylcyclohexane | 0.783 | 0.722 | 7.8 | 81 | 0.00 | 11.37 |
| 69 | M | dibromomethane | 0.289 | 0.255 | 11.8 | 75 | 0.00 | 11.45 |
| 70 | M | bromodichloromethane | 0.576 | 0.530 | 8.0 | 78 | 0.00 | 11.59 |
| 71 | M | cis-1,3-dichloropropene | 0.762 | 0.658 | 13.6 | 71 | 0.00 | 12.08 |
| 72 | S | toluene-d8 (s) | 1.451 | 1.421 | 2.1 | 86 | 0.00 | 12.43 |
| 73 | M | 4-methyl-2-pentanone | 0.214 | 0.184 | 14.0 | 70 | 0.00 | 12.19 |
| 74 | M | toluene | 1.084 | 0.961 | 11.3 | 72 | 0.00 | 12.51 |
| 75 | M | 3-methyl-1-butanol | 0.014 | 0.013 | 7.1 | 76 | 0.00 | 12.18 |
| 76 | M | trans-1,3-dichloropropene | 0.735 | 0.639 | 13.1 | 71 | 0.00 | 12.66 |
| 77 | M | ethyl methacrylate | 0.559 | 0.451 | 19.3 | 66 | 0.00 | 12.70 |
| 78 | M | 1,1,2-trichloroethane | 0.368 | 0.300 | 18.5 | 70 | 0.00 | 12.88 |
| 79 | M | 2-hexanone | 0.184 | 0.147 | 20.1# | 67 | 0.00 | 13.10 |
| 80 | I | chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 73 | 0.00 | 14.05 |
| 81 | M | tetrachloroethene | 0.485 | 0.477 | 1.6 | 75 | 0.00 | 13.16 |
| 82 | M | 1,3-dichloropropane | 0.763 | 0.701 | 8.1 | 70 | 0.00 | 13.08 |
| 83 | M | butyl acetate | 0.295 | 0.310 | -5.1 | 78 | 0.00 | 13.20 |
| 84 | m | 3,3-dimethyl-1-butanol | 0.048 | 0.048 | 0.0 | 80 | 0.00 | 13.27 |
| 85 | M | dibromochloromethane | 0.442 | 0.432 | 2.3 | 72 | 0.00 | 13.37 |
| 86 | M | 1,2-dibromoethane | 0.429 | 0.398 | 7.2 | 70 | 0.00 | 13.54 |
| 87 | M | chlorobenzene | 1.289 | 1.158 | 10.2 | 70 | 0.00 | 14.09 |
| 88 | M | 1,1,1,2-tetrachloroethane | 0.454 | 0.440 | 3.1 | 73 | 0.00 | 14.14 |
| 89 | M | ethylbenzene | 2.150 | 2.066 | 3.9 | 71 | 0.00 | 14.17 |
| 90 | M | m,p-xylene | 0.818 | 0.778 | 4.9 | 70 | 0.00 | 14.29 |
| 91 | M | o-xylene | 0.792 | 0.770 | 2.8 | 70 | 0.00 | 14.75 |
| 92 | M | styrene | 1.336 | 1.281 | 4.1 | 69 | 0.00 | 14.75 |
| 93 | M | bromoform | 0.346 | 0.314 | 9.2 | 70 | 0.00 | 14.99 |
| 94 | I | 1,4-dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 72 | 0.00 | 16.63 |
| 95 | M | isopropylbenzene | 3.343 | 3.410 | -2.0 | 71 | 0.00 | 15.14 |
| 96 | S | 4-bromofluorobenzene (s) | 0.993 | 1.043 | -5.0 | 82 | 0.00 | 15.33 |
| 97 | M | bromobenzene | 0.968 | 0.877 | 9.4 | 68 | 0.00 | 15.55 |
| 98 | M | cyclohexanone | 0.034 | 0.042 | -23.5# | 93 | 0.00 | 15.25 |

# Continuing Calibration Summary

**Job Number:** JA19940 **Sample:** VD6254-CC6218
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** D155659.D
**Project:** Hess-Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 99 | M | 1,1,2,2-tetrachloroethane | 1.088 | 0.981 | 9.8 | 71 | 0.00 | 15.39 |
| 100 | M | trans-1,4-dichloro-2-bute | 0.341 | 0.316 | 7.3 | 70 | 0.00 | 15.45 |
| 101 | M | 1,2,3-trichloropropane | 0.301 | 0.273 | 9.3 | 72 | 0.00 | 15.48 |
| 102 | M | n-propylbenzene | 4.178 | 4.203 | -0.6 | 71 | 0.00 | 15.59 |
| 103 | M | p-ethyltoluene | | ----------NA---------- | | | | |
| 104 | M | 2-chlorotoluene | 0.900 | 0.810 | 10.0 | 68 | 0.00 | 15.74 |
| 105 | M | 4-chlorotoluene | 2.777 | 2.586 | 6.9 | 70 | 0.00 | 15.84 |
| 106 | M | 1,3,5-trimethylbenzene | 3.123 | 3.021 | 3.3 | 72 | 0.00 | 15.77 |
| 107 | M | tert-butylbenzene | 2.480 | 2.519 | -1.6 | 72 | 0.00 | 16.16 |
| 108 | M | pentachloroethane | 0.591 | 0.579 | 2.0 | 72 | 0.00 | 16.21 |
| 109 | M | 1,2,4-trimethylbenzene | 3.133 | 3.130 | 0.1 | 71 | 0.00 | 16.20 |
| 110 | M | sec-butylbenzene | 3.824 | 3.856 | -0.8 | 72 | 0.00 | 16.40 |
| 111 | M | 1,3-dichlorobenzene | 1.902 | 1.772 | 6.8 | 73 | 0.00 | 16.58 |
| 112 | M | p-isopropyltoluene | 3.092 | 3.198 | -3.4 | 72 | 0.00 | 16.53 |
| 113 | M | 1,4-dichlorobenzene | 2.047 | 1.848 | 9.7 | 72 | 0.00 | 16.67 |
| 114 | M | p-diethylbenzene | | ----------NA---------- | | | | |
| 115 | M | 1,2-dichlorobenzene | 1.817 | 1.753 | 3.5 | 74 | 0.00 | 17.09 |
| 116 | M | n-butylbenzene | 1.770 | 1.721 | 2.8 | 69 | 0.00 | 16.99 |
| 117 | M | 1,2,4,5-tetramethylbenzen | | ----------NA---------- | | | | |
| 118 | M | 1,2-dibromo-3-chloropropa | 0.178 | 0.190 | -6.7 | 79 | 0.00 | 17.91 |
| 119 | M | 1,2,4-trichlorobenzene | 1.210 | 1.197 | 1.1 | 75 | 0.00 | 18.87 |
| 120 | M | hexachlorobutadiene | 0.689 | 0.663 | 3.8 | 76 | 0.00 | 19.04 |
| 121 | M | naphthalene | 2.527 | 2.534 | -0.3 | 76 | 0.00 | 19.18 |
| 122 | M | 1,2,3-trichlorobenzene | 1.004 | 0.987 | 1.7 | 77 | 0.00 | 19.46 |
| 123 | M | hexachloroethane | 0.561 | 0.568 | -1.2 | 76 | 0.00 | 17.42 |
| 124 | M | Cyclohexane | 1.141 | 1.155 | -1.2 | 76 | 0.00 | 10.06 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
D154836.D MD6218.M Wed Jun 03 13:04:51 2009 MSD

6.7.3

6

New Jersey

ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\D155668.D Vial: 11
Acq On : 3 Jun 2009 1:47 pm Operator: thienn
Sample : ja19940-1 Inst : MSD
Misc : MS81063,VD6254,6.4,,100,5,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 3 14:25 2009 Quant Results File: MD6218.RES

Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue May 26 17:16:15 2009
Response via : Initial Calibration
DataAcq Meth : MD6218

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 7.56 | 65 | 122660 | 500.00 | ug/L | 0.00 |
| 4) pentafluorobenzene | 9.80 | 168 | 239448 | 50.00 | ug/L | 0.00 |
| 49) 1,4-difluorobenzene | 10.71 | 114 | 336856 | 50.00 | ug/L | 0.00 |
| 80) chlorobenzene-d5 | 14.05 | 117 | 319847 | 50.00 | ug/L | 0.00 |
| 94) 1,4-dichlorobenzene-d4 | 16.63 | 152 | 199460 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 42) dibromofluoromethane (s) | 9.81 | 113 | 122891 | 45.07 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 90.14% | | | |
| 43) 1,2-dichloroethane-d4 (s) | 10.23 | 65 | 172657 | 46.56 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 93.12% | | | |
| 72) toluene-d8 (s) | 12.43 | 98 | 491344 | 50.27 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 100.54% | | | |
| 96) 4-bromofluorobenzene (s) | 15.33 | 95 | 212495 | 53.64 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 107.28% | | | |

Target Compounds

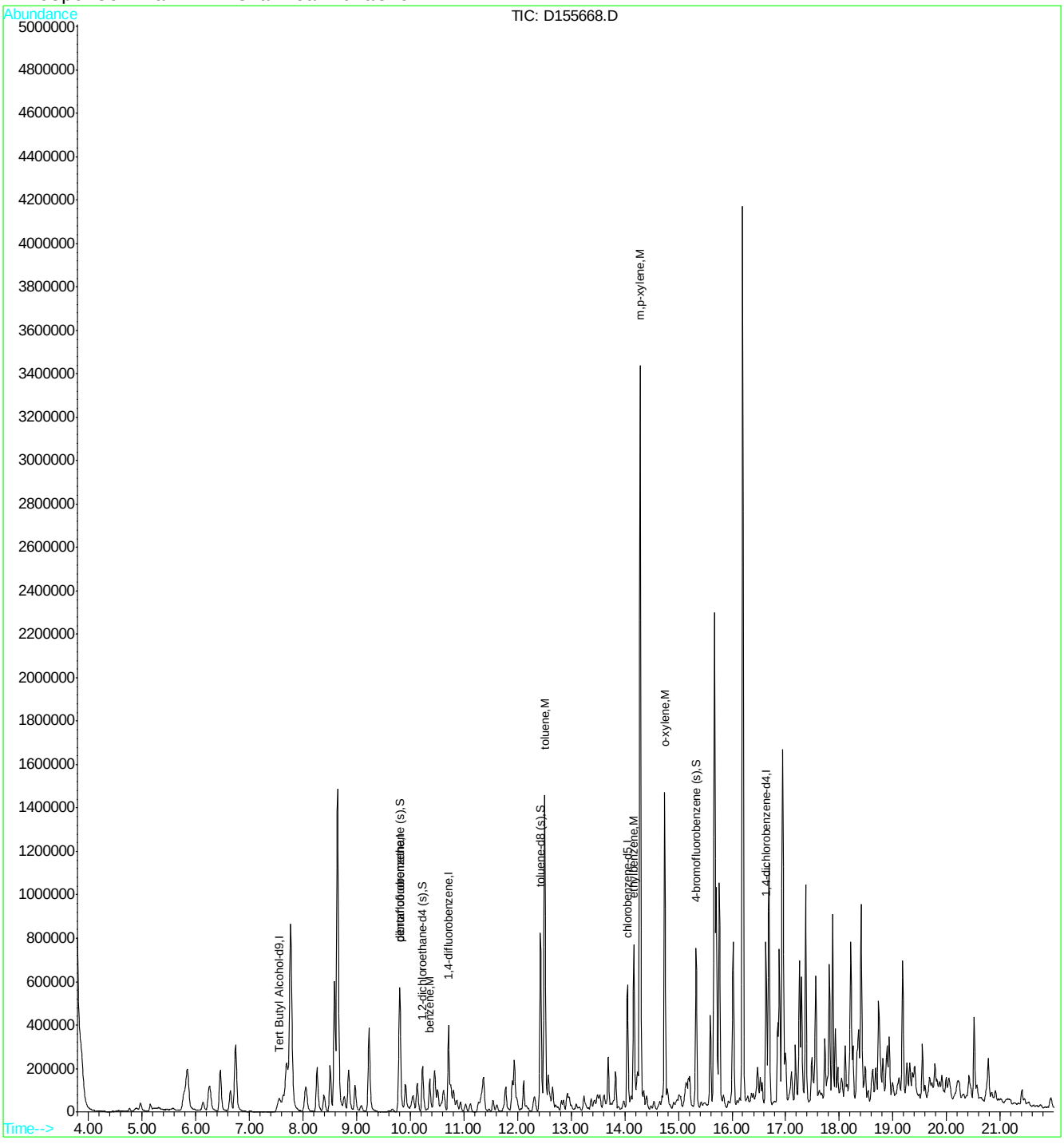
| | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 58) benzene | 10.36 | 78 | 148227 | 12.26 | ug/L | 98 |
| 74) toluene | 12.51 | 92 | 648698 | 88.81 | ug/L | 99 |
| 89) ethylbenzene | 14.17 | 91 | 555745 | 40.40 | ug/L | 100 |
| 90) m,p-xylene | 14.28 | 106 | 1009525 | 192.93 | ug/L | 98 |
| 91) o-xylene | 14.74 | 106 | 397523 | 78.51 | ug/L | 100 |

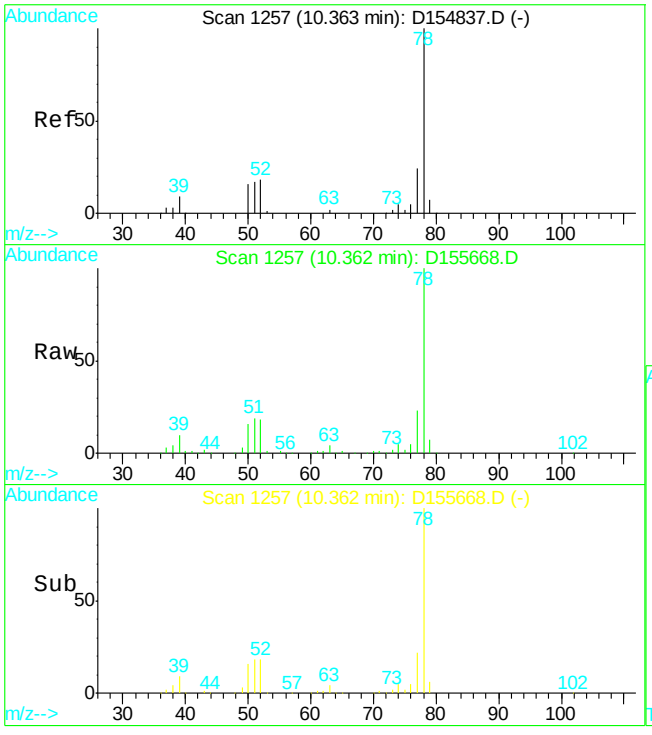
(#) = qualifier out of range (m) = manual integration
D155668.D MD6218.M Wed Jun 03 15:15:46 2009 MSD Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\D155668.D  Vial: 11
Acq On : 3 Jun 2009 1:47 pm  Operator: thienn
Sample : ja19940-1  Inst : MSD
Misc : MS81063,VD6254,6.4,,100,5,1  Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 3 14:25 2009  Quant Results File: MD6218.RES

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue May 26 17:16:15 2009
Response via : Initial Calibration

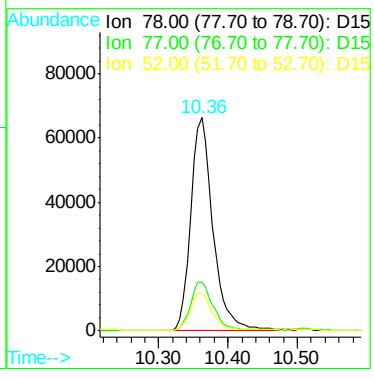


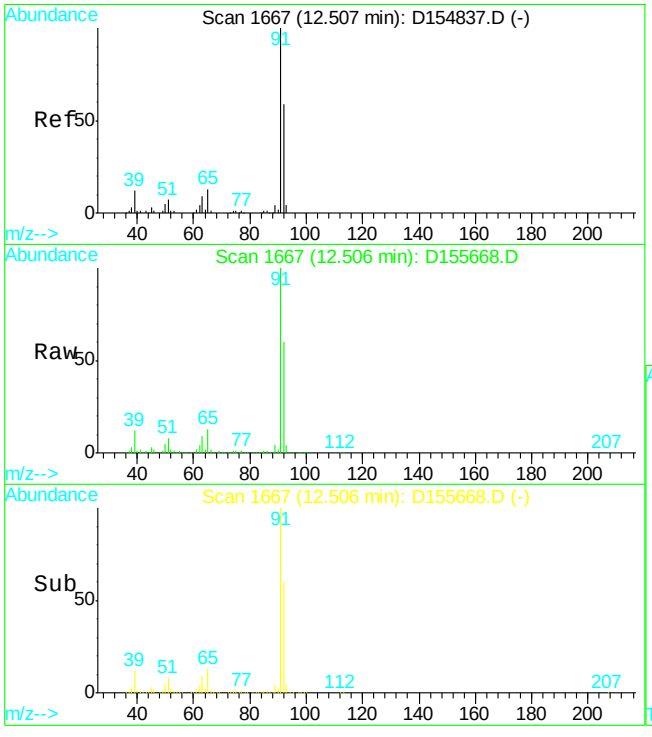



#58
benzene
Concen: 12.26 ug/L
RT: 10.36 min Scan# 1257
Delta R.T. -0.00 min
Lab File: D155668.D
Acq: 3 Jun 2009 1:47 pm

Tgt Ion: 78 Resp: 148227

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 78 | 100 | | |
| 77 | 22.7 | 0.0 | 53.7 |
| 52 | 17.7 | 0.0 | 48.1 |

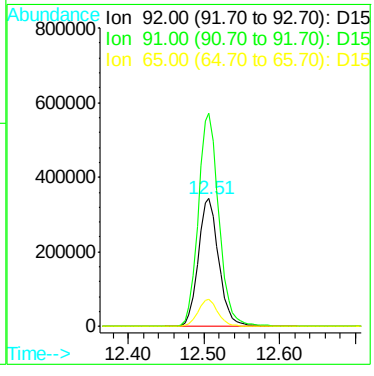


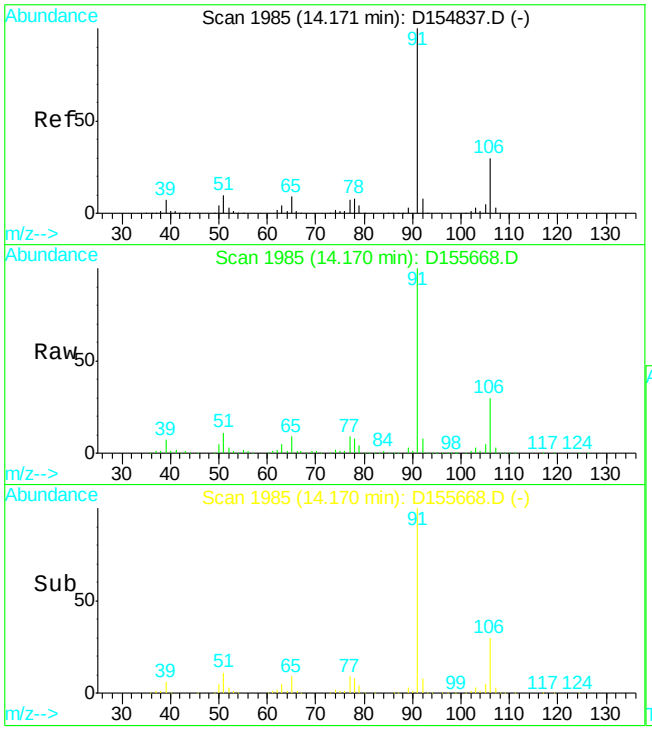




#74
toluene
Concen: 88.81 ug/L
RT: 12.51 min Scan# 1667
Delta R.T. -0.00 min
Lab File: D155668.D
Acq: 3 Jun 2009 1:47 pm

Tgt Ion: 92 Resp: 648698

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 92 | 100 | | |
| 91 | 166.8 | 138.4 | 198.4 |
| 65 | 21.0 | 0.0 | 51.2 |

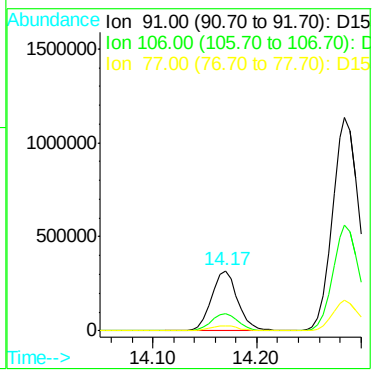


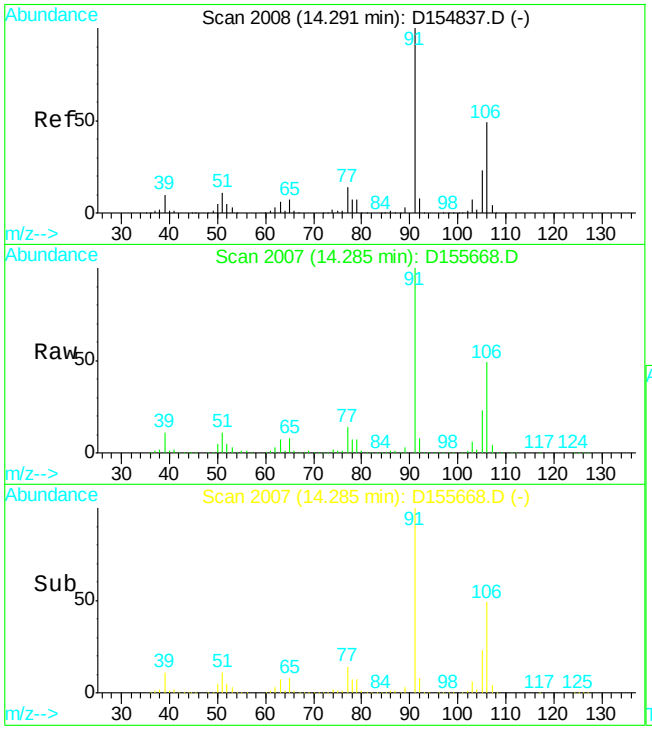



#89
ethylbenzene
Concen: 40.40 ug/L
RT: 14.17 min Scan# 1985
Delta R.T. -0.00 min
Lab File: D155668.D
Acq: 3 Jun 2009 1:47 pm

Tgt Ion: 91 Resp: 555745

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 29.6 | 0.0 | 59.7 |
| 77 | 8.9 | 0.0 | 39.1 |

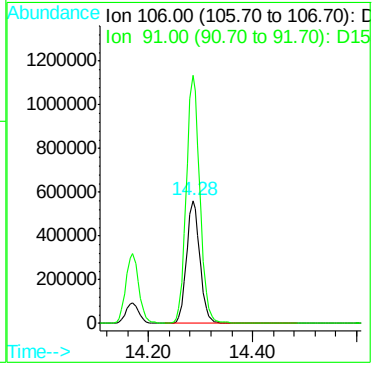


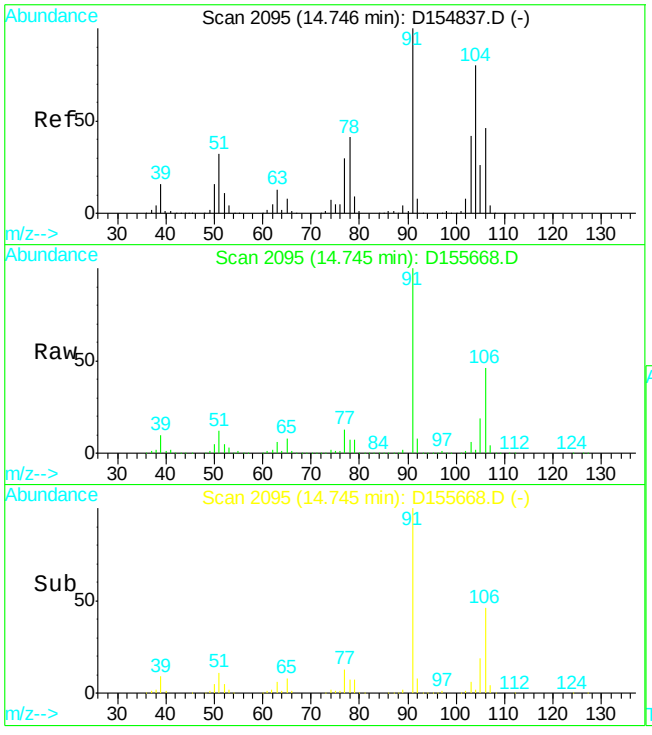




#90
m,p-xylene
Concen: 192.93 ug/L
RT: 14.28 min Scan# 2007
Delta R.T. -0.01 min
Lab File: D155668.D
Acq: 3 Jun 2009 1:47 pm

Tgt Ion:106 Resp: 1009525

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 106 | 100 | | |
| 91 | 202.1 | 143.4 | 266.4 |

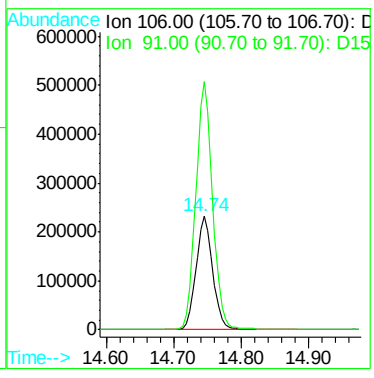





#91
o-xylene
Concen: 78.51 ug/L
RT: 14.74 min Scan# 2095
Delta R.T. -0.00 min
Lab File: D155668.D
Acq: 3 Jun 2009 1:47 pm

Tgt Ion:106 Resp: 397523

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 106 | 100 | | |
| 91 | 217.3 | 152.2 | 282.7 |




711

7

LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA\D155668.D  Vial: 11
Acq On : 3 Jun 2009 1:47 pm  Operator: thienn
Sample : ja19940-1  Inst : MSD
Misc : MS81063,VD6254,6.4,,100,5,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.02  Max Peaks: 100
Stop Thrs : 0.005  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.843 | 367 | 393 | 424 | rVV | 188834 | 1011699 | 14.84% | 1.065% |
| 2 | 6.256 | 459 | 472 | 499 | rVB7 | 116331 | 471708 | 6.92% | 0.497% |
| 3 | 6.455 | 499 | 510 | 534 | rBV | 191007 | 506709 | 7.43% | 0.533% |
| 4 | 6.643 | 534 | 546 | 555 | rVV | 93358 | 254468 | 3.73% | 0.268% |
| 5 | 6.743 | 555 | 565 | 600 | rVB | 305377 | 917385 | 13.46% | 0.966% |
| 6 | 7.553 | 698 | 720 | 728 | rBV5 | 63134 | 273042 | 4.00% | 0.287% |
| 7 | 7.637 | 728 | 736 | 738 | rVV | 75238 | 204331 | 3.00% | 0.215% |
| 8 | 7.695 | 738 | 747 | 751 | rVV2 | 223960 | 702389 | 10.30% | 0.739% |
| 9 | 7.768 | 751 | 761 | 801 | rVV | 863479 | 2927837 | 42.95% | 3.082% |
| 10 | 8.050 | 801 | 815 | 843 | rVB2 | 112431 | 391733 | 5.75% | 0.412% |
| 11 | 8.260 | 843 | 855 | 872 | rBV2 | 202853 | 547172 | 8.03% | 0.576% |
| 12 | 8.505 | 893 | 902 | 910 | rBV | 211454 | 476641 | 6.99% | 0.502% |
| 13 | 8.584 | 910 | 917 | 922 | rVV | 593905 | 1292779 | 18.96% | 1.361% |
| 14 | 8.641 | 922 | 928 | 945 | rVV | 1483427 | 3555622 | 52.15% | 3.743% |
| 15 | 8.845 | 960 | 967 | 983 | rVV2 | 185855 | 468274 | 6.87% | 0.493% |
| 16 | 8.971 | 983 | 991 | 1005 | rVB3 | 118264 | 278228 | 4.08% | 0.293% |
| 17 | 9.227 | 1029 | 1040 | 1080 | rVB | 388498 | 1041930 | 15.28% | 1.097% |
| 18 | 9.802 | 1134 | 1150 | 1163 | rBV4 | 572621 | 1458618 | 21.39% | 1.536% |
| 19 | 9.907 | 1163 | 1170 | 1184 | rVV | 117919 | 296089 | 4.34% | 0.312% |
| 20 | 10.127 | 1205 | 1212 | 1224 | rVB | 127340 | 288664 | 4.23% | 0.304% |
| 21 | 10.226 | 1224 | 1231 | 1245 | rBV | 204307 | 449191 | 6.59% | 0.473% |
| 22 | 10.362 | 1245 | 1257 | 1266 | rBV | 144046 | 319132 | 4.68% | 0.336% |
| 23 | 10.451 | 1266 | 1274 | 1281 | rVV3 | 175735 | 472944 | 6.94% | 0.498% |
| 24 | 10.509 | 1281 | 1285 | 1293 | rVV2 | 88351 | 199687 | 2.93% | 0.210% |
| 25 | 10.613 | 1293 | 1305 | 1317 | rVB5 | 93288 | 332371 | 4.88% | 0.350% |
| 26 | 10.712 | 1317 | 1324 | 1337 | rBV | 392333 | 1001222 | 14.69% | 1.054% |
| 27 | 11.366 | 1434 | 1449 | 1462 | rVB3 | 155520 | 575657 | 8.44% | 0.606% |
| 28 | 11.779 | 1512 | 1528 | 1543 | rBV2 | 111643 | 308816 | 4.53% | 0.325% |
| 29 | 11.905 | 1543 | 1552 | 1554 | rBV | 134696 | 261120 | 3.83% | 0.275% |
| 30 | 11.942 | 1554 | 1559 | 1578 | rVB2 | 231500 | 631224 | 9.26% | 0.665% |
| 31 | 12.114 | 1585 | 1592 | 1598 | rBV | 132540 | 250340 | 3.67% | 0.264% |
| 32 | 12.318 | 1617 | 1631 | 1641 | rBV5 | 68750 | 204091 | 2.99% | 0.215% |
| 33 | 12.428 | 1641 | 1652 | 1659 | rBV | 818717 | 1581142 | 23.19% | 1.665% |
| 34 | 12.506 | 1659 | 1667 | 1675 | rVV | 1438622 | 2767243 | 40.59% | 2.913% |
| 35 | 12.569 | 1675 | 1679 | 1690 | rVV3 | 148265 | 375125 | 5.50% | 0.395% |
| 36 | 13.688 | 1885 | 1893 | 1901 | rVV | 226049 | 425296 | 6.24% | 0.448% |
| 37 | 13.830 | 1907 | 1920 | 1926 | rVB | 167387 | 361014 | 5.30% | 0.380% |
| 38 | 14.049 | 1954 | 1962 | 1970 | rBV | 564591 | 1025782 | 15.05% | 1.080% |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 14.170 | 1979 | 1985 | 1991 | rVV | 743982 | 1306281 | 19.16% | 1.375% |
| 40 | 14.238 | 1992 | 1998 | 2000 | rVV6 | 155126 | 316061 | 4.64% | 0.333% |
| 41 | 14.285 | 2000 | 2007 | 2016 | rVV | 3410151 | 6179065 | 90.63% | 6.505% |
| 42 | 14.745 | 2088 | 2095 | 2102 | rVV | 1441233 | 2478270 | 36.35% | 2.609% |
| 43 | 15.142 | 2157 | 2171 | 2176 | rBV3 | 112346 | 352994 | 5.18% | 0.372% |
| 44 | 15.184 | 2176 | 2179 | 2182 | rVV | 122826 | 207314 | 3.04% | 0.218% |
| 45 | 15.331 | 2197 | 2207 | 2219 | rVB | 733463 | 1323716 | 19.42% | 1.394% |
| 46 | 15.592 | 2246 | 2257 | 2264 | rBV | 416659 | 721721 | 10.59% | 0.760% |
| 47 | 15.671 | 2264 | 2272 | 2277 | rVV | 2264867 | 4108485 | 60.26% | 4.325% |
| 48 | 15.707 | 2277 | 2279 | 2284 | rVV | 1000113 | 1327740 | 19.48% | 1.398% |
| 49 | 15.765 | 2284 | 2290 | 2300 | rVV | 1021159 | 1859303 | 27.27% | 1.957% |
| 50 | 16.021 | 2327 | 2339 | 2349 | rVB | 749564 | 1471281 | 21.58% | 1.549% |
| 51 | 16.199 | 2365 | 2373 | 2384 | rVV | 4137817 | 6817609 | 100.00% | 7.177% |
| 52 | 16.476 | 2415 | 2426 | 2432 | rVV2 | 169953 | 473708 | 6.95% | 0.499% |
| 53 | 16.633 | 2449 | 2456 | 2461 | rVV | 744761 | 1297881 | 19.04% | 1.366% |
| 54 | 16.691 | 2461 | 2467 | 2477 | rVB | 1112245 | 2013226 | 29.53% | 2.119% |
| 55 | 16.853 | 2491 | 2498 | 2500 | rVV | 373558 | 562658 | 8.25% | 0.592% |
| 56 | 16.884 | 2500 | 2504 | 2509 | rVV | 710073 | 1172538 | 17.20% | 1.234% |
| 57 | 16.947 | 2509 | 2516 | 2522 | rVV3 | 1629477 | 3350754 | 49.15% | 3.527% |
| 58 | 16.994 | 2522 | 2525 | 2533 | rVV2 | 233114 | 449743 | 6.60% | 0.473% |
| 59 | 17.109 | 2533 | 2547 | 2555 | rVV7 | 145911 | 433188 | 6.35% | 0.456% |
| 60 | 17.182 | 2555 | 2561 | 2568 | rVV | 267516 | 500295 | 7.34% | 0.527% |
| 61 | 17.255 | 2568 | 2575 | 2579 | rVV | 655876 | 1145388 | 16.80% | 1.206% |
| 62 | 17.297 | 2579 | 2583 | 2591 | rVV | 580932 | 1013574 | 14.87% | 1.067% |
| 63 | 17.376 | 2591 | 2598 | 2609 | rVV | 1004494 | 1716698 | 25.18% | 1.807% |
| 64 | 17.485 | 2609 | 2619 | 2626 | rVV3 | 210908 | 489291 | 7.18% | 0.515% |
| 65 | 17.564 | 2626 | 2634 | 2641 | rVV2 | 583945 | 1179935 | 17.31% | 1.242% |
| 66 | 17.731 | 2659 | 2666 | 2671 | rVV | 296715 | 563013 | 8.26% | 0.593% |
| 67 | 17.815 | 2671 | 2682 | 2688 | rVV | 636551 | 1340033 | 19.66% | 1.411% |
| 68 | 17.878 | 2688 | 2694 | 2699 | rVV | 869555 | 1445437 | 21.20% | 1.522% |
| 69 | 17.925 | 2699 | 2703 | 2708 | rVV2 | 341544 | 573937 | 8.42% | 0.604% |
| 70 | 17.972 | 2708 | 2712 | 2717 | rVV | 161480 | 287327 | 4.21% | 0.302% |
| 71 | 18.040 | 2717 | 2725 | 2733 | rVV5 | 111340 | 366187 | 5.37% | 0.385% |
| 72 | 18.108 | 2733 | 2738 | 2743 | rVV2 | 261833 | 464920 | 6.82% | 0.489% |
| 73 | 18.212 | 2749 | 2758 | 2763 | rVV2 | 737597 | 1518654 | 22.28% | 1.599% |
| 74 | 18.254 | 2763 | 2766 | 2773 | rVV3 | 262205 | 436230 | 6.40% | 0.459% |
| 75 | 18.359 | 2773 | 2786 | 2790 | rVV3 | 333987 | 1057629 | 15.51% | 1.113% |
| 76 | 18.406 | 2790 | 2795 | 2804 | rVV2 | 913192 | 1896470 | 27.82% | 1.996% |
| 77 | 18.484 | 2804 | 2810 | 2816 | rVV2 | 165178 | 352837 | 5.18% | 0.371% |
| 78 | 18.620 | 2826 | 2836 | 2842 | rVV5 | 150179 | 404849 | 5.94% | 0.426% |
| 79 | 18.678 | 2842 | 2847 | 2852 | rVV2 | 155643 | 327256 | 4.80% | 0.345% |
| 80 | 18.735 | 2852 | 2858 | 2869 | rVV3 | 464146 | 1332219 | 19.54% | 1.402% |
| 81 | 18.814 | 2869 | 2873 | 2879 | rVV | 200049 | 387013 | 5.68% | 0.407% |
| 82 | 18.887 | 2879 | 2887 | 2891 | rVV2 | 256513 | 594205 | 8.72% | 0.626% |
| 83 | 18.929 | 2891 | 2895 | 2902 | rVV | 297263 | 612228 | 8.98% | 0.645% |
| 84 | 18.992 | 2902 | 2907 | 2915 | rVV6 | 88970 | 236619 | 3.47% | 0.249% |
| 85 | 19.117 | 2915 | 2931 | 2936 | rVV7 | 110324 | 439206 | 6.44% | 0.462% |
| 86 | 19.180 | 2936 | 2943 | 2952 | rVV | 647711 | 1267104 | 18.59% | 1.334% |
| 87 | 19.259 | 2952 | 2958 | 2964 | rVV3 | 177200 | 403884 | 5.92% | 0.425% |
| 88 | 19.316 | 2964 | 2969 | 2974 | rVV2 | 180266 | 382008 | 5.60% | 0.402% |
| 89 | 19.363 | 2974 | 2978 | 2982 | rVV5 | 134032 | 289109 | 4.24% | 0.304% |
| 90 | 19.405 | 2982 | 2986 | 2999 | rVV4 | 163174 | 447709 | 6.57% | 0.471% |
| 91 | 19.551 | 3006 | 3014 | 3020 | rVV2 | 264518 | 530745 | 7.78% | 0.559% |
| 92 | 19.687 | 3029 | 3040 | 3044 | rVV4 | 110977 | 305436 | 4.48% | 0.322% |
| 93 | 19.782 | 3052 | 3058 | 3063 | rVV | 172140 | 397408 | 5.83% | 0.418% |
| 94 | 19.912 | 3078 | 3083 | 3092 | rVV4 | 119346 | 332332 | 4.87% | 0.350% |
| 95 | 19.991 | 3092 | 3098 | 3103 | rVV2 | 110387 | 266794 | 3.91% | 0.281% |

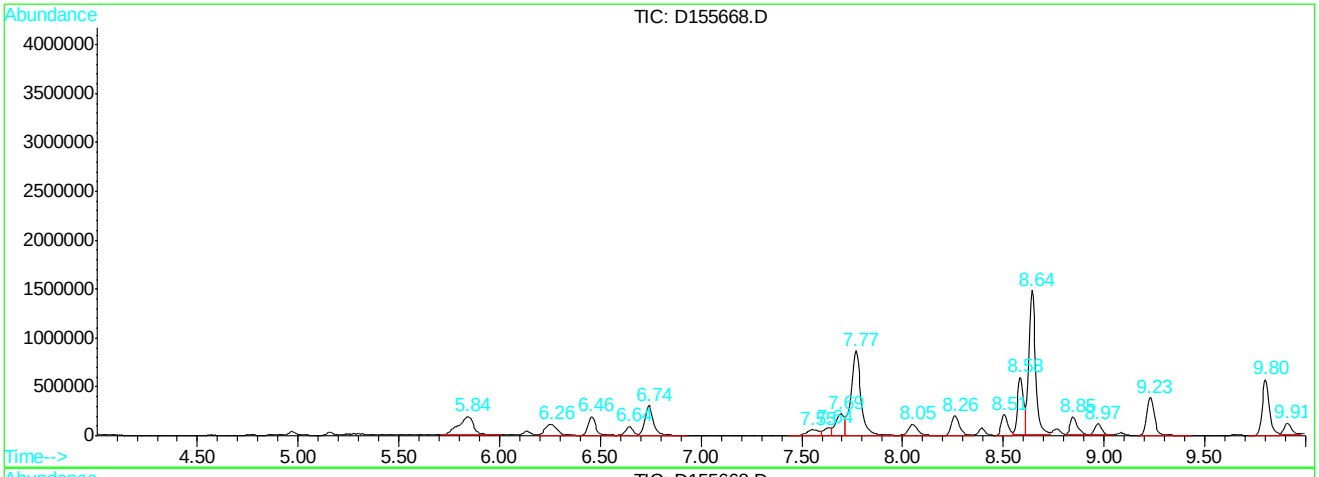
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 20.043 | 3103 | 3108 | 3122 | rVV2 | 107080 | 342728 | 5.03% | 0.361% |
| 97 | 20.210 | 3122 | 3140 | 3152 | rVV9 | 92872 | 460126 | 6.75% | 0.484% |
| 98 | 20.420 | 3166 | 3180 | 3191 | rVV5 | 115638 | 409292 | 6.00% | 0.431% |
| 99 | 20.514 | 3191 | 3198 | 3205 | rVV2 | 382834 | 767834 | 11.26% | 0.808% |
| 100 | 20.780 | 3234 | 3249 | 3257 | rBV3 | 197053 | 576171 | 8.45% | 0.607% |

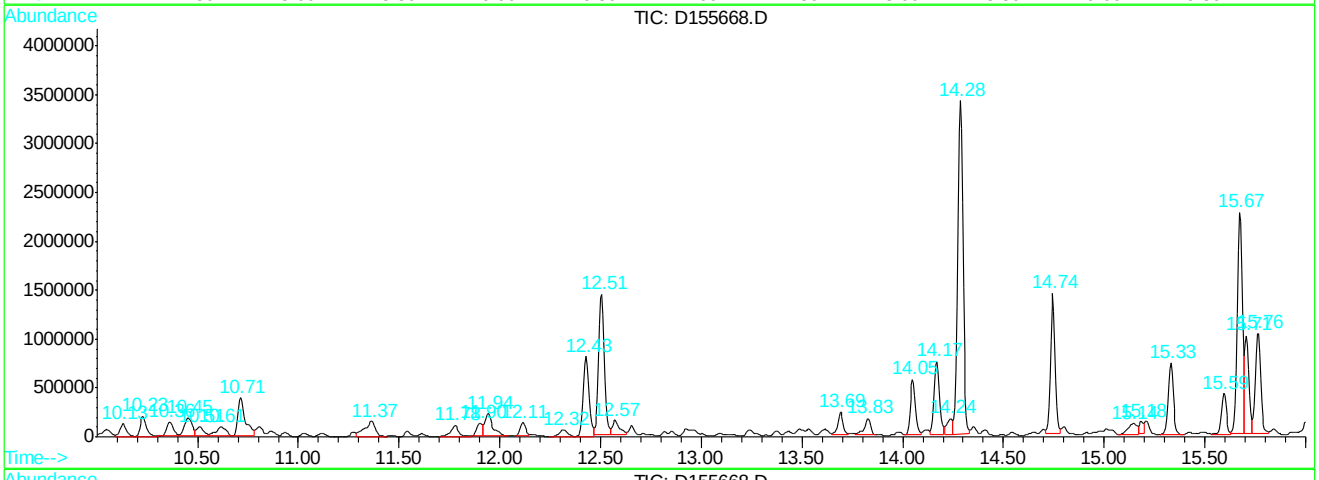
Sum of corrected areas: 94990381

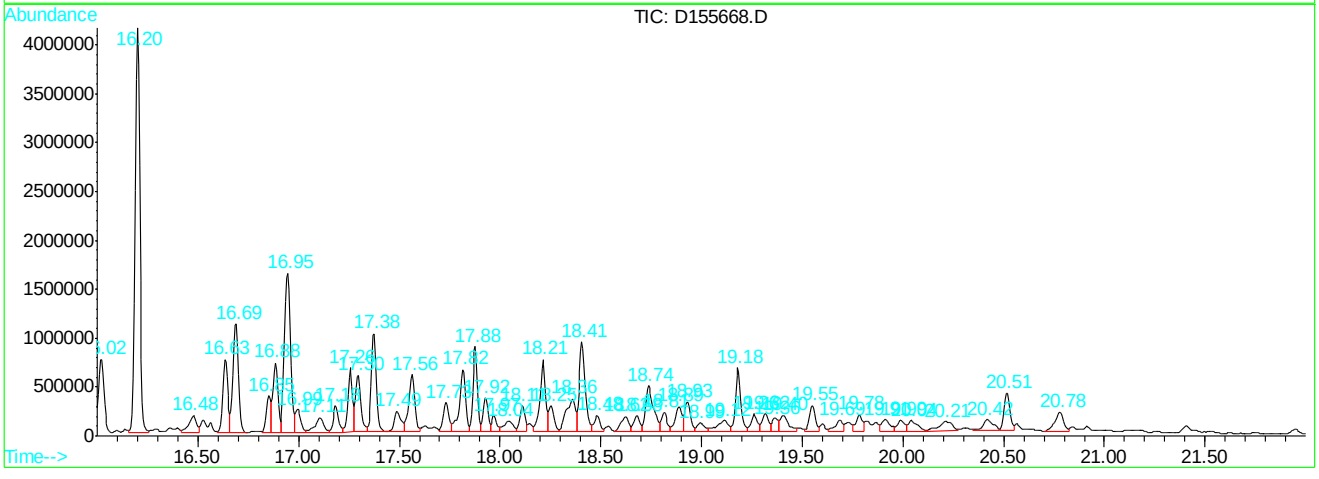
D155668.D MD6218.M Wed Jun 03 14:25:37 2009 MSD

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA\D155668.D
Operator : thienn
Acquired : 3 Jun 2009 1:47 pm using AcqMethod MD6218
Instrument : MSD
Sample Name: ja19940-1
Misc Info : MS81063,VD6254,6.4,,100,5,1
Vial Number: 11
Quant File :MD6218.RES (RTE Integrator)




D155668.D MD6218.M Wed Jun 03 14:25:38 2009 MSD

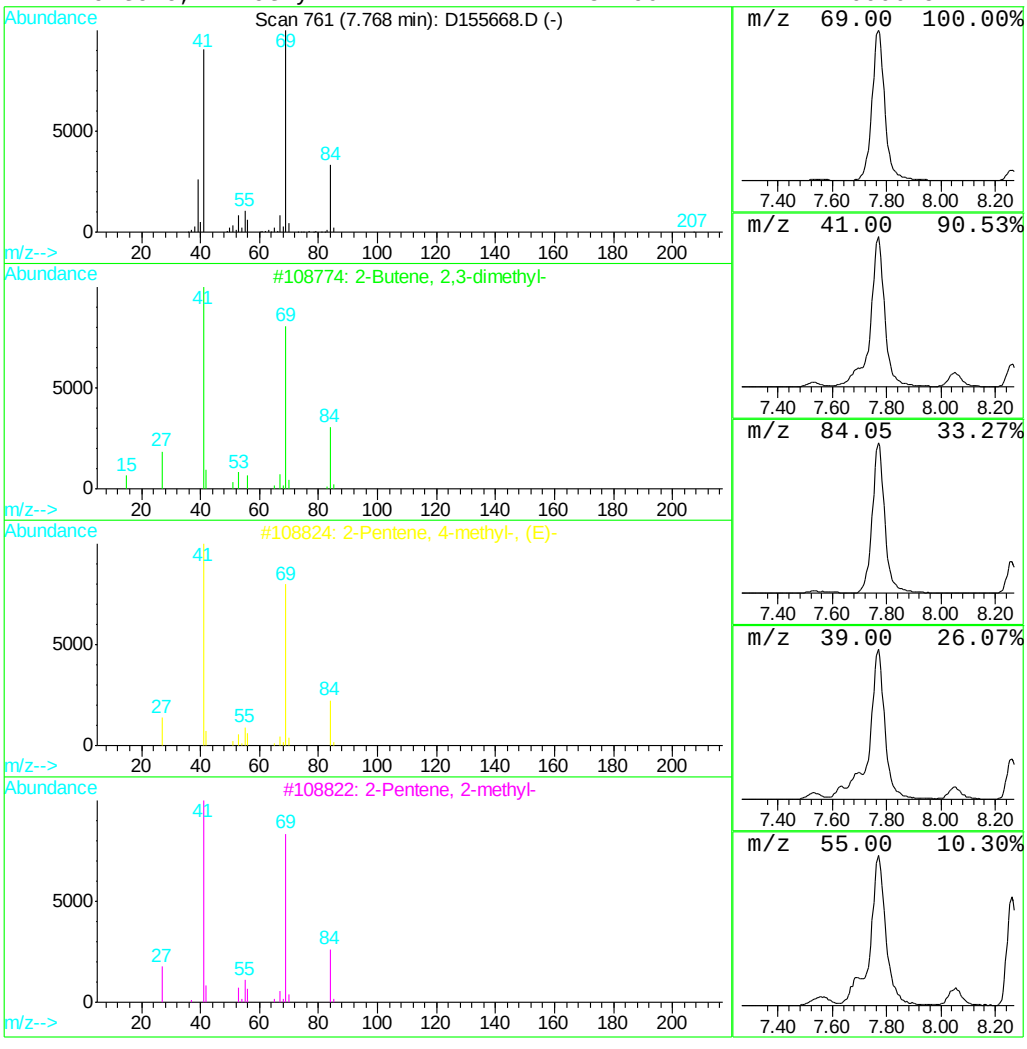
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  1  2-Butene, 2,3-dimethyl-         Concentration Rank  5

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
  7.77  100.36 ug/L      2927840    pentafluorobenzene          9.80

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 2-Butene, 2,3-dimethyl-               84 C6H12          000563-79-1 91
 2 2-Pentene, 4-methyl-, (E)-            84 C6H12          000674-76-0 91
 3 2-Pentene, 2-methyl-                  84 C6H12          000625-27-4 91
 4 2-Pentene, 2-methyl-                  84 C6H12          000625-27-4 91
```



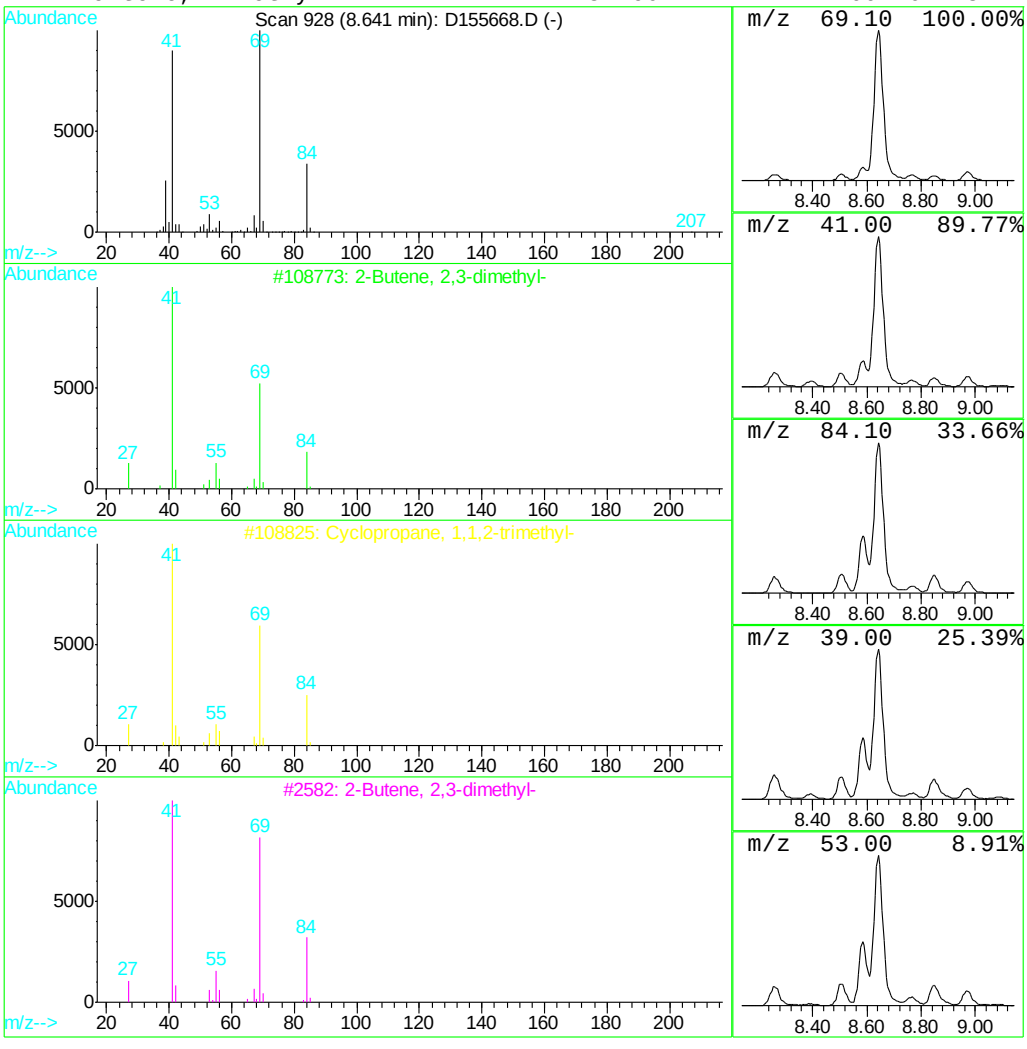
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  2  2-Butene, 2,3-dimethyl-         Concentration Rank  4

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
  8.64  121.88 ug/L      3555620    pentafluorobenzene          9.80

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 2-Butene, 2,3-dimethyl-               84 C6H12          000563-79-1 91
 2 Cyclopropane, 1,1,2-trimethyl-        84 C6H12          004127-45-1 90
 3 2-Butene, 2,3-dimethyl-               84 C6H12          000563-79-1 90
 4 2-Pentene, 4-methyl-                  84 C6H12          004461-48-7 86
```



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\D155668.D  Vial: 11
Acq On : 3 Jun 2009 1:47 pm  Operator: thienn
Sample : ja19940-1  Inst : MSD
Misc : MS81063,VD6254,6.4,,100,5,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

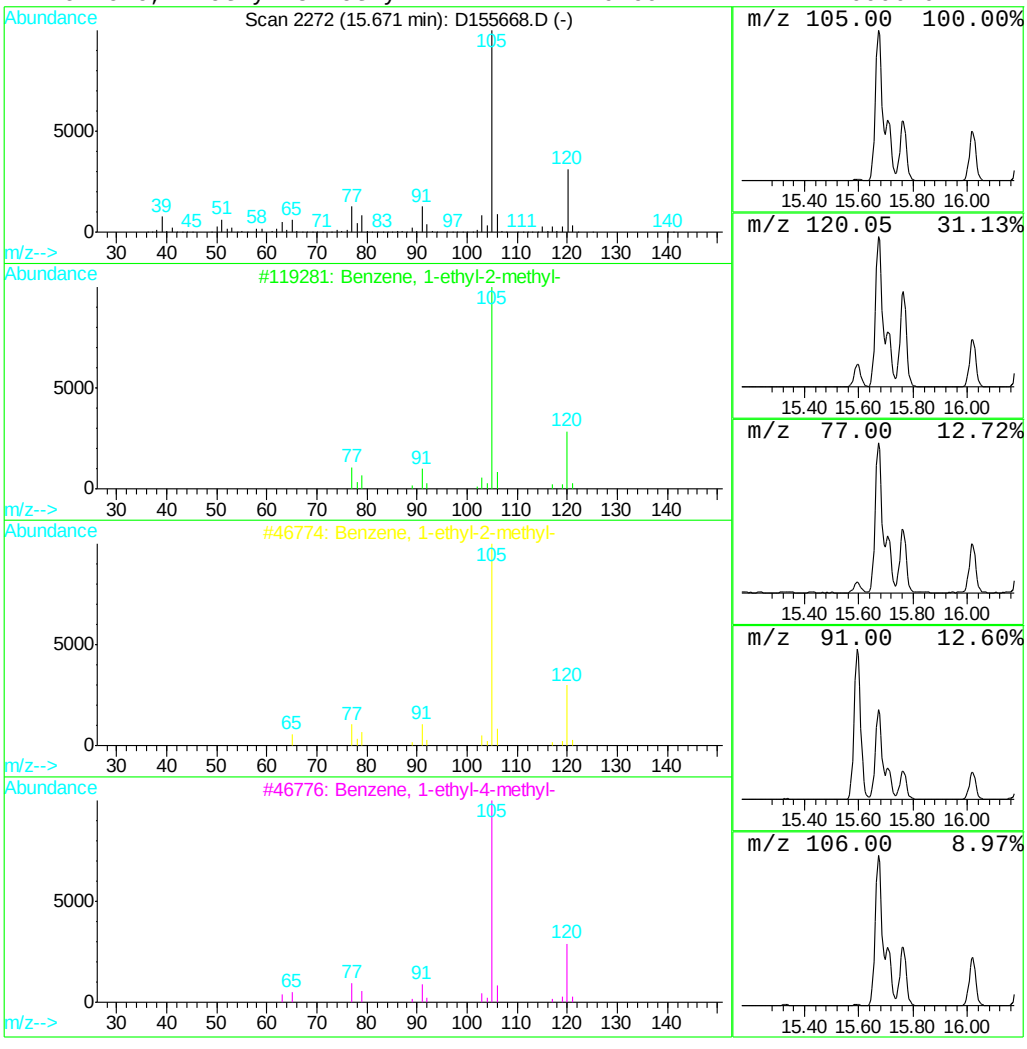
Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Library : C:\DATABASE\NIST98.L

**********

Peak Number 3 Benzene, 1-ethyl-2-methyl- Concentration Rank 2

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 15.67 | 158.28 ug/L | 4108490 | 1,4-dichlorobenzene-d4 | 16.63 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzene, 1-ethyl-2-methyl- | 120 | C9H12 | 000611-14-3 | 95 |
| 2 | Benzene, 1-ethyl-2-methyl- | 120 | C9H12 | 000611-14-3 | 95 |
| 3 | Benzene, 1-ethyl-4-methyl- | 120 | C9H12 | 000622-96-8 | 95 |
| 4 | Benzene, 1-ethyl-3-methyl- | 120 | C9H12 | 000620-14-4 | 95 |



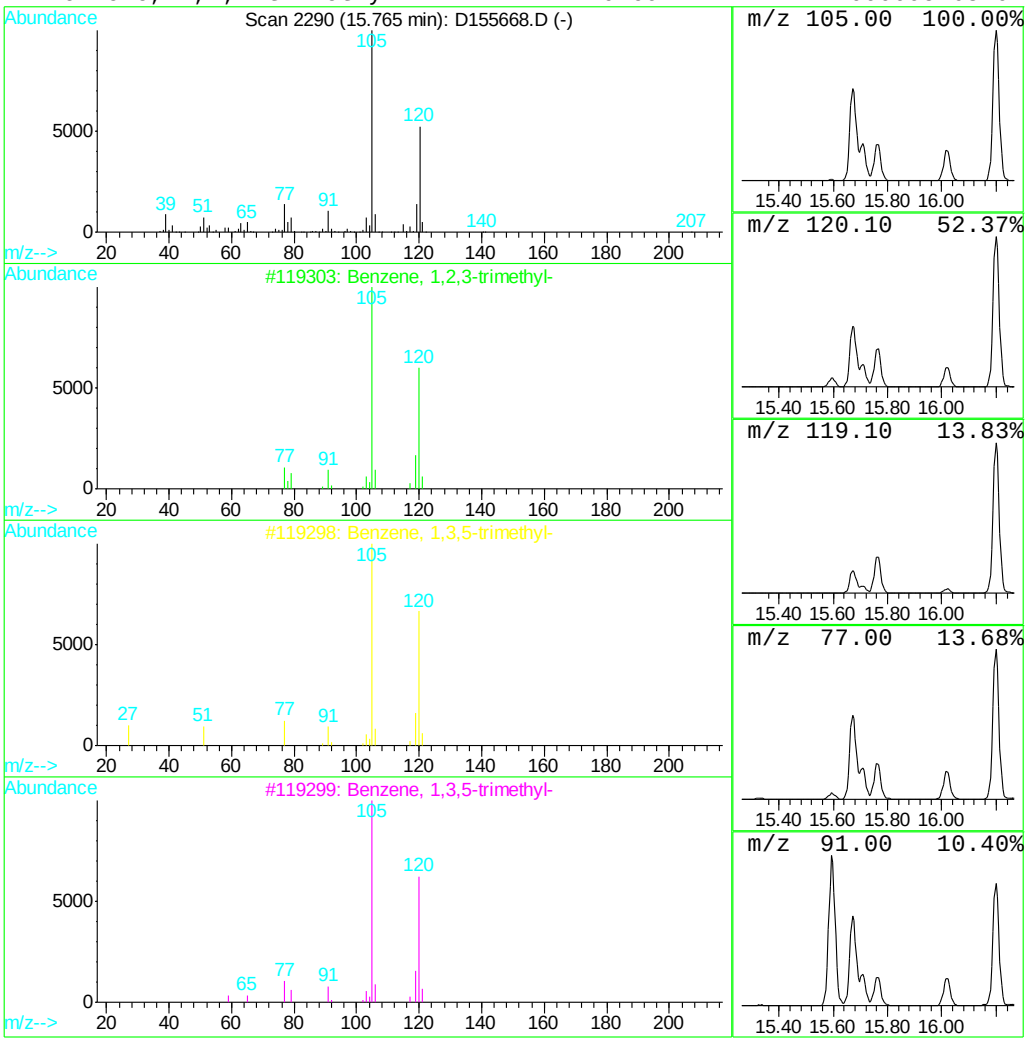
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  4  Benzene, 1,2,3-trimethyl-       Concentration Rank  8

  R.T.   EstConc           Area       Relative to ISTD         R.T.
-------------------------------------------------------------------
 15.76   71.63 ug/L      1859300    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
-------------------------------------------------------------------------
 1 Benzene, 1,2,3-trimethyl-            120 C9H12          000526-73-8 97
 2 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 95
 3 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 95
 4 Benzene, 1,2,4-trimethyl-            120 C9H12          000095-63-6 94
```



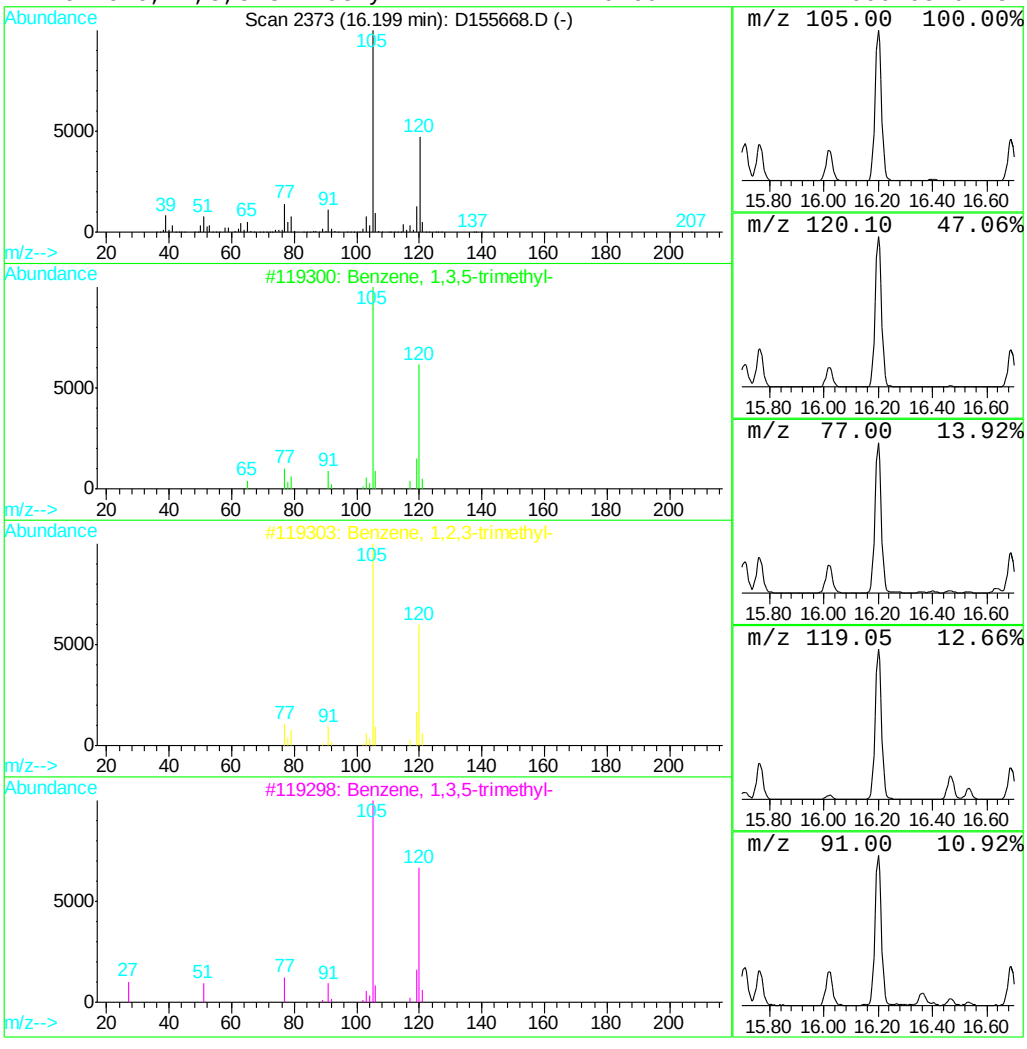
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  5  Benzene, 1,3,5-trimethyl-       Concentration Rank  1

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
 16.20  262.64 ug/L      6817610    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 97
 2 Benzene, 1,2,3-trimethyl-            120 C9H12          000526-73-8 97
 3 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 95
 4 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 95
```



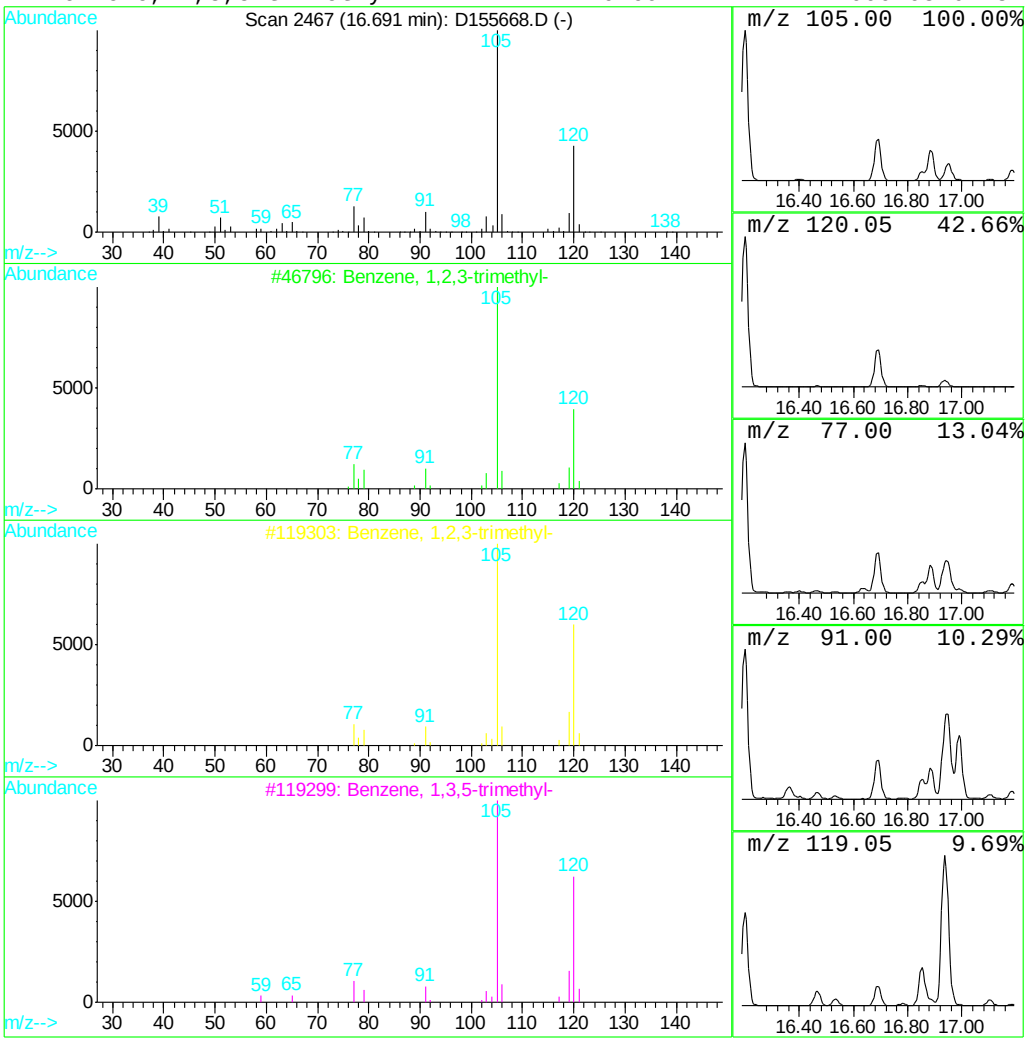
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  6  Benzene, 1,2,3-trimethyl-       Concentration Rank  6

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
 16.69   77.56 ug/L      2013230    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 Benzene, 1,2,3-trimethyl-            120 C9H12          000526-73-8 95
 2 Benzene, 1,2,3-trimethyl-            120 C9H12          000526-73-8 95
 3 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 94
 4 Benzene, 1,3,5-trimethyl-            120 C9H12          000108-67-8 94
```



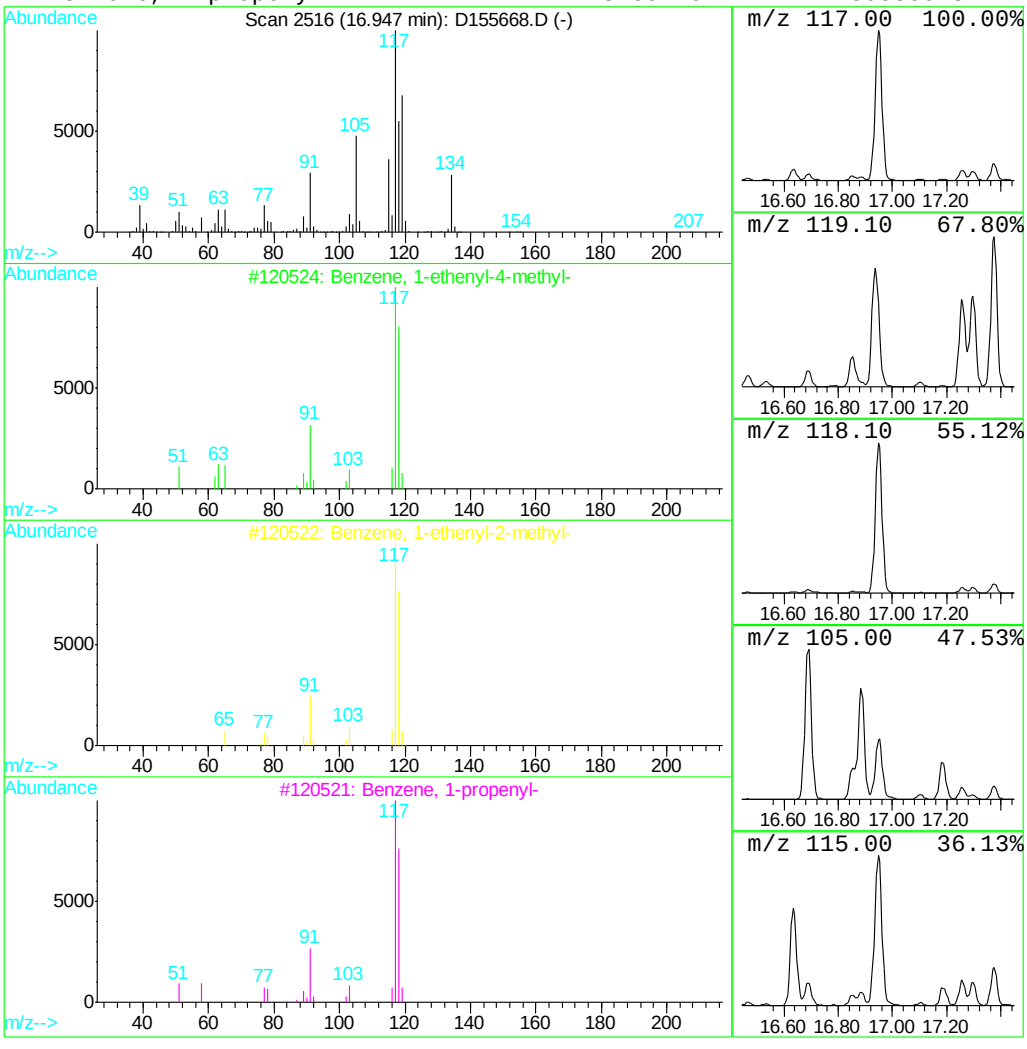
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  7  Benzene, 1-ethenyl-4-methyl-    Concentration Rank  3

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
 16.95  129.09 ug/L      3350750    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 Benzene, 1-ethenyl-4-methyl-         118 C9H10          000622-97-9 80
 2 Benzene, 1-ethenyl-2-methyl-         118 C9H10          000611-15-4 55
 3 Benzene, 1-propenyl-                 118 C9H10          000637-50-3 55
 4 Benzene, 2-propenyl-                 118 C9H10          000300-57-2 55
```



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\D155668.D  Vial: 11
Acq On : 3 Jun 2009 1:47 pm  Operator: thienn
Sample : ja19940-1  Inst : MSD
Misc : MS81063,VD6254,6.4,,100,5,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

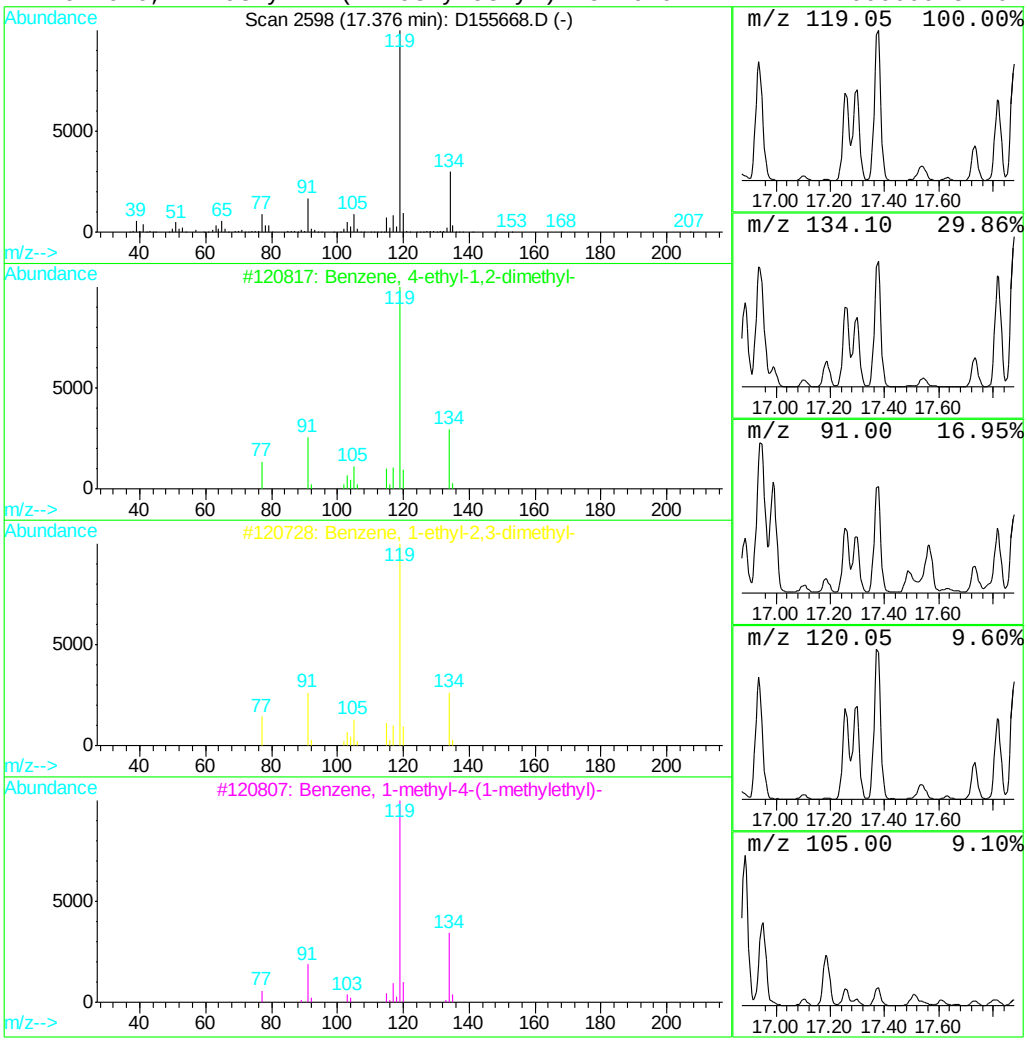
Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Library : C:\DATABASE\NIST98.L

**********

Peak Number 8 Benzene, 4-ethyl-1,2-dimethyl- Concentration Rank 9

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 17.38 | 66.13 ug/L | 1716700 | 1,4-dichlorobenzene-d4 | 16.63 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzene, 4-ethyl-1,2-dimethyl- | 134 | C10H14 | 000934-80-5 | 95 |
| 2 | Benzene, 1-ethyl-2,3-dimethyl- | 134 | C10H14 | 000933-98-2 | 95 |
| 3 | Benzene, 1-methyl-4-(1-methylethyl) | 134 | C10H14 | 000099-87-6 | 94 |
| 4 | Benzene, 1-methyl-4-(1-methylethyl) | 134 | C10H14 | 000099-87-6 | 94 |



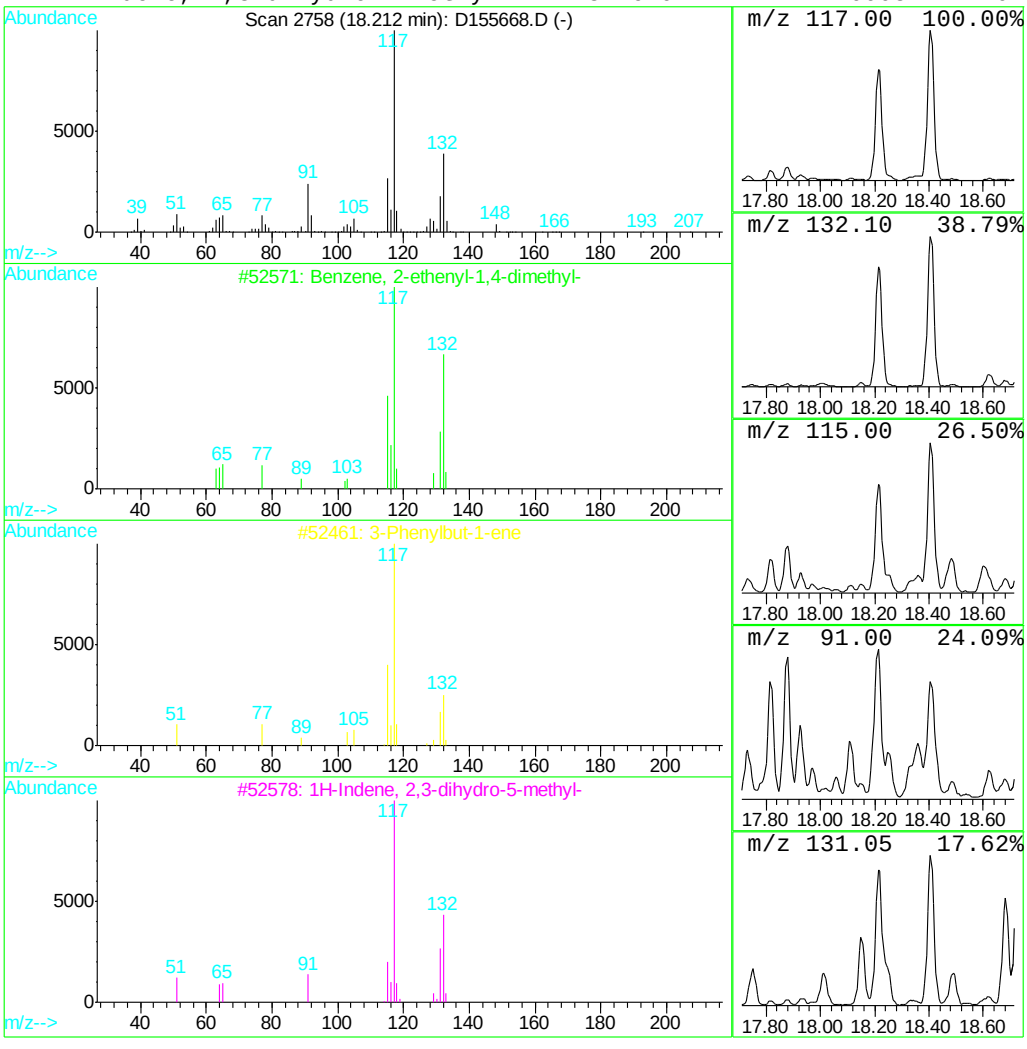
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number  9  Benzene, 2-ethenyl-1,4-dimethy  Concentration Rank 10

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
 18.21   58.51 ug/L      1518650    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID              MW  MolForm       CAS#       Qual
---------------------------------------------------------------------
 1 Benzene, 2-ethenyl-1,4-dimethyl-     132 C10H12         002039-89-6 96
 2 3-Phenylbut-1-ene                    132 C10H12         000934-10-1 94
 3 1H-Indene, 2,3-dihydro-5-methyl-     132 C10H12         000874-35-1 93
 4 1H-Indene, 2,3-dihydro-4-methyl-     132 C10H12         000824-22-6 93
```



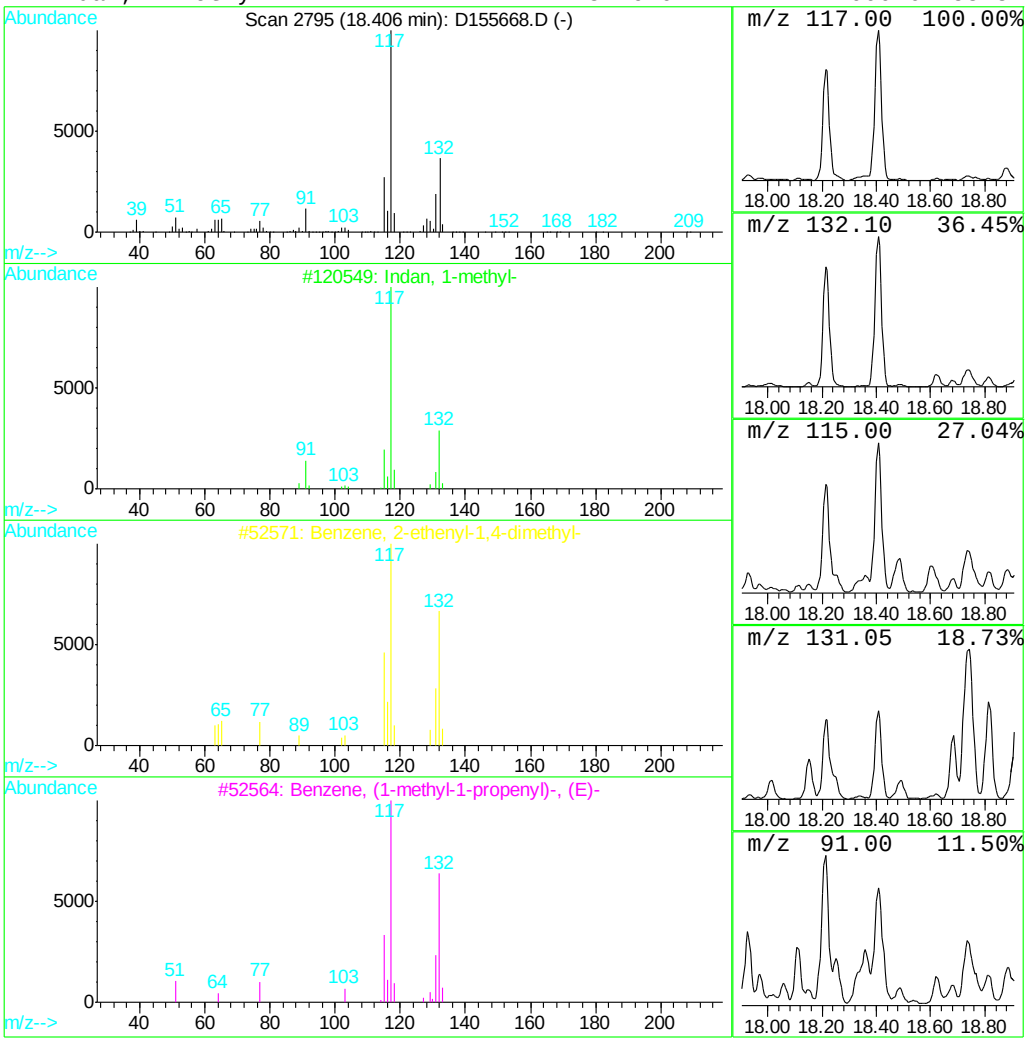
Library Search Compound Report

```
  Data File : C:\HPCHEM\1\DATA\D155668.D                    Vial: 11
  Acq On    :  3 Jun 2009   1:47 pm                     Operator: thienn
  Sample    : ja19940-1                                 Inst    : MSD
  Misc      : MS81063,VD6254,6.4,,100,5,1               Multiplr: 1.00
  MS Integration Params: LSCINT.P

  Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
  Title        : SW-846 Method 8260B
  Library      : C:\DATABASE\NIST98.L
*********************************************************************
Peak Number 10  Indan, 1-methyl-                Concentration Rank  7

  R.T.   EstConc           Area       Relative to ISTD         R.T.
---------------------------------------------------------------------
 18.41   73.06 ug/L      1896470    1,4-dichlorobenzene-d4     16.63

 Hit# of  5    Tentative ID                MW  MolForm       CAS#       Qual
---------------------------------------------------------------------------
 1 Indan, 1-methyl-                       132 C10H12         000767-58-8 91
 2 Benzene, 2-ethenyl-1,4-dimethyl-       132 C10H12         002039-89-6 91
 3 Benzene, (1-methyl-1-propenyl)-, (E    132 C10H12         000768-00-3 90
 4 Indan, 1-methyl-                       132 C10H12         000767-58-8 90
```



Tentatively Identified Compound (LSC) summary

Operator ID: thienn  Date Acquired:  3 Jun 2009  1:47 pm
Data File: C:\HPCHEM\1\DATA\D155668.D
Name: ja19940-1
Misc: MS81063,VD6254,6.4,,100,5,1
Method: C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title: SW-846 Method 8260B
Library Searched: C:\DATABASE\NIST98.L

| TIC Top Hit name | RT | EstConc | Units | Area | IntStd | ISRT | ISArea | ISConc |
|---|---|---|---|---|---|---|---|---|
| 2-Butene, 2,3-dimeth | 7.77 | 100.4 | ug/L | 2927840 | ISTD02 | 9.80 | 1458620 | 50.0 |
| 2-Butene, 2,3-dimeth | 8.64 | 121.9 | ug/L | 3555620 | ISTD02 | 9.80 | 1458620 | 50.0 |
| Benzene, 1-ethyl-2-m | 15.67 | 158.3 | ug/L | 4108490 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 1,2,3-trime | 15.76 | 71.6 | ug/L | 1859300 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 1,3,5-trime | 16.20 | 262.6 | ug/L | 6817610 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 1,2,3-trime | 16.69 | 77.6 | ug/L | 2013230 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 1-ethenyl-4 | 16.95 | 129.1 | ug/L | 3350750 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 4-ethyl-1,2 | 17.38 | 66.1 | ug/L | 1716700 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Benzene, 2-ethenyl-1 | 18.21 | 58.5 | ug/L | 1518650 | ISTD05 | 16.63 | 1297880 | 50.0 |
| Indan, 1-methyl- | 18.41 | 73.1 | ug/L | 1896470 | ISTD05 | 16.63 | 1297880 | 50.0 |

D155668.D  MD6218.M  Wed Jun 03 14:25:44 2009  MSD

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\D155661.D Vial: 4
Acq On : 3 Jun 2009 10:14 am Operator: thienn
Sample : mb1 Inst : MSD
Misc : MS80953,VD6254,5,,100,5,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 3 12:58 2009 Quant Results File: MD6218.RES

Quant Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue May 26 17:16:15 2009
Response via : Initial Calibration
DataAcq Meth : MD6218

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 7.56 | 65 | 130620 | 500.00 | ug/L | 0.00 |
| 4) pentafluorobenzene | 9.80 | 168 | 229210 | 50.00 | ug/L | 0.00 |
| 49) 1,4-difluorobenzene | 10.71 | 114 | 327288 | 50.00 | ug/L | 0.00 |
| 80) chlorobenzene-d5 | 14.05 | 117 | 296904 | 50.00 | ug/L | 0.00 |
| 94) 1,4-dichlorobenzene-d4 | 16.63 | 152 | 174894 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 42) dibromofluoromethane (s) | 9.81 | 113 | 120951 | 46.34 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 92.68% | | | |
| 43) 1,2-dichloroethane-d4 (s) | 10.23 | 65 | 176566 | 49.74 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 99.48% | | | |
| 72) toluene-d8 (s) | 12.43 | 98 | 458957 | 48.33 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 96.66% | | | |
| 96) 4-bromofluorobenzene (s) | 15.33 | 95 | 186790 | 53.78 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 107.56% | | | |

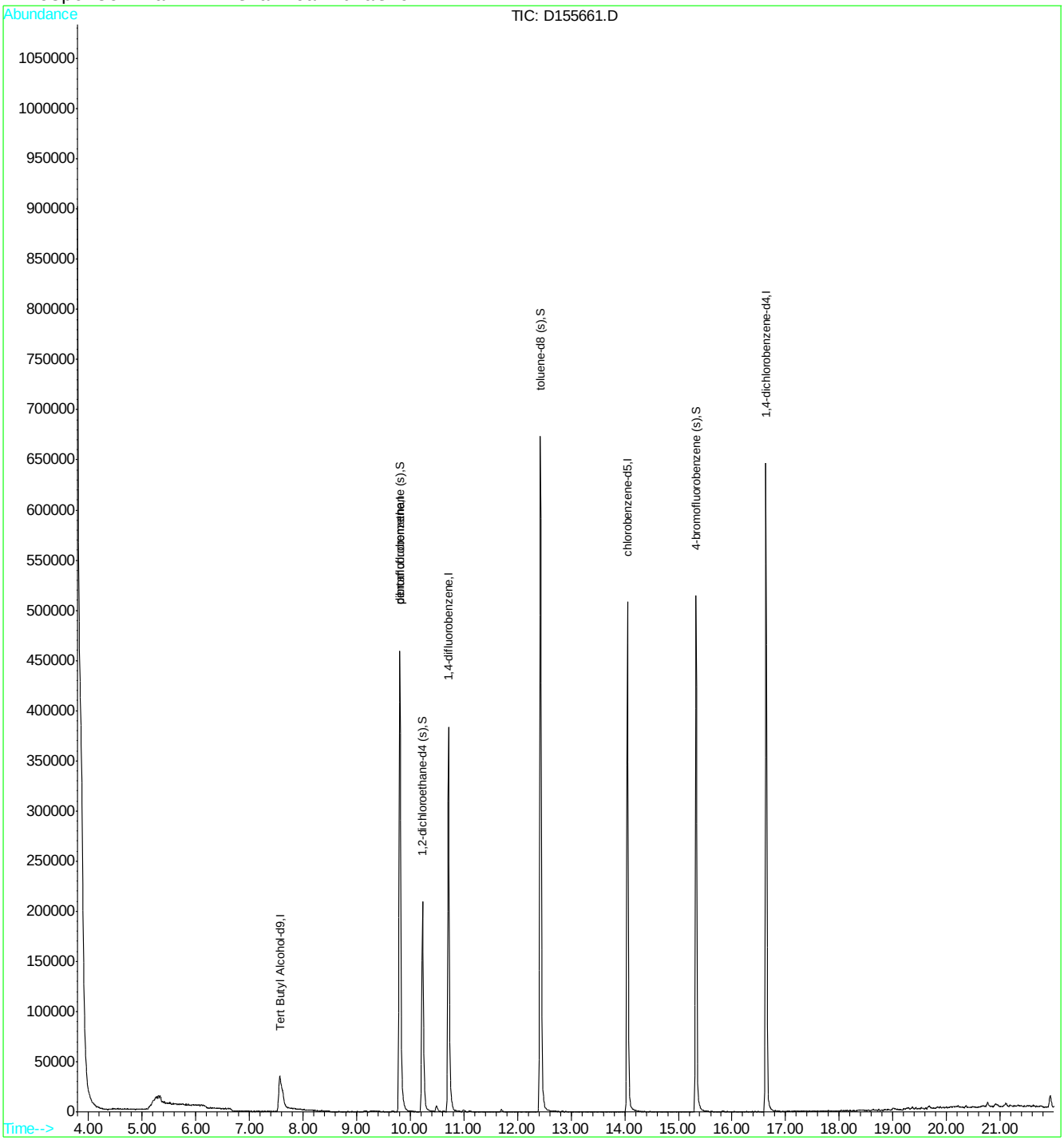
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
D155661.D MD6218.M Wed Jun 03 12:58:42 2009 MSD Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\D155661.D  Vial: 4
Acq On : 3 Jun 2009 10:14 am  Operator: thienn
Sample : mb1  Inst : MSD
Misc : MS80953,VD6254,5,,100,5,1  Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 3 12:58 2009  Quant Results File: MD6218.RES

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Last Update : Tue May 26 17:16:15 2009
Response via : Initial Calibration




D155661.D MD6218.M Wed Jun 03 12:58:44 2009 MSD Page 2

LSC Area Percent Report

Data File : C:\HPCHEM\1\DATA\D155661.D  Vial: 4
Acq On : 3 Jun 2009 10:14 am  Operator: thienn
Sample : mb1  Inst : MSD
Misc : MS80953,VD6254,5,,100,5,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title : SW-846 Method 8260B
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.02  Max Peaks: 100
Stop Thrs : 0.005  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.395 | 111 | 116 | 120 | rBV2 | 755 | 1396 | 0.11% | 0.020% |
| 2 | 4.442 | 120 | 125 | 127 | rBV3 | 981 | 1377 | 0.11% | 0.019% |
| 3 | 4.761 | 183 | 186 | 188 | rBV3 | 759 | 816 | 0.06% | 0.011% |
| 4 | 4.777 | 188 | 189 | 194 | rBV5 | 808 | 1031 | 0.08% | 0.014% |
| 5 | 5.018 | 230 | 235 | 237 | rBV3 | 708 | 772 | 0.06% | 0.011% |
| 6 | 5.059 | 240 | 243 | 246 | rBV2 | 693 | 705 | 0.05% | 0.010% |
| 7 | 5.242 | 252 | 278 | 279 | rBV2 | 11316 | 49013 | 3.78% | 0.686% |
| 8 | 5.258 | 279 | 281 | 286 | rVV5 | 7171 | 13536 | 1.04% | 0.189% |
| 9 | 5.295 | 286 | 288 | 292 | rVV5 | 6719 | 11356 | 0.88% | 0.159% |
| 10 | 5.337 | 292 | 296 | 301 | rVB7 | 6056 | 11508 | 0.89% | 0.161% |
| 11 | 5.577 | 339 | 342 | 343 | rVB3 | 1527 | 1278 | 0.10% | 0.018% |
| 12 | 5.656 | 356 | 357 | 360 | rVB3 | 1155 | 892 | 0.07% | 0.012% |
| 13 | 5.703 | 364 | 366 | 373 | rBV6 | 1003 | 1679 | 0.13% | 0.023% |
| 14 | 5.860 | 393 | 396 | 399 | rBV5 | 1829 | 1972 | 0.15% | 0.028% |
| 15 | 5.938 | 407 | 411 | 417 | rBV7 | 1113 | 1952 | 0.15% | 0.027% |
| 16 | 5.975 | 417 | 418 | 422 | rVB3 | 1314 | 1446 | 0.11% | 0.020% |
| 17 | 6.006 | 422 | 424 | 426 | rBV3 | 1302 | 983 | 0.08% | 0.014% |
| 18 | 6.451 | 508 | 509 | 513 | rVB4 | 825 | 827 | 0.06% | 0.012% |
| 19 | 6.550 | 526 | 528 | 535 | rVV5 | 1054 | 1552 | 0.12% | 0.022% |
| 20 | 6.592 | 535 | 536 | 541 | rVV4 | 1132 | 1776 | 0.14% | 0.025% |
| 21 | 6.634 | 541 | 544 | 562 | rVB8 | 2633 | 7800 | 0.60% | 0.109% |
| 22 | 6.916 | 591 | 598 | 601 | rBV3 | 539 | 1070 | 0.08% | 0.015% |
| 23 | 7.570 | 708 | 723 | 758 | rBV2 | 35306 | 197244 | 15.23% | 2.759% |
| 24 | 8.349 | 867 | 872 | 876 | rVB3 | 578 | 901 | 0.07% | 0.013% |
| 25 | 8.961 | 988 | 989 | 998 | rBV2 | 354 | 780 | 0.06% | 0.011% |
| 26 | 9.155 | 1017 | 1026 | 1036 | rVB3 | 1117 | 2797 | 0.22% | 0.039% |
| 27 | 9.264 | 1039 | 1047 | 1049 | rBV3 | 1028 | 1689 | 0.13% | 0.024% |
| 28 | 9.662 | 1118 | 1123 | 1134 | rBV3 | 817 | 1965 | 0.15% | 0.027% |
| 29 | 9.803 | 1141 | 1150 | 1184 | rBV2 | 459728 | 1053512 | 81.33% | 14.736% |
| 30 | 10.028 | 1192 | 1193 | 1200 | rVB3 | 619 | 800 | 0.06% | 0.011% |
| 31 | 10.227 | 1222 | 1231 | 1260 | rBV | 209281 | 470671 | 36.34% | 6.584% |
| 32 | 10.488 | 1273 | 1281 | 1292 | rBV2 | 5785 | 13220 | 1.02% | 0.185% |
| 33 | 10.614 | 1304 | 1305 | 1313 | rVB2 | 658 | 997 | 0.08% | 0.014% |
| 34 | 10.713 | 1313 | 1324 | 1347 | rBV | 383948 | 795962 | 61.45% | 11.134% |
| 35 | 10.849 | 1348 | 1350 | 1359 | rVB2 | 1132 | 1597 | 0.12% | 0.022% |
| 36 | 10.990 | 1371 | 1377 | 1386 | rVB5 | 1646 | 3322 | 0.26% | 0.046% |
| 37 | 11.100 | 1390 | 1398 | 1407 | rBV4 | 952 | 1961 | 0.15% | 0.027% |
| 38 | 11.696 | 1506 | 1512 | 1520 | rBV3 | 2200 | 3972 | 0.31% | 0.056% |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 12.429 | 1641 | 1652 | 1684 | rBV | 673208 | 1295364 | 100.00% | 18.119% |
| 40 | 12.701 | 1701 | 1704 | 1711 | rVB4 | 471 | 766 | 0.06% | 0.011% |
| 41 | 12.831 | 1724 | 1729 | 1733 | rVB4 | 1163 | 1251 | 0.10% | 0.017% |
| 42 | 14.050 | 1951 | 1962 | 1997 | rBV | 508106 | 954496 | 73.69% | 13.351% |
| 43 | 15.326 | 2197 | 2206 | 2241 | rBV | 514356 | 932604 | 72.00% | 13.045% |
| 44 | 15.828 | 2298 | 2302 | 2308 | rBV3 | 799 | 1281 | 0.10% | 0.018% |
| 45 | 16.634 | 2444 | 2456 | 2484 | rBV | 646549 | 1126735 | 86.98% | 15.760% |
| 46 | 16.806 | 2486 | 2489 | 2491 | rVB4 | 862 | 771 | 0.06% | 0.011% |
| 47 | 17.335 | 2589 | 2590 | 2597 | rVV2 | 534 | 748 | 0.06% | 0.010% |
| 48 | 17.800 | 2676 | 2679 | 2686 | rBV3 | 894 | 907 | 0.07% | 0.013% |
| 49 | 17.889 | 2690 | 2696 | 2698 | rBV3 | 620 | 801 | 0.06% | 0.011% |
| 50 | 18.051 | 2719 | 2727 | 2730 | rBV5 | 1212 | 2006 | 0.15% | 0.028% |
| 51 | 18.145 | 2737 | 2745 | 2750 | rVB4 | 1012 | 1771 | 0.14% | 0.025% |
| 52 | 18.198 | 2750 | 2755 | 2757 | rBV2 | 718 | 777 | 0.06% | 0.011% |
| 53 | 18.354 | 2781 | 2785 | 2786 | rVV4 | 853 | 781 | 0.06% | 0.011% |
| 54 | 18.381 | 2787 | 2790 | 2797 | rVV6 | 879 | 1521 | 0.12% | 0.021% |
| 55 | 18.459 | 2797 | 2805 | 2809 | rVB4 | 894 | 1838 | 0.14% | 0.026% |
| 56 | 18.490 | 2809 | 2811 | 2816 | rVB2 | 767 | 965 | 0.07% | 0.013% |
| 57 | 18.553 | 2816 | 2823 | 2826 | rBV3 | 1005 | 1978 | 0.15% | 0.028% |
| 58 | 18.637 | 2829 | 2839 | 2842 | rBV4 | 1704 | 4127 | 0.32% | 0.058% |
| 59 | 18.736 | 2855 | 2858 | 2865 | rBV | 1153 | 2200 | 0.17% | 0.031% |
| 60 | 18.841 | 2874 | 2878 | 2880 | rBV2 | 968 | 1121 | 0.09% | 0.016% |
| 61 | 19.013 | 2898 | 2911 | 2920 | rBV2 | 2140 | 7682 | 0.59% | 0.107% |
| 62 | 19.081 | 2923 | 2924 | 2932 | rBV5 | 866 | 1328 | 0.10% | 0.019% |
| 63 | 19.134 | 2932 | 2934 | 2943 | rVB5 | 990 | 1339 | 0.10% | 0.019% |
| 64 | 19.202 | 2943 | 2947 | 2952 | rBV6 | 1677 | 2888 | 0.22% | 0.040% |
| 65 | 19.264 | 2952 | 2959 | 2961 | rVV5 | 1434 | 2403 | 0.19% | 0.034% |
| 66 | 19.291 | 2961 | 2964 | 2969 | rVB5 | 1842 | 1841 | 0.14% | 0.026% |
| 67 | 19.369 | 2970 | 2979 | 2985 | rBV8 | 2463 | 5597 | 0.43% | 0.078% |
| 68 | 19.427 | 2988 | 2990 | 2995 | rVB6 | 1177 | 1408 | 0.11% | 0.020% |
| 69 | 19.526 | 3006 | 3009 | 3011 | rBV4 | 1321 | 1522 | 0.12% | 0.021% |
| 70 | 19.620 | 3021 | 3027 | 3028 | rVB5 | 1249 | 1906 | 0.15% | 0.027% |
| 71 | 19.657 | 3028 | 3034 | 3036 | rBV5 | 3012 | 4929 | 0.38% | 0.069% |
| 72 | 19.683 | 3036 | 3039 | 3047 | rVV6 | 3170 | 5183 | 0.40% | 0.072% |
| 73 | 19.761 | 3051 | 3054 | 3056 | rVB4 | 1142 | 896 | 0.07% | 0.013% |
| 74 | 19.835 | 3060 | 3068 | 3074 | rBV7 | 2248 | 4941 | 0.38% | 0.069% |
| 75 | 19.882 | 3074 | 3077 | 3082 | rVV6 | 1559 | 2315 | 0.18% | 0.032% |
| 76 | 19.918 | 3082 | 3084 | 3088 | rVV4 | 1096 | 1406 | 0.11% | 0.020% |
| 77 | 19.955 | 3088 | 3091 | 3094 | rVV5 | 925 | 1210 | 0.09% | 0.017% |
| 78 | 19.976 | 3094 | 3095 | 3099 | rVV3 | 795 | 953 | 0.07% | 0.013% |
| 79 | 20.033 | 3103 | 3106 | 3108 | rBV4 | 1033 | 1112 | 0.09% | 0.016% |
| 80 | 20.086 | 3113 | 3116 | 3120 | rVV6 | 1130 | 1955 | 0.15% | 0.027% |
| 81 | 20.138 | 3122 | 3126 | 3131 | rVV7 | 1327 | 2475 | 0.19% | 0.035% |
| 82 | 20.222 | 3131 | 3142 | 3147 | rVB10 | 1937 | 6139 | 0.47% | 0.086% |
| 83 | 20.263 | 3147 | 3150 | 3154 | rBV5 | 1271 | 1502 | 0.12% | 0.021% |
| 84 | 20.363 | 3164 | 3169 | 3173 | rBV7 | 2136 | 3079 | 0.24% | 0.043% |
| 85 | 20.483 | 3189 | 3192 | 3194 | rBV3 | 830 | 697 | 0.05% | 0.010% |
| 86 | 20.771 | 3239 | 3247 | 3254 | rVV3 | 4437 | 10165 | 0.78% | 0.142% |
| 87 | 20.912 | 3267 | 3274 | 3288 | rBV3 | 3089 | 10261 | 0.79% | 0.144% |
| 88 | 21.043 | 3294 | 3299 | 3301 | rBV5 | 850 | 1150 | 0.09% | 0.016% |
| 89 | 21.100 | 3301 | 3310 | 3321 | rVV5 | 3879 | 11483 | 0.89% | 0.161% |
| 90 | 21.189 | 3321 | 3327 | 3336 | rVB8 | 1502 | 3866 | 0.30% | 0.054% |
| 91 | 21.315 | 3348 | 3351 | 3353 | rBV4 | 1117 | 1583 | 0.12% | 0.022% |
| 92 | 21.336 | 3353 | 3355 | 3362 | rVV6 | 1952 | 3270 | 0.25% | 0.046% |
| 93 | 21.388 | 3363 | 3365 | 3372 | rVV5 | 1270 | 2133 | 0.16% | 0.030% |
| 94 | 21.519 | 3385 | 3390 | 3392 | rVB5 | 1185 | 1513 | 0.12% | 0.021% |
| 95 | 21.555 | 3392 | 3397 | 3402 | rBV7 | 989 | 1587 | 0.12% | 0.022% |

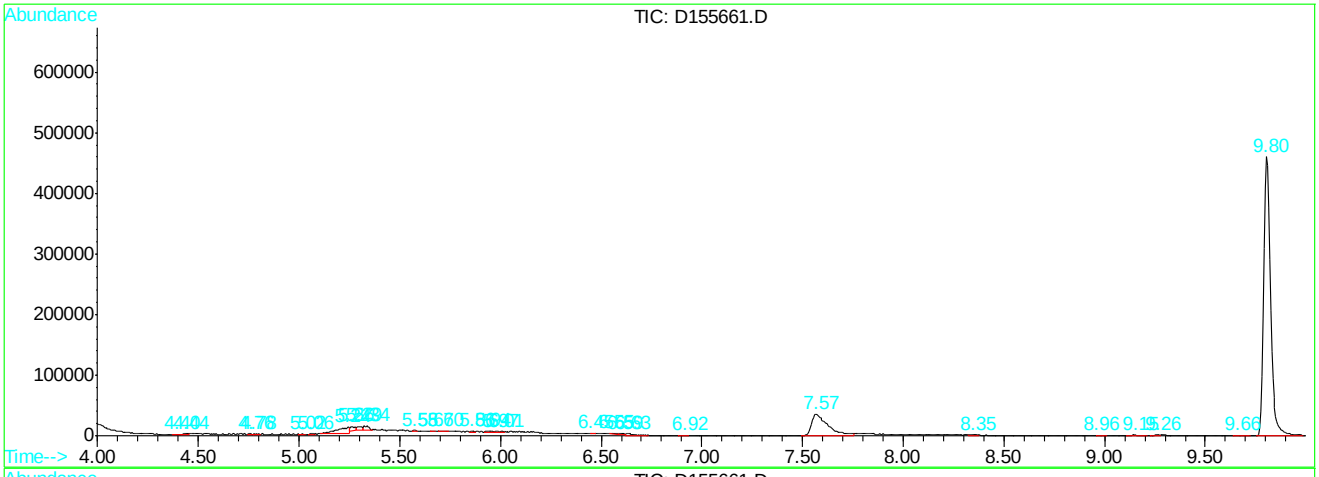
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 21.597 | 3402 | 3405 | 3406 | rBV2 | 1230 | 837 | 0.06% | 0.012% |
| 97 | 21.623 | 3409 | 3410 | 3415 | rVB4 | 1659 | 1629 | 0.13% | 0.023% |
| 98 | 21.676 | 3418 | 3420 | 3428 | rVB7 | 852 | 1135 | 0.09% | 0.016% |
| 99 | 21.749 | 3431 | 3434 | 3445 | rVB9 | 1709 | 2841 | 0.22% | 0.040% |
| 100 | 21.932 | 3462 | 3469 | 3478 | rBV6 | 11694 | 28153 | 2.17% | 0.394% |

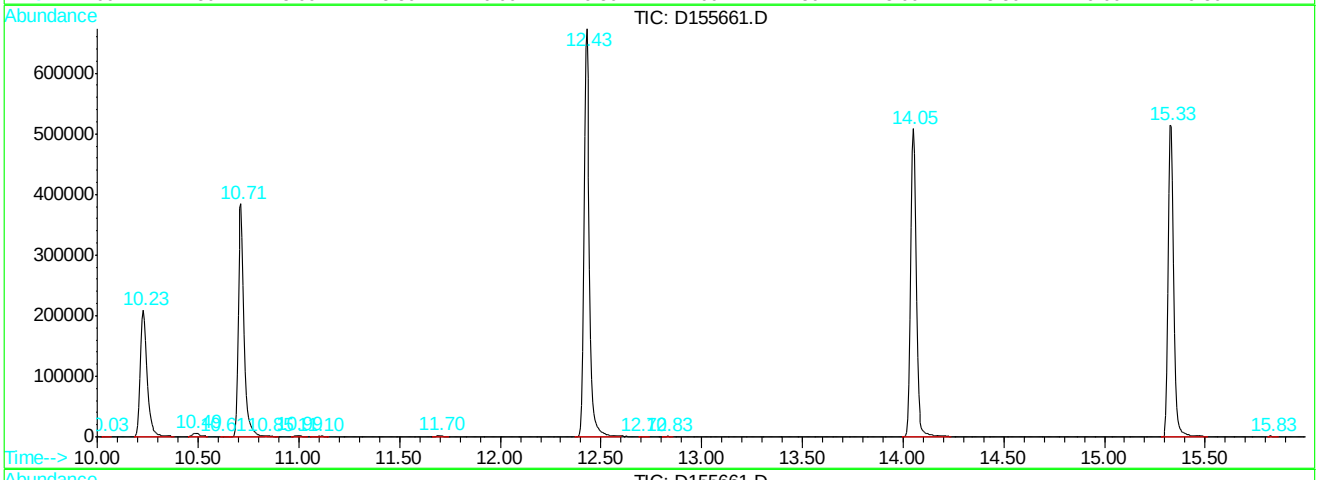
Sum of corrected areas: 7149248

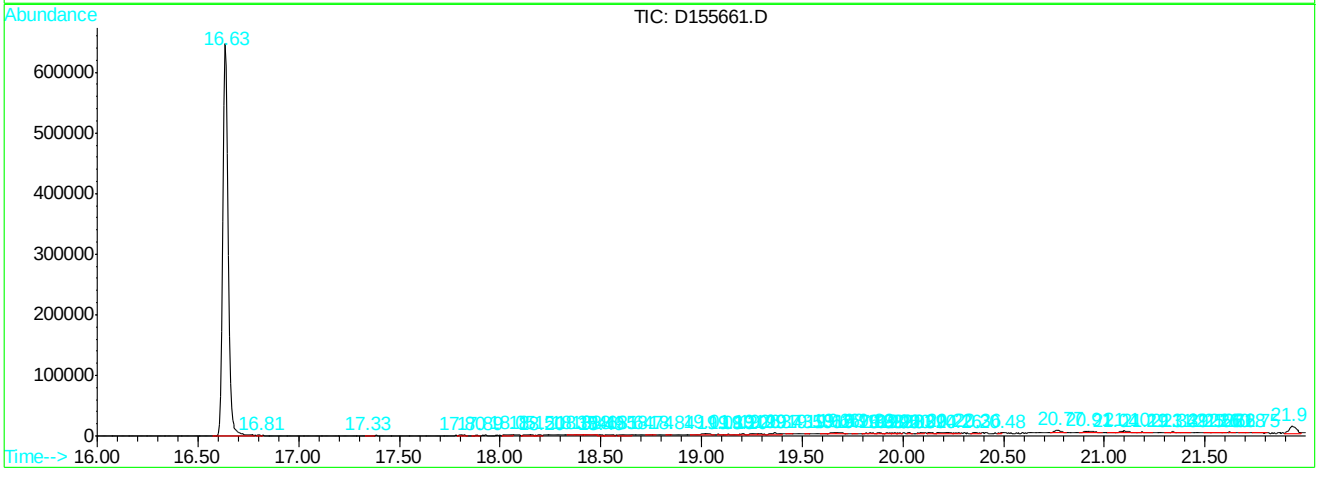
D155661.D MD6218.M Wed Jun 03 12:59:02 2009 MSD

LSC Report - Integrated Chromatogram

File : C:\HPCHEM\1\DATA\D155661.D
Operator : thienn
Acquired : 3 Jun 2009 10:14 am using AcqMethod MD6218
Instrument : MSD
Sample Name: mb1
Misc Info : MS80953,VD6254,5,,100,5,1
Vial Number: 4
Quant File :MD6218.RES (RTE Integrator)




D155661.D MD6218.M Wed Jun 03 12:59:02 2009 MSD

Tentatively Identified Compound (LSC) summary

Operator ID: thienn  Date Acquired:  3 Jun 2009  10:14 am
Data File: C:\HPCHEM\1\DATA\D155661.D
Name: mb1
Misc: MS80953,VD6254,5,,100,5,1
Method: C:\HPCHEM\1\METHODS\MD6218.M (RTE Integrator)
Title: SW-846 Method 8260B
Library Searched: C:\DATABASE\NIST98.L

| TIC | Top Hit name | RT | EstConc | Units | Area | IntStd | ISRT | ISArea | ISConc |
|---|---|---|---|---|---|---|---|---|---|
| D155661.D | MD6218.M | Wed Jun 03 12:59:02 2009 | | | | MSD | | | |

New Jersey

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## General Chemistry

# QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

# Percent Solids Raw Data Summary



**Job Number:** JA19940
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading, NJ

**Sample:** JA19940-1 **Analyzed:** 03-JUN-09 by KD **Method:** ASTM 4643-00
**ClientID:** 7930 SUMP(PE-1)

| | | |
|---|---|---|
| Wet Weight (Total) | 27.15 | g |
| Tare Weight | 17.85 | g |
| Dry Weight (Total) | 25.54 | g |
| Solids, Percent | 82.7 | % |

**APPENDIX VIII**

**Laboratory Analytical Data Package- Temporary Well—TK-7930-TW-1—October 26, 2009**

New Jersey
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12/21/12

# Technical Report for

EnviroTrac, Ltd.

Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Accutest Job Number: JA31597

Sampling Date: 10/28/09

Report to:

EnviroTrac

sarahd@envirotrac.com

ATTN: Sarah Dyson

Total number of pages in report: **160**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV

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Accutest LabLink@704161 09:49 21-Dec-2012

# Sample Summary

EnviroTrac, Ltd.

**Job No:** JA31597

Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| JA31597-1 | 10/28/09 | 09:55 | RD | 10/29/09 | AQ | Ground Water | TK-7930-TW1 |
| JA31597-2 | 10/28/09 | 10:20 | RD | 10/29/09 | AQ | Field Blank Water | FIELD BLANK |
| JA31597-3 | 10/28/09 | 10:20 | RD | 10/29/09 | AQ | Trip Blank Water | TRIP BLANK |

# CASE NARRATIVE / CONFORMANCE SUMMARY

| | | | |
|---|---|---|---|
| **Client:** | EnviroTrac, Ltd. | **Job No** | JA31597 |
| **Site:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | **Report Date** | 11/16/2009 10:59:02 A |

On 10/29/2009, 1 Sample(s), 1 Trip Blank(s) and 1 Field Blank(s) were received at Accutest Laboratories at a temperature of 2.6 C. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA31597 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## Volatiles by GCMS By Method SW846 8260B

**Matrix:** AQ **Batch ID:** V2C2892

- All samples were analyzed within the recommended method holding time.
- Sample(s) JA31630-4MS, JA31630-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

## Extractables by GCMS By Method SW846 8270C

**Matrix:** AQ **Batch ID:** OP40707

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) JA31445-6MS, JA31445-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for bis(2-Chloroethyl)ether are outside control limits.
- Sample(s) JA31597-2, OP40707-MB1, OP40707-BS1 have surrogates outside control limits. Probable cause due to matrix interference.
- OP40707-BS1 for bis(2-Chloroethyl)ether: Outside of in house control limits.
- OP40707-BS1 for 2-Fluorobiphenyl: Outside of in house control limits.
- OP40707-MB1 for Nitrobenzene-d5: Outside of in house control limits, but within reasonable method recovery limits.
- OP40707-MB1 for 2-Fluorobiphenyl: Outside of in house control limits, but within reasonable method recovery limits.
- OP40707-BS1 for Nitrobenzene-d5: Outside of in house control limits.
- JA31597-2 for 2-Fluorobiphenyl: Outside of in house control limits, but within reasonable method recovery limits.

## Extractables by GCMS By Method SW846 8270C BY SIM

**Matrix:** AQ **Batch ID:** OP40707A

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) JA31445-6MS, JA31445-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) OP40707A-MB1 have surrogates outside control limits. Probable cause due to matrix interference.
- OP40707A-MB1 for Nitrobenzene-d5: Outside of in house control limits.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

# Summary of Hits



**Job Number:** JA31597
**Account:** EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ
**Collected:** 10/28/09



| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **JA31597-1** | **TK-7930-TW1** | | | | | |
| No hits reported in this sample. | | | | | | |
| **JA31597-2** | **FIELD BLANK** | | | | | |
| Naphthalene | | 0.513 | 0.10 | 0.019 | ug/l | SW846 8270C BY SIM |
| **JA31597-3** | **TRIP BLANK** | | | | | |
| No hits reported in this sample. | | | | | | |

New Jersey

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Sample Results

Report of Analysis

Accutest LabLink@704161 09:49 21-Dec-2012

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TK-7930-TW1 | | |
| **Lab Sample ID:** | JA31597-1 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 2C63877.D | 1 | 11/07/09 | TLR | n/a | n/a | V2C2892 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 10 | 2.9 | ug/l | |
| 71-43-2 | Benzene | ND | 1.0 | 0.23 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 0.33 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.22 | ug/l | |
| 75-25-2 | Bromoform | ND | 4.0 | 0.23 | ug/l | |
| 74-83-9 | Bromomethane | ND | 2.0 | 0.30 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) | ND | 10 | 1.6 | ug/l | |
| 75-15-0 | Carbon disulfide | ND | 2.0 | 0.74 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 1.0 | 0.26 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.39 | ug/l | |
| 75-00-3 | Chloroethane | ND | 1.0 | 0.37 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.23 | ug/l | |
| 74-87-3 | Chloromethane | ND | 1.0 | 0.29 | ug/l | |
| 110-82-7 | Cyclohexane | ND | 5.0 | 1.9 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 10 | 1.1 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.22 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.39 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.25 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 0.92 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.29 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.33 | ug/l | |
| 75-35-4 | 1,1-Dichloroethene | ND | 1.0 | 0.40 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 1.0 | 0.22 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 1.0 | 0.25 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.27 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.25 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 123-91-1 | 1,4-Dioxane | ND | 130 | 94 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 76-13-1 | Freon 113 | ND | 5.0 | 0.38 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TK-7930-TW1 | | |
| **Lab Sample ID:** | JA31597-1 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | 5.0 | 1.4 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 2.0 | 0.57 | ug/l | |
| 79-20-9 | Methyl Acetate | ND | 5.0 | 1.5 | ug/l | |
| 108-87-2 | Methylcyclohexane | ND | 5.0 | 0.35 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | ND | 5.0 | 0.86 | ug/l | |
| 75-09-2 | Methylene chloride | ND | 2.0 | 0.30 | ug/l | |
| 100-42-5 | Styrene | ND | 5.0 | 0.58 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.24 | ug/l | |
| 127-18-4 | Tetrachloroethene | ND | 1.0 | 0.27 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 0.47 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 0.56 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.26 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.23 | ug/l | |
| 79-01-6 | Trichloroethene | ND | 1.0 | 0.24 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 0.54 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 1.0 | 0.44 | ug/l | |
| | m,p-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 95-47-6 | o-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 1.0 | 0.25 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 108% | | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 111% | | 64-135% |
| 2037-26-5 | Toluene-D8 | 93% | | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 89% | | 72-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Volatile | | 0 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TK-7930-TW1 | | |
| **Lab Sample ID:** | JA31597-1 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 3M15081.D | 1 | 11/07/09 | LP | 10/31/09 | OP40707 | E3M664 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1000 ml | 1.0 ml |
| Run #2 | | |

**BN TCL11 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 98-86-2 | Acetophenone | ND | 5.0 | 0.40 | ug/l | |
| 1912-24-9 | Atrazine | ND | 5.0 | 0.39 | ug/l | |
| 100-52-7 | Benzaldehyde | ND | 5.0 | 0.40 | ug/l | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 85-68-7 | Butyl benzyl phthalate | ND | 2.0 | 0.25 | ug/l | |
| 92-52-4 | 1,1'-Biphenyl | ND | 2.0 | 0.42 | ug/l | |
| 91-58-7 | 2-Chloronaphthalene | ND | 5.0 | 0.42 | ug/l | |
| 106-47-8 | 4-Chloroaniline | ND | 5.0 | 0.25 | ug/l | |
| 86-74-8 | Carbazole | ND | 2.0 | 0.17 | ug/l | |
| 105-60-2 | Caprolactam | ND | 2.0 | 0.20 | ug/l | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 2.0 | 0.25 | ug/l | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 2.0 | 0.31 | ug/l | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 2.0 | 0.39 | ug/l | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 121-14-2 | 2,4-Dinitrotoluene | ND | 2.0 | 0.22 | ug/l | |
| 606-20-2 | 2,6-Dinitrotoluene | ND | 2.0 | 0.33 | ug/l | |
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 5.0 | 0.30 | ug/l | |
| 132-64-9 | Dibenzofuran | ND | 5.0 | 0.30 | ug/l | |
| 84-74-2 | Di-n-butyl phthalate | ND | 2.0 | 0.19 | ug/l | |
| 117-84-0 | Di-n-octyl phthalate | ND | 2.0 | 0.40 | ug/l | |
| 84-66-2 | Diethyl phthalate | ND | 2.0 | 0.17 | ug/l | |
| 131-11-3 | Dimethyl phthalate | ND | 2.0 | 0.23 | ug/l | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | 2.0 | 0.33 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | ND | 1.0 | 0.37 | ug/l | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 20 | 0.67 | ug/l | |
| 67-72-1 | Hexachloroethane | ND | 5.0 | 0.26 | ug/l | |
| 78-59-1 | Isophorone | ND | 2.0 | 0.25 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 2.0 | 0.66 | ug/l | |
| 88-74-4 | 2-Nitroaniline | ND | 5.0 | 0.24 | ug/l | |
| 99-09-2 | 3-Nitroaniline | ND | 5.0 | 0.29 | ug/l | |
| 100-01-6 | 4-Nitroaniline | ND | 5.0 | 0.18 | ug/l | |
| 98-95-3 | Nitrobenzene | ND | 2.0 | 0.25 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TK-7930-TW1 | | |
| **Lab Sample ID:** | JA31597-1 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

**BN TCL11 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 2.0 | 0.44 | ug/l | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 5.0 | 0.22 | ug/l | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | ND | 5.0 | 0.48 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 90% | | 25-112% |
| 321-60-8 | 2-Fluorobiphenyl | 88% | | 31-106% |
| 1718-51-0 | Terphenyl-d14 | 44% | | 14-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Semi-Volatile | | 0 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TK-7930-TW1 | | |
| **Lab Sample ID:** | JA31597-1 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C BY SIM SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 4M13122.D | 1 | 11/07/09 | NAP | 10/31/09 | OP40707A | E4M606 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1000 ml | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 0.10 | 0.029 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 0.10 | 0.039 | ug/l | |
| 120-12-7 | Anthracene | ND | 0.10 | 0.026 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 0.10 | 0.024 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 0.10 | 0.031 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 0.10 | 0.036 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 0.10 | 0.029 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 0.10 | 0.028 | ug/l | |
| 218-01-9 | Chrysene | ND | 0.10 | 0.022 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 0.10 | 0.023 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 0.10 | 0.024 | ug/l | |
| 86-73-7 | Fluorene | ND | 0.10 | 0.027 | ug/l | |
| 118-74-1 | Hexachlorobenzene | ND | 0.020 | 0.0099 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 0.10 | 0.029 | ug/l | |
| 91-20-3 | Naphthalene | ND | 0.10 | 0.019 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 0.10 | 0.036 | ug/l | |
| 129-00-0 | Pyrene | ND | 0.10 | 0.022 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 102% | | 18-119% |
| 321-60-8 | 2-Fluorobiphenyl | 79% | | 18-104% |
| 1718-51-0 | Terphenyl-d14 | 41% | | 13-109% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FIELD BLANK | | |
| **Lab Sample ID:** | JA31597-2 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Field Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 2C63879.D | 1 | 11/07/09 | TLR | n/a | n/a | V2C2892 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 10 | 2.9 | ug/l | |
| 71-43-2 | Benzene | ND | 1.0 | 0.23 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 0.33 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.22 | ug/l | |
| 75-25-2 | Bromoform | ND | 4.0 | 0.23 | ug/l | |
| 74-83-9 | Bromomethane | ND | 2.0 | 0.30 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) | ND | 10 | 1.6 | ug/l | |
| 75-15-0 | Carbon disulfide | ND | 2.0 | 0.74 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 1.0 | 0.26 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.39 | ug/l | |
| 75-00-3 | Chloroethane | ND | 1.0 | 0.37 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.23 | ug/l | |
| 74-87-3 | Chloromethane | ND | 1.0 | 0.29 | ug/l | |
| 110-82-7 | Cyclohexane | ND | 5.0 | 1.9 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 10 | 1.1 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.22 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.39 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.25 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 0.92 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.29 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.33 | ug/l | |
| 75-35-4 | 1,1-Dichloroethene | ND | 1.0 | 0.40 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 1.0 | 0.22 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 1.0 | 0.25 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.27 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.25 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 123-91-1 | 1,4-Dioxane | ND | 130 | 94 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 76-13-1 | Freon 113 | ND | 5.0 | 0.38 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FIELD BLANK | | |
| **Lab Sample ID:** | JA31597-2 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Field Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | 5.0 | 1.4 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 2.0 | 0.57 | ug/l | |
| 79-20-9 | Methyl Acetate | ND | 5.0 | 1.5 | ug/l | |
| 108-87-2 | Methylcyclohexane | ND | 5.0 | 0.35 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | ND | 5.0 | 0.86 | ug/l | |
| 75-09-2 | Methylene chloride | ND | 2.0 | 0.30 | ug/l | |
| 100-42-5 | Styrene | ND | 5.0 | 0.58 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.24 | ug/l | |
| 127-18-4 | Tetrachloroethene | ND | 1.0 | 0.27 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 0.47 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 0.56 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.26 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.23 | ug/l | |
| 79-01-6 | Trichloroethene | ND | 1.0 | 0.24 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 0.54 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 1.0 | 0.44 | ug/l | |
| | m,p-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 95-47-6 | o-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 1.0 | 0.25 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 110% | | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 112% | | 64-135% |
| 2037-26-5 | Toluene-D8 | 100% | | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 89% | | 72-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Volatile | | 0 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FIELD BLANK | | |
| **Lab Sample ID:** | JA31597-2 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Field Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 3M15031.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1000 ml | 1.0 ml |
| Run #2 | | |

**BN TCL11 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 98-86-2 | Acetophenone | ND | 5.0 | 0.40 | ug/l | |
| 1912-24-9 | Atrazine | ND | 5.0 | 0.39 | ug/l | |
| 100-52-7 | Benzaldehyde | ND | 5.0 | 0.40 | ug/l | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 85-68-7 | Butyl benzyl phthalate | ND | 2.0 | 0.25 | ug/l | |
| 92-52-4 | 1,1'-Biphenyl | ND | 2.0 | 0.42 | ug/l | |
| 91-58-7 | 2-Chloronaphthalene | ND | 5.0 | 0.42 | ug/l | |
| 106-47-8 | 4-Chloroaniline | ND | 5.0 | 0.25 | ug/l | |
| 86-74-8 | Carbazole | ND | 2.0 | 0.17 | ug/l | |
| 105-60-2 | Caprolactam | ND | 2.0 | 0.20 | ug/l | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 2.0 | 0.25 | ug/l | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 2.0 | 0.31 | ug/l | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 2.0 | 0.39 | ug/l | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 121-14-2 | 2,4-Dinitrotoluene | ND | 2.0 | 0.22 | ug/l | |
| 606-20-2 | 2,6-Dinitrotoluene | ND | 2.0 | 0.33 | ug/l | |
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 5.0 | 0.30 | ug/l | |
| 132-64-9 | Dibenzofuran | ND | 5.0 | 0.30 | ug/l | |
| 84-74-2 | Di-n-butyl phthalate | ND | 2.0 | 0.19 | ug/l | |
| 117-84-0 | Di-n-octyl phthalate | ND | 2.0 | 0.40 | ug/l | |
| 84-66-2 | Diethyl phthalate | ND | 2.0 | 0.17 | ug/l | |
| 131-11-3 | Dimethyl phthalate | ND | 2.0 | 0.23 | ug/l | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | 2.0 | 0.33 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | ND | 1.0 | 0.37 | ug/l | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 20 | 0.67 | ug/l | |
| 67-72-1 | Hexachloroethane | ND | 5.0 | 0.26 | ug/l | |
| 78-59-1 | Isophorone | ND | 2.0 | 0.25 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 2.0 | 0.66 | ug/l | |
| 88-74-4 | 2-Nitroaniline | ND | 5.0 | 0.24 | ug/l | |
| 99-09-2 | 3-Nitroaniline | ND | 5.0 | 0.29 | ug/l | |
| 100-01-6 | 4-Nitroaniline | ND | 5.0 | 0.18 | ug/l | |
| 98-95-3 | Nitrobenzene | ND | 2.0 | 0.25 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FIELD BLANK | | |
| **Lab Sample ID:** | JA31597-2 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Field Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

**BN TCL11 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 2.0 | 0.44 | ug/l | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 5.0 | 0.22 | ug/l | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | ND | 5.0 | 0.48 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 104% | | 25-112% |
| 321-60-8 | 2-Fluorobiphenyl | 108% [a] | | 31-106% |
| 1718-51-0 | Terphenyl-d14 | 75% | | 14-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Semi-Volatile | | 0 | ug/l | |

(a) Outside of in house control limits, but within reasonable method recovery limits.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FIELD BLANK | | |
| **Lab Sample ID:** | JA31597-2 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Field Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8270C BY SIM SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 4M13123.D | 1 | 11/07/09 | NAP | 10/31/09 | OP40707A | E4M606 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1000 ml | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 0.10 | 0.029 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 0.10 | 0.039 | ug/l | |
| 120-12-7 | Anthracene | ND | 0.10 | 0.026 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 0.10 | 0.024 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 0.10 | 0.031 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 0.10 | 0.036 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 0.10 | 0.029 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 0.10 | 0.028 | ug/l | |
| 218-01-9 | Chrysene | ND | 0.10 | 0.022 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 0.10 | 0.023 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 0.10 | 0.024 | ug/l | |
| 86-73-7 | Fluorene | ND | 0.10 | 0.027 | ug/l | |
| 118-74-1 | Hexachlorobenzene | ND | 0.020 | 0.0099 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 0.10 | 0.029 | ug/l | |
| 91-20-3 | Naphthalene | 0.513 | 0.10 | 0.019 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 0.10 | 0.036 | ug/l | |
| 129-00-0 | Pyrene | ND | 0.10 | 0.022 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 114% | | 18-119% |
| 321-60-8 | 2-Fluorobiphenyl | 96% | | 18-104% |
| 1718-51-0 | Terphenyl-d14 | 64% | | 13-109% |

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest LabLink@704161 09:49 21-Dec-2012

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TRIP BLANK | | |
| **Lab Sample ID:** | JA31597-3 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Trip Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 2C63880.D | 1 | 11/07/09 | TLR | n/a | n/a | V2C2892 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 10 | 2.9 | ug/l | |
| 71-43-2 | Benzene | ND | 1.0 | 0.23 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 0.33 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.22 | ug/l | |
| 75-25-2 | Bromoform | ND | 4.0 | 0.23 | ug/l | |
| 74-83-9 | Bromomethane | ND | 2.0 | 0.30 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) | ND | 10 | 1.6 | ug/l | |
| 75-15-0 | Carbon disulfide | ND | 2.0 | 0.74 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 1.0 | 0.26 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.39 | ug/l | |
| 75-00-3 | Chloroethane | ND | 1.0 | 0.37 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.23 | ug/l | |
| 74-87-3 | Chloromethane | ND | 1.0 | 0.29 | ug/l | |
| 110-82-7 | Cyclohexane | ND | 5.0 | 1.9 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 10 | 1.1 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.22 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.39 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.25 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 0.92 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.29 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.33 | ug/l | |
| 75-35-4 | 1,1-Dichloroethene | ND | 1.0 | 0.40 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 1.0 | 0.22 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 1.0 | 0.25 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.27 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.25 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 123-91-1 | 1,4-Dioxane | ND | 130 | 94 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 76-13-1 | Freon 113 | ND | 5.0 | 0.38 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | TRIP BLANK | | |
| **Lab Sample ID:** | JA31597-3 | **Date Sampled:** | 10/28/09 |
| **Matrix:** | AQ - Trip Blank Water | **Date Received:** | 10/29/09 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ | | |

**VOA TCL List (SOM0 1.1)**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 591-78-6 | 2-Hexanone | ND | 5.0 | 1.4 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 2.0 | 0.57 | ug/l | |
| 79-20-9 | Methyl Acetate | ND | 5.0 | 1.5 | ug/l | |
| 108-87-2 | Methylcyclohexane | ND | 5.0 | 0.35 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | ND | 5.0 | 0.86 | ug/l | |
| 75-09-2 | Methylene chloride | ND | 2.0 | 0.30 | ug/l | |
| 100-42-5 | Styrene | ND | 5.0 | 0.58 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.24 | ug/l | |
| 127-18-4 | Tetrachloroethene | ND | 1.0 | 0.27 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 0.47 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 0.56 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.26 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.23 | ug/l | |
| 79-01-6 | Trichloroethene | ND | 1.0 | 0.24 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 0.54 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 1.0 | 0.44 | ug/l | |
| | m,p-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 95-47-6 | o-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 1.0 | 0.25 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 111% | | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 115% | | 64-135% |
| 2037-26-5 | Toluene-D8 | 104% | | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 90% | | 72-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Volatile | | 0 | ug/l | |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

# CHAIN OF CUSTODY

ACCUTEST Laboratories

2235 Route 130, Dayton NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #: 
Bottle Order Control #: 
Accutest Quote #: 
Accutest Job #: JA31597

**Client / Reporting Information**

Company Name: ENVIROTRAC
Address: 400 CORPORATE CT
City: S. PLAINFIELD State: NJ Zip:
Project Contact: BILL GROELING E-mail:
Phone #:
Sampler's Name: R. DELACRUZ

**Project Information**

Project Name: PORT READING REFINERY
Street:
City: State:
Project #:
Fax #:
Client Purchase Order #:

**Requested Analysis**

| Accutest Sample # | Field ID / Point of Collection | SUMMA # / MEOH Vial # | Collection Date | Collection Time | Sampled By | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | NaHSO4 | MEOH | ENCORE | 8260 BTEX MTBE | 8021 602 PAUG NAP TBA | 624 PPL TC +15 | 8260 624 STARS MTBE +10 NAP TBA | 8270 625 TC PPL STARS PAH PADF +TICS ABN BN | BN+15 | VO+10 | | | | | | | Matrix Codes / LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | TK-7930-TW1 | | 10-28 | 0955 | RD | DW | 5 | 3 | | | | 2 | | | | | | | | | X | X | | | | | | | 2163 |
| -2 | FIELD BLANK | | 1 | 1010 | 1 | 1 | 3 | 2 | | | | 1 | | | | | | | | | X | X | | | | | | | EX81 |
| -3 | TRIP BLANK | | 1 | | 1 | 1 | 2 | | | | | | | | | | | | | | | X | | | | | | | |

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

**Turnaround Time (Business Days)**

- ☒ Std. 15 Business Days
- ☐ 10 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*
- ☐ Other

Approved By: / Date:

**Emergency & Rush T/A data available VIA LabLink**

**Data Deliverable Information**

- ☐ Commercial "A"
- ☐ Commercial "B"
- ☒ NJ Reduced
- ☐ NJ Full
- ☐ Other _____
- ☐ FULL CLP
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format _____

Commercial "A" = Results Only

**Comments / Remarks**

• TB RU 10.27.09 @ 0630 10.29.09

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| Relinquished by Sampler: | Date Time: | Received by: | Relinquished by: | Date Time: | Received by: |
|---|---|---|---|---|---|
| 1 | 10-28 | 1 Robin Temp 10-29-9 12:55 | Robin Temp 10-29-9 | 16:55 | 2 |
| Relinquished by: 3 | Date Time: | Received by: 3 | Relinquished by: 4 | Date Time: | Received by: 4 |
| Relinquished by: 5 | Date Time: | Received by: 5 | Custody Seal # NO SEAL | Preserved where applicable ☐ | On Ice ☒ Cooler Temp. 2.6°C |

A. 1 Cooler

RPP

**JA31597: Chain of Custody**
**Page 1 of 2**

# Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** JA31597 **Client:** **Immediate Client Services Action Required:** No

**Date / Time Received:** 10/29/2009 **Delivery Method:** **Client Service Action Required at Login:** No

**Project:** **No. Coolers:** 1 **Airbill #'s:**

| Cooler Security | Y | N | | Y | N |
|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☑ | ☐ | 3. COC Present: | ☑ | ☐ |
| 2. Custody Seals Intact: | ☑ | ☐ | 4. Smpl Dates/Time OK | ☑ | ☐ |

| Cooler Temperature | Y | N |
|---|---|---|
| 1. Temp criteria achieved: | ☑ | ☐ |
| 2. Cooler temp verification: | Infared gun | |
| 3. Cooler media: | Ice (bag) | |

| Quality Control Preservatio | Y | N | N/A |
|---|---|---|---|
| 1. Trip Blank present / cooler: | ☑ | ☐ | |
| 2. Trip Blank listed on COC: | ☑ | ☐ | |
| 3. Samples preserved properly: | ☑ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☑ |

| Sample Integrity - Documentation | Y | N |
|---|---|---|
| 1. Sample labels present on bottles: | ☑ | ☐ |
| 2. Container labeling complete: | ☑ | ☐ |
| 3. Sample container label / COC agree: | ☑ | ☐ |

| Sample Integrity - Condition | Y | N |
|---|---|---|
| 1. Sample recvd within HT: | ☑ | ☐ |
| 2. All containers accounted for: | ☑ | ☐ |
| 3. Condition of sample: | Intact | |

| Sample Integrity - Instructions | Y | N | N/A |
|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☑ |

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com



**JA31597: Chain of Custody**
**Page 2 of 2**

# Internal Sample Tracking Chronicle

EnviroTrac, Ltd.

Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Job No:** JA31597



| Sample Number | Method | Analyzed | By | Prepped | By | Test Codes |
|---|---|---|---|---|---|---|
| JA31597-1 | Collected: 28-OCT-09 09:55 By: RD | | Received: 29-OCT-09 By: MPC | | | |
| TK-7930-TW1 | | | | | | |
| JA31597-1 | SW846 8270C BY SIM | 07-NOV-09 01:34 | NAP | 31-OCT-09 | AW | B8270SIMNJ |
| JA31597-1 | SW846 8260B | 07-NOV-09 02:16 | TLR | | | V8260TCL11+ |
| JA31597-1 | SW846 8270C | 07-NOV-09 04:23 | LP | 31-OCT-09 | AW | B8270NJTCL11+ |
| JA31597-2 | Collected: 28-OCT-09 10:20 By: RD | | Received: 29-OCT-09 By: MPC | | | |
| FIELD BLANK | | | | | | |
| JA31597-2 | SW846 8270C | 05-NOV-09 19:38 | LP | 31-OCT-09 | AW | B8270NJTCL11+ |
| JA31597-2 | SW846 8270C BY SIM | 07-NOV-09 01:56 | NAP | 31-OCT-09 | AW | B8270SIMNJ |
| JA31597-2 | SW846 8260B | 07-NOV-09 03:17 | TLR | | | V8260TCL11+ |
| JA31597-3 | Collected: 28-OCT-09 10:20 By: RD | | Received: 29-OCT-09 By: MPC | | | |
| TRIP BLANK | | | | | | |
| JA31597-3 | SW846 8260B | 07-NOV-09 03:48 | TLR | | | V8260TCL11+ |

# Accutest Internal Chain of Custody



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ
**Received:** 10/29/09

| Sample.Bottle Number | Transfer FROM | Transfer TO | Date/Time | Reason |
|---|---|---|---|---|
| JA31597-1.1 | Secured Storage | Alan Wan | 10/31/09 06:18 | Retrieve from Storage |
| JA31597-1.1 | Alan Wan | | 10/31/09 14:23 | Depleted |
| JA31597-1.1.1 | Alan Wan | Organics Prep | 10/31/09 06:20 | Extract from JA31597-1.1 |
| JA31597-1.1.1 | Organics Prep | Alan Wan | 10/31/09 14:24 | Extract from JA31597-1.1 |
| JA31597-1.1.1 | Alan Wan | Extract Storage | 10/31/09 14:24 | Return to Storage |
| JA31597-1.1.1 | Extract Storage | Larisa Pejdah | 11/05/09 16:54 | Retrieve from Storage |
| JA31597-1.1.1 | Larisa Pejdah | GCMS3M | 11/05/09 16:54 | Load on Instrument |
| JA31597-1.1.1 | GCMS3M | Larisa Pejdah | 11/06/09 13:23 | Unload from Instrument |
| JA31597-1.1.1 | Larisa Pejdah | Extract Freezer | 11/06/09 13:24 | Return to Storage |
| JA31597-1.1.1 | Extract Freezer | Larisa Pejdah | 11/06/09 21:57 | Retrieve from Storage |
| JA31597-1.1.1 | Larisa Pejdah | GCMS3M | 11/06/09 21:57 | Load on Instrument |
| JA31597-1.1.1 | GCMS3M | Kristi Schollenberger | 11/09/09 17:12 | Unload from Instrument |
| JA31597-1.1.1 | Kristi Schollenberger | Extract Freezer | 11/09/09 17:12 | Return to Storage |
| JA31597-1.1.1 | Extract Freezer | | 12/11/09 09:00 | Disposed |
| JA31597-1.1.2 | Alan Wan | Organics Prep | 10/31/09 06:26 | Extract from JA31597-1.1 |
| JA31597-1.1.2 | Organics Prep | Alan Wan | 10/31/09 14:25 | Extract from JA31597-1.1 |
| JA31597-1.1.2 | Alan Wan | Extract Storage | 10/31/09 14:25 | Return to Storage |
| JA31597-1.1.2 | Extract Storage | Nina Pandya | 11/06/09 11:58 | Retrieve from Storage |
| JA31597-1.1.2 | Nina Pandya | GCMS4M | 11/06/09 11:59 | Load on Instrument |
| JA31597-1.1.2 | GCMS4M | Nina Pandya | 11/09/09 10:53 | Unload from Instrument |
| JA31597-1.1.2 | Nina Pandya | Extract Freezer | 11/09/09 10:54 | Return to Storage |
| JA31597-1.1.2 | Extract Freezer | | 12/11/09 09:00 | Disposed |
| JA31597-1.4 | Secured Storage | Tara Reddington | 11/06/09 11:33 | Retrieve from Storage |
| JA31597-1.4 | Tara Reddington | Secured Storage | 11/06/09 17:31 | Return to Storage |
| JA31597-1.4 | Dave Hunkele | | 12/08/09 10:59 | Disposed |
| JA31597-2.1 | Secured Storage | Alan Wan | 10/31/09 06:18 | Retrieve from Storage |
| JA31597-2.1 | Alan Wan | | 10/31/09 14:23 | Depleted |
| JA31597-2.1.1 | Alan Wan | Organics Prep | 10/31/09 06:20 | Extract from JA31597-2.1 |
| JA31597-2.1.1 | Organics Prep | Alan Wan | 10/31/09 14:24 | Extract from JA31597-2.1 |
| JA31597-2.1.1 | Alan Wan | Extract Storage | 10/31/09 14:24 | Return to Storage |
| JA31597-2.1.1 | Extract Storage | Larisa Pejdah | 11/05/09 16:54 | Retrieve from Storage |
| JA31597-2.1.1 | Larisa Pejdah | GCMS3M | 11/05/09 16:54 | Load on Instrument |
| JA31597-2.1.1 | GCMS3M | Larisa Pejdah | 11/06/09 13:23 | Unload from Instrument |
| JA31597-2.1.1 | Larisa Pejdah | Extract Freezer | 11/06/09 13:24 | Return to Storage |
| JA31597-2.1.1 | Extract Freezer | | 12/11/09 09:00 | Disposed |
| JA31597-2.1.2 | Alan Wan | Organics Prep | 10/31/09 06:26 | Extract from JA31597-2.1 |
| JA31597-2.1.2 | Organics Prep | Alan Wan | 10/31/09 14:25 | Extract from JA31597-2.1 |
| JA31597-2.1.2 | Alan Wan | Extract Storage | 10/31/09 14:25 | Return to Storage |

# Accutest Internal Chain of Custody



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ
**Received:** 10/29/09

| Sample.Bottle Number | Transfer FROM | Transfer TO | Date/Time | Reason |
|---|---|---|---|---|
| JA31597-2.1.2 | Extract Storage | Nina Pandya | 11/06/09 11:58 | Retrieve from Storage |
| JA31597-2.1.2 | Nina Pandya | GCMS4M | 11/06/09 11:59 | Load on Instrument |
| JA31597-2.1.2 | GCMS4M | Nina Pandya | 11/09/09 10:53 | Unload from Instrument |
| JA31597-2.1.2 | Nina Pandya | Extract Freezer | 11/09/09 10:54 | Return to Storage |
| JA31597-2.1.2 | Extract Freezer | | 12/11/09 09:00 | Disposed |
| JA31597-2.4 | Secured Storage | Tara Reddington | 11/06/09 16:47 | Retrieve from Storage |
| JA31597-2.4 | Tara Reddington | GCMS2C | 11/06/09 16:48 | Load on Instrument |
| JA31597-2.4 | GCMS2C | Tara Reddington | 11/09/09 08:07 | Unload from Instrument |
| JA31597-2.4 | Tara Reddington | Secured Storage | 11/09/09 08:07 | Return to Storage |
| JA31597-2.4 | Dave Hunkele | | 12/08/09 10:59 | Disposed |
| JA31597-3.4 | Secured Storage | Tara Reddington | 11/06/09 16:47 | Retrieve from Storage |
| JA31597-3.4 | Tara Reddington | GCMS2C | 11/06/09 16:48 | Load on Instrument |
| JA31597-3.4 | GCMS2C | Tara Reddington | 11/09/09 08:07 | Unload from Instrument |
| JA31597-3.4 | Tara Reddington | Secured Storage | 11/09/09 08:07 | Return to Storage |
| JA31597-3.4 | Dave Hunkele | | 12/08/09 10:59 | Disposed |

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# GC/MS Volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

# Method Blank Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V2C2892-MB | 2C63867.D | 1 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 10 | 2.9 | ug/l | |
| 71-43-2 | Benzene | ND | 1.0 | 0.23 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 0.33 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.22 | ug/l | |
| 75-25-2 | Bromoform | ND | 4.0 | 0.23 | ug/l | |
| 74-83-9 | Bromomethane | ND | 2.0 | 0.30 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) | ND | 10 | 1.6 | ug/l | |
| 75-15-0 | Carbon disulfide | ND | 2.0 | 0.74 | ug/l | |
| 56-23-5 | Carbon tetrachloride | ND | 1.0 | 0.26 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.39 | ug/l | |
| 75-00-3 | Chloroethane | ND | 1.0 | 0.37 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.23 | ug/l | |
| 74-87-3 | Chloromethane | ND | 1.0 | 0.29 | ug/l | |
| 110-82-7 | Cyclohexane | ND | 5.0 | 1.9 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 10 | 1.1 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.22 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.39 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.25 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 0.92 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.29 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.33 | ug/l | |
| 75-35-4 | 1,1-Dichloroethene | ND | 1.0 | 0.40 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethene | ND | 1.0 | 0.22 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethene | ND | 1.0 | 0.25 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.27 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.25 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 123-91-1 | 1,4-Dioxane | ND | 130 | 94 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 76-13-1 | Freon 113 | ND | 5.0 | 0.38 | ug/l | |
| 591-78-6 | 2-Hexanone | ND | 5.0 | 1.4 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 2.0 | 0.57 | ug/l | |
| 79-20-9 | Methyl Acetate | ND | 5.0 | 1.5 | ug/l | |
| 108-87-2 | Methylcyclohexane | ND | 5.0 | 0.35 | ug/l | |

# Method Blank Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V2C2892-MB | 2C63867.D | 1 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | ND | 5.0 | 0.86 | ug/l | |
| 75-09-2 | Methylene chloride | ND | 2.0 | 0.30 | ug/l | |
| 100-42-5 | Styrene | ND | 5.0 | 0.58 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.24 | ug/l | |
| 127-18-4 | Tetrachloroethene | ND | 1.0 | 0.27 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 0.47 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 0.56 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.26 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.23 | ug/l | |
| 79-01-6 | Trichloroethene | ND | 1.0 | 0.24 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 0.54 | ug/l | |
| 75-01-4 | Vinyl chloride | ND | 1.0 | 0.44 | ug/l | |
| | m,p-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 95-47-6 | o-Xylene | ND | 1.0 | 0.25 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 1.0 | 0.25 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 109% | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 108% | 64-135% |
| 2037-26-5 | Toluene-D8 | 99% | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 89% | 72-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Volatile | | 0 | ug/l | |

# Blank Spike Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V2C2892-BS | 2C63868.D | 1 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 67-64-1 | Acetone | 50 | 44.7 | 89 | 51-151 |
| 71-43-2 | Benzene | 50 | 46.8 | 94 | 75-122 |
| 74-97-5 | Bromochloromethane | 50 | 51.5 | 103 | 78-124 |
| 75-27-4 | Bromodichloromethane | 50 | 49.4 | 99 | 77-128 |
| 75-25-2 | Bromoform | 50 | 51.8 | 104 | 67-141 |
| 74-83-9 | Bromomethane | 50 | 54.2 | 108 | 53-152 |
| 78-93-3 | 2-Butanone (MEK) | 50 | 48.0 | 96 | 64-130 |
| 75-15-0 | Carbon disulfide | 50 | 44.4 | 89 | 59-140 |
| 56-23-5 | Carbon tetrachloride | 50 | 49.8 | 100 | 75-148 |
| 108-90-7 | Chlorobenzene | 50 | 46.9 | 94 | 76-124 |
| 75-00-3 | Chloroethane | 50 | 56.6 | 113 | 54-147 |
| 67-66-3 | Chloroform | 50 | 51.3 | 103 | 77-124 |
| 74-87-3 | Chloromethane | 50 | 56.2 | 112 | 46-144 |
| 110-82-7 | Cyclohexane | 50 | 45.8 | 92 | 62-127 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 50 | 43.9 | 88 | 64-134 |
| 124-48-1 | Dibromochloromethane | 50 | 48.8 | 98 | 76-132 |
| 106-93-4 | 1,2-Dibromoethane | 50 | 46.9 | 94 | 75-130 |
| 95-50-1 | 1,2-Dichlorobenzene | 50 | 47.0 | 94 | 74-125 |
| 541-73-1 | 1,3-Dichlorobenzene | 50 | 47.0 | 94 | 73-124 |
| 106-46-7 | 1,4-Dichlorobenzene | 50 | 46.8 | 94 | 71-123 |
| 75-71-8 | Dichlorodifluoromethane | 50 | 42.7 | 85 | 42-152 |
| 75-34-3 | 1,1-Dichloroethane | 50 | 53.3 | 107 | 72-124 |
| 107-06-2 | 1,2-Dichloroethane | 50 | 47.7 | 95 | 66-150 |
| 75-35-4 | 1,1-Dichloroethene | 50 | 47.1 | 94 | 61-132 |
| 156-59-2 | cis-1,2-Dichloroethene | 50 | 50.0 | 100 | 71-119 |
| 156-60-5 | trans-1,2-Dichloroethene | 50 | 49.0 | 98 | 71-123 |
| 78-87-5 | 1,2-Dichloropropane | 50 | 47.3 | 95 | 75-120 |
| 10061-01-5 | cis-1,3-Dichloropropene | 50 | 47.4 | 95 | 77-124 |
| 10061-02-6 | trans-1,3-Dichloropropene | 50 | 44.9 | 90 | 75-132 |
| 123-91-1 | 1,4-Dioxane | 1250 | 1270 | 102 | 57-147 |
| 100-41-4 | Ethylbenzene | 50 | 43.2 | 86 | 77-124 |
| 76-13-1 | Freon 113 | 50 | 49.8 | 100 | 58-149 |
| 591-78-6 | 2-Hexanone | 50 | 42.7 | 85 | 58-136 |
| 98-82-8 | Isopropylbenzene | 50 | 36.4 | 73 | 60-136 |
| 79-20-9 | Methyl Acetate | 50 | 47.2 | 94 | 57-139 |
| 108-87-2 | Methylcyclohexane | 50 | 46.4 | 93 | 73-130 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V2C2892-BS | 2C63868.D | 1 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 1634-04-4 | Methyl Tert Butyl Ether | 50 | 49.4 | 99 | 72-127 |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | 50 | 46.1 | 92 | 63-135 |
| 75-09-2 | Methylene chloride | 50 | 42.0 | 84 | 69-122 |
| 100-42-5 | Styrene | 50 | 45.2 | 90 | 78-126 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 50 | 41.6 | 83 | 66-125 |
| 127-18-4 | Tetrachloroethene | 50 | 44.5 | 89 | 70-136 |
| 108-88-3 | Toluene | 50 | 43.9 | 88 | 76-126 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 50 | 46.9 | 94 | 62-132 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 50 | 47.7 | 95 | 67-132 |
| 71-55-6 | 1,1,1-Trichloroethane | 50 | 51.5 | 103 | 77-136 |
| 79-00-5 | 1,1,2-Trichloroethane | 50 | 46.0 | 92 | 75-123 |
| 79-01-6 | Trichloroethene | 50 | 45.9 | 92 | 79-126 |
| 75-69-4 | Trichlorofluoromethane | 50 | 48.7 | 97 | 56-154 |
| 75-01-4 | Vinyl chloride | 50 | 57.9 | 116 | 56-146 |
| | m,p-Xylene | 100 | 89.9 | 90 | 77-125 |
| 95-47-6 | o-Xylene | 50 | 45.9 | 92 | 76-126 |
| 1330-20-7 | Xylene (total) | 150 | 136 | 91 | 77-125 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 109% | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 105% | 64-135% |
| 2037-26-5 | Toluene-D8 | 98% | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 88% | 72-122% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| JA31630-4MS | 2C63871.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |
| JA31630-4MSD | 2C63872.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |
| JA31630-4 [a] | 2C63870.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | JA31630-4 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | | 1250 | 1230 | 98 | 1180 | 94 | 4 | 44-157/20 |
| 71-43-2 | Benzene | 3020 | | 1250 | 4270 | 100 | 3980 | 77 | 7 | 38-139/13 |
| 74-97-5 | Bromochloromethane | ND | | 1250 | 1420 | 114 | 1410 | 113 | 1 | 70-129/11 |
| 75-27-4 | Bromodichloromethane | ND | | 1250 | 1310 | 105 | 1270 | 102 | 3 | 70-135/13 |
| 75-25-2 | Bromoform | ND | | 1250 | 1330 | 106 | 1310 | 105 | 2 | 53-139/13 |
| 74-83-9 | Bromomethane | ND | | 1250 | 1400 | 112 | 1330 | 106 | 5 | 44-150/18 |
| 78-93-3 | 2-Butanone (MEK) | ND | | 1250 | 1300 | 104 | 1300 | 104 | 0 | 58-140/14 |
| 75-15-0 | Carbon disulfide | ND | | 1250 | 1480 | 118 | 1430 | 114 | 3 | 34-136/21 |
| 56-23-5 | Carbon tetrachloride | ND | | 1250 | 1450 | 116 | 1430 | 114 | 1 | 50-161/18 |
| 108-90-7 | Chlorobenzene | ND | | 1250 | 1290 | 103 | 1280 | 102 | 1 | 65-128/12 |
| 75-00-3 | Chloroethane | ND | | 1250 | 1450 | 116 | 1410 | 113 | 3 | 41-151/18 |
| 67-66-3 | Chloroform | ND | | 1250 | 1410 | 113 | 1370 | 110 | 3 | 66-132/14 |
| 74-87-3 | Chloromethane | ND | | 1250 | 1470 | 118 | 1380 | 110 | 6 | 35-149/22 |
| 110-82-7 | Cyclohexane | 79.7 | J | 1250 | 1560 | 118 | 1510 | 114 | 3 | 29-158/18 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | | 1250 | 1120 | 90 | 1180 | 94 | 5 | 58-141/14 |
| 124-48-1 | Dibromochloromethane | ND | | 1250 | 1350 | 108 | 1330 | 106 | 1 | 67-134/12 |
| 106-93-4 | 1,2-Dibromoethane | ND | | 1250 | 1300 | 104 | 1290 | 103 | 1 | 69-130/11 |
| 95-50-1 | 1,2-Dichlorobenzene | ND | | 1250 | 1220 | 98 | 1230 | 98 | 1 | 65-128/12 |
| 541-73-1 | 1,3-Dichlorobenzene | ND | | 1250 | 1230 | 98 | 1230 | 98 | 0 | 63-128/13 |
| 106-46-7 | 1,4-Dichlorobenzene | ND | | 1250 | 1230 | 98 | 1230 | 98 | 0 | 63-126/13 |
| 75-71-8 | Dichlorodifluoromethane | ND | | 1250 | 1260 | 101 | 1260 | 101 | 0 | 24-170/24 |
| 75-34-3 | 1,1-Dichloroethane | ND | | 1250 | 1510 | 121 | 1450 | 116 | 4 | 59-132/15 |
| 107-06-2 | 1,2-Dichloroethane | ND | | 1250 | 1370 | 110 | 1330 | 106 | 3 | 59-153/15 |
| 75-35-4 | 1,1-Dichloroethene | ND | | 1250 | 1420 | 114 | 1400 | 112 | 1 | 41-144/17 |
| 156-59-2 | cis-1,2-Dichloroethene | ND | | 1250 | 1370 | 110 | 1350 | 108 | 1 | 57-131/13 |
| 156-60-5 | trans-1,2-Dichloroethene | ND | | 1250 | 1460 | 117 | 1430 | 114 | 2 | 55-131/15 |
| 78-87-5 | 1,2-Dichloropropane | ND | | 1250 | 1310 | 105 | 1270 | 102 | 3 | 67-125/12 |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | | 1250 | 1290 | 103 | 1160 | 93 | 11 | 68-126/13 |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | | 1250 | 1210 | 97 | 1150 | 92 | 5 | 68-134/13 |
| 123-91-1 | 1,4-Dioxane | ND | | 31300 | 30400 | 97 | 31500 | 101 | 4 | 52-148/22 |
| 100-41-4 | Ethylbenzene | 809 | | 1250 | 2020 | 97 | 1930 | 90 | 5 | 37-143/13 |
| 76-13-1 | Freon 113 | ND | | 1250 | 1270 | 102 | 1260 | 101 | 1 | 33-159/19 |
| 591-78-6 | 2-Hexanone | ND | | 1250 | 1140 | 91 | 1090 | 87 | 4 | 53-145/17 |
| 98-82-8 | Isopropylbenzene | 33.3 | J | 1250 | 1190 | 93 | 1200 | 93 | 1 | 48-141/15 |
| 79-20-9 | Methyl Acetate | ND | | 1250 | 1180 | 94 | 1220 | 98 | 3 | 46-147/18 |
| 108-87-2 | Methylcyclohexane | 28.2 | J | 1250 | 1250 | 98 | 1210 | 95 | 3 | 36-156/18 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| JA31630-4MS | 2C63871.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |
| JA31630-4MSD | 2C63872.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |
| JA31630-4 [a] | 2C63870.D | 25 | 11/06/09 | TLR | n/a | n/a | V2C2892 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

JA31597-1, JA31597-2, JA31597-3

| CAS No. | Compound | JA31630-4 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1634-04-4 | Methyl Tert Butyl Ether | ND | | 1250 | 1380 | 110 | 1350 | 108 | 2 | 53-139/14 |
| 108-10-1 | 4-Methyl-2-pentanone(MIBK) | ND | | 1250 | 1250 | 100 | 1130 | 90 | 10 | 57-141/14 |
| 75-09-2 | Methylene chloride | ND | | 1250 | 1210 | 97 | 1190 | 95 | 2 | 59-129/12 |
| 100-42-5 | Styrene | ND | | 1250 | 1280 | 102 | 1250 | 100 | 2 | 60-135/13 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | | 1250 | 1100 | 88 | 1100 | 88 | 0 | 62-126/13 |
| 127-18-4 | Tetrachloroethene | ND | | 1250 | 1270 | 102 | 1280 | 102 | 1 | 48-145/15 |
| 108-88-3 | Toluene | 1660 | | 1250 | 2740 | 86 | 2520 | 69 | 8 | 44-141/14 |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | | 1250 | 1170 | 94 | 1270 | 102 | 8 | 54-137/14 |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | | 1250 | 1260 | 101 | 1340 | 107 | 6 | 59-135/13 |
| 71-55-6 | 1,1,1-Trichloroethane | ND | | 1250 | 1470 | 118 | 1420 | 114 | 3 | 55-149/18 |
| 79-00-5 | 1,1,2-Trichloroethane | ND | | 1250 | 1200 | 96 | 1150 | 92 | 4 | 70-127/12 |
| 79-01-6 | Trichloroethene | ND | | 1250 | 1310 | 105 | 1270 | 102 | 3 | 53-141/15 |
| 75-69-4 | Trichlorofluoromethane | ND | | 1250 | 1280 | 102 | 1270 | 102 | 1 | 35-169/23 |
| 75-01-4 | Vinyl chloride | ND | | 1250 | 1560 | 125 | 1540 | 123 | 1 | 34-151/20 |
| | m,p-Xylene | 1260 | | 2500 | 3720 | 98 | 3590 | 93 | 4 | 32-146/13 |
| 95-47-6 | o-Xylene | 1280 | | 1250 | 2500 | 98 | 2400 | 90 | 4 | 46-141/12 |
| 1330-20-7 | Xylene (total) | 2530 | | 3750 | 6220 | 98 | 5990 | 92 | 4 | 36-144/13 |

| CAS No. | Surrogate Recoveries | MS | MSD | JA31630-4 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 108% | 107% | | 76-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 104% | 101% | | 64-135% |
| 2037-26-5 | Toluene-D8 | 97% | 93% | | 76-117% |
| 460-00-4 | 4-Bromofluorobenzene | 86% | 87% | | 72-122% |

(a) Sample used for QC purposes only. Check failed low for acrolein.

* = Outside of Control Limits.

# Instrument Performance Check (BFB)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** V2C2824-BFB
**Lab File ID:** 2C62451.D
**Instrument ID:** GCMS2C
**Injection Date:** 09/30/09
**Injection Time:** 12:06

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 9159 | 17.6 | | Pass |
| 75 | 30.0 - 60.0% of mass 95 | 23365 | 45.0 | | Pass |
| 95 | Base peak, 100% relative abundance | 51965 | 100.0 | | Pass |
| 96 | 5.0 - 9.0% of mass 95 | 3409 | 6.6 | | Pass |
| 173 | Less than 2.0% of mass 174 | 259 | 0.5 | (0.57) [a] | Pass |
| 174 | 50.0 - 120.0% of mass 95 | 45650 | 87.8 | | Pass |
| 175 | 5.0 - 9.0% of mass 174 | 3260 | 6.3 | (7.1) [a] | Pass |
| 176 | 95.0 - 101.0% of mass 174 | 44352 | 85.3 | (97.2) [a] | Pass |
| 177 | 5.0 - 9.0% of mass 176 | 2937 | 5.7 | (6.6) [b] | Pass |

(a) Value is % of mass 174
(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| V2C2824-IC2824 | 2C62452.D | 09/30/09 | 12:40 | 00:34 | Initial cal 0.5 |
| V2C2824-IC2824 | 2C62453.D | 09/30/09 | 13:18 | 01:12 | Initial cal 5 |
| V2C2824-IC2824 | 2C62454.D | 09/30/09 | 13:49 | 01:43 | Initial cal 2 |
| V2C2824-IC2824 | 2C62455.D | 09/30/09 | 14:20 | 02:14 | Initial cal 1 |
| V2C2824-IC2824 | 2C62456.D | 09/30/09 | 14:51 | 02:45 | Initial cal 10 |
| V2C2824-IC2824 | 2C62457.D | 09/30/09 | 15:22 | 03:16 | Initial cal 20 |
| V2C2824-ICC2824 | 2C62458.D | 09/30/09 | 15:53 | 03:47 | Initial cal 50 |
| V2C2824-IC2824 | 2C62459.D | 09/30/09 | 16:24 | 04:18 | Initial cal 200 |
| V2C2824-IC2824 | 2C62460.D | 09/30/09 | 16:55 | 04:49 | Initial cal 100 |
| V2C2824-ICV2824 | 2C62461.D | 09/30/09 | 17:26 | 05:20 | Initial cal verification 50 |

# Instrument Performance Check (BFB)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** V2C2892-BFB
**Lab File ID:** 2C63864.D
**Instrument ID:** GCMS2C
**Injection Date:** 11/06/09
**Injection Time:** 19:36

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 9263 | 22.3 | | Pass |
| 75 | 30.0 - 60.0% of mass 95 | 21384 | 51.6 | | Pass |
| 95 | Base peak, 100% relative abundance | 41456 | 100.0 | | Pass |
| 96 | 5.0 - 9.0% of mass 95 | 2739 | 6.6 | | Pass |
| 173 | Less than 2.0% of mass 174 | 126 | 0.3 | (0.42) [a] | Pass |
| 174 | 50.0 - 120.0% of mass 95 | 29778 | 71.8 | | Pass |
| 175 | 5.0 - 9.0% of mass 174 | 2253 | 5.4 | (7.6) [a] | Pass |
| 176 | 95.0 - 101.0% of mass 174 | 29162 | 70.3 | (97.9) [a] | Pass |
| 177 | 5.0 - 9.0% of mass 176 | 1893 | 4.6 | (6.5) [b] | Pass |

(a) Value is % of mass 174
(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| V2C2892-CC2824 | 2C63865.D | 11/06/09 | 20:07 | 00:31 | Continuing cal 50 |
| V2C2892-MB | 2C63867.D | 11/06/09 | 21:08 | 01:32 | Method Blank |
| V2C2892-BS | 2C63868.D | 11/06/09 | 21:39 | 02:03 | Blank Spike |
| JA31630-4 | 2C63870.D | 11/06/09 | 22:40 | 03:04 | (used for QC only; not part of job JA31597) |
| JA31630-4MS | 2C63871.D | 11/06/09 | 23:11 | 03:35 | Matrix Spike |
| JA31630-4MSD | 2C63872.D | 11/06/09 | 23:42 | 04:06 | Matrix Spike Duplicate |
| ZZZZZZ | 2C63874R.D | 11/07/09 | 00:43 | 05:07 | (unrelated sample) |
| ZZZZZZ | 2C63874.D | 11/07/09 | 00:43 | 05:07 | (unrelated sample) |
| ZZZZZZ | 2C63875.D | 11/07/09 | 01:14 | 05:38 | (unrelated sample) |
| ZZZZZZ | 2C63876.D | 11/07/09 | 01:45 | 06:09 | (unrelated sample) |
| JA31597-1 | 2C63877.D | 11/07/09 | 02:16 | 06:40 | TK-7930-TW1 |
| JA31597-2 | 2C63879.D | 11/07/09 | 03:17 | 07:41 | FIELD BLANK |
| JA31597-3 | 2C63880.D | 11/07/09 | 03:48 | 08:12 | TRIP BLANK |

# Volatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | V2C2892-CC2824 | **Injection Date:** | 11/06/09 |
| **Lab File ID:** | 2C63865.D | **Injection Time:** | 20:07 |
| **Instrument ID:** | GCMS2C | **Method:** | SW846 8260B |

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|
| Check Std | 80649 | 8.70 | 168312 | 11.09 | 269086 | 12.00 | 221051 | 14.95 | 117916 | 17.10 |
| Upper Limit [a] | 161298 | 9.20 | 336624 | 11.59 | 538172 | 12.50 | 442102 | 15.45 | 235832 | 17.60 |
| Lower Limit [b] | 40325 | 8.20 | 84156 | 10.59 | 134543 | 11.50 | 110526 | 14.45 | 58958 | 16.60 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|
| V2C2892-MB | 86212 | 8.70 | 165646 | 11.09 | 267864 | 12.00 | 222807 | 14.95 | 112611 | 17.10 |
| V2C2892-BS | 80576 | 8.69 | 162686 | 11.09 | 263830 | 12.00 | 223306 | 14.95 | 117210 | 17.10 |
| JA31630-4 | 88985 | 8.69 | 166570 | 11.09 | 271578 | 12.00 | 228817 | 14.95 | 117989 | 17.10 |
| JA31630-4MS | 84625 | 8.69 | 165237 | 11.09 | 266225 | 12.00 | 221970 | 14.95 | 120168 | 17.10 |
| JA31630-4MSD | 88838 | 8.69 | 174000 | 11.09 | 275619 | 12.00 | 218954 | 14.95 | 116480 | 17.10 |
| ZZZZZZ | 109989 | 8.69 | 176985 | 11.09 | 277698 | 12.00 | 227690 | 14.95 | 116800 | 17.10 |
| ZZZZZZ | 109989 | 8.69 | 176985 | 11.09 | 277698 | 12.00 | 227690 | 14.95 | 116800 | 17.10 |
| ZZZZZZ | 87874 | 8.70 | 177144 | 11.09 | 279196 | 12.00 | 229354 | 14.95 | 115403 | 17.10 |
| ZZZZZZ | 82033 | 8.69 | 165903 | 11.09 | 269852 | 12.00 | 232083 | 14.95 | 114999 | 17.10 |
| JA31597-1 | 78291 | 8.69 | 159061 | 11.09 | 261470 | 12.00 | 221603 | 14.95 | 111004 | 17.10 |
| JA31597-2 | 73321 | 8.69 | 154467 | 11.09 | 254864 | 12.00 | 211761 | 14.95 | 107498 | 17.10 |
| JA31597-3 | 73640 | 8.70 | 146035 | 11.09 | 243960 | 12.00 | 212027 | 14.95 | 106534 | 17.10 |

**IS 1** = Tert Butyl Alcohol-D9
**IS 2** = Pentafluorobenzene
**IS 3** = 1,4-Difluorobenzene
**IS 4** = Chlorobenzene-D5
**IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Volatile Surrogate Recovery Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Method:** SW846 8260B **Matrix:** AQ

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|
| JA31597-1 | 2C63877.D | 108.0 | 111.0 | 93.0 | 89.0 |
| JA31597-2 | 2C63879.D | 110.0 | 112.0 | 100.0 | 89.0 |
| JA31597-3 | 2C63880.D | 111.0 | 115.0 | 104.0 | 90.0 |
| JA31630-4MS | 2C63871.D | 108.0 | 104.0 | 97.0 | 86.0 |
| JA31630-4MSD | 2C63872.D | 107.0 | 101.0 | 93.0 | 87.0 |
| V2C2892-BS | 2C63868.D | 109.0 | 105.0 | 98.0 | 88.0 |
| V2C2892-MB | 2C63867.D | 109.0 | 108.0 | 99.0 | 89.0 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = Dibromofluoromethane | 76-120% |
| **S2** = 1,2-Dichloroethane-D4 | 64-135% |
| **S3** = Toluene-D8 | 76-117% |
| **S4** = 4-Bromofluorobenzene | 72-122% |

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2824-ICC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62458.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Response Factor Report ms2C

```
Method       : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title        : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update  : Thu Oct 01 16:34:28 2009
Response via : Initial Calibration

Calibration Files
1   =2C62455.D   2   =2C62454.D   100 =2C62460.D   50  =2C62458.D
20  =2C62457.D   200 =2C62459.D   5   =2C62453.D   10  =2C62456.D
0.5 =2C62452.D       =

 Compound
           1     2     100   50    20    200   5     10    0.5     Avg    %RSD
-------------------------------------------------------------------------------

1) I   Tert Butyl Alcohol-d9 ----------------ISTD---------------------
2)  tertiary butyl alcohol
                1.232 1.329 1.367 1.366 1.344 1.227 1.305         1.310    4.50
3)  1,4-dioxane
                0.105 0.133 0.122 0.123 0.121 0.099 0.108         0.116   10.53

4) I   pentafluorobenzene    ----------------ISTD---------------------
5)  FREON 115
                                                                  0.000#  -1.00
6)  FREON 23
                                                                  0.000#  -1.00
7)  FREON 143A
                                                                  0.000#  -1.00
8)  FREON 152A
                                                                  0.000#  -1.00
9)  CHLOROTRIFLUOROETHENE
                                                                  0.000#  -1.00
10)  chlorodifluoromethane
           0.619 0.722 0.641 0.697 0.650 0.728 0.715 0.629         0.675    6.65
11)  dichlorodifluoromethane
           0.512 0.649 0.747 0.792 0.782 0.763 0.711 0.776         0.716   13.26
12)  FREON 114
                                                                  0.000#  -1.00
13)  FREON 142B
                                                                  0.000#  -1.00
14)  chloromethane
           0.914 0.884 0.815 0.945 0.933 0.930 0.874 0.963 0.925   0.909    4.96
15)  vinyl chloride
           0.756 0.784 0.804 0.893 0.869 0.906 0.811 0.885 0.642   0.817   10.31
16)  bromomethane
           0.497 0.556 0.417 0.535 0.545       0.543 0.565 0.586   0.530    9.89
17)  chloroethane
           0.403 0.436 0.456 0.496 0.487 0.469 0.449 0.501         0.462    7.18
18)  trichlorofluoromethane
           0.758 0.785 0.830 0.863 0.851 0.879 0.837 0.877         0.835    5.20
19)  ethyl ether
           0.245 0.278 0.330 0.331 0.311 0.347 0.269 0.307         0.302   11.63
20)  FREON 123
                                                                  0.000#  -1.00
21)  FREON 141B
                                                                  0.000#  -1.00
22)  FREON 123A
                                                                  0.000#  -1.00
23)  acrolein
```

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2824-ICC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62458.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
            0.121 0.120       0.118 0.111       0.102 0.111 0.092   0.111    9.44
24)  1,1-dichloroethene
            0.479 0.481 0.448 0.443 0.396 0.529 0.461 0.466         0.463    8.21
25)  acetone
                        0.165 0.174 0.175 0.162       0.192         0.174    6.59
26)  allyl chloride
            0.276 0.274 0.320 0.319 0.287 0.365 0.296 0.316         0.307    9.84
27)  acetonitrile
                        0.049 0.053 0.055 0.052       0.058         0.053    6.35
28)  iodomethane
            0.780 0.799 0.806 0.783 0.710 0.892 0.766 0.797 0.548   0.765   12.28
29)  iso-butyl alcohol
                        0.007 0.007 0.007 0.008 0.006 0.007         0.007#   8.77
30)  carbon disulfide
            2.066 1.870 1.712 1.736 1.539 2.020 1.820 1.785 1.570   1.791   10.01
31)  methylene chloride
            0.879 0.728 0.631 0.631 0.606 0.678 0.649 0.656         0.682   12.84
32)  methyl acetate
                        0.099 0.097 0.092 0.102 0.055 0.073         0.086   21.33
             ----- Linear regression -----  Coefficient =  1.0000
               Response Ratio = -0.00542 + 0.10277 *A

33)  methyl tert butyl ether
            1.808 1.658 1.700 1.728 1.651 1.767 1.534 1.702 1.493   1.671    6.14
34)  trans-1,2-dichloroethene
            0.575 0.541 0.523 0.522 0.473 0.598 0.525 0.542 0.384   0.520   11.91
35)  di-isopropyl ether
            2.145 2.305 2.034 2.177 2.097 2.191 2.063 2.090 2.016   2.124    4.27
36)  2-butanone
                        0.070 0.069 0.063 0.072       0.052         0.065   12.44
37)  1,1-dichloroethane
            1.093 1.006 1.002 1.027 0.943 1.125 0.951 1.049 0.694   0.988   12.67
38)  chloroprene
            0.734 0.835 0.838 0.894 0.798 0.953 0.826 0.779         0.832    8.14
39)  acrylonitrile
            0.151 0.177 0.212 0.216 0.206 0.218 0.174 0.202         0.194   12.43
40)  vinyl acetate
                        0.095 0.095 0.085 0.100       0.061         0.087   17.75
             ----- Linear regression -----  Coefficient =  0.9996
               Response Ratio = -0.00796 + 0.10132 *A

41)  ethyl tert-butyl ether
            1.799 2.031 1.953 2.064 1.967 2.089 1.902 1.919 1.586   1.923    8.05
42)  ethyl acetate
                        0.081 0.088 0.101 0.084 0.088 0.095         0.090    7.99
43)  2,2-dichloropropane
            0.891 0.856 0.750 0.779 0.708 0.889 0.812 0.814 0.647   0.794   10.37
44)  cis-1,2-dichloroethene
            0.645 0.584 0.591 0.589 0.542 0.651 0.562 0.595         0.595    6.25
45)  propionitrile
            0.060 0.069 0.087 0.088 0.085 0.088 0.073 0.084         0.079   13.51
46)  bromochloromethane
            0.213 0.233 0.273 0.272 0.253 0.291 0.238 0.262         0.254    9.96
47)  tetrahydrofuran
                  0.276 0.202 0.217 0.217 0.210 0.215 0.226         0.223   10.98
48)  chloroform
            1.017 0.942 0.919 0.937 0.870 1.018 0.879 0.950 0.743   0.919    9.11
49)  t-butyl formate
            0.402 0.486 0.508 0.519 0.504 0.538 0.506 0.492         0.494    8.19
50)  dibromofluoromethane (s)
```

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2824-ICC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62458.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
            0.468 0.488 0.516 0.518 0.513 0.550 0.482 0.508 0.462   0.501    5.61
51)  1,2-dichloroethane-d4 (s)
            0.586 0.568 0.573 0.609 0.622 0.606 0.601 0.602 0.559   0.592    3.60
52)  freon 113
                  0.374 0.392 0.397 0.354 0.428 0.397 0.341         0.383    7.65
53)  methacrylonitrile
                        0.334 0.340 0.319 0.352 0.246 0.319         0.318   11.83
54)  1,1,1-trichloroethane
            0.830 0.790 0.740 0.755 0.668 0.877 0.750 0.768 0.583   0.751   11.46
55)  Cyclohexane
            0.921 0.847 0.788 0.793 0.690 0.941 0.830 0.807         0.827    9.57
56)  tert amyl alcohol
            0.060 0.067 0.078 0.081 0.078 0.082 0.073 0.077         0.075   10.06

57) I   1,4-difluorobenzene   ----------------ISTD---------------------
58)  Di-isobutylene
                                                                    0.000#  -1.00
59)  epichlorohydrin
            0.026 0.035 0.036 0.038 0.038 0.038 0.035 0.036         0.035   11.51
60)  n-butyl alcohol
            0.008 0.010 0.012 0.012 0.011 0.012 0.011 0.010         0.011   11.41
61)  carbon tetrachloride
            0.419 0.400 0.393 0.385 0.342 0.463 0.404 0.387         0.399    8.52
62)  1,1-dichloropropene
            0.524 0.494 0.464 0.463 0.414 0.542 0.464 0.484 0.367   0.468   11.38
63)  hexane
            0.447 0.540 0.499 0.517 0.470 0.535 0.542 0.451         0.500    7.90
64)  tert amyl ethyl ether
            0.568 0.549 0.565 0.563 0.557 0.595 0.521 0.557 0.470   0.549    6.45
65)  iso-octane
                                                                    0.000#  -1.00
66)  benzene
            1.647 1.494 1.414 1.433 1.332 1.533 1.414 1.465 1.246   1.442    7.96
67)  tert-amyl methyl ether
            1.148 1.267 1.157 1.197 1.181 1.185 1.181 1.153 1.056   1.169    4.72
68)  heptane
            0.236 0.291 0.263 0.274 0.253 0.287 0.293 0.234         0.266    8.91
69)  isopropyl acetate
            0.757 0.784 0.743 0.778 0.763 0.764 0.708 0.741 0.699   0.749    3.91
70)  1,2-dichloroethane
            0.422 0.408 0.434 0.450 0.442 0.451 0.403 0.453         0.433    4.58
71)  trichloroethene
            0.368 0.347 0.343 0.342 0.312 0.391 0.345 0.352         0.350    6.47
72)  2-nitropropane
                        0.019 0.019 0.019 0.019 0.021 0.015         0.019    9.97
73)  2-chloroethyl vinyl ether
            0.223 0.256 0.267 0.286 0.281 0.254 0.259 0.266         0.262    7.39
74)  methyl methacrylate
                  0.214 0.286 0.287 0.273 0.290 0.227 0.267         0.263   11.67
75)  1,2-dichloropropane
            0.398 0.367 0.370 0.379 0.358 0.394 0.349 0.386         0.375    4.60
76)  dibromomethane
            0.198 0.188 0.214 0.214 0.206 0.222 0.190 0.209         0.205    5.95
77)  methylcyclohexane
            0.572 0.695 0.612 0.633 0.570 0.664 0.660 0.546         0.619    8.59
78)  bromodichloromethane
            0.415 0.403 0.440 0.441 0.407 0.475 0.386 0.429         0.424    6.57
79)  cis-1,3-dichloropropene
            0.570 0.570 0.597 0.606 0.568 0.636 0.538 0.593 0.474   0.572    8.10
80)  toluene-d8 (s)
```

```
            1.382 1.324 1.268 1.288 1.294 1.319 1.292 1.239 1.464   1.319    5.11
 81)  4-methyl-2-pentanone
                  0.110 0.143 0.148 0.144 0.146 0.124 0.140         0.136   10.51
 82)  toluene
            0.945 0.861 0.842 0.856 0.786 0.918 0.836 0.878 0.669   0.844    9.49
 83)  3-methyl-1-butanol
            0.011 0.016 0.016 0.016 0.016 0.016 0.016 0.015         0.015   11.27
 84)  trans-1,3-dichloropropene
            0.503 0.478 0.533 0.541 0.510 0.556 0.476 0.523 0.379   0.500   10.55
 85)  ethyl methacrylate
                  0.291 0.389 0.388 0.364 0.403 0.314 0.358         0.358   11.56
 86)  1,1,2-trichloroethane
            0.254 0.241 0.262 0.262 0.257 0.273 0.236 0.260         0.256    4.74
 87)  2-hexanone
                  0.105 0.142 0.143 0.139 0.128 0.116 0.135         0.130   11.01

 88) I   chlorobenzene-d5      ----------------ISTD--------------------
 89)  tetrachloroethene
            0.364 0.336 0.320 0.319 0.286 0.359 0.327 0.327         0.330    7.39
 90)  1,3-dichloropropane
            0.637 0.563 0.596 0.615 0.594 0.594 0.556 0.611 0.462   0.581    8.80
 91)  butyl acetate
            0.197 0.253 0.261 0.273 0.269 0.257 0.253 0.262         0.253    9.40
 92)  3,3-dimethyl-1-butanol
            0.032 0.038 0.039 0.037 0.037 0.038 0.037 0.033 0.040   0.037    6.65
 93)  dibromochloromethane
            0.303 0.316 0.394 0.375 0.341 0.407 0.314 0.343         0.349   11.17
 94)  1,2-dibromoethane
            0.339 0.332 0.369 0.364 0.352 0.369 0.328 0.357 0.252   0.340   10.71
 95)  BUTYL ETHER
                                                                    0.000#  -1.00
 96)  chlorobenzene
            1.195 1.103 1.081 1.080 1.013 1.139 1.036 1.090 0.922   1.073    7.25
 97)  1,1,1,2-tetrachloroethane
            0.395 0.353 0.378 0.379 0.350 0.396 0.345 0.369         0.371    5.35
 98)  ethylbenzene
            2.116 1.920 1.762 1.800 1.687 1.855 1.797 1.886 1.591   1.824    8.17
 99)  m,p-xylene
            0.802 0.714 0.672 0.694 0.649 0.681 0.699 0.723 0.604   0.693    7.83
100)  o-xylene
            0.751 0.710 0.684 0.703 0.653 0.697 0.677 0.720 0.593   0.688    6.52
101)  styrene
            1.144 1.082 1.194 1.211 1.137 1.174 1.085 1.201 0.855   1.120    9.81
102)  bromoform
                  0.190 0.269 0.251 0.225 0.278 0.200 0.219         0.233   14.61

103) I   1,4-dichlorobenzene-d ----------------ISTD--------------------
104)  isopropylbenzene
            4.042 3.690 3.461 3.517 3.245 3.734 3.503 3.671 3.049   3.546    8.13
105)  4-bromofluorobenzene (s)
            1.224 1.325 1.102 1.128 1.123 1.136 1.106 1.103 1.481   1.192   11.00
106)  cyclohexanone
            0.046 0.048 0.043 0.037 0.048 0.038 0.063 0.038         0.045   18.85
             ----- Linear regression -----  Coefficient =  0.9955
               Response Ratio = 0.01698 + 0.03820 *A

107)  bromobenzene
            1.017 0.901 0.923 0.936 0.875 0.949 0.878 0.950 0.761   0.910    7.78
108)  1,1,2,2-tetrachloroethane
            0.948 0.924 0.952 0.968 0.926 0.957 0.882 0.960 0.846   0.929    4.38
```

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2824-ICC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62458.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
109)  trans-1,4-dichloro-2-butene
                        0.121 0.119 0.110 0.126 0.094 0.103         0.112   10.86
110)  1,2,3-trichloropropane
                  0.175 0.202 0.213 0.209 0.196 0.191 0.217         0.200    7.23
111)  n-propylbenzene
            4.962 4.408 4.061 4.211 3.918 4.250 4.259 4.453 3.829   4.261    7.85
112)  2-chlorotoluene
            0.975 0.870 0.867 0.875 0.806 0.917 0.860 0.914 0.714   0.867    8.52
113)  4-chlorotoluene
            2.915 2.618 2.504 2.547 2.358 2.658 2.485 2.620 2.149   2.539    8.33
114)  1,3,5-trimethylbenzene
            3.318 2.949 2.870 2.923 2.756 3.023 2.922 3.071 2.726   2.951    6.00
115)  tert-butylbenzene
            3.049 2.674 2.577 2.553 2.345 2.785 2.481 2.605 2.281   2.594    8.88
116)  pentachloroethane
            0.496 0.495 0.570 0.551 0.503 0.608 0.477 0.525         0.528    8.48
117)  1,2,4-trimethylbenzene
            3.455 3.099 3.025 3.052 2.871 3.158 2.938 3.142 2.606   3.039    7.61
118)  sec-butylbenzene
            4.610 4.183 3.885 3.884 3.630 4.119 3.874 4.006 3.529   3.969    8.03
119)  1,3-dichlorobenzene
            1.939 1.809 1.786 1.781 1.661 1.854 1.693 1.808 1.571   1.767    6.20
120)  p-isopropyltoluene
            3.626 3.337 3.235 3.208 2.994 3.449 3.184 3.281 2.901   3.246    6.74
121)  1,4-dichlorobenzene
            2.020 1.864 1.821 1.817 1.716 1.869 1.725 1.833 1.640   1.812    6.05
122)  1,2-dichlorobenzene
            1.942 1.758 1.768 1.774 1.674 1.798 1.666 1.765 1.628   1.753    5.26
123)  n-butylbenzene
            1.973 1.867 1.761 1.770 1.668 1.834 1.775 1.787 1.465   1.766    7.97
124)  1,2-dibromo-3-chloropropane
                  0.127 0.162 0.164 0.160 0.162 0.133 0.151         0.151   10.12
125)  1,3,5-trichlorobenzene
            1.582 1.490 1.515 1.504 1.393 1.542 1.374 1.462 1.449   1.479    4.55
126)  1,2,4-trichlorobenzene
            1.199 1.144 1.277 1.252 1.146 1.287 1.060 1.156 1.177   1.189    6.17
127)  hexachlorobutadiene
            0.757 0.731 0.686 0.664 0.615 0.713 0.677 0.646 0.680   0.686    6.33
128)  naphthalene
            2.317 2.250 2.590 2.534 2.366 2.472 2.093 2.284 2.870   2.420    9.41
129)  1,2,3-trichlorobenzene
            1.033 0.962 1.085 1.040 0.966 1.067 0.922 0.960 1.285   1.036   10.49
130)  hexachloroethane
            0.407 0.429 0.534 0.487 0.425 0.596 0.445 0.439         0.470   13.80
 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M2C2824.M         Thu Oct 01 16:47:31 2009   MS2C
```

6.7.1

6

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** V2C2824-ICV2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62461.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2C62461.D Vial: 11
Acq On : 30 Sep 2009 5:26 pm Operator: jordanl
Sample : icv2824-50 Inst : ms2C
Misc : MS86417,V2C2824,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Thu Oct 01 16:34:28 2009
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|
| 1 I | Tert Butyl Alcohol-d9 | 1.000 | 1.000 | 0.0 | 111 | 0.00 | 8.71 |
| 2 | tertiary butyl alcohol | 1.310 | 1.359 | -3.7 | 110 | 0.00 | 8.84 |
| 3 | 1,4-dioxane | 0.116 | 0.138 | -19.0 | 126 | 0.00 | 12.70 |
| 4 I | pentafluorobenzene | 1.000 | 1.000 | 0.0 | 113 | 0.00 | 11.10 |
| 5 | FREON 115 | | ----------NA---------- | | | | |
| 6 | FREON 23 | | ----------NA---------- | | | | |
| 7 | FREON 143A | | ----------NA---------- | | | | |
| 8 | FREON 152A | | ----------NA---------- | | | | |
| 9 | CHLOROTRIFLUOROETHENE | | ----------NA---------- | | | | |
| 10 | chlorodifluoromethane | 0.675 | 0.596 | 11.7 | 97 | 0.00 | 4.64 |
| 11 | dichlorodifluoromethane | 0.716 | 0.608 | 15.1 | 87 | 0.00 | 4.60 |
| 12 | FREON 114 | | ----------NA---------- | | | | |
| 13 | FREON 142B | | ----------NA---------- | | | | |
| 14 | chloromethane | 0.909 | 0.785 | 13.6 | 94 | 0.00 | 5.04 |
| 15 | vinyl chloride | 0.817 | 0.804 | 1.6 | 102 | 0.00 | 5.34 |
| 16 | bromomethane | 0.530 | 0.455 | 14.2 | 96 | 0.00 | 6.15 |
| 17 | chloroethane | 0.462 | 0.470 | -1.7 | 107 | 0.00 | 6.37 |
| 18 | trichlorofluoromethane | 0.835 | 0.837 | -0.2 | 110 | 0.00 | 6.89 |
| 19 | ethyl ether | 0.302 | 0.331 | -9.6 | 113 | 0.00 | 7.40 |
| 20 | FREON 123 | | ----------NA---------- | | | | |
| 21 | FREON 141B | | ----------NA---------- | | | | |
| 22 | FREON 123A | | ----------NA---------- | | | | |
| 23 | acrolein | 0.111 | 0.132 | -18.9 | 127 | 0.00 | 7.73 |
| 24 | 1,1-dichloroethene | 0.463 | 0.442 | 4.5 | 113 | 0.00 | 7.90 |
| 25 | acetone | 0.174 | 0.166 | 4.6 | 108 | 0.00 | 8.02 |
| 26 | allyl chloride | 0.307 | 0.322 | -4.9 | 114 | 0.00 | 8.52 |
| 27 | acetonitrile | 0.053 | 0.050 | 5.7 | 107 | 0.00 | 8.52 |
| 28 | iodomethane | 0.765 | 0.823 | -7.6 | 119 | 0.00 | 8.23 |
| 29 | iso-butyl alcohol | 0.007 | 0.007# | 0.0 | 109 | 0.00 | 11.38 |
| 30 | carbon disulfide | 1.791 | 1.582 | 11.7 | 103 | 0.00 | 8.36 |
| 31 | methylene chloride | 0.682 | 0.623 | 8.7 | 112 | 0.00 | 8.75 |
| | ---------- | True | Calc. | % Drift | ---------- | | |
| 32 | methyl acetate | 50.000 | 49.610 | 0.8 | 113 | 0.00 | 8.52 |
| | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 33 | methyl tert butyl ether | 1.671 | 1.681 | -0.6 | 110 | 0.00 | 9.08 |
| 34 | trans-1,2-dichloroethene | 0.520 | 0.507 | 2.5 | 110 | 0.00 | 9.14 |
| 35 | di-isopropyl ether | 2.124 | 1.966 | 7.4 | 102 | 0.00 | 9.72 |
| 36 | 2-butanone | 0.065 | 0.068 | -4.6 | 111 | 0.00 | 10.56 |
| 37 | 1,1-dichloroethane | 0.988 | 1.004 | -1.6 | 111 | 0.00 | 9.78 |

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** V2C2824-ICV2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62461.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 38 | | chloroprene | 0.832 | 0.776 | 6.7 | 98 | 0.00 | 9.88 |
| 39 | | acrylonitrile | 0.194 | 0.210 | -8.2 | 110 | 0.00 | 9.13 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 40 | | vinyl acetate | 50.000 | 48.246 | 3.5 | 106 | 0.00 | 9.77 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 41 | | ethyl tert-butyl ether | 1.923 | 1.892 | 1.6 | 104 | 0.00 | 10.23 |
| 42 | | ethyl acetate | 0.090 | 0.083 | 7.8 | 107 | 0.00 | 10.56 |
| 43 | | 2,2-dichloropropane | 0.794 | 0.747 | 5.9 | 109 | 0.00 | 10.56 |
| 44 | | cis-1,2-dichloroethene | 0.595 | 0.604 | -1.5 | 116 | 0.00 | 10.58 |
| 45 | | propionitrile | 0.079 | 0.084 | -6.3 | 108 | 0.00 | 10.68 |
| 46 | | bromochloromethane | 0.254 | 0.274 | -7.9 | 114 | 0.00 | 10.91 |
| 47 | | tetrahydrofuran | 0.223 | 0.209 | 6.3 | 109 | 0.00 | 10.95 |
| 48 | | chloroform | 0.919 | 0.929 | -1.1 | 112 | 0.00 | 10.96 |
| 49 | | t-butyl formate | 0.494 | 0.492 | 0.4 | 107 | 0.00 | 10.98 |
| 50 | S | dibromofluoromethane (s) | 0.501 | 0.516 | -3.0 | 113 | 0.00 | 11.17 |
| 51 | S | 1,2-dichloroethane-d4 (s) | 0.592 | 0.574 | 3.0 | 107 | 0.00 | 11.59 |
| 52 | | freon 113 | 0.383 | 0.356 | 7.0 | 101 | 0.00 | 7.83 |
| 53 | | methacrylonitrile | 0.318 | 0.326 | -2.5 | 109 | 0.00 | 10.86 |
| 54 | | 1,1,1-trichloroethane | 0.751 | 0.725 | 3.5 | 109 | 0.00 | 11.21 |
| 55 | | Cyclohexane | 0.827 | 0.734 | 11.2 | 105 | 0.00 | 11.26 |
| 56 | | tert amyl alcohol | 0.075 | 0.078 | -4.0 | 109 | 0.00 | 11.53 |
| 57 | I | 1,4-difluorobenzene | 1.000 | 1.000 | 0.0 | 109 | 0.00 | 12.01 |
| 58 | | Di-isobutylene | | ----------NA---------- | | | | |
| 59 | | epichlorohydrin | 0.035 | 0.037 | -5.7 | 105 | 0.00 | 13.21 |
| 60 | | n-butyl alcohol | 0.011 | 0.012 | -9.1 | 113 | 0.00 | 12.14 |
| 61 | | carbon tetrachloride | 0.399 | 0.388 | 2.8 | 110 | 0.00 | 11.40 |
| 62 | | 1,1-dichloropropene | 0.468 | 0.462 | 1.3 | 109 | 0.00 | 11.38 |
| 63 | | hexane | 0.500 | 0.452 | 9.6 | 96 | 0.00 | 9.44 |
| 64 | | tert amyl ethyl ether | 0.549 | 0.571 | -4.0 | 111 | 0.00 | 12.46 |
| 65 | | iso-octane | | ----------NA---------- | | | | |
| 66 | | benzene | 1.442 | 1.420 | 1.5 | 108 | 0.00 | 11.65 |
| 67 | | tert-amyl methyl ether | 1.169 | 1.147 | 1.9 | 105 | 0.00 | 11.66 |
| 68 | | heptane | 0.266 | 0.233 | 12.4 | 93 | 0.00 | 11.78 |
| 69 | | isopropyl acetate | 0.749 | 0.731 | 2.4 | 103 | 0.00 | 11.56 |
| 70 | | 1,2-dichloroethane | 0.433 | 0.435 | -0.5 | 106 | 0.00 | 11.68 |
| 71 | | trichloroethene | 0.350 | 0.343 | 2.0 | 110 | 0.00 | 12.34 |
| 72 | | 2-nitropropane | 0.019 | 0.019 | 0.0 | 108 | 0.00 | 13.39 |
| 73 | | 2-chloroethyl vinyl ether | 0.262 | 0.270 | -3.1 | 103 | 0.00 | 13.07 |
| 74 | | methyl methacrylate | 0.263 | 0.251 | 4.6 | 96 | 0.00 | 12.58 |
| 75 | | 1,2-dichloropropane | 0.375 | 0.376 | -0.3 | 108 | 0.00 | 12.59 |
| 76 | | dibromomethane | 0.205 | 0.215 | -4.9 | 110 | 0.00 | 12.76 |
| 77 | | methylcyclohexane | 0.619 | 0.561 | 9.4 | 97 | 0.00 | 12.52 |
| 78 | | bromodichloromethane | 0.424 | 0.449 | -5.9 | 112 | 0.00 | 12.87 |
| 79 | | cis-1,3-dichloropropene | 0.572 | 0.603 | -5.4 | 109 | 0.00 | 13.29 |
| 80 | S | toluene-d8 (s) | 1.319 | 1.281 | 2.9 | 109 | 0.00 | 13.54 |
| 81 | | 4-methyl-2-pentanone | 0.136 | 0.144 | -5.9 | 106 | 0.00 | 13.37 |
| 82 | | toluene | 0.844 | 0.833 | 1.3 | 106 | 0.00 | 13.62 |
| 83 | | 3-methyl-1-butanol | 0.015 | 0.016 | -6.7 | 110 | 0.00 | 13.39 |
| 84 | | trans-1,3-dichloropropene | 0.500 | 0.529 | -5.8 | 107 | 0.00 | 13.81 |
| 85 | | ethyl methacrylate | 0.358 | 0.462 | -29.1# | 130 | 0.00 | 13.77 |
| 86 | | 1,1,2-trichloroethane | 0.256 | 0.265 | -3.5 | 110 | 0.00 | 14.01 |
| 87 | | 2-hexanone | 0.130 | 0.142 | -9.2 | 109 | 0.00 | 14.15 |
| 88 | I | chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 107 | 0.00 | 14.95 |
| 89 | | tetrachloroethene | 0.330 | 0.320 | 3.0 | 107 | 0.00 | 14.16 |
| 90 | | 1,3-dichloropropane | 0.581 | 0.616 | -6.0 | 107 | 0.00 | 14.18 |
| 91 | | butyl acetate | 0.253 | 0.263 | -4.0 | 103 | 0.00 | 14.20 |

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** V2C2824-ICV2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C62461.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 92 | | 3,3-dimethyl-1-butanol | 0.037 | 0.039 | -5.4 | 113 | 0.00 | 14.30 |
| 93 | | dibromochloromethane | 0.349 | 0.376 | -7.7 | 107 | 0.00 | 14.43 |
| 94 | | 1,2-dibromoethane | 0.340 | 0.370 | -8.8 | 109 | 0.00 | 14.58 |
| 95 | | BUTYL ETHER | | ----------NA---------- | | | | |
| 96 | | chlorobenzene | 1.073 | 1.112 | -3.6 | 110 | 0.00 | 14.99 |
| 97 | | 1,1,1,2-tetrachloroethane | 0.371 | 0.383 | -3.2 | 108 | 0.00 | 15.04 |
| 98 | | ethylbenzene | 1.824 | 1.784 | 2.2 | 106 | 0.00 | 15.02 |
| 99 | | m,p-xylene | 0.693 | 0.698 | -0.7 | 107 | 0.00 | 15.11 |
| 100 | | o-xylene | 0.688 | 0.712 | -3.5 | 108 | 0.00 | 15.50 |
| 101 | | styrene | 1.120 | 1.203 | -7.4 | 106 | 0.00 | 15.52 |
| 102 | | bromoform | 0.233 | 0.262 | -12.4 | 111 | 0.00 | 15.79 |
| 103 | I | 1,4-dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 105 | 0.00 | 17.10 |
| 104 | | isopropylbenzene | 3.546 | 3.079 | 13.2 | 92 | 0.00 | 15.81 |
| 105 | S | 4-bromofluorobenzene (s) | 1.192 | 1.152 | 3.4 | 108 | 0.00 | 16.02 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 106 | | cyclohexanone | 500.000 | 389.692 | 22.1# | 89 | 0.00 | 16.00 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 107 | | bromobenzene | 0.910 | 0.961 | -5.6 | 108 | 0.00 | 16.21 |
| 108 | | 1,1,2,2-tetrachloroethane | 0.929 | 0.973 | -4.7 | 106 | 0.00 | 16.11 |
| 109 | | trans-1,4-dichloro-2-bute | 0.112 | 0.137 | -22.3# | 121 | 0.00 | 16.15 |
| 110 | | 1,2,3-trichloropropane | 0.200 | 0.237 | -18.5 | 118 | 0.00 | 16.19 |
| 111 | | n-propylbenzene | 4.261 | 4.203 | 1.4 | 105 | 0.00 | 16.19 |
| 112 | | 2-chlorotoluene | 0.867 | 0.902 | -4.0 | 109 | 0.00 | 16.34 |
| 113 | | 4-chlorotoluene | 2.539 | 2.599 | -2.4 | 108 | 0.00 | 16.43 |
| 114 | | 1,3,5-trimethylbenzene | 2.951 | 2.932 | 0.6 | 106 | 0.00 | 16.32 |
| 115 | | tert-butylbenzene | 2.594 | 2.646 | -2.0 | 109 | 0.00 | 16.65 |
| 116 | | pentachloroethane | 0.528 | 0.589 | -11.6 | 113 | 0.00 | 16.75 |
| 117 | | 1,2,4-trimethylbenzene | 3.039 | 3.090 | -1.7 | 107 | 0.00 | 16.69 |
| 118 | | sec-butylbenzene | 3.969 | 4.006 | -0.9 | 109 | 0.00 | 16.85 |
| 119 | | 1,3-dichlorobenzene | 1.767 | 1.869 | -5.8 | 111 | 0.00 | 17.05 |
| 120 | | p-isopropyltoluene | 3.246 | 3.385 | -4.3 | 111 | 0.00 | 16.95 |
| 121 | | 1,4-dichlorobenzene | 1.812 | 1.899 | -4.8 | 110 | 0.00 | 17.13 |
| 122 | | 1,2-dichlorobenzene | 1.753 | 1.832 | -4.5 | 109 | 0.00 | 17.52 |
| 123 | | n-butylbenzene | 1.766 | 1.820 | -3.1 | 108 | 0.00 | 17.35 |
| 124 | | 1,2-dibromo-3-chloropropa | 0.151 | 0.170 | -12.6 | 109 | 0.00 | 18.29 |
| 125 | | 1,3,5-trichlorobenzene | 1.479 | 1.494 | -1.0 | 105 | 0.00 | 18.46 |
| 126 | | 1,2,4-trichlorobenzene | 1.189 | 1.310 | -10.2 | 110 | 0.00 | 19.13 |
| 127 | | hexachlorobutadiene | 0.686 | 0.676 | 1.5 | 107 | 0.00 | 19.22 |
| 128 | | naphthalene | 2.420 | 2.677 | -10.6 | 111 | 0.00 | 19.42 |
| 129 | | 1,2,3-trichlorobenzene | 1.036 | 1.150 | -11.0 | 117 | 0.00 | 19.66 |
| 130 | | hexachloroethane | 0.470 | 0.555 | -18.1 | 120 | 0.00 | 17.76 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2C62458.D M2C2824.M Thu Oct 01 16:41:00 2009 MS2C

6.7.2

6

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2892-CC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C63865.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2C63865.D Vial: 23
Acq On : 6 Nov 2009 8:07 pm Operator: tarar1
Sample : cc2824-50 Inst : ms2C
Misc : MS87958,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|
| 1 I | Tert Butyl Alcohol-d9 | 1.000 | 1.000 | 0.0 | 96 | -0.02 | 8.70 |
| 2 | tertiary butyl alcohol | 1.310 | 1.339 | -2.2 | 94 | -0.01 | 8.83 |
| 3 | 1,4-dioxane | 0.116 | 0.114 | 1.7 | 90 | -0.01 | 12.69 |
| 4 I | pentafluorobenzene | 1.000 | 1.000 | 0.0 | 105 | 0.00 | 11.09 |
| 5 | FREON 115 | | ----------NA---------- | | | | |
| 6 | FREON 23 | | ----------NA---------- | | | | |
| 7 | FREON 143A | | ----------NA---------- | | | | |
| 8 | FREON 152A | | ----------NA---------- | | | | |
| 9 | CHLOROTRIFLUOROETHENE | | ----------NA---------- | | | | |
| 10 | chlorodifluoromethane | 0.675 | 0.659 | 2.4 | 100 | 0.00 | 4.63 |
| 11 | dichlorodifluoromethane | 0.716 | 0.675 | 5.7 | 90 | 0.00 | 4.61 |
| 12 | FREON 114 | | ----------NA---------- | | | | |
| 13 | FREON 142B | | ----------NA---------- | | | | |
| 14 | chloromethane | 0.909 | 1.012 | -11.3 | 113 | -0.01 | 5.03 |
| 15 | vinyl chloride | 0.817 | 0.964 | -18.0 | 114 | -0.02 | 5.33 |
| 16 | bromomethane | 0.530 | 0.572 | -7.9 | 113 | 0.00 | 6.14 |
| 17 | chloroethane | 0.462 | 0.513 | -11.0 | 109 | 0.00 | 6.36 |
| 18 | trichlorofluoromethane | 0.835 | 0.823 | 1.4 | 100 | 0.00 | 6.88 |
| 19 | ethyl ether | 0.302 | 0.346 | -14.6 | 110 | -0.02 | 7.39 |
| 20 | FREON 123 | | ----------NA---------- | | | | |
| 21 | FREON 141B | | ----------NA---------- | | | | |
| 22 | FREON 123A | | ----------NA---------- | | | | |
| 23 | acrolein | 0.111 | 0.071 | 36.0# | 63 | -0.01 | 7.73 |
| 24 | 1,1-dichloroethene | 0.463 | 0.529 | -14.3 | 126 | 0.00 | 7.89 |
| 25 | acetone | 0.174 | 0.154 | 11.5 | 94 | -0.02 | 8.00 |
| 26 | allyl chloride | 0.307 | 0.359 | -16.9 | 119 | -0.01 | 8.51 |
| 27 | acetonitrile | 0.053 | 0.055 | -3.8 | 110 | -0.02 | 8.51 |
| 28 | iodomethane | 0.765 | 0.899 | -17.5 | 121 | 0.00 | 8.23 |
| 29 | iso-butyl alcohol | 0.007 | 0.008# | -14.3 | 109 | -0.01 | 11.38 |
| 30 | carbon disulfide | 1.791 | 2.121 | -18.4 | 129 | -0.01 | 8.36 |
| 31 | methylene chloride | 0.682 | 0.640 | 6.2 | 107 | 0.00 | 8.74 |
| | ---------- | True | Calc. | % Drift | | ---------- | |
| 32 | methyl acetate | 50.000 | 47.584 | 4.8 | 101 | -0.02 | 8.51 |
| | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 33 | methyl tert butyl ether | 1.671 | 1.802 | -7.8 | 110 | -0.02 | 9.07 |
| 34 | trans-1,2-dichloroethene | 0.520 | 0.601 | -15.6 | 121 | 0.00 | 9.14 |
| 35 | di-isopropyl ether | 2.124 | 2.065 | 2.8 | 100 | -0.01 | 9.71 |
| 36 | 2-butanone | 0.065 | 0.066 | -1.5 | 101 | 0.00 | 10.55 |
| 37 | 1,1-dichloroethane | 0.988 | 1.151 | -16.5 | 118 | -0.01 | 9.77 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2892-CC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C63865.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 38 | | chloroprene | 0.832 | 0.846 | -1.7 | 100 | 0.00 | 9.87 |
| 39 | | acrylonitrile | 0.194 | 0.228 | -17.5 | 112 | -0.02 | 9.12 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 40 | | vinyl acetate | 50.000 | 44.315 | 11.4 | 90 | -0.01 | 9.76 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 41 | | ethyl tert-butyl ether | 1.923 | 2.003 | -4.2 | 102 | -0.01 | 10.21 |
| 42 | | ethyl acetate | 0.090 | 0.076 | 15.6 | 91 | -0.02 | 10.54 |
| 43 | | 2,2-dichloropropane | 0.794 | 0.902 | -13.6 | 122 | 0.00 | 10.56 |
| 44 | | cis-1,2-dichloroethene | 0.595 | 0.639 | -7.4 | 114 | 0.00 | 10.57 |
| 45 | | propionitrile | 0.079 | 0.090 | -13.9 | 107 | -0.01 | 10.67 |
| 46 | | bromochloromethane | 0.254 | 0.284 | -11.8 | 110 | -0.01 | 10.90 |
| 47 | | tetrahydrofuran | 0.223 | 0.209 | 6.3 | 102 | 0.00 | 10.94 |
| 48 | | chloroform | 0.919 | 1.010 | -9.9 | 114 | -0.01 | 10.95 |
| 49 | | t-butyl formate | 0.494 | 0.528 | -6.9 | 107 | -0.01 | 10.97 |
| 50 | S | dibromofluoromethane (s) | 0.501 | 0.538 | -7.4 | 109 | 0.00 | 11.16 |
| 51 | S | 1,2-dichloroethane-d4 (s) | 0.592 | 0.606 | -2.4 | 105 | 0.00 | 11.59 |
| 52 | | freon 113 | 0.383 | 0.415 | -8.4 | 110 | 0.00 | 7.83 |
| 53 | | methacrylonitrile | 0.318 | 0.318 | 0.0 | 99 | -0.01 | 10.85 |
| 54 | | 1,1,1-trichloroethane | 0.751 | 0.859 | -14.4 | 120 | -0.01 | 11.20 |
| 55 | | Cyclohexane | 0.827 | 0.985 | -19.1 | 131 | 0.00 | 11.26 |
| 56 | | tert amyl alcohol | | ----------NA---------- | | | | |
| 57 | I | 1,4-difluorobenzene | 1.000 | 1.000 | 0.0 | 106 | -0.01 | 12.00 |
| 58 | | Di-isobutylene | | ----------NA---------- | | | | |
| 59 | | epichlorohydrin | 0.035 | 0.032 | 8.6 | 90 | -0.01 | 13.20 |
| 60 | | n-butyl alcohol | 0.011 | 0.010 | 9.1 | 94 | -0.01 | 12.13 |
| 61 | | carbon tetrachloride | 0.399 | 0.460 | -15.3 | 126 | 0.00 | 11.40 |
| 62 | | 1,1-dichloropropene | 0.468 | 0.509 | -8.8 | 117 | 0.00 | 11.38 |
| 63 | | hexane | 0.500 | 0.503 | -0.6 | 103 | 0.00 | 9.43 |
| 64 | | tert amyl ethyl ether | | ----------NA---------- | | | | |
| 65 | | iso-octane | | ----------NA---------- | | | | |
| 66 | | benzene | 1.442 | 1.519 | -5.3 | 112 | -0.01 | 11.64 |
| 67 | | tert-amyl methyl ether | 1.169 | 1.133 | 3.1 | 100 | 0.00 | 11.65 |
| 68 | | heptane | 0.266 | 0.270 | -1.5 | 104 | -0.01 | 11.77 |
| 69 | | isopropyl acetate | 0.749 | 0.599 | 20.0# | 81 | -0.01 | 11.55 |
| 70 | | 1,2-dichloroethane | 0.433 | 0.448 | -3.5 | 105 | 0.00 | 11.67 |
| 71 | | trichloroethene | 0.350 | 0.354 | -1.1 | 110 | 0.00 | 12.33 |
| 72 | | 2-nitropropane | 0.019 | 0.016 | 15.8 | 88 | 0.00 | 13.38 |
| 73 | | 2-chloroethyl vinyl ether | 0.262 | 0.210 | 19.8 | 78 | 0.00 | 13.07 |
| 74 | | methyl methacrylate | 0.263 | 0.226 | 14.1 | 84 | 0.00 | 12.57 |
| 75 | | 1,2-dichloropropane | 0.375 | 0.382 | -1.9 | 107 | 0.00 | 12.59 |
| 76 | | dibromomethane | 0.205 | 0.211 | -2.9 | 104 | -0.01 | 12.75 |
| 77 | | methylcyclohexane | 0.619 | 0.634 | -2.4 | 106 | 0.00 | 12.52 |
| 78 | | bromodichloromethane | 0.424 | 0.434 | -2.4 | 104 | -0.01 | 12.86 |
| 79 | | cis-1,3-dichloropropene | 0.572 | 0.580 | -1.4 | 101 | 0.00 | 13.28 |
| 80 | S | toluene-d8 (s) | 1.319 | 1.263 | 4.2 | 104 | 0.00 | 13.54 |
| 81 | | 4-methyl-2-pentanone | 0.136 | 0.130 | 4.4 | 93 | 0.00 | 13.36 |
| 82 | | toluene | 0.844 | 0.817 | 3.2 | 101 | -0.01 | 13.61 |
| 83 | | 3-methyl-1-butanol | 0.015 | 0.015 | 0.0 | 96 | -0.01 | 13.38 |
| 84 | | trans-1,3-dichloropropene | 0.500 | 0.483 | 3.4 | 95 | 0.00 | 13.80 |
| 85 | | ethyl methacrylate | 0.358 | 0.379 | -5.9 | 104 | 0.00 | 13.76 |
| 86 | | 1,1,2-trichloroethane | 0.256 | 0.243 | 5.1 | 98 | 0.00 | 14.01 |
| 87 | | 2-hexanone | 0.130 | 0.112 | 13.8 | 83 | 0.00 | 14.15 |
| 88 | I | chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 101 | 0.00 | 14.95 |
| 89 | | tetrachloroethene | 0.330 | 0.341 | -3.3 | 108 | 0.00 | 14.15 |
| 90 | | 1,3-dichloropropane | 0.581 | 0.579 | 0.3 | 95 | -0.01 | 14.17 |
| 91 | | butyl acetate | 0.253 | 0.215 | 15.0 | 80 | 0.00 | 14.19 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** V2C2892-CC2824
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 2C63865.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 92 | | 3,3-dimethyl-1-butanol | 0.037 | 0.034 | 8.1 | 93 | 0.00 | 14.30 |
| 93 | | dibromochloromethane | 0.349 | 0.381 | -9.2 | 103 | -0.01 | 14.42 |
| 94 | | 1,2-dibromoethane | 0.340 | 0.351 | -3.2 | 98 | 0.00 | 14.57 |
| 95 | | BUTYL ETHER | | ----------NA---------- | | | | |
| 96 | | chlorobenzene | 1.073 | 1.088 | -1.4 | 102 | 0.00 | 14.98 |
| 97 | | 1,1,1,2-tetrachloroethane | 0.371 | 0.382 | -3.0 | 102 | 0.00 | 15.03 |
| 98 | | ethylbenzene | 1.824 | 1.782 | 2.3 | 100 | 0.00 | 15.01 |
| 99 | | m,p-xylene | 0.693 | 0.692 | 0.1 | 101 | 0.00 | 15.11 |
| 100 | | o-xylene | 0.688 | 0.675 | 1.9 | 97 | 0.00 | 15.50 |
| 101 | | styrene | 1.120 | 1.114 | 0.5 | 93 | 0.00 | 15.51 |
| 102 | | bromoform | 0.233 | 0.256 | -9.9 | 103 | 0.00 | 15.78 |
| 103 | I | 1,4-dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 108 | 0.00 | 17.10 |
| 104 | | isopropylbenzene | 3.546 | 3.271 | 7.8 | 100 | 0.00 | 15.80 |
| 105 | S | 4-bromofluorobenzene (s) | 1.192 | 1.030 | 13.6 | 98 | 0.00 | 16.01 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 106 | | cyclohexanone | 500.000 | 336.227 | 32.8# | 79 | 0.00 | 16.00 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 107 | | bromobenzene | 0.910 | 0.896 | 1.5 | 103 | 0.00 | 16.20 |
| 108 | | 1,1,2,2-tetrachloroethane | 0.929 | 0.806 | 13.2 | 90 | 0.00 | 16.11 |
| 109 | | trans-1,4-dichloro-2-bute | 0.112 | 0.096 | 14.3 | 86 | 0.00 | 16.14 |
| 110 | | 1,2,3-trichloropropane | 0.200 | 0.189 | 5.5 | 96 | 0.00 | 16.18 |
| 111 | | n-propylbenzene | 4.261 | 3.861 | 9.4 | 99 | 0.00 | 16.18 |
| 112 | | 2-chlorotoluene | 0.867 | 0.826 | 4.7 | 102 | 0.00 | 16.34 |
| 113 | | 4-chlorotoluene | 2.539 | 2.314 | 8.9 | 98 | 0.00 | 16.43 |
| 114 | | 1,3,5-trimethylbenzene | 2.951 | 2.723 | 7.7 | 100 | 0.00 | 16.31 |
| 115 | | tert-butylbenzene | 2.594 | 2.379 | 8.3 | 100 | 0.00 | 16.64 |
| 116 | | pentachloroethane | 0.528 | 0.544 | -3.0 | 106 | 0.00 | 16.74 |
| 117 | | 1,2,4-trimethylbenzene | 3.039 | 2.768 | 8.9 | 98 | 0.00 | 16.68 |
| 118 | | sec-butylbenzene | 3.969 | 3.620 | 8.8 | 100 | 0.00 | 16.84 |
| 119 | | 1,3-dichlorobenzene | 1.767 | 1.741 | 1.5 | 105 | 0.00 | 17.05 |
| 120 | | p-isopropyltoluene | 3.246 | 3.059 | 5.8 | 103 | 0.00 | 16.95 |
| 121 | | 1,4-dichlorobenzene | 1.812 | 1.772 | 2.2 | 105 | 0.00 | 17.12 |
| 122 | | 1,2-dichlorobenzene | 1.753 | 1.725 | 1.6 | 105 | 0.00 | 17.51 |
| 123 | | n-butylbenzene | 1.766 | 1.596 | 9.6 | 97 | 0.00 | 17.35 |
| 124 | | 1,2-dibromo-3-chloropropa | 0.151 | 0.137 | 9.3 | 90 | 0.00 | 18.29 |
| 125 | | 1,3,5-trichlorobenzene | 1.479 | 1.535 | -3.8 | 110 | 0.00 | 18.46 |
| 126 | | 1,2,4-trichlorobenzene | 1.189 | 1.262 | -6.1 | 109 | 0.00 | 19.12 |
| 127 | | hexachlorobutadiene | 0.686 | 0.746 | -8.7 | 121 | 0.00 | 19.22 |
| 128 | | naphthalene | 2.420 | 2.264 | 6.4 | 96 | 0.00 | 19.42 |
| 129 | | 1,2,3-trichlorobenzene | 1.036 | 1.028 | 0.8 | 107 | 0.00 | 19.66 |
| 130 | | hexachloroethane | 0.470 | 0.525 | -11.7 | 116 | 0.00 | 17.76 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2C62458.D M2C2824.M Tue Nov 10 14:14:56 2009 MS2C

6.7.3

6

New Jersey

ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63877.D Vial: 35
Acq On : 7 Nov 2009 2:16 am Operator: tarar1
Sample : ja31597-1 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 07 02:41:37 2009 Quant Results File: M2C2824.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration
DataAcq Meth : M2C2824

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 8.69 | 65 | 78291 | 500.00 | ug/L | -0.02 |
| 4) pentafluorobenzene | 11.09 | 168 | 159061 | 50.00 | ug/L | 0.00 |
| 57) 1,4-difluorobenzene | 12.00 | 114 | 261470 | 50.00 | ug/L | -0.01 |
| 88) chlorobenzene-d5 | 14.95 | 117 | 221603 | 50.00 | ug/L | 0.00 |
| 103) 1,4-dichlorobenzene-d4 | 17.10 | 152 | 111004 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 50) dibromofluoromethane (s) | 11.16 | 113 | 85917 | 53.95 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 107.90% | | | |
| 51) 1,2-dichloroethane-d4 (s) | 11.59 | 65 | 104258 | 55.37 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 110.74% | | | |
| 80) toluene-d8 (s) | 13.54 | 98 | 321898 | 46.67 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 93.34% | | | |
| 105) 4-bromofluorobenzene (s) | 16.01 | 95 | 117285 | 44.32 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 88.64% | | | |

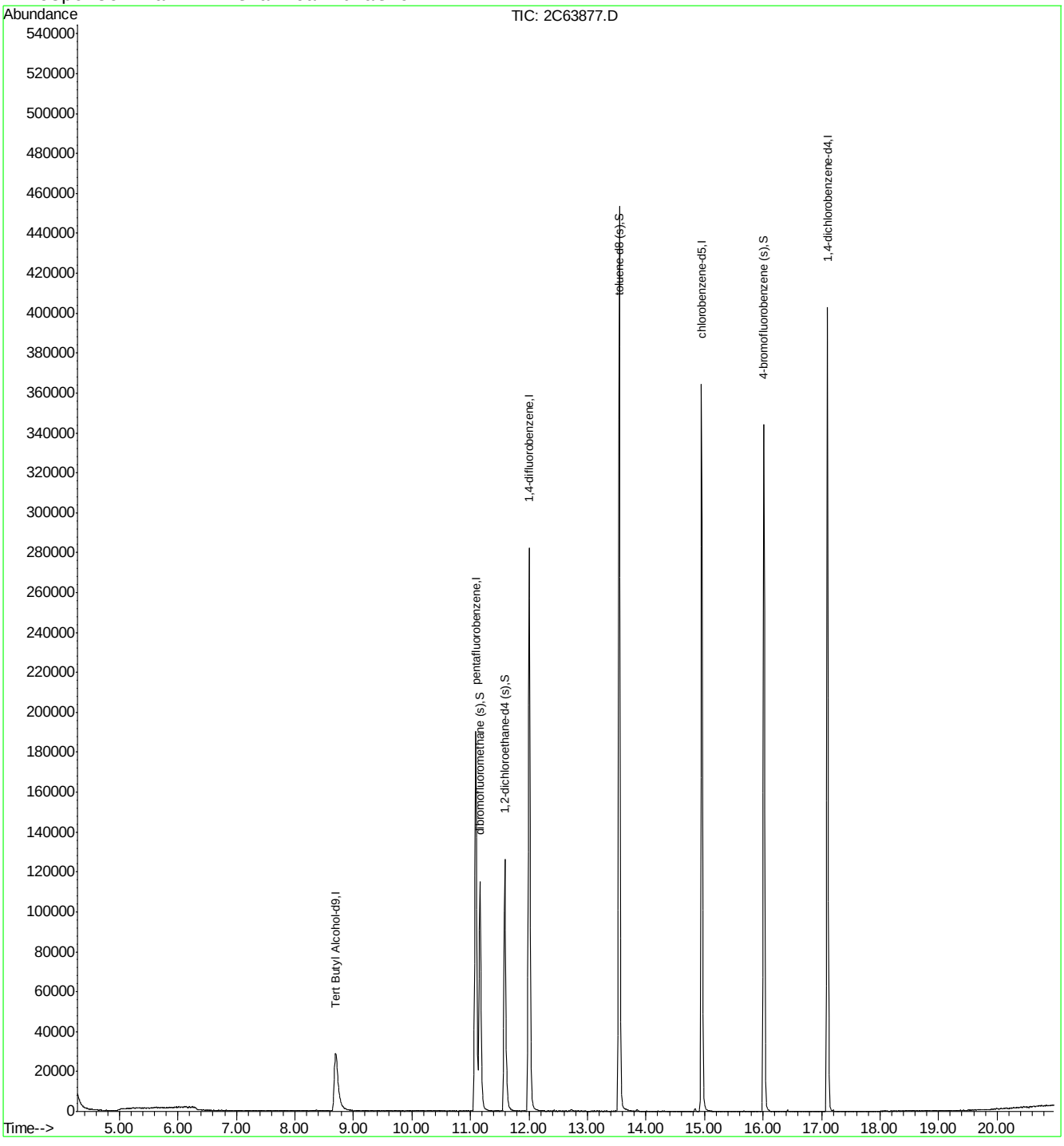
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63877.D Vial: 35
Acq On : 7 Nov 2009 2:16 am Operator: tarar1
Sample : ja31597-1 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 10 14:29 2009 Quant Results File: M2C2824.RES

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration



LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\2C63877.D  Vial: 35
Acq On : 7 Nov 2009 2:16 am  Operator: tarar1
Sample : ja31597-1  Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.06  Max Peaks: 100
Stop Thrs : 0.04  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.526 | 46 | 47 | 73 | rVB | 599 | 1789 | 0.22% | 0.040% |
| 2 | 5.066 | 132 | 150 | 157 | rBV2 | 853 | 4829 | 0.58% | 0.109% |
| 3 | 5.129 | 157 | 162 | 167 | rVV2 | 563 | 921 | 0.11% | 0.021% |
| 4 | 5.810 | 289 | 292 | 304 | rBV2 | 496 | 1293 | 0.16% | 0.029% |
| 5 | 6.015 | 329 | 331 | 335 | rVB2 | 593 | 432 | 0.05% | 0.010% |
| 6 | 6.046 | 335 | 337 | 344 | rBV3 | 460 | 840 | 0.10% | 0.019% |
| 7 | 6.193 | 363 | 365 | 370 | rBV2 | 615 | 538 | 0.06% | 0.012% |
| 8 | 6.235 | 370 | 373 | 375 | rBV | 398 | 370 | 0.04% | 0.008% |
| 9 | 6.350 | 392 | 395 | 401 | rVB | 382 | 533 | 0.06% | 0.012% |
| 10 | 6.827 | 482 | 486 | 490 | rVV | 377 | 536 | 0.06% | 0.012% |
| 11 | 6.885 | 494 | 497 | 500 | rVV | 302 | 347 | 0.04% | 0.008% |
| 12 | 6.916 | 500 | 503 | 506 | rVV2 | 290 | 402 | 0.05% | 0.009% |
| 13 | 6.937 | 506 | 507 | 514 | rVV2 | 311 | 532 | 0.06% | 0.012% |
| 14 | 6.995 | 514 | 518 | 525 | rVV2 | 292 | 712 | 0.09% | 0.016% |
| 15 | 7.063 | 525 | 531 | 541 | rVB2 | 260 | 627 | 0.08% | 0.014% |
| 16 | 7.907 | 691 | 692 | 699 | rBV | 219 | 370 | 0.04% | 0.008% |
| 17 | 8.259 | 758 | 759 | 766 | rVV2 | 213 | 379 | 0.05% | 0.009% |
| 18 | 8.369 | 775 | 780 | 786 | rVB3 | 460 | 768 | 0.09% | 0.017% |
| 19 | 8.479 | 799 | 801 | 807 | rBV2 | 256 | 406 | 0.05% | 0.009% |
| 20 | 8.589 | 816 | 822 | 824 | rVB | 263 | 430 | 0.05% | 0.010% |
| 21 | 8.694 | 830 | 842 | 879 | rBV2 | 28892 | 136859 | 16.53% | 3.089% |
| 22 | 8.946 | 889 | 890 | 895 | rVB | 299 | 335 | 0.04% | 0.008% |
| 23 | 9.008 | 900 | 902 | 904 | rBV2 | 463 | 384 | 0.05% | 0.009% |
| 24 | 9.035 | 904 | 907 | 910 | rBV2 | 377 | 406 | 0.05% | 0.009% |
| 25 | 9.108 | 914 | 921 | 928 | rVB | 245 | 707 | 0.09% | 0.016% |
| 26 | 9.176 | 928 | 934 | 936 | rVB2 | 227 | 386 | 0.05% | 0.009% |
| 27 | 9.239 | 941 | 946 | 949 | rVB2 | 242 | 434 | 0.05% | 0.010% |
| 28 | 9.276 | 949 | 953 | 955 | rBV | 228 | 326 | 0.04% | 0.007% |
| 29 | 9.328 | 955 | 963 | 967 | rVB2 | 272 | 788 | 0.10% | 0.018% |
| 30 | 9.360 | 967 | 969 | 974 | rBV | 278 | 455 | 0.05% | 0.010% |
| 31 | 9.402 | 974 | 977 | 982 | rVV2 | 245 | 425 | 0.05% | 0.010% |
| 32 | 9.701 | 1029 | 1034 | 1037 | rBV2 | 278 | 418 | 0.05% | 0.009% |
| 33 | 9.774 | 1046 | 1048 | 1055 | rVB | 281 | 511 | 0.06% | 0.012% |
| 34 | 9.832 | 1055 | 1059 | 1061 | rBV | 265 | 332 | 0.04% | 0.007% |
| 35 | 9.973 | 1082 | 1086 | 1090 | rBV2 | 300 | 406 | 0.05% | 0.009% |
| 36 | 10.068 | 1103 | 1104 | 1110 | rBV2 | 274 | 321 | 0.04% | 0.007% |
| 37 | 10.188 | 1122 | 1127 | 1130 | rVB2 | 252 | 321 | 0.04% | 0.007% |
| 38 | 10.288 | 1142 | 1146 | 1151 | rBV2 | 268 | 376 | 0.05% | 0.008% |

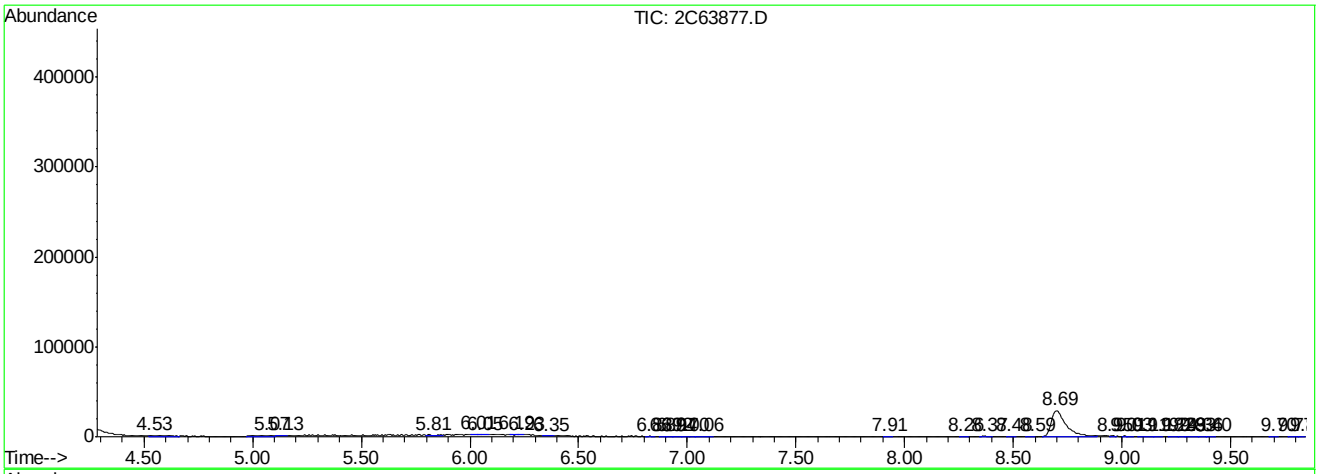
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 10.403 | 1161 | 1168 | 1173 | rVB3 | 378 | 821 | 0.10% | 0.019% |
| 40 | 11.090 | 1289 | 1299 | 1307 | rBV | 190462 | 435386 | 52.60% | 9.827% |
| 41 | 11.163 | 1307 | 1313 | 1347 | rVB2 | 115207 | 280890 | 33.93% | 6.340% |
| 42 | 11.588 | 1379 | 1394 | 1424 | rBV | 126181 | 289622 | 34.99% | 6.537% |
| 43 | 12.002 | 1463 | 1473 | 1510 | rBV | 282120 | 583170 | 70.45% | 13.163% |
| 44 | 12.201 | 1510 | 1511 | 1528 | rVB | 392 | 972 | 0.12% | 0.022% |
| 45 | 12.427 | 1550 | 1554 | 1559 | rVB | 629 | 644 | 0.08% | 0.015% |
| 46 | 12.726 | 1605 | 1611 | 1620 | rVB2 | 636 | 1275 | 0.15% | 0.029% |
| 47 | 13.544 | 1757 | 1767 | 1809 | rBV | 453683 | 827800 | 100.00% | 18.684% |
| 48 | 13.843 | 1817 | 1824 | 1829 | rVB3 | 807 | 1301 | 0.16% | 0.029% |
| 49 | 14.839 | 2009 | 2014 | 2025 | rVB2 | 1329 | 2311 | 0.28% | 0.052% |
| 50 | 14.949 | 2025 | 2035 | 2066 | rBV | 364355 | 626336 | 75.66% | 14.137% |
| 51 | 15.185 | 2079 | 2080 | 2086 | rBB | 213 | 356 | 0.04% | 0.008% |
| 52 | 15.242 | 2090 | 2091 | 2097 | rVB | 202 | 328 | 0.04% | 0.007% |
| 53 | 15.290 | 2097 | 2100 | 2106 | rBB | 213 | 430 | 0.05% | 0.010% |
| 54 | 15.410 | 2119 | 2123 | 2127 | rBV | 205 | 448 | 0.05% | 0.010% |
| 55 | 15.578 | 2151 | 2155 | 2160 | rBV | 214 | 453 | 0.05% | 0.010% |
| 56 | 15.730 | 2176 | 2184 | 2186 | rBV | 216 | 564 | 0.07% | 0.013% |
| 57 | 15.845 | 2202 | 2206 | 2211 | rBV | 197 | 444 | 0.05% | 0.010% |
| 58 | 16.013 | 2227 | 2238 | 2258 | rBB | 344408 | 550954 | 66.56% | 12.435% |
| 59 | 16.254 | 2277 | 2284 | 2285 | rVB | 202 | 379 | 0.05% | 0.009% |
| 60 | 16.422 | 2309 | 2316 | 2322 | rBB | 709 | 1154 | 0.14% | 0.026% |
| 61 | 16.642 | 2354 | 2358 | 2363 | rBB | 199 | 439 | 0.05% | 0.010% |
| 62 | 16.737 | 2372 | 2376 | 2381 | rBB | 201 | 433 | 0.05% | 0.010% |
| 63 | 16.904 | 2405 | 2408 | 2413 | rBB | 211 | 395 | 0.05% | 0.009% |
| 64 | 17.020 | 2422 | 2430 | 2431 | rBB | 183 | 362 | 0.04% | 0.008% |
| 65 | 17.104 | 2438 | 2446 | 2461 | rBV | 403072 | 641539 | 77.50% | 14.480% |
| 66 | 17.198 | 2462 | 2464 | 2470 | rVB | 775 | 808 | 0.10% | 0.018% |
| 67 | 17.271 | 2471 | 2478 | 2479 | rBB | 222 | 327 | 0.04% | 0.007% |
| 68 | 17.329 | 2486 | 2489 | 2493 | rBB | 183 | 322 | 0.04% | 0.007% |
| 69 | 17.492 | 2516 | 2520 | 2522 | rBV | 194 | 323 | 0.04% | 0.007% |
| 70 | 17.618 | 2537 | 2544 | 2547 | rBB | 243 | 480 | 0.06% | 0.011% |
| 71 | 17.801 | 2567 | 2579 | 2580 | rBB | 199 | 673 | 0.08% | 0.015% |
| 72 | 17.853 | 2586 | 2589 | 2593 | rBB | 216 | 329 | 0.04% | 0.007% |
| 73 | 17.964 | 2605 | 2610 | 2612 | rBB | 181 | 322 | 0.04% | 0.007% |
| 74 | 18.079 | 2627 | 2632 | 2634 | rBB | 385 | 515 | 0.06% | 0.012% |
| 75 | 18.110 | 2634 | 2638 | 2639 | rBV | 370 | 384 | 0.05% | 0.009% |
| 76 | 18.126 | 2639 | 2641 | 2644 | rVB | 356 | 390 | 0.05% | 0.009% |
| 77 | 18.184 | 2650 | 2652 | 2657 | rBV2 | 377 | 560 | 0.07% | 0.013% |
| 78 | 18.430 | 2696 | 2699 | 2702 | rBV2 | 225 | 338 | 0.04% | 0.008% |
| 79 | 18.760 | 2756 | 2762 | 2766 | rBV2 | 253 | 617 | 0.07% | 0.014% |
| 80 | 19.206 | 2845 | 2847 | 2851 | rVB2 | 228 | 341 | 0.04% | 0.008% |
| 81 | 19.232 | 2851 | 2852 | 2858 | rBV2 | 292 | 417 | 0.05% | 0.009% |
| 82 | 19.342 | 2870 | 2873 | 2876 | rBV2 | 288 | 341 | 0.04% | 0.008% |
| 83 | 19.374 | 2876 | 2879 | 2887 | rBV2 | 225 | 468 | 0.06% | 0.011% |
| 84 | 19.453 | 2891 | 2894 | 2902 | rBV2 | 286 | 827 | 0.10% | 0.019% |
| 85 | 19.778 | 2951 | 2956 | 2965 | rBV2 | 227 | 596 | 0.07% | 0.013% |
| 86 | 19.846 | 2965 | 2969 | 2971 | rBV2 | 303 | 408 | 0.05% | 0.009% |
| 87 | 19.914 | 2980 | 2982 | 2984 | rBV2 | 370 | 367 | 0.04% | 0.008% |
| 88 | 19.993 | 2996 | 2997 | 3005 | rVV3 | 496 | 556 | 0.07% | 0.013% |
| 89 | 20.071 | 3007 | 3012 | 3016 | rBV2 | 368 | 514 | 0.06% | 0.012% |
| 90 | 20.208 | 3036 | 3038 | 3041 | rBV3 | 455 | 485 | 0.06% | 0.011% |
| 91 | 20.244 | 3042 | 3045 | 3048 | rVV3 | 479 | 627 | 0.08% | 0.014% |
| 92 | 20.286 | 3050 | 3053 | 3059 | rVB4 | 544 | 984 | 0.12% | 0.022% |
| 93 | 20.328 | 3059 | 3061 | 3068 | rBV | 454 | 871 | 0.11% | 0.020% |
| 94 | 20.402 | 3072 | 3075 | 3079 | rVB2 | 576 | 705 | 0.09% | 0.016% |
| 95 | 20.454 | 3082 | 3085 | 3089 | rVV4 | 656 | 805 | 0.10% | 0.018% |

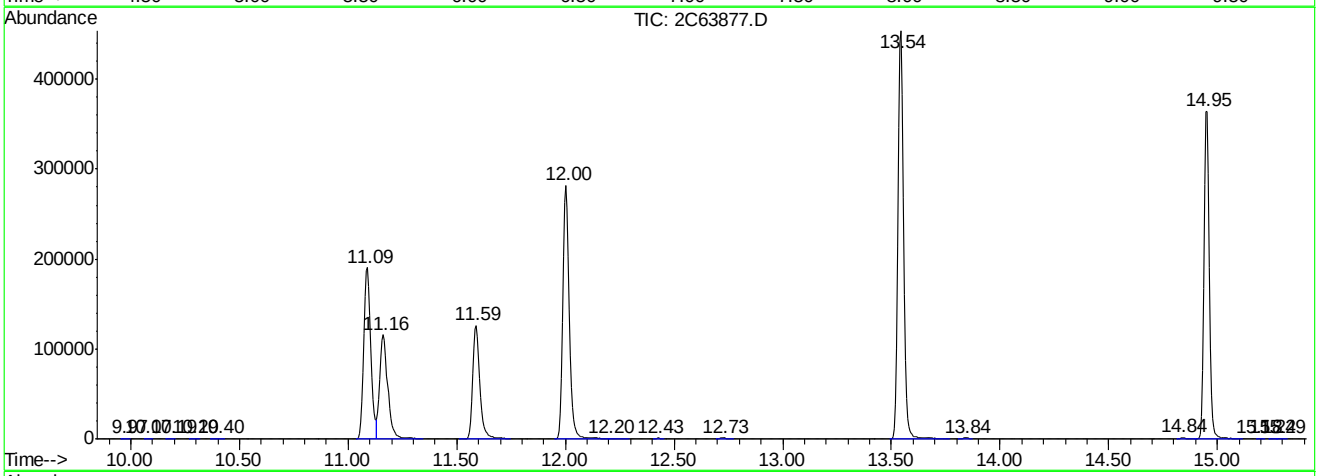
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 20.506 | 3089 | 3095 | 3097 | rVB5 | 443 | 621 | 0.08% | 0.014% |
| 97 | 20.580 | 3102 | 3109 | 3111 | rBV4 | 557 | 1067 | 0.13% | 0.024% |
| 98 | 20.627 | 3115 | 3118 | 3121 | rVB4 | 503 | 511 | 0.06% | 0.012% |
| 99 | 20.706 | 3121 | 3133 | 3135 | rBV6 | 696 | 1741 | 0.21% | 0.039% |
| 100 | 20.769 | 3142 | 3145 | 3149 | rBV3 | 563 | 433 | 0.05% | 0.010% |

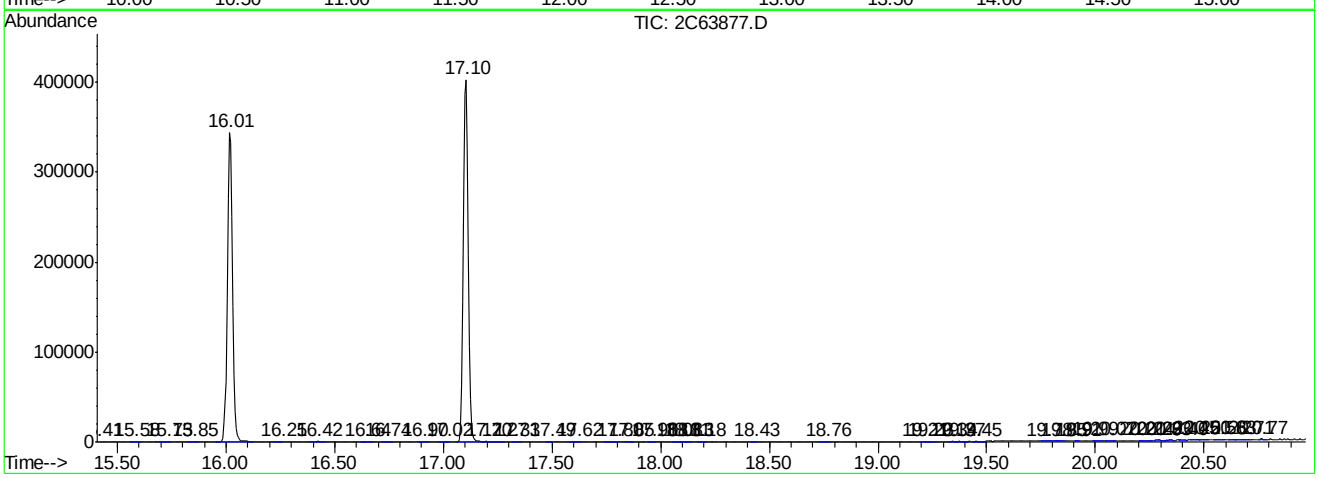
Sum of corrected areas: 4430523

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\1\DATA\2C63877.D
Operator : tarar1
Acquired : 7 Nov 2009 2:16 am using AcqMethod M2C2824
Instrument : ms2C
Sample Name: ja31597-1
Misc Info : MS88065,V2C2892,W,,,,1
Vial Number: 35
Quant File :M2C2824.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: tarar1 Date Acquired: 7 Nov 2009 2:16 am
Data File: C:\MSDCHEM\1\DATA\2C63877.D
Name: ja31597-1
Misc: MS88065,V2C2892,W,,,,1
Method: C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title: SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Library Searched: C:\DATABASE\NBS75K.L

| TIC Top Hit name | RT | EstConc | Units | Response | Internal Standard # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63879.D Vial: 37
Acq On : 7 Nov 2009 3:17 am Operator: tarar1
Sample : ja31597-2 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 07 03:43:15 2009 Quant Results File: M2C2824.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration
DataAcq Meth : M2C2824

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 8.69 | 65 | 73321 | 500.00 | ug/L | -0.02 |
| 4) pentafluorobenzene | 11.09 | 168 | 154467 | 50.00 | ug/L | 0.00 |
| 57) 1,4-difluorobenzene | 12.00 | 114 | 254864 | 50.00 | ug/L | -0.01 |
| 88) chlorobenzene-d5 | 14.95 | 117 | 211761 | 50.00 | ug/L | 0.00 |
| 103) 1,4-dichlorobenzene-d4 | 17.10 | 152 | 107498 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 50) dibromofluoromethane (s) | 11.16 | 113 | 85143 | 55.06 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 110.12% | | | |
| 51) 1,2-dichloroethane-d4 (s) | 11.59 | 65 | 102336 | 55.96 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 111.92% | | | |
| 80) toluene-d8 (s) | 13.54 | 98 | 335584 | 49.92 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 99.84% | | | |
| 105) 4-bromofluorobenzene (s) | 16.01 | 95 | 114522 | 44.69 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 89.38% | | | |

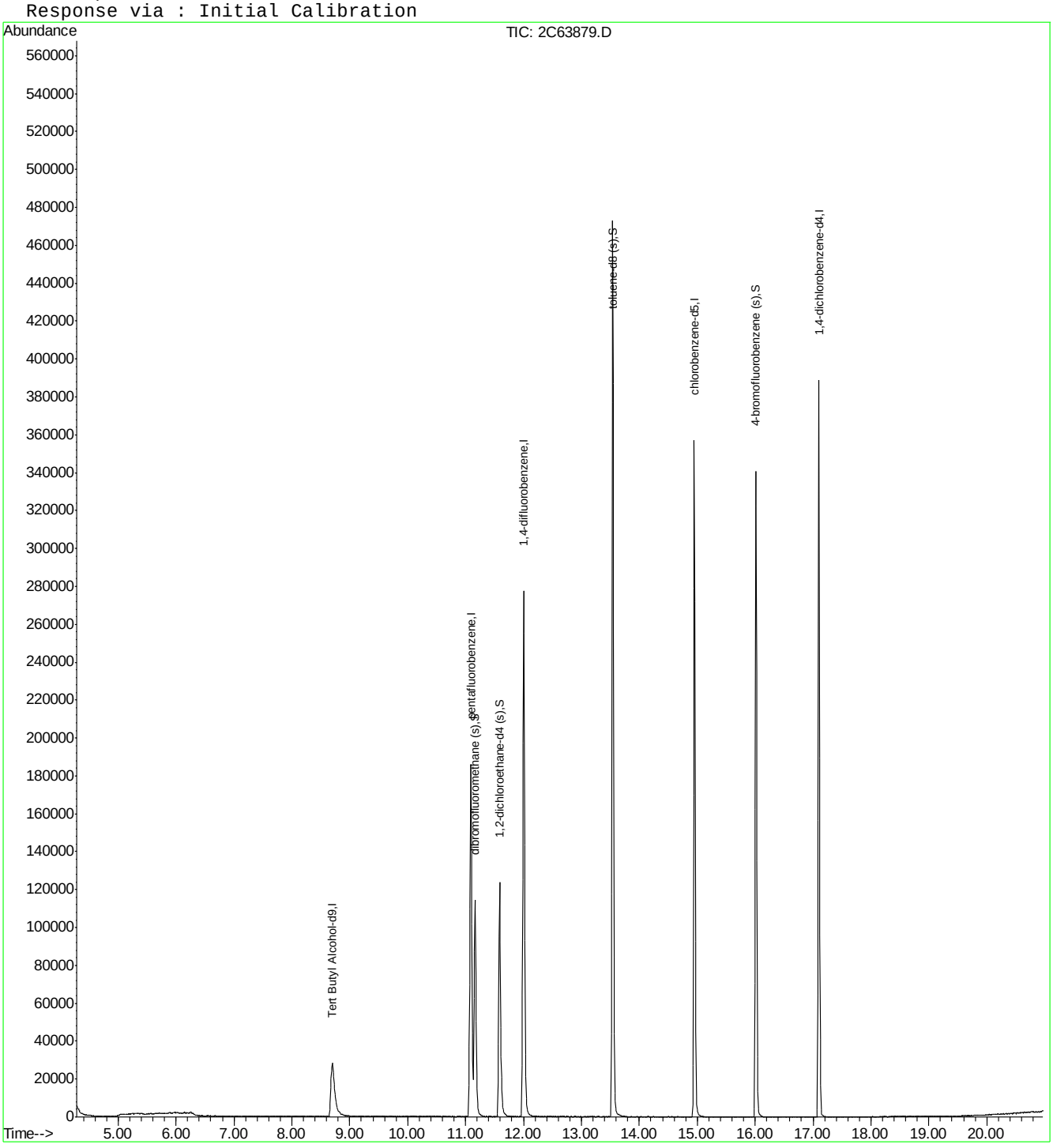
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63879.D Vial: 37
Acq On : 7 Nov 2009 3:17 am Operator: tarar1
Sample : ja31597-2 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 10 14:29 2009 Quant Results File: M2C2824.RES

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration



LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\2C63879.D  Vial: 37
Acq On : 7 Nov 2009 3:17 am  Operator: tarar1
Sample : ja31597-2  Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.06  Max Peaks: 100
Stop Thrs : 0.04  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.029 | 130 | 143 | 145 | rBV2 | 778 | 2264 | 0.26% | 0.052% |
| 2 | 5.244 | 181 | 184 | 191 | rVB3 | 481 | 665 | 0.08% | 0.015% |
| 3 | 5.297 | 191 | 194 | 200 | rBV2 | 491 | 568 | 0.07% | 0.013% |
| 4 | 5.344 | 201 | 203 | 215 | rVV2 | 336 | 454 | 0.05% | 0.010% |
| 5 | 5.648 | 259 | 261 | 266 | rVB2 | 315 | 388 | 0.04% | 0.009% |
| 6 | 5.805 | 279 | 291 | 295 | rBV2 | 421 | 1289 | 0.15% | 0.029% |
| 7 | 5.989 | 324 | 326 | 343 | rVB4 | 696 | 1881 | 0.22% | 0.043% |
| 8 | 6.130 | 350 | 353 | 354 | rBV2 | 457 | 288 | 0.03% | 0.007% |
| 9 | 6.188 | 360 | 364 | 368 | rBV2 | 617 | 1097 | 0.13% | 0.025% |
| 10 | 6.219 | 368 | 370 | 374 | rVV2 | 861 | 1116 | 0.13% | 0.026% |
| 11 | 6.256 | 374 | 377 | 396 | rVB | 1986 | 5125 | 0.59% | 0.117% |
| 12 | 6.392 | 401 | 403 | 411 | rVB | 235 | 294 | 0.03% | 0.007% |
| 13 | 6.801 | 478 | 481 | 485 | rBV | 303 | 427 | 0.05% | 0.010% |
| 14 | 6.922 | 503 | 504 | 512 | rVV2 | 273 | 481 | 0.06% | 0.011% |
| 15 | 7.252 | 565 | 567 | 575 | rBV | 246 | 375 | 0.04% | 0.009% |
| 16 | 7.404 | 591 | 596 | 605 | rBV | 271 | 415 | 0.05% | 0.009% |
| 17 | 7.923 | 691 | 695 | 702 | rBV | 250 | 413 | 0.05% | 0.009% |
| 18 | 8.343 | 771 | 775 | 782 | rBV | 270 | 419 | 0.05% | 0.010% |
| 19 | 8.406 | 782 | 787 | 791 | rVB2 | 255 | 309 | 0.04% | 0.007% |
| 20 | 8.615 | 825 | 827 | 831 | rBV | 262 | 353 | 0.04% | 0.008% |
| 21 | 8.699 | 831 | 843 | 881 | rBV2 | 28232 | 133809 | 15.46% | 3.060% |
| 22 | 9.014 | 901 | 903 | 907 | rVB | 418 | 390 | 0.05% | 0.009% |
| 23 | 9.071 | 910 | 914 | 917 | rBV2 | 221 | 311 | 0.04% | 0.007% |
| 24 | 9.145 | 925 | 928 | 932 | rBV | 235 | 312 | 0.04% | 0.007% |
| 25 | 9.328 | 956 | 963 | 966 | rVB2 | 284 | 524 | 0.06% | 0.012% |
| 26 | 9.423 | 979 | 981 | 986 | rVV2 | 215 | 311 | 0.04% | 0.007% |
| 27 | 9.491 | 990 | 994 | 998 | rVV | 219 | 393 | 0.05% | 0.009% |
| 28 | 9.517 | 998 | 999 | 1008 | rVB2 | 245 | 534 | 0.06% | 0.012% |
| 29 | 9.617 | 1012 | 1018 | 1020 | rVB | 291 | 398 | 0.05% | 0.009% |
| 30 | 9.638 | 1020 | 1022 | 1025 | rBV | 289 | 296 | 0.03% | 0.007% |
| 31 | 9.664 | 1025 | 1027 | 1031 | rBV | 234 | 295 | 0.03% | 0.007% |
| 32 | 9.722 | 1036 | 1038 | 1046 | rVB2 | 227 | 351 | 0.04% | 0.008% |
| 33 | 9.800 | 1046 | 1053 | 1054 | rVB | 243 | 342 | 0.04% | 0.008% |
| 34 | 9.821 | 1054 | 1057 | 1061 | rBV2 | 250 | 338 | 0.04% | 0.008% |
| 35 | 10.393 | 1164 | 1166 | 1175 | rBV3 | 413 | 503 | 0.06% | 0.012% |
| 36 | 11.090 | 1288 | 1299 | 1307 | rBV | 185875 | 424255 | 49.03% | 9.703% |
| 37 | 11.163 | 1307 | 1313 | 1347 | rVB | 114345 | 274081 | 31.68% | 6.269% |
| 38 | 11.588 | 1381 | 1394 | 1435 | rBV | 123788 | 285012 | 32.94% | 6.519% |

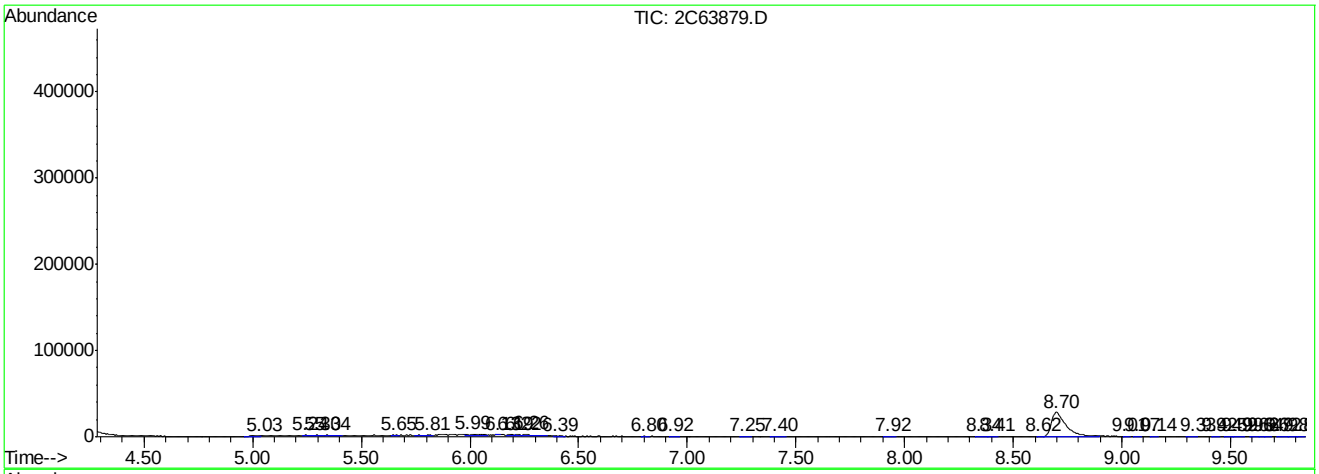
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 12.002 | 1464 | 1473 | 1504 | rBV | 277528 | 573651 | 66.30% | 13.120% |
| 40 | 13.539 | 1756 | 1766 | 1817 | rVB | 473040 | 865270 | 100.00% | 19.790% |
| 41 | 14.341 | 1914 | 1919 | 1921 | rVB | 235 | 393 | 0.05% | 0.009% |
| 42 | 14.383 | 1921 | 1927 | 1928 | rBV | 243 | 471 | 0.05% | 0.011% |
| 43 | 14.949 | 2022 | 2035 | 2065 | rBV | 356952 | 602022 | 69.58% | 13.769% |
| 44 | 15.237 | 2083 | 2090 | 2092 | rBB | 192 | 452 | 0.05% | 0.010% |
| 45 | 15.274 | 2092 | 2097 | 2100 | rBV | 209 | 471 | 0.05% | 0.011% |
| 46 | 15.410 | 2120 | 2123 | 2127 | rVB | 208 | 347 | 0.04% | 0.008% |
| 47 | 15.463 | 2130 | 2133 | 2135 | rBV | 226 | 312 | 0.04% | 0.007% |
| 48 | 15.510 | 2141 | 2142 | 2149 | rVB | 201 | 402 | 0.05% | 0.009% |
| 49 | 15.589 | 2149 | 2157 | 2160 | rBV | 228 | 626 | 0.07% | 0.014% |
| 50 | 15.615 | 2160 | 2162 | 2169 | rVB | 201 | 446 | 0.05% | 0.010% |
| 51 | 15.720 | 2172 | 2182 | 2183 | rBV | 209 | 650 | 0.08% | 0.015% |
| 52 | 15.809 | 2194 | 2199 | 2207 | rBV | 201 | 704 | 0.08% | 0.016% |
| 53 | 16.013 | 2231 | 2238 | 2261 | rBB | 340675 | 535264 | 61.86% | 12.242% |
| 54 | 16.155 | 2261 | 2265 | 2269 | rBB | 179 | 316 | 0.04% | 0.007% |
| 55 | 16.239 | 2277 | 2281 | 2287 | rBB | 224 | 460 | 0.05% | 0.011% |
| 56 | 16.480 | 2326 | 2327 | 2338 | rBB | 192 | 548 | 0.06% | 0.013% |
| 57 | 16.632 | 2350 | 2356 | 2360 | rBB | 193 | 451 | 0.05% | 0.010% |
| 58 | 16.721 | 2368 | 2373 | 2377 | rBB | 179 | 318 | 0.04% | 0.007% |
| 59 | 16.800 | 2385 | 2388 | 2398 | rBB | 196 | 633 | 0.07% | 0.014% |
| 60 | 16.926 | 2409 | 2412 | 2415 | rBB | 223 | 292 | 0.03% | 0.007% |
| 61 | 17.104 | 2438 | 2446 | 2465 | rBV | 389000 | 621046 | 71.77% | 14.204% |
| 62 | 17.251 | 2471 | 2474 | 2488 | rBV | 216 | 880 | 0.10% | 0.020% |
| 63 | 17.397 | 2500 | 2502 | 2506 | rBB | 211 | 301 | 0.03% | 0.007% |
| 64 | 17.429 | 2506 | 2508 | 2518 | rBB | 188 | 608 | 0.07% | 0.014% |
| 65 | 17.518 | 2523 | 2525 | 2531 | rBV | 231 | 448 | 0.05% | 0.010% |
| 66 | 17.597 | 2537 | 2540 | 2546 | rVB | 212 | 419 | 0.05% | 0.010% |
| 67 | 17.707 | 2558 | 2561 | 2565 | rVB | 237 | 307 | 0.04% | 0.007% |
| 68 | 17.806 | 2573 | 2580 | 2588 | rBB | 201 | 792 | 0.09% | 0.018% |
| 69 | 17.864 | 2588 | 2591 | 2593 | rBV | 206 | 304 | 0.04% | 0.007% |
| 70 | 17.927 | 2601 | 2603 | 2606 | rBV | 213 | 289 | 0.03% | 0.007% |
| 71 | 17.969 | 2610 | 2611 | 2619 | rBB | 237 | 478 | 0.06% | 0.011% |
| 72 | 18.027 | 2620 | 2622 | 2630 | rBV | 339 | 599 | 0.07% | 0.014% |
| 73 | 18.158 | 2643 | 2647 | 2651 | rBB | 320 | 430 | 0.05% | 0.010% |
| 74 | 18.231 | 2658 | 2661 | 2662 | rBV | 355 | 329 | 0.04% | 0.008% |
| 75 | 18.247 | 2662 | 2664 | 2666 | rVV | 346 | 323 | 0.04% | 0.007% |
| 76 | 18.263 | 2666 | 2667 | 2671 | rVB | 355 | 333 | 0.04% | 0.008% |
| 77 | 18.310 | 2671 | 2676 | 2678 | rBV | 319 | 422 | 0.05% | 0.010% |
| 78 | 18.346 | 2678 | 2683 | 2685 | rVV2 | 277 | 386 | 0.04% | 0.009% |
| 79 | 18.378 | 2685 | 2689 | 2690 | rVV2 | 262 | 289 | 0.03% | 0.007% |
| 80 | 18.425 | 2690 | 2698 | 2702 | rVV2 | 226 | 573 | 0.07% | 0.013% |
| 81 | 18.498 | 2702 | 2712 | 2716 | rBV2 | 239 | 764 | 0.09% | 0.017% |
| 82 | 18.556 | 2716 | 2723 | 2725 | rBV | 215 | 486 | 0.06% | 0.011% |
| 83 | 18.651 | 2739 | 2741 | 2744 | rBV2 | 261 | 362 | 0.04% | 0.008% |
| 84 | 18.682 | 2745 | 2747 | 2753 | rVB | 242 | 403 | 0.05% | 0.009% |
| 85 | 18.803 | 2764 | 2770 | 2773 | rBV | 287 | 610 | 0.07% | 0.014% |
| 86 | 19.767 | 2952 | 2954 | 2963 | rBV2 | 224 | 388 | 0.04% | 0.009% |
| 87 | 19.909 | 2978 | 2981 | 2987 | rVB | 386 | 651 | 0.08% | 0.015% |
| 88 | 19.951 | 2987 | 2989 | 2993 | rBV | 344 | 509 | 0.06% | 0.012% |
| 89 | 20.145 | 3021 | 3026 | 3033 | rBV3 | 350 | 782 | 0.09% | 0.018% |
| 90 | 20.192 | 3033 | 3035 | 3038 | rBV2 | 570 | 350 | 0.04% | 0.008% |
| 91 | 20.244 | 3038 | 3045 | 3049 | rBV4 | 558 | 1070 | 0.12% | 0.024% |
| 92 | 20.276 | 3049 | 3051 | 3055 | rVB2 | 728 | 628 | 0.07% | 0.014% |
| 93 | 20.323 | 3057 | 3060 | 3067 | rBV3 | 702 | 1273 | 0.15% | 0.029% |
| 94 | 20.386 | 3067 | 3072 | 3075 | rBV3 | 706 | 1126 | 0.13% | 0.026% |
| 95 | 20.433 | 3079 | 3081 | 3083 | rVB2 | 504 | 421 | 0.05% | 0.010% |

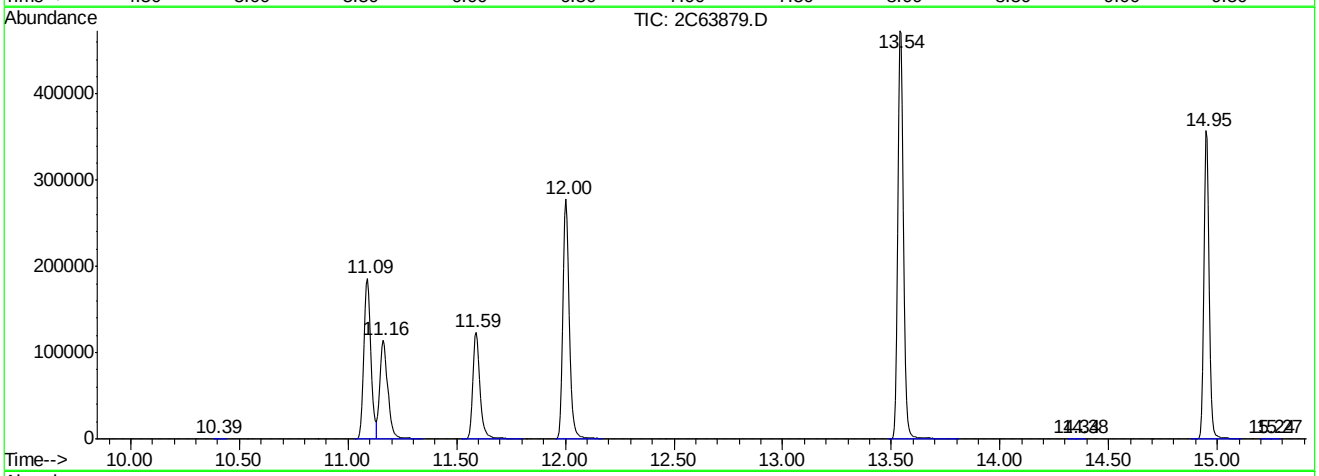
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 20.486 | 3083 | 3091 | 3092 | rBV2 | 721 | 1240 | 0.14% | 0.028% |
| 97 | 20.528 | 3096 | 3099 | 3104 | rBV3 | 553 | 838 | 0.10% | 0.019% |
| 98 | 20.632 | 3110 | 3119 | 3120 | rBV5 | 640 | 1542 | 0.18% | 0.035% |
| 99 | 20.648 | 3120 | 3122 | 3129 | rVV5 | 686 | 1105 | 0.13% | 0.025% |
| 100 | 20.942 | 3158 | 3178 | 3179 | rBV7 | 645 | 2655 | 0.31% | 0.061% |

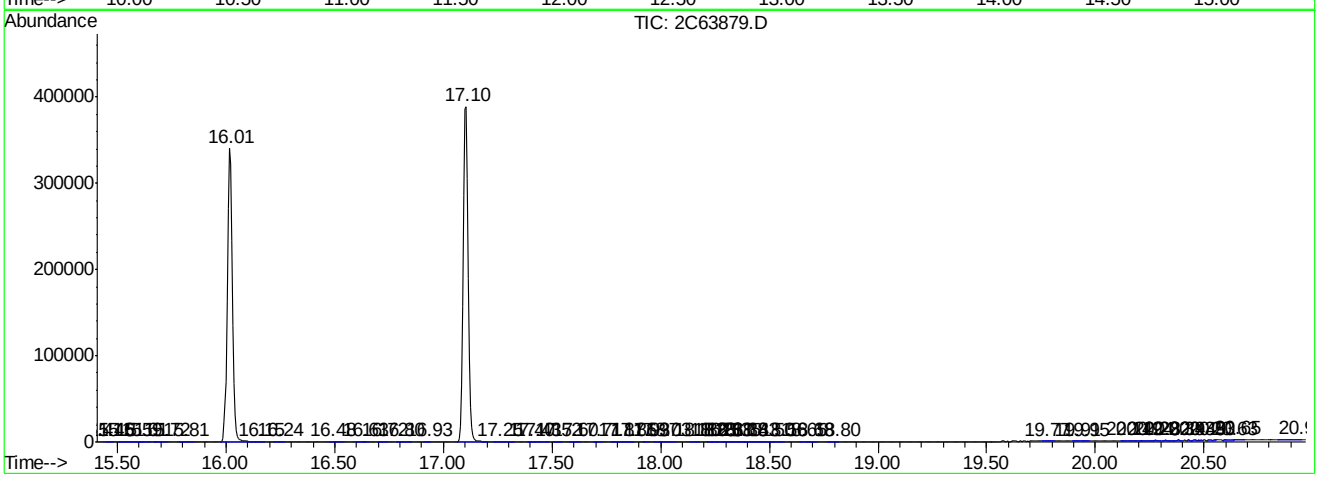
Sum of corrected areas: 4372334

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\1\DATA\2C63879.D
Operator : tarar1
Acquired : 7 Nov 2009 3:17 am using AcqMethod M2C2824
Instrument : ms2C
Sample Name: ja31597-2
Misc Info : MS88065,V2C2892,W,,,,1
Vial Number: 37
Quant File :M2C2824.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: tarar1 Date Acquired: 7 Nov 2009 3:17 am
Data File: C:\MSDCHEM\1\DATA\2C63879.D
Name: ja31597-2
Misc: MS88065,V2C2892,W,,,,1
Method: C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title: SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Library Searched: C:\DATABASE\NBS75K.L

| TIC Top Hit name | RT | EstConc | Units | Response | Internal Standard # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63880.D Vial: 38
Acq On : 7 Nov 2009 3:48 am Operator: tarar1
Sample : ja31597-3 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 07 04:14:03 2009 Quant Results File: M2C2824.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration
DataAcq Meth : M2C2824

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 8.70 | 65 | 73640 | 500.00 | ug/L | -0.02 |
| 4) pentafluorobenzene | 11.09 | 168 | 146035 | 50.00 | ug/L | 0.00 |
| 57) 1,4-difluorobenzene | 12.00 | 114 | 243960 | 50.00 | ug/L | -0.01 |
| 88) chlorobenzene-d5 | 14.95 | 117 | 212027 | 50.00 | ug/L | 0.00 |
| 103) 1,4-dichlorobenzene-d4 | 17.10 | 152 | 106534 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 50) dibromofluoromethane (s) | 11.16 | 113 | 81232 | 55.56 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 111.12% | | | |
| 51) 1,2-dichloroethane-d4 (s) | 11.59 | 65 | 99806 | 57.73 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 115.46% | | | |
| 80) toluene-d8 (s) | 13.54 | 98 | 333942 | 51.89 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 103.78% | | | |
| 105) 4-bromofluorobenzene (s) | 16.01 | 95 | 114741 | 45.18 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 90.36% | | | |

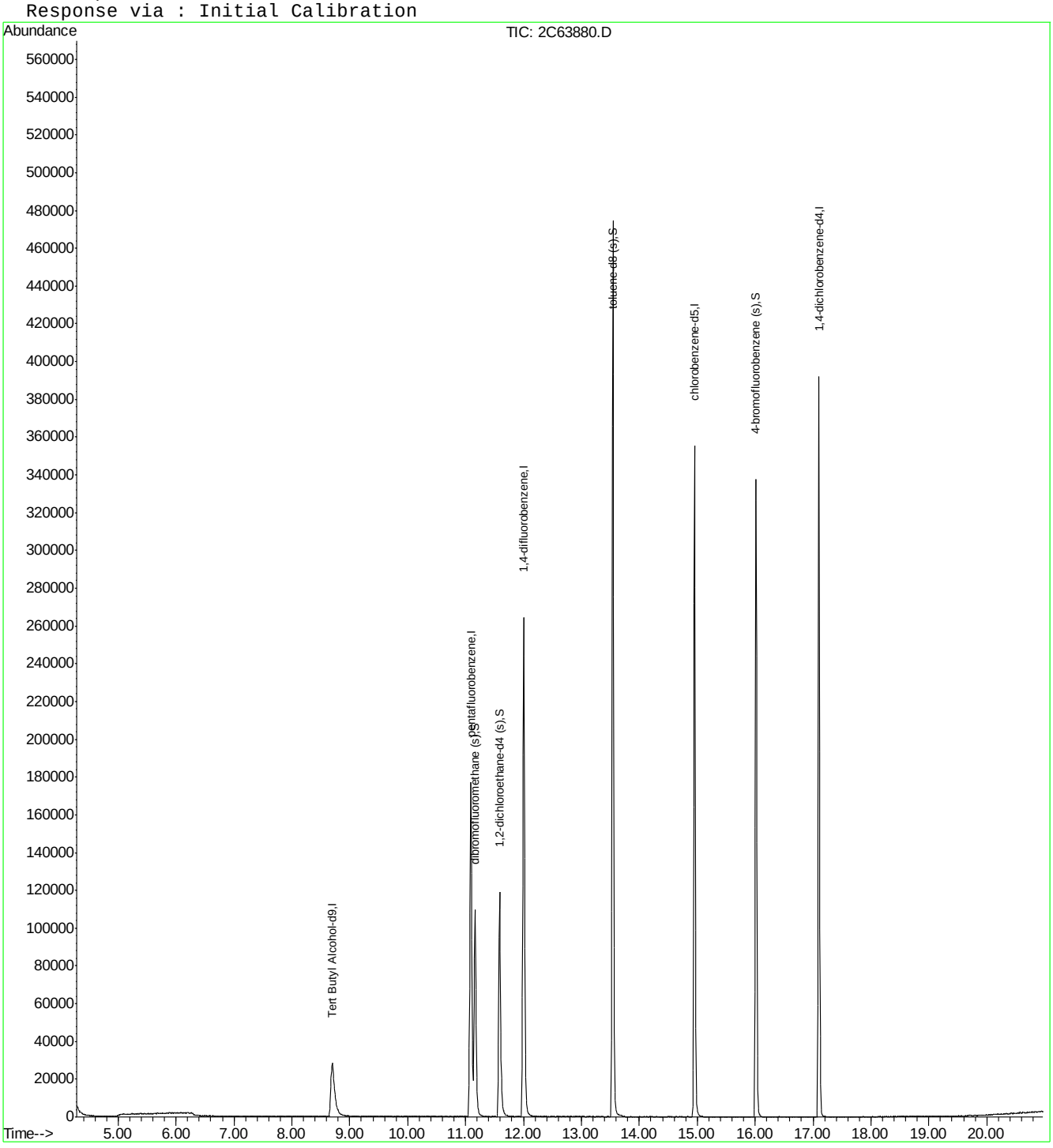
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63880.D Vial: 38
Acq On : 7 Nov 2009 3:48 am Operator: tarar1
Sample : ja31597-3 Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 10 14:30 2009 Quant Results File: M2C2824.RES

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration



LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\2C63880.D  Vial: 38
Acq On : 7 Nov 2009 3:48 am  Operator: tarar1
Sample : ja31597-3  Inst : ms2C
Misc : MS88065,V2C2892,W,,,,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.06  Max Peaks: 100
Stop Thrs : 0.04  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.987 | 129 | 135 | 136 | rBV | 463 | 516 | 0.06% | 0.012% |
| 2 | 5.024 | 136 | 142 | 144 | rVV2 | 775 | 1047 | 0.12% | 0.024% |
| 3 | 5.066 | 144 | 150 | 152 | rVV2 | 574 | 1086 | 0.13% | 0.025% |
| 4 | 5.102 | 154 | 157 | 167 | rVV2 | 475 | 1237 | 0.14% | 0.029% |
| 5 | 5.244 | 179 | 184 | 192 | rBV2 | 486 | 776 | 0.09% | 0.018% |
| 6 | 5.344 | 200 | 203 | 206 | rVB2 | 510 | 424 | 0.05% | 0.010% |
| 7 | 5.391 | 206 | 212 | 219 | rVB2 | 626 | 924 | 0.11% | 0.021% |
| 8 | 5.569 | 245 | 246 | 250 | rBV | 456 | 381 | 0.04% | 0.009% |
| 9 | 5.669 | 264 | 265 | 272 | rBV2 | 564 | 836 | 0.10% | 0.019% |
| 10 | 5.716 | 272 | 274 | 282 | rBV2 | 418 | 656 | 0.08% | 0.015% |
| 11 | 5.868 | 302 | 303 | 305 | rBV2 | 644 | 383 | 0.04% | 0.009% |
| 12 | 5.941 | 313 | 317 | 319 | rBV2 | 421 | 668 | 0.08% | 0.016% |
| 13 | 6.020 | 330 | 332 | 337 | rVB2 | 502 | 664 | 0.08% | 0.015% |
| 14 | 6.120 | 350 | 351 | 355 | rBV | 733 | 700 | 0.08% | 0.016% |
| 15 | 6.151 | 355 | 357 | 359 | rVB | 452 | 333 | 0.04% | 0.008% |
| 16 | 6.251 | 374 | 376 | 378 | rBV | 353 | 331 | 0.04% | 0.008% |
| 17 | 7.027 | 521 | 524 | 527 | rVB2 | 227 | 287 | 0.03% | 0.007% |
| 18 | 7.582 | 624 | 630 | 636 | rBV | 246 | 413 | 0.05% | 0.010% |
| 19 | 7.692 | 645 | 651 | 657 | rVB | 145 | 310 | 0.04% | 0.007% |
| 20 | 8.259 | 755 | 759 | 762 | rVB | 236 | 302 | 0.03% | 0.007% |
| 21 | 8.395 | 783 | 785 | 793 | rVB | 288 | 298 | 0.03% | 0.007% |
| 22 | 8.699 | 828 | 843 | 889 | rBV | 28181 | 133799 | 15.48% | 3.110% |
| 23 | 9.082 | 912 | 916 | 922 | rVB2 | 251 | 550 | 0.06% | 0.013% |
| 24 | 9.155 | 927 | 930 | 934 | rVB | 239 | 290 | 0.03% | 0.007% |
| 25 | 9.223 | 938 | 943 | 945 | rBV | 253 | 310 | 0.04% | 0.007% |
| 26 | 9.328 | 956 | 963 | 966 | rBV2 | 232 | 474 | 0.05% | 0.011% |
| 27 | 9.465 | 984 | 989 | 990 | rBV2 | 237 | 356 | 0.04% | 0.008% |
| 28 | 10.398 | 1166 | 1167 | 1171 | rBV2 | 380 | 310 | 0.04% | 0.007% |
| 29 | 11.090 | 1287 | 1299 | 1307 | rBV | 177006 | 404503 | 46.80% | 9.403% |
| 30 | 11.163 | 1307 | 1313 | 1340 | rVB | 109416 | 263212 | 30.46% | 6.118% |
| 31 | 11.588 | 1383 | 1394 | 1423 | rBV | 118987 | 276068 | 31.94% | 6.417% |
| 32 | 12.002 | 1462 | 1473 | 1507 | rBV | 264207 | 551139 | 63.77% | 12.811% |
| 33 | 13.544 | 1756 | 1767 | 1800 | rVV | 474709 | 864239 | 100.00% | 20.089% |
| 34 | 13.727 | 1800 | 1802 | 1808 | rVB2 | 432 | 809 | 0.09% | 0.019% |
| 35 | 13.780 | 1808 | 1812 | 1816 | rBV | 254 | 539 | 0.06% | 0.013% |
| 36 | 14.954 | 2027 | 2036 | 2061 | rBV | 355640 | 605075 | 70.01% | 14.065% |
| 37 | 15.185 | 2077 | 2080 | 2084 | rBB | 207 | 349 | 0.04% | 0.008% |
| 38 | 15.248 | 2089 | 2092 | 2099 | rBV | 214 | 589 | 0.07% | 0.014% |

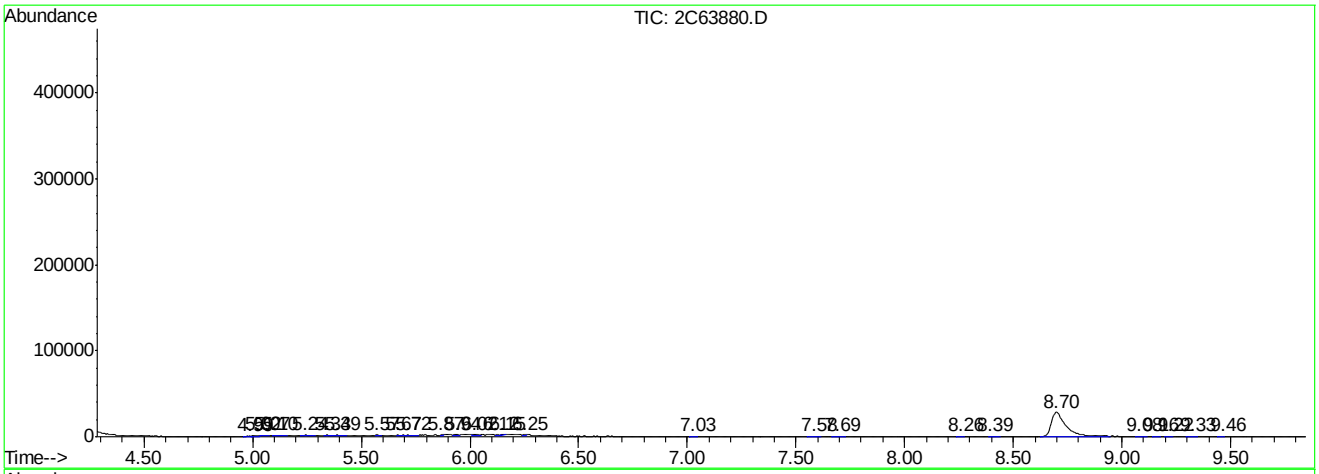
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 15.352 | 2099 | 2112 | 2114 | rVB | 218 | 824 | 0.10% | 0.019% |
| 40 | 15.436 | 2125 | 2128 | 2135 | rBB | 211 | 516 | 0.06% | 0.012% |
| 41 | 15.499 | 2137 | 2140 | 2148 | rBB | 199 | 551 | 0.06% | 0.013% |
| 42 | 15.588 | 2155 | 2157 | 2162 | rBB | 217 | 370 | 0.04% | 0.009% |
| 43 | 15.625 | 2162 | 2164 | 2170 | rBV | 211 | 458 | 0.05% | 0.011% |
| 44 | 15.746 | 2180 | 2187 | 2190 | rBB | 220 | 458 | 0.05% | 0.011% |
| 45 | 15.856 | 2200 | 2208 | 2210 | rBV | 197 | 537 | 0.06% | 0.012% |
| 46 | 15.882 | 2210 | 2213 | 2219 | rVB | 200 | 447 | 0.05% | 0.010% |
| 47 | 16.013 | 2231 | 2238 | 2260 | rBB | 337819 | 536314 | 62.06% | 12.467% |
| 48 | 16.191 | 2266 | 2272 | 2274 | rBB | 185 | 365 | 0.04% | 0.008% |
| 49 | 16.281 | 2288 | 2289 | 2296 | rBB | 215 | 389 | 0.05% | 0.009% |
| 50 | 16.338 | 2296 | 2300 | 2305 | rBB | 230 | 386 | 0.04% | 0.009% |
| 51 | 16.391 | 2305 | 2310 | 2312 | rBV | 215 | 379 | 0.04% | 0.009% |
| 52 | 16.417 | 2312 | 2315 | 2319 | rVB | 530 | 439 | 0.05% | 0.010% |
| 53 | 16.516 | 2329 | 2334 | 2336 | rBV | 183 | 359 | 0.04% | 0.008% |
| 54 | 16.621 | 2349 | 2354 | 2359 | rBB | 217 | 443 | 0.05% | 0.010% |
| 55 | 16.768 | 2378 | 2382 | 2387 | rBB | 218 | 401 | 0.05% | 0.009% |
| 56 | 16.904 | 2402 | 2408 | 2411 | rBV | 189 | 427 | 0.05% | 0.010% |
| 57 | 16.994 | 2421 | 2425 | 2430 | rBV | 187 | 431 | 0.05% | 0.010% |
| 58 | 17.104 | 2434 | 2446 | 2462 | rBV | 392036 | 620704 | 71.82% | 14.428% |
| 59 | 17.250 | 2471 | 2474 | 2479 | rBV | 199 | 373 | 0.04% | 0.009% |
| 60 | 17.313 | 2484 | 2486 | 2493 | rBB | 193 | 459 | 0.05% | 0.011% |
| 61 | 17.408 | 2495 | 2504 | 2506 | rBB | 224 | 540 | 0.06% | 0.013% |
| 62 | 17.602 | 2537 | 2541 | 2543 | rBV | 205 | 348 | 0.04% | 0.008% |
| 63 | 17.665 | 2549 | 2553 | 2557 | rBB | 210 | 388 | 0.04% | 0.009% |
| 64 | 17.691 | 2557 | 2558 | 2564 | rBV | 206 | 403 | 0.05% | 0.009% |
| 65 | 17.743 | 2565 | 2568 | 2574 | rVB | 209 | 465 | 0.05% | 0.011% |
| 66 | 17.801 | 2574 | 2579 | 2583 | rBB | 200 | 442 | 0.05% | 0.010% |
| 67 | 17.864 | 2585 | 2591 | 2593 | rBB | 303 | 428 | 0.05% | 0.010% |
| 68 | 17.895 | 2593 | 2597 | 2604 | rBV | 216 | 609 | 0.07% | 0.014% |
| 69 | 17.990 | 2612 | 2615 | 2618 | rBV | 195 | 332 | 0.04% | 0.008% |
| 70 | 18.032 | 2618 | 2623 | 2630 | rVB | 342 | 705 | 0.08% | 0.016% |
| 71 | 18.105 | 2633 | 2637 | 2639 | rBV | 213 | 348 | 0.04% | 0.008% |
| 72 | 18.205 | 2653 | 2656 | 2658 | rVB | 362 | 300 | 0.03% | 0.007% |
| 73 | 18.236 | 2658 | 2662 | 2664 | rBV | 378 | 454 | 0.05% | 0.011% |
| 74 | 18.341 | 2680 | 2682 | 2685 | rBV | 354 | 434 | 0.05% | 0.010% |
| 75 | 18.383 | 2685 | 2690 | 2694 | rVV2 | 356 | 598 | 0.07% | 0.014% |
| 76 | 18.430 | 2694 | 2699 | 2702 | rVV2 | 343 | 554 | 0.06% | 0.013% |
| 77 | 18.493 | 2705 | 2711 | 2713 | rVB | 294 | 451 | 0.05% | 0.010% |
| 78 | 18.509 | 2713 | 2714 | 2723 | rBV2 | 272 | 626 | 0.07% | 0.015% |
| 79 | 18.572 | 2723 | 2726 | 2729 | rBV | 267 | 327 | 0.04% | 0.008% |
| 80 | 18.603 | 2729 | 2732 | 2736 | rBV | 247 | 371 | 0.04% | 0.009% |
| 81 | 18.671 | 2740 | 2745 | 2747 | rBV2 | 247 | 434 | 0.05% | 0.010% |
| 82 | 18.755 | 2753 | 2761 | 2762 | rVB2 | 250 | 525 | 0.06% | 0.012% |
| 83 | 18.781 | 2762 | 2766 | 2768 | rBV2 | 291 | 464 | 0.05% | 0.011% |
| 84 | 18.881 | 2781 | 2785 | 2793 | rVB2 | 271 | 694 | 0.08% | 0.016% |
| 85 | 18.965 | 2793 | 2801 | 2802 | rBV2 | 226 | 538 | 0.06% | 0.013% |
| 86 | 19.290 | 2852 | 2863 | 2865 | rVV2 | 164 | 389 | 0.05% | 0.009% |
| 87 | 19.327 | 2865 | 2870 | 2883 | rVV2 | 184 | 612 | 0.07% | 0.014% |
| 88 | 19.778 | 2954 | 2956 | 2964 | rVB2 | 344 | 403 | 0.05% | 0.009% |
| 89 | 19.872 | 2968 | 2974 | 2977 | rBV2 | 423 | 606 | 0.07% | 0.014% |
| 90 | 19.993 | 2994 | 2997 | 3003 | rVB3 | 268 | 401 | 0.05% | 0.009% |
| 91 | 20.071 | 3010 | 3012 | 3017 | rVB2 | 281 | 290 | 0.03% | 0.007% |
| 92 | 20.108 | 3017 | 3019 | 3028 | rBV2 | 416 | 674 | 0.08% | 0.016% |
| 93 | 20.192 | 3033 | 3035 | 3043 | rVV2 | 443 | 806 | 0.09% | 0.019% |
| 94 | 20.249 | 3043 | 3046 | 3050 | rVB2 | 638 | 530 | 0.06% | 0.012% |
| 95 | 20.339 | 3060 | 3063 | 3065 | rVB2 | 507 | 396 | 0.05% | 0.009% |

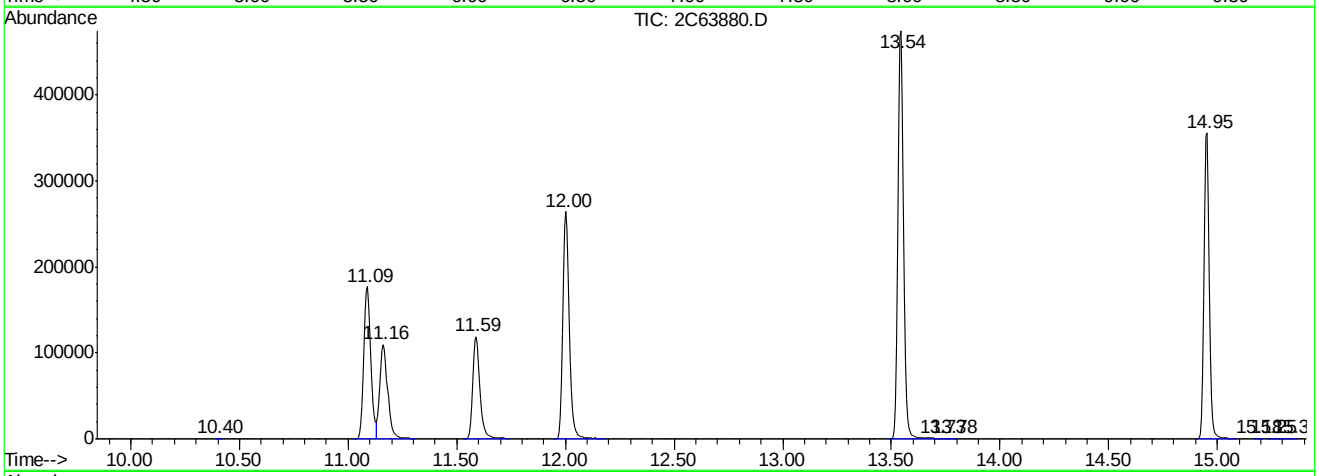
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 20.417 | 3075 | 3078 | 3085 | rBV5 | 795 | 1535 | 0.18% | 0.036% |
| 97 | 20.538 | 3098 | 3101 | 3104 | rBV2 | 520 | 499 | 0.06% | 0.012% |
| 98 | 20.575 | 3104 | 3108 | 3112 | rBV2 | 833 | 798 | 0.09% | 0.019% |
| 99 | 20.622 | 3116 | 3117 | 3126 | rVB5 | 537 | 769 | 0.09% | 0.018% |
| 100 | 20.706 | 3131 | 3133 | 3137 | rVB2 | 449 | 300 | 0.03% | 0.007% |

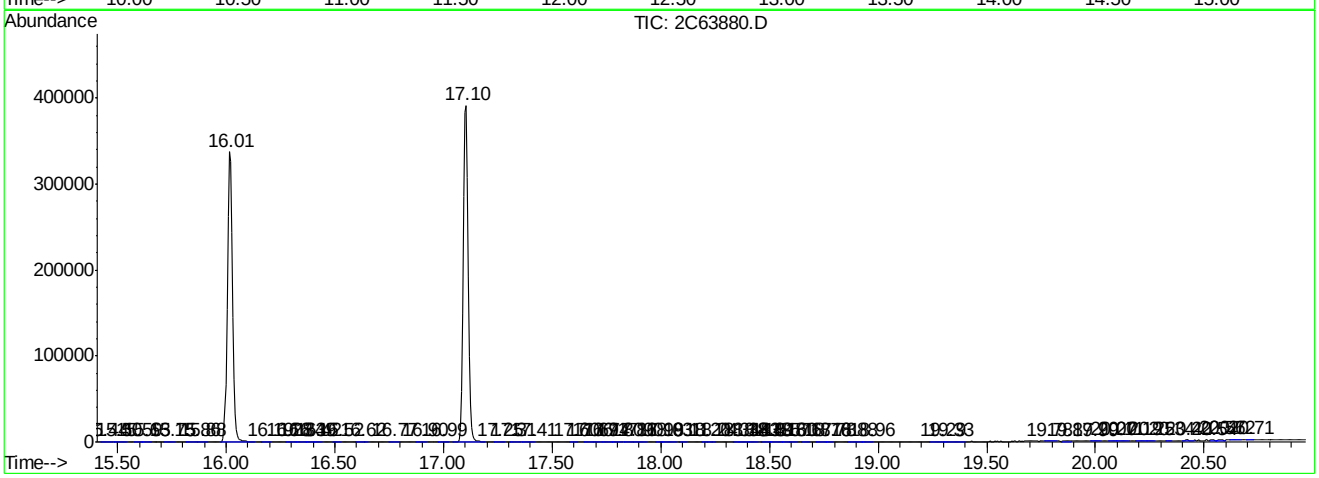
Sum of corrected areas: 4301999

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\1\DATA\2C63880.D
Operator : tarar1
Acquired : 7 Nov 2009 3:48 am using AcqMethod M2C2824
Instrument : ms2C
Sample Name: ja31597-3
Misc Info : MS88065,V2C2892,W,,,,1
Vial Number: 38
Quant File :M2C2824.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: tarar1 Date Acquired: 7 Nov 2009 3:48 am
Data File: C:\MSDCHEM\1\DATA\2C63880.D
Name: ja31597-3
Misc: MS88065,V2C2892,W,,,,1
Method: C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title: SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Library Searched: C:\DATABASE\NBS75K.L

| | | | | | |--Internal Standard---\| | | |
|---|---|---|---|---|---|---|---|---|
| TIC | Top Hit name | RT | EstConc | Units | Response | # | RT | Resp | Conc |

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63867.D Vial: 25
Acq On : 6 Nov 2009 9:08 pm Operator: tarar1
Sample : mb Inst : ms2C
Misc : MS88078,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 06 21:34:18 2009 Quant Results File: M2C2824.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration
DataAcq Meth : M2C2824

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Tert Butyl Alcohol-d9 | 8.70 | 65 | 86212 | 500.00 | ug/L | -0.02 |
| 4) pentafluorobenzene | 11.09 | 168 | 165646 | 50.00 | ug/L | 0.00 |
| 57) 1,4-difluorobenzene | 12.00 | 114 | 267864 | 50.00 | ug/L | -0.01 |
| 88) chlorobenzene-d5 | 14.95 | 117 | 222807 | 50.00 | ug/L | 0.00 |
| 103) 1,4-dichlorobenzene-d4 | 17.10 | 152 | 112611 | 50.00 | ug/L | 0.00 |

System Monitoring Compounds

| | | | | | | |
|---|---|---|---|---|---|---|
| 50) dibromofluoromethane (s) | 11.16 | 113 | 90097 | 54.33 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 120 | | Recovery = 108.66% | | | |
| 51) 1,2-dichloroethane-d4 (s) | 11.59 | 65 | 105624 | 53.86 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 64 - 135 | | Recovery = 107.72% | | | |
| 80) toluene-d8 (s) | 13.54 | 98 | 351368 | 49.73 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 76 - 117 | | Recovery = 99.46% | | | |
| 105) 4-bromofluorobenzene (s) | 16.01 | 95 | 119665 | 44.58 | ug/L | 0.00 |
| Spiked Amount 50.000 | Range 72 - 122 | | Recovery = 89.16% | | | |

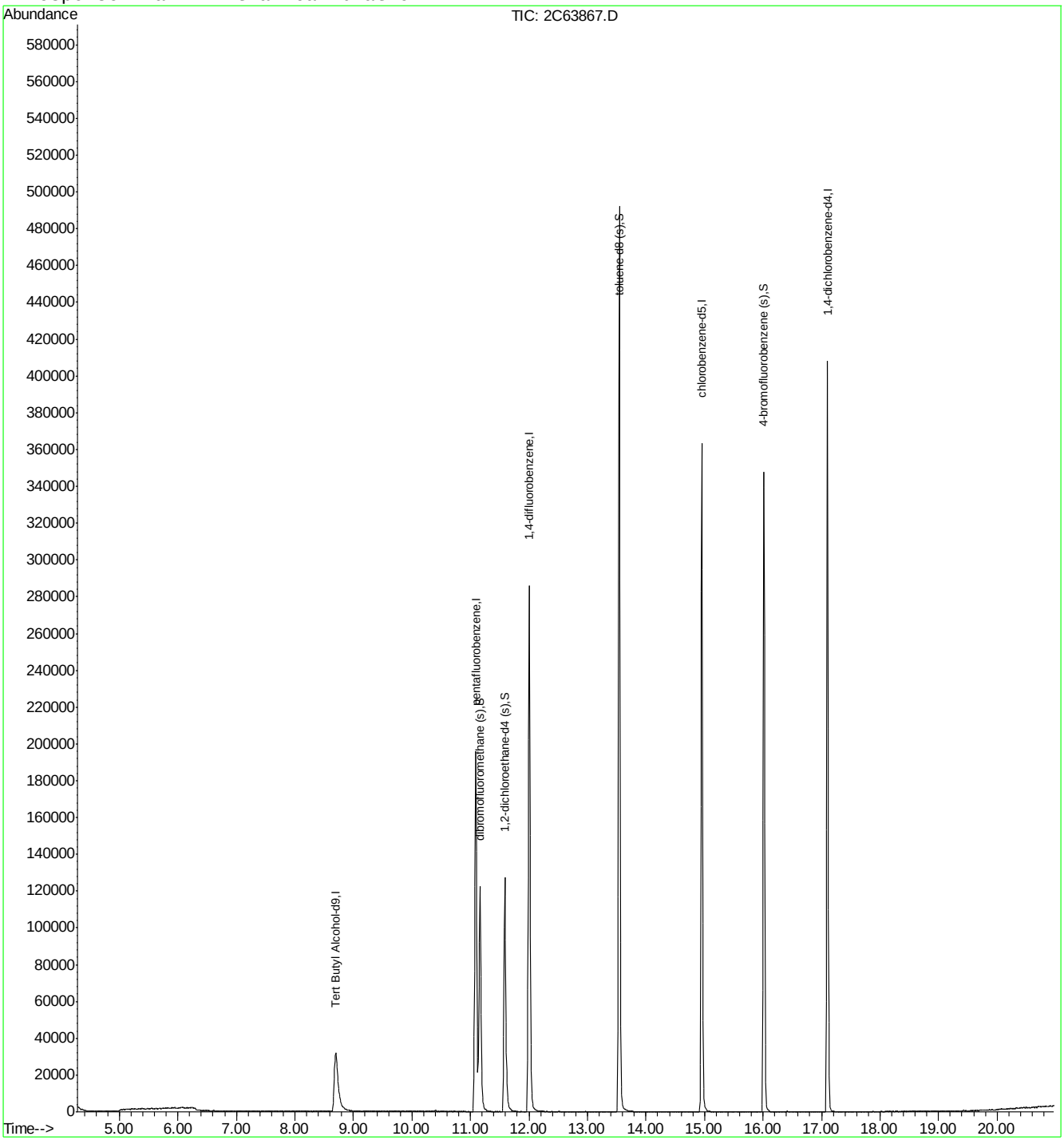
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2C63867.D Vial: 25
Acq On : 6 Nov 2009 9:08 pm Operator: tarar1
Sample : mb Inst : ms2C
Misc : MS88078,V2C2892,W,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 10 14:16 2009 Quant Results File: M2C2824.RES

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Last Update : Mon Nov 02 14:49:47 2009
Response via : Initial Calibration










ACCUTEST LABORATORIES JA31597

LSC Area Percent Report

Data File : C:\MSDCHEM\1\DATA\2C63867.D  Vial: 25
Acq On : 6 Nov 2009 9:08 pm  Operator: tarar1
Sample : mb  Inst : ms2C
Misc : MS88078,V2C2892,W,,,,1  Multiplr: 1.00
MS Integration Params: LSCINT.P

Method : C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title : SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Smoothing : ON  Filtering: 5
Sampling : 1  Min Area: 100 Area counts
Start Thrs: 0.06  Max Peaks: 100
Stop Thrs : 0.04  Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.039 | 129 | 145 | 147 | rBV | 987 | 2874 | 0.32% | 0.063% |
| 2 | 5.071 | 147 | 151 | 154 | rVV2 | 352 | 611 | 0.07% | 0.013% |
| 3 | 5.422 | 216 | 218 | 226 | rBV3 | 500 | 771 | 0.09% | 0.017% |
| 4 | 5.475 | 226 | 228 | 230 | rVB2 | 643 | 425 | 0.05% | 0.009% |
| 5 | 5.501 | 230 | 233 | 239 | rBV2 | 602 | 1008 | 0.11% | 0.022% |
| 6 | 5.564 | 239 | 245 | 248 | rVV2 | 606 | 857 | 0.10% | 0.019% |
| 7 | 5.627 | 254 | 257 | 261 | rBV2 | 389 | 465 | 0.05% | 0.010% |
| 8 | 5.674 | 264 | 266 | 273 | rVB2 | 677 | 934 | 0.10% | 0.020% |
| 9 | 5.716 | 273 | 274 | 281 | rBV2 | 538 | 990 | 0.11% | 0.022% |
| 10 | 5.794 | 287 | 289 | 295 | rBV2 | 480 | 540 | 0.06% | 0.012% |
| 11 | 5.910 | 306 | 311 | 313 | rBV | 638 | 911 | 0.10% | 0.020% |
| 12 | 6.151 | 355 | 357 | 360 | rVV2 | 453 | 439 | 0.05% | 0.010% |
| 13 | 6.177 | 360 | 362 | 364 | rVB | 519 | 443 | 0.05% | 0.010% |
| 14 | 6.230 | 370 | 372 | 378 | rVV | 640 | 902 | 0.10% | 0.020% |
| 15 | 6.266 | 378 | 379 | 397 | rVB3 | 1569 | 4141 | 0.46% | 0.091% |
| 16 | 6.434 | 410 | 411 | 416 | rVB | 340 | 431 | 0.05% | 0.009% |
| 17 | 6.534 | 429 | 430 | 442 | rBV2 | 298 | 673 | 0.07% | 0.015% |
| 18 | 6.749 | 466 | 471 | 474 | rBV2 | 240 | 376 | 0.04% | 0.008% |
| 19 | 6.827 | 480 | 486 | 491 | rVB2 | 256 | 457 | 0.05% | 0.010% |
| 20 | 6.864 | 491 | 493 | 499 | rVB | 287 | 495 | 0.05% | 0.011% |
| 21 | 6.922 | 499 | 504 | 506 | rVB2 | 264 | 445 | 0.05% | 0.010% |
| 22 | 7.000 | 512 | 519 | 524 | rVB2 | 268 | 546 | 0.06% | 0.012% |
| 23 | 7.525 | 615 | 619 | 623 | rVV2 | 266 | 445 | 0.05% | 0.010% |
| 24 | 7.556 | 623 | 625 | 630 | rVB | 345 | 422 | 0.05% | 0.009% |
| 25 | 8.070 | 717 | 723 | 730 | rBV2 | 261 | 672 | 0.07% | 0.015% |
| 26 | 8.269 | 756 | 761 | 765 | rVB | 343 | 528 | 0.06% | 0.012% |
| 27 | 8.421 | 785 | 790 | 792 | rBV2 | 247 | 409 | 0.05% | 0.009% |
| 28 | 8.458 | 795 | 797 | 802 | rVV2 | 230 | 388 | 0.04% | 0.008% |
| 29 | 8.495 | 802 | 804 | 812 | rVB2 | 256 | 621 | 0.07% | 0.014% |
| 30 | 8.599 | 823 | 824 | 830 | rBV2 | 261 | 453 | 0.05% | 0.010% |
| 31 | 8.699 | 830 | 843 | 891 | rVV | 31966 | 152839 | 16.95% | 3.341% |
| 32 | 8.966 | 893 | 894 | 902 | rVV2 | 394 | 781 | 0.09% | 0.017% |
| 33 | 9.014 | 902 | 903 | 919 | rVB3 | 400 | 1123 | 0.12% | 0.025% |
| 34 | 9.129 | 919 | 925 | 926 | rVB | 247 | 433 | 0.05% | 0.009% |
| 35 | 9.166 | 929 | 932 | 935 | rBV | 255 | 368 | 0.04% | 0.008% |
| 36 | 9.396 | 964 | 976 | 977 | rBV | 254 | 777 | 0.09% | 0.017% |
| 37 | 9.501 | 990 | 996 | 999 | rBV2 | 285 | 606 | 0.07% | 0.013% |
| 38 | 9.580 | 1006 | 1011 | 1014 | rBV2 | 263 | 438 | 0.05% | 0.010% |

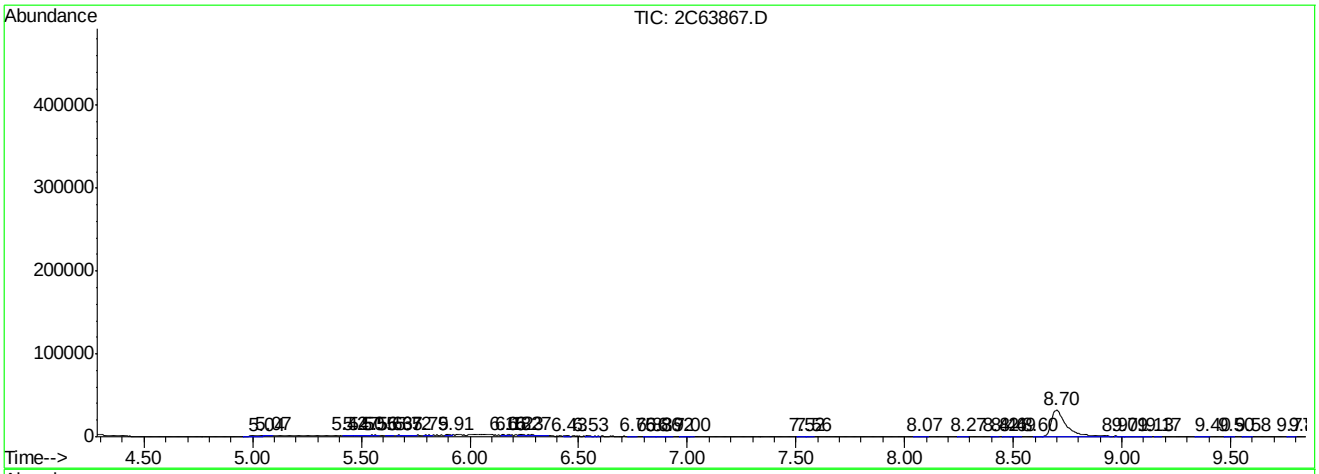
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 9.769 | 1045 | 1047 | 1053 | rVB | 219 | 416 | 0.05% | 0.009% |
| 40 | 9.826 | 1053 | 1058 | 1068 | rVB2 | 264 | 901 | 0.10% | 0.020% |
| 41 | 9.952 | 1081 | 1082 | 1090 | rBV2 | 206 | 512 | 0.06% | 0.011% |
| 42 | 10.141 | 1114 | 1118 | 1121 | rVV | 279 | 406 | 0.05% | 0.009% |
| 43 | 10.162 | 1121 | 1122 | 1131 | rVB2 | 254 | 555 | 0.06% | 0.012% |
| 44 | 10.251 | 1138 | 1139 | 1146 | rBV | 206 | 448 | 0.05% | 0.010% |
| 45 | 10.398 | 1161 | 1167 | 1173 | rVB4 | 649 | 1252 | 0.14% | 0.027% |
| 46 | 11.090 | 1287 | 1299 | 1306 | rBV | 195907 | 441690 | 48.97% | 9.656% |
| 47 | 11.163 | 1306 | 1313 | 1344 | rVV | 122384 | 297309 | 32.96% | 6.500% |
| 48 | 11.588 | 1384 | 1394 | 1434 | rVB | 127355 | 294005 | 32.60% | 6.428% |
| 49 | 12.002 | 1463 | 1473 | 1502 | rBV | 285892 | 590588 | 65.48% | 12.912% |
| 50 | 13.544 | 1756 | 1767 | 1800 | rBV | 492297 | 901927 | 100.00% | 19.718% |
| 51 | 14.057 | 1864 | 1865 | 1871 | rBV | 229 | 462 | 0.05% | 0.010% |
| 52 | 14.388 | 1925 | 1928 | 1933 | rBV | 240 | 487 | 0.05% | 0.011% |
| 53 | 14.713 | 1985 | 1990 | 1991 | rBV | 211 | 363 | 0.04% | 0.008% |
| 54 | 14.781 | 1998 | 2003 | 2011 | rBB | 234 | 679 | 0.08% | 0.015% |
| 55 | 14.954 | 2022 | 2036 | 2062 | rBB | 363406 | 624875 | 69.28% | 13.661% |
| 56 | 15.143 | 2064 | 2072 | 2073 | rBB | 235 | 462 | 0.05% | 0.010% |
| 57 | 15.179 | 2077 | 2079 | 2086 | rBB | 219 | 454 | 0.05% | 0.010% |
| 58 | 15.353 | 2104 | 2112 | 2113 | rBB | 217 | 436 | 0.05% | 0.010% |
| 59 | 15.615 | 2152 | 2162 | 2163 | rBB | 203 | 528 | 0.06% | 0.012% |
| 60 | 15.914 | 2215 | 2219 | 2224 | rBB | 201 | 398 | 0.04% | 0.009% |
| 61 | 16.013 | 2228 | 2238 | 2259 | rBB | 347657 | 561222 | 62.22% | 12.270% |
| 62 | 16.417 | 2312 | 2315 | 2319 | rBB | 655 | 629 | 0.07% | 0.014% |
| 63 | 16.962 | 2415 | 2419 | 2426 | rBB | 211 | 445 | 0.05% | 0.010% |
| 64 | 17.104 | 2436 | 2446 | 2462 | rBV | 408110 | 647688 | 71.81% | 14.160% |
| 65 | 17.193 | 2462 | 2463 | 2468 | rVB | 412 | 452 | 0.05% | 0.010% |
| 66 | 17.686 | 2553 | 2557 | 2563 | rBB | 201 | 451 | 0.05% | 0.010% |
| 67 | 18.011 | 2615 | 2619 | 2622 | rBB | 336 | 425 | 0.05% | 0.009% |
| 68 | 18.089 | 2631 | 2634 | 2636 | rBV | 359 | 373 | 0.04% | 0.008% |
| 69 | 18.152 | 2644 | 2646 | 2649 | rVB | 387 | 383 | 0.04% | 0.008% |
| 70 | 18.189 | 2649 | 2653 | 2655 | rBB | 365 | 455 | 0.05% | 0.010% |
| 71 | 18.215 | 2655 | 2658 | 2662 | rBV2 | 377 | 626 | 0.07% | 0.014% |
| 72 | 18.399 | 2692 | 2693 | 2697 | rBV2 | 383 | 466 | 0.05% | 0.010% |
| 73 | 18.509 | 2707 | 2714 | 2717 | rBV2 | 409 | 1043 | 0.12% | 0.023% |
| 74 | 18.546 | 2717 | 2721 | 2726 | rBV | 248 | 566 | 0.06% | 0.012% |
| 75 | 18.729 | 2754 | 2756 | 2760 | rBV2 | 271 | 388 | 0.04% | 0.008% |
| 76 | 18.755 | 2760 | 2761 | 2767 | rVB | 262 | 418 | 0.05% | 0.009% |
| 77 | 18.802 | 2767 | 2770 | 2777 | rVB2 | 322 | 551 | 0.06% | 0.012% |
| 78 | 18.886 | 2777 | 2786 | 2788 | rBV2 | 270 | 841 | 0.09% | 0.018% |
| 79 | 18.960 | 2797 | 2800 | 2810 | rVB | 256 | 764 | 0.08% | 0.017% |
| 80 | 19.023 | 2810 | 2812 | 2816 | rBV2 | 247 | 375 | 0.04% | 0.008% |
| 81 | 19.180 | 2835 | 2842 | 2843 | rBV | 287 | 549 | 0.06% | 0.012% |
| 82 | 19.243 | 2843 | 2854 | 2856 | rVV2 | 279 | 837 | 0.09% | 0.018% |
| 83 | 19.301 | 2861 | 2865 | 2874 | rVV | 163 | 516 | 0.06% | 0.011% |
| 84 | 19.421 | 2881 | 2888 | 2893 | rVB2 | 419 | 872 | 0.10% | 0.019% |
| 85 | 19.463 | 2893 | 2896 | 2901 | rVB | 370 | 513 | 0.06% | 0.011% |
| 86 | 19.510 | 2901 | 2905 | 2912 | rBV2 | 268 | 755 | 0.08% | 0.017% |
| 87 | 19.673 | 2935 | 2936 | 2939 | rBV2 | 377 | 402 | 0.04% | 0.009% |
| 88 | 19.872 | 2970 | 2974 | 2976 | rBV | 362 | 361 | 0.04% | 0.008% |
| 89 | 19.909 | 2980 | 2981 | 2993 | rBV3 | 539 | 1297 | 0.14% | 0.028% |
| 90 | 20.019 | 2994 | 3002 | 3003 | rVV3 | 291 | 574 | 0.06% | 0.013% |
| 91 | 20.050 | 3006 | 3008 | 3011 | rVV2 | 481 | 472 | 0.05% | 0.010% |
| 92 | 20.076 | 3011 | 3013 | 3018 | rVV2 | 688 | 693 | 0.08% | 0.015% |
| 93 | 20.166 | 3024 | 3030 | 3032 | rBV2 | 540 | 696 | 0.08% | 0.015% |
| 94 | 20.323 | 3058 | 3060 | 3062 | rBV2 | 551 | 404 | 0.04% | 0.009% |
| 95 | 20.496 | 3090 | 3093 | 3095 | rBV3 | 772 | 607 | 0.07% | 0.013% |

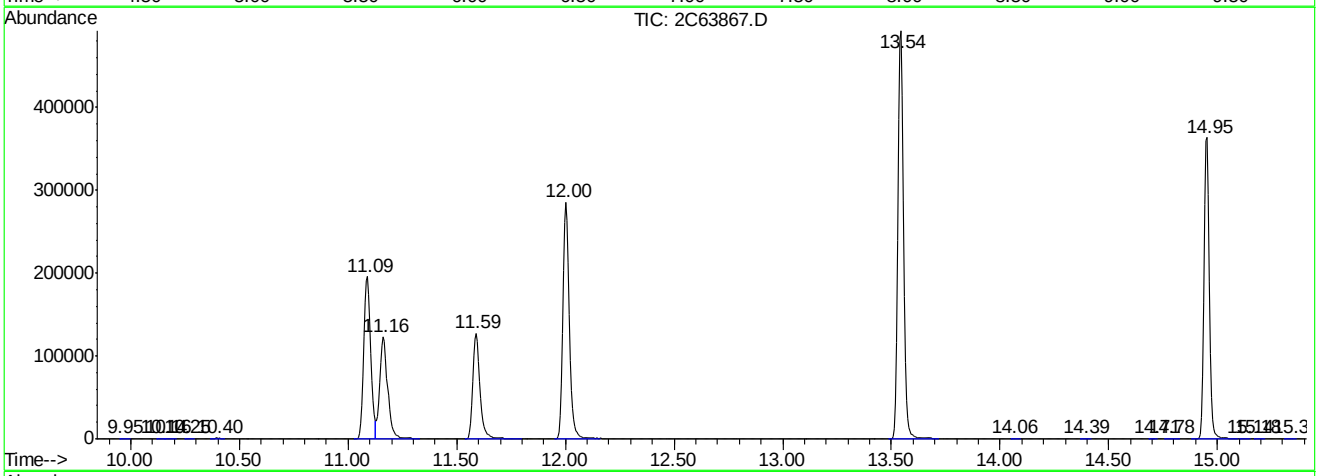
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 20.512 | 3095 | 3096 | 3099 | rVV2 | 449 | 395 | 0.04% | 0.009% |
| 97 | 20.533 | 3099 | 3100 | 3110 | rVV5 | 523 | 1061 | 0.12% | 0.023% |
| 98 | 20.617 | 3114 | 3116 | 3121 | rVB4 | 640 | 919 | 0.10% | 0.020% |
| 99 | 20.674 | 3121 | 3127 | 3128 | rBV3 | 748 | 1085 | 0.12% | 0.024% |
| 100 | 20.779 | 3141 | 3147 | 3155 | rBV6 | 678 | 2308 | 0.26% | 0.050% |

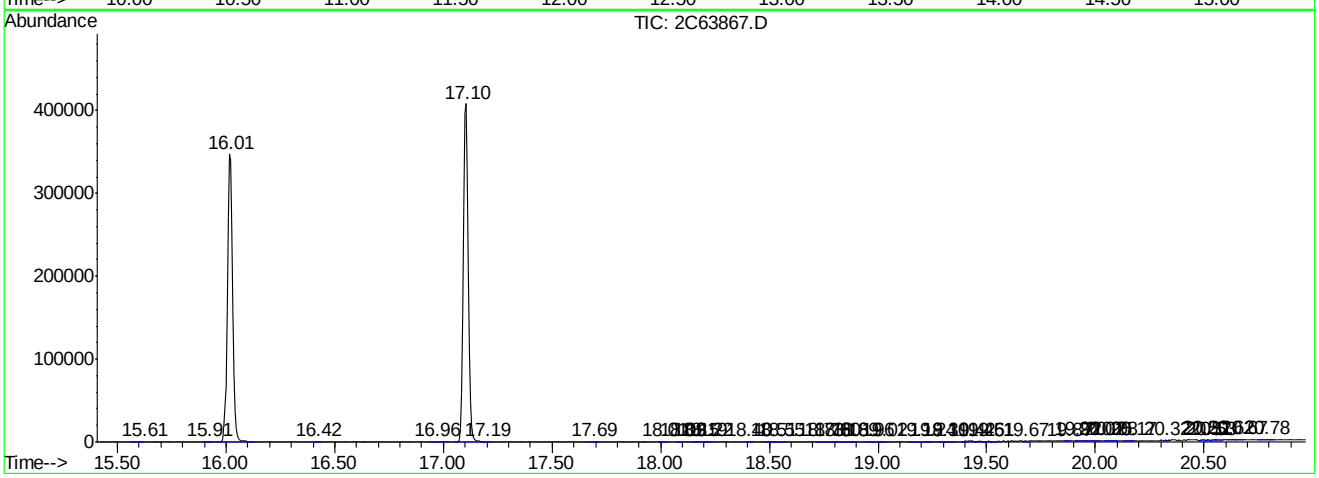
Sum of corrected areas: 4574067

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\1\DATA\2C63867.D
Operator : tarar1
Acquired : 6 Nov 2009 9:08 pm using AcqMethod M2C2824
Instrument : ms2C
Sample Name: mb
Misc Info : MS88078,V2C2892,W,,,,1
Vial Number: 25
Quant File :M2C2824.RES (RTE Integrator)



Tentatively Identified Compound (LSC) summary

Operator ID: tarar1 Date Acquired: 6 Nov 2009 9:08 pm
Data File: C:\MSDCHEM\1\DATA\2C63867.D
Name: mb
Misc: MS88078,V2C2892,W,,,,1
Method: C:\MSDCHEM\1\METHODS\M2C2824.M (RTE Integrator)
Title: SW846 8260B, Column ZB624 60mX0.25mmX1.4um
Library Searched: C:\DATABASE\NBS75K.L

| | | | | | | --Internal Standard--- | | |
|---|---|---|---|---|---|---|---|---|
| TIC Top Hit name | RT | EstConc | Units | Response | # | RT | Resp | Conc |

New Jersey

ACCUTEST LABORATORIES

# GC/MS Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

# Method Blank Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-MB1 | 3M15026.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 98-86-2 | Acetophenone | ND | 5.0 | 0.40 | ug/l | |
| 1912-24-9 | Atrazine | ND | 5.0 | 0.39 | ug/l | |
| 100-52-7 | Benzaldehyde | ND | 5.0 | 0.40 | ug/l | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 85-68-7 | Butyl benzyl phthalate | ND | 2.0 | 0.25 | ug/l | |
| 92-52-4 | 1,1'-Biphenyl | ND | 2.0 | 0.42 | ug/l | |
| 91-58-7 | 2-Chloronaphthalene | ND | 5.0 | 0.42 | ug/l | |
| 106-47-8 | 4-Chloroaniline | ND | 5.0 | 0.25 | ug/l | |
| 86-74-8 | Carbazole | ND | 2.0 | 0.17 | ug/l | |
| 105-60-2 | Caprolactam | ND | 2.0 | 0.20 | ug/l | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 2.0 | 0.25 | ug/l | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 2.0 | 0.31 | ug/l | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 2.0 | 0.39 | ug/l | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 2.0 | 0.35 | ug/l | |
| 121-14-2 | 2,4-Dinitrotoluene | ND | 2.0 | 0.22 | ug/l | |
| 606-20-2 | 2,6-Dinitrotoluene | ND | 2.0 | 0.33 | ug/l | |
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 5.0 | 0.30 | ug/l | |
| 132-64-9 | Dibenzofuran | ND | 5.0 | 0.30 | ug/l | |
| 84-74-2 | Di-n-butyl phthalate | ND | 2.0 | 0.19 | ug/l | |
| 117-84-0 | Di-n-octyl phthalate | ND | 2.0 | 0.40 | ug/l | |
| 84-66-2 | Diethyl phthalate | ND | 2.0 | 0.17 | ug/l | |
| 131-11-3 | Dimethyl phthalate | ND | 2.0 | 0.23 | ug/l | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1.6 | 2.0 | 0.33 | ug/l | J |
| 87-68-3 | Hexachlorobutadiene | ND | 1.0 | 0.37 | ug/l | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 20 | 0.67 | ug/l | |
| 67-72-1 | Hexachloroethane | ND | 5.0 | 0.26 | ug/l | |
| 78-59-1 | Isophorone | ND | 2.0 | 0.25 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 2.0 | 0.66 | ug/l | |
| 88-74-4 | 2-Nitroaniline | ND | 5.0 | 0.24 | ug/l | |
| 99-09-2 | 3-Nitroaniline | ND | 5.0 | 0.29 | ug/l | |
| 100-01-6 | 4-Nitroaniline | ND | 5.0 | 0.18 | ug/l | |
| 98-95-3 | Nitrobenzene | ND | 2.0 | 0.25 | ug/l | |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 2.0 | 0.44 | ug/l | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 5.0 | 0.22 | ug/l | |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | ND | 5.0 | 0.48 | ug/l | |

# Method Blank Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-MB1 | 3M15026.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 114%* [a] | 25-112% |
| 321-60-8 | 2-Fluorobiphenyl | 110%* [a] | 31-106% |
| 1718-51-0 | Terphenyl-d14 | 76% | 14-122% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Semi-Volatile | | 0 | ug/l | |

(a) Outside of in house control limits, but within reasonable method recovery limits.

# Method Blank Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707A-MB1 | 4M13107.D | 1 | 11/06/09 | NAP | 10/31/09 | OP40707A | E4M606 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

JA31597-1, JA31597-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 0.10 | 0.029 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 0.10 | 0.039 | ug/l | |
| 120-12-7 | Anthracene | ND | 0.10 | 0.026 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 0.10 | 0.024 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 0.10 | 0.031 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 0.10 | 0.036 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 0.10 | 0.029 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 0.10 | 0.028 | ug/l | |
| 218-01-9 | Chrysene | ND | 0.10 | 0.022 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 0.10 | 0.023 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 0.10 | 0.024 | ug/l | |
| 86-73-7 | Fluorene | ND | 0.10 | 0.027 | ug/l | |
| 118-74-1 | Hexachlorobenzene | ND | 0.020 | 0.0099 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 0.10 | 0.029 | ug/l | |
| 91-20-3 | Naphthalene | ND | 0.10 | 0.019 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 0.10 | 0.036 | ug/l | |
| 129-00-0 | Pyrene | ND | 0.10 | 0.022 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 122%* [a] | 18-119% |
| 321-60-8 | 2-Fluorobiphenyl | 103% | 18-104% |
| 1718-51-0 | Terphenyl-d14 | 66% | 13-109% |

(a) Outside of in house control limits.

# Blank Spike Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-BS1 | 3M15027.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 98-86-2 | Acetophenone | 50 | 50.2 | 100 | 46-113 |
| 1912-24-9 | Atrazine | 50 | 53.6 | 107 | 55-127 |
| 100-52-7 | Benzaldehyde | 50 | 45.3 | 91 | 31-130 |
| 101-55-3 | 4-Bromophenyl phenyl ether | 50 | 53.3 | 107 | 55-121 |
| 85-68-7 | Butyl benzyl phthalate | 50 | 43.8 | 88 | 55-132 |
| 92-52-4 | 1,1'-Biphenyl | 50 | 43.6 | 87 | 43-107 |
| 91-58-7 | 2-Chloronaphthalene | 50 | 40.1 | 80 | 39-108 |
| 106-47-8 | 4-Chloroaniline | 50 | 41.4 | 83 | 34-103 |
| 86-74-8 | Carbazole | 50 | 47.3 | 95 | 63-122 |
| 105-60-2 | Caprolactam | 50 | 0.91 | 2 | 1-99 |
| 111-91-1 | bis(2-Chloroethoxy)methane | 50 | 49.3 | 99 | 43-119 |
| 111-44-4 | bis(2-Chloroethyl)ether | 50 | 64.3 | 129* [a] | 36-124 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 50 | 42.9 | 86 | 40-106 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 50 | 46.8 | 94 | 50-117 |
| 121-14-2 | 2,4-Dinitrotoluene | 50 | 45.2 | 90 | 56-124 |
| 606-20-2 | 2,6-Dinitrotoluene | 50 | 45.9 | 92 | 55-128 |
| 91-94-1 | 3,3'-Dichlorobenzidine | 50 | 44.4 | 89 | 42-116 |
| 132-64-9 | Dibenzofuran | 50 | 44.3 | 89 | 53-109 |
| 84-74-2 | Di-n-butyl phthalate | 50 | 47.6 | 95 | 58-130 |
| 117-84-0 | Di-n-octyl phthalate | 50 | 40.3 | 81 | 55-133 |
| 84-66-2 | Diethyl phthalate | 50 | 44.1 | 88 | 52-123 |
| 131-11-3 | Dimethyl phthalate | 50 | 37.6 | 75 | 44-126 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 50 | 46.0 | 92 | 57-134 |
| 87-68-3 | Hexachlorobutadiene | 50 | 34.3 | 69 | 11-100 |
| 77-47-4 | Hexachlorocyclopentadiene | 100 | 46.7 | 47 | 5-120 |
| 67-72-1 | Hexachloroethane | 50 | 32.3 | 65 | 13-88 |
| 78-59-1 | Isophorone | 50 | 50.3 | 101 | 43-120 |
| 91-57-6 | 2-Methylnaphthalene | 50 | 41.7 | 83 | 33-103 |
| 88-74-4 | 2-Nitroaniline | 50 | 52.3 | 105 | 48-132 |
| 99-09-2 | 3-Nitroaniline | 50 | 30.7 | 61 | 48-115 |
| 100-01-6 | 4-Nitroaniline | 50 | 36.1 | 72 | 51-125 |
| 98-95-3 | Nitrobenzene | 50 | 43.2 | 86 | 41-114 |
| 621-64-7 | N-Nitroso-di-n-propylamine | 50 | 50.7 | 101 | 41-121 |
| 86-30-6 | N-Nitrosodiphenylamine | 50 | 44.7 | 89 | 54-136 |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 50 | 43.7 | 87 | 18-130 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-BS1 | 3M15027.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 125%* [a] | 25-112% |
| 321-60-8 | 2-Fluorobiphenyl | 117%* [a] | 31-106% |
| 1718-51-0 | Terphenyl-d14 | 56% | 14-122% |

(a) Outside of in house control limits.

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707A-BS12 | 4M13108.D | 1 | 11/06/09 | NAP | 10/31/09 | OP40707A | E4M606 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

JA31597-1, JA31597-2

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1 | 0.961 | 96 | 42-105 |
| 208-96-8 | Acenaphthylene | 1 | 0.773 | 77 | 36-99 |
| 120-12-7 | Anthracene | 1 | 0.998 | 100 | 44-111 |
| 56-55-3 | Benzo(a)anthracene | 1 | 1.05 | 105 | 33-130 |
| 50-32-8 | Benzo(a)pyrene | 1 | 0.810 | 81 | 35-117 |
| 205-99-2 | Benzo(b)fluoranthene | 1 | 1.07 | 107 | 26-145 |
| 191-24-2 | Benzo(g,h,i)perylene | 1 | 0.711 | 71 | 29-130 |
| 207-08-9 | Benzo(k)fluoranthene | 1 | 0.731 | 73 | 33-142 |
| 218-01-9 | Chrysene | 1 | 0.875 | 88 | 41-127 |
| 53-70-3 | Dibenzo(a,h)anthracene | 1 | 0.684 | 68 | 27-135 |
| 206-44-0 | Fluoranthene | 1 | 0.793 | 79 | 40-112 |
| 86-73-7 | Fluorene | 1 | 0.859 | 86 | 45-104 |
| 118-74-1 | Hexachlorobenzene | 1 | 0.679 | 68 | 30-110 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1 | 0.826 | 83 | 32-131 |
| 91-20-3 | Naphthalene | 1 | 0.844 | 84 | 21-120 |
| 85-01-8 | Phenanthrene | 1 | 0.858 | 86 | 38-114 |
| 129-00-0 | Pyrene | 1 | 0.849 | 85 | 38-124 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 113% | 18-119% |
| 321-60-8 | 2-Fluorobiphenyl | 96% | 18-104% |
| 1718-51-0 | Terphenyl-d14 | 61% | 13-109% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-MS | 3M15033.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |
| OP40707-MSD | 3M15034.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |
| JA31445-6 | 3M15032.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Compound | JA31445-6 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 98-86-2 | Acetophenone | ND | | 100 | 71.0 | 71 | 82.0 | 82 | 14 | 25-127/35 |
| 1912-24-9 | Atrazine | ND | | 100 | 86.2 | 86 | 95.4 | 95 | 10 | 40-133/27 |
| 100-52-7 | Benzaldehyde | ND | | 100 | 65.6 | 66 | 77.1 | 77 | 16 | 9-151/37 |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | | 100 | 82.2 | 82 | 88.0 | 88 | 7 | 47-123/28 |
| 85-68-7 | Butyl benzyl phthalate | ND | | 100 | 71.5 | 72 | 74.5 | 75 | 4 | 47-137/27 |
| 92-52-4 | 1,1'-Biphenyl | ND | | 100 | 68.2 | 68 | 75.5 | 76 | 10 | 36-113/32 |
| 91-58-7 | 2-Chloronaphthalene | ND | | 100 | 67.4 | 67 | 74.7 | 75 | 10 | 35-110/32 |
| 106-47-8 | 4-Chloroaniline | ND | | 100 | 62.9 | 63 | 69.1 | 69 | 9 | 22-98/36 |
| 86-74-8 | Carbazole | ND | | 100 | 73.8 | 74 | 81.9 | 82 | 10 | 54-127/26 |
| 105-60-2 | Caprolactam | ND | | 100 | 1.9 | 2 | 2.2 | 2 | 15 | 1-103/43 |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | | 100 | 72.9 | 73 | 82.0 | 82 | 12 | 33-116/36 |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | | 100 | 94.7 | 95 | 107 | 107 | 12 | 24-124/34 |
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | | 100 | 66.5 | 67 | 73.7 | 74 | 10 | 31-104/35 |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | | 100 | 74.2 | 74 | 78.8 | 79 | 6 | 42-119/28 |
| 121-14-2 | 2,4-Dinitrotoluene | ND | | 100 | 72.7 | 73 | 76.9 | 77 | 6 | 45-129/28 |
| 606-20-2 | 2,6-Dinitrotoluene | ND | | 100 | 71.7 | 72 | 79.4 | 79 | 10 | 46-132/29 |
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | | 100 | 72.2 | 72 | 75.9 | 76 | 5 | 17-119/36 |
| 132-64-9 | Dibenzofuran | 1.2 | J | 100 | 72.2 | 71 | 78.7 | 78 | 9 | 44-114/30 |
| 84-74-2 | Di-n-butyl phthalate | ND | | 100 | 77.8 | 78 | 82.0 | 82 | 5 | 49-134/26 |
| 117-84-0 | Di-n-octyl phthalate | ND | | 100 | 66.1 | 66 | 66.7 | 67 | 1 | 46-140/25 |
| 84-66-2 | Diethyl phthalate | ND | | 100 | 71.5 | 72 | 75.9 | 76 | 6 | 46-123/27 |
| 131-11-3 | Dimethyl phthalate | ND | | 100 | 63.3 | 63 | 63.6 | 64 | 0 | 39-123/32 |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | | 100 | 76.5 | 77 | 77.2 | 77 | 1 | 49-141/27 |
| 87-68-3 | Hexachlorobutadiene | ND | | 100 | 69.7 | 70 | 77.3 | 77 | 10 | 15-99/39 |
| 77-47-4 | Hexachlorocyclopentadiene | ND | | 200 | 80.3 | 40 | 87.4 | 44 | 8 | 4-124/39 |
| 67-72-1 | Hexachloroethane | ND | | 100 | 61.6 | 62 | 71.5 | 72 | 15 | 16-86/39 |
| 78-59-1 | Isophorone | ND | | 100 | 75.2 | 75 | 84.4 | 84 | 12 | 33-117/36 |
| 91-57-6 | 2-Methylnaphthalene | 5.4 | | 100 | 74.8 | 69 | 82.2 | 77 | 9 | 22-117/37 |
| 88-74-4 | 2-Nitroaniline | ND | | 100 | 81.7 | 82 | 90.6 | 91 | 10 | 37-135/29 |
| 99-09-2 | 3-Nitroaniline | ND | | 100 | 43.4 | 43 | 51.7 | 52 | 17 | 34-115/28 |
| 100-01-6 | 4-Nitroaniline | ND | | 100 | 45.9 | 46 | 53.1 | 53 | 15 | 36-128/30 |
| 98-95-3 | Nitrobenzene | ND | | 100 | 62.6 | 63 | 73.4 | 73 | 16 | 30-116/37 |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | | 100 | 77.5 | 78 | 86.9 | 87 | 11 | 32-118/35 |
| 86-30-6 | N-Nitrosodiphenylamine | ND | | 100 | 76.2 | 76 | 81.8 | 82 | 7 | 42-145/27 |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | ND | | 100 | 77.0 | 77 | 83.6 | 84 | 8 | 23-131/18 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707-MS | 3M15033.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |
| OP40707-MSD | 3M15034.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |
| JA31445-6 | 3M15032.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707 | E3M662 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C

JA31597-1, JA31597-2

| CAS No. | Surrogate Recoveries | MS | MSD | JA31445-6 | Limits |
|---|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 95% | 107% | 103% | 25-112% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | 99% | 105% | 31-106% |
| 1718-51-0 | Terphenyl-d14 | 58% | 50% | 50% | 14-122% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP40707A-MS | 3M15033.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707A | E3M662 |
| OP40707A-MSD | 3M15034.D | 1 | 11/05/09 | LP | 10/31/09 | OP40707A | E3M662 |
| JA31445-6 | 4M13111.D | 1 | 11/06/09 | NAP | 10/31/09 | OP40707A | E4M606 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

JA31597-1, JA31597-2

| CAS No. | Compound | JA31445-6 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 2.17 | | 100 | 67.4 | 65 | 74.7 | 73 | 10 | 33-117/32 |
| 208-96-8 | Acenaphthylene | ND | | 100 | 60.0 | 60 | 65.7 | 66 | 9 | 32-107/31 |
| 120-12-7 | Anthracene | 0.214 | | 100 | 67.8 | 68 | 72.0 | 72 | 6 | 44-126/28 |
| 56-55-3 | Benzo(a)anthracene | ND | | 100 | 70.8 | 71 | 72.4 | 72 | 2 | 45-127/30 |
| 50-32-8 | Benzo(a)pyrene | ND | | 100 | 68.3 | 68 | 68.9 | 69 | 1 | 40-131/31 |
| 205-99-2 | Benzo(b)fluoranthene | ND | | 100 | 56.8 | 57 | 56.4 | 56 | 1 | 36-134/32 |
| 191-24-2 | Benzo(g,h,i)perylene | ND | | 100 | 72.6 | 73 | 76.2 | 76 | 5 | 37-134/32 |
| 207-08-9 | Benzo(k)fluoranthene | ND | | 100 | 85.7 | 86 | 89.2 | 89 | 4 | 37-135/34 |
| 218-01-9 | Chrysene | ND | | 100 | 67.8 | 68 | 68.4 | 68 | 1 | 46-125/28 |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | | 100 | 74.8 | 75 | 76.5 | 77 | 2 | 36-139/31 |
| 206-44-0 | Fluoranthene | ND | | 100 | 71.3 | 71 | 73.8 | 74 | 3 | 41-130/29 |
| 86-73-7 | Fluorene | 2.33 | | 100 | 72.4 | 70 | 79.5 | 77 | 9 | 38-124/31 |
| 118-74-1 | Hexachlorobenzene | ND | | 100 | 84.9 | 85 | 87.9 | 88 | 3 | 42-120/28 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | | 100 | 80.3 | 80 | 82.1 | 82 | 2 | 37-137/33 |
| 91-20-3 | Naphthalene | 1.24 | | 100 | 63.8 | 63 | 71.9 | 71 | 12 | 16-114/35 |
| 85-01-8 | Phenanthrene | 0.967 | | 100 | 69.3 | 68 | 73.4 | 72 | 6 | 44-125/29 |
| 129-00-0 | Pyrene | ND | | 100 | 63.8 | 64 | 65.9 | 66 | 3 | 39-134/29 |

| CAS No. | Surrogate Recoveries | MS | MSD | JA31445-6 | Limits |
|---|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 95% | 107% | 101% | 18-119% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | 99% | 84% | 18-104% |
| 1718-51-0 | Terphenyl-d14 | 58% | 50% | 42% | 13-109% |

* = Outside of Control Limits.

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M630-DFTPP
**Lab File ID:** 3M14189.D
**Instrument ID:** GCMS3M
**Injection Date:** 09/28/09
**Injection Time:** 23:53

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 65200 | 33.5 | | Pass |
| 68 | Less than 2.0% of mass 69 | 1251 | 0.64 | (1.5) [a] | Pass |
| 69 | Mass 69 relative abundance | 82121 | 42.2 | | Pass |
| 70 | Less than 2.0% of mass 69 | 0 | 0.0 | (0.0) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 105741 | 54.3 | | Pass |
| 197 | Less than 1.0% of mass 198 | 0 | 0.0 | | Pass |
| 198 | Base peak, 100% relative abundance | 194560 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 13096 | 6.7 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 47696 | 24.5 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 6512 | 3.3 | | Pass |
| 441 | Present, but less than mass 443 | 17672 | 9.1 | (84.9) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 111264 | 57.2 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 20810 | 10.7 | (18.7) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E3M630-IC630 | 3M14190.D | 09/29/09 | 00:14 | 00:21 | Initial cal 100 |
| E3M630-IC630 | 3M14191.D | 09/29/09 | 00:42 | 00:49 | Initial cal 80 |
| E3M630-ICC630 | 3M14192.D | 09/29/09 | 01:09 | 01:16 | Initial cal 50 |
| E3M630-IC630 | 3M14193.D | 09/29/09 | 01:37 | 01:44 | Initial cal 25 |
| E3M630-IC630 | 3M14194.D | 09/29/09 | 02:05 | 02:12 | Initial cal 10 |
| E3M630-IC630 | 3M14195.D | 09/29/09 | 02:32 | 02:39 | Initial cal 5 |
| E3M630-IC630 | 3M14196.D | 09/29/09 | 03:00 | 03:07 | Initial cal 2 |
| E3M630-IC630 | 3M14197.D | 09/29/09 | 03:28 | 03:35 | Initial cal 1 |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M631-DFTPP
**Lab File ID:** 3M14198.D
**Instrument ID:** GCMS3M
**Injection Date:** 09/29/09
**Injection Time:** 08:59

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 211099 | 31.2 | | Pass |
| 68 | Less than 2.0% of mass 69 | 4533 | 0.67 | (1.7) [a] | Pass |
| 69 | Mass 69 relative abundance | 266863 | 39.4 | | Pass |
| 70 | Less than 2.0% of mass 69 | 285 | 0.04 | (0.11) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 348738 | 51.5 | | Pass |
| 197 | Less than 1.0% of mass 198 | 3197 | 0.47 | | Pass |
| 198 | Base peak, 100% relative abundance | 676650 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 47328 | 7.0 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 165373 | 24.4 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 21025 | 3.1 | | Pass |
| 441 | Present, but less than mass 443 | 66653 | 9.9 | (80.3) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 431274 | 63.7 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 83021 | 12.3 | (19.3) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E3M631-IC631 | 3M14199.D | 09/29/09 | 09:12 | 00:13 | Initial cal 100 |
| E3M631-IC631 | 3M14205.D | 09/29/09 | 09:40 | 00:41 | Initial cal 2 |
| E3M631-IC631 | 3M14200.D | 09/29/09 | 10:13 | 01:14 | Initial cal 80 |
| E3M631-IC631 | 3M14204.D | 09/29/09 | 10:40 | 01:41 | Initial cal 5 |
| E3M631-IC631 | 3M14201.D | 09/29/09 | 11:09 | 02:10 | Initial cal 50 |
| E3M631-IC631 | 3M14206.D | 09/29/09 | 11:37 | 02:38 | Initial cal 1 |
| E3M631-ICC631 | 3M14202.D | 09/29/09 | 12:05 | 03:06 | Initial cal 25 |
| E3M631-IC631 | 3M14203.D | 09/29/09 | 12:32 | 03:33 | Initial cal 10 |
| E3M631-ICV631 | 3M14207.D | 09/29/09 | 13:00 | 04:01 | Initial cal verification 50 |
| E3M631-ICV631 | 3M14208.D | 09/29/09 | 13:28 | 04:29 | Initial cal verification 50 |
| E3M631-ICV631 | 3M14209.D | 09/29/09 | 13:56 | 04:57 | Initial cal verification 50 |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M662-DFTPP
**Lab File ID:** 3M15023.D
**Instrument ID:** GCMS3M
**Injection Date:** 11/05/09
**Injection Time:** 13:37

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 60697 | 50.9 | | Pass |
| 68 | Less than 2.0% of mass 69 | 0 | 0.0 | (0.0) [a] | Pass |
| 69 | Mass 69 relative abundance | 74880 | 62.8 | | Pass |
| 70 | Less than 2.0% of mass 69 | 427 | 0.36 | (0.57) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 67922 | 57.0 | | Pass |
| 197 | Less than 1.0% of mass 198 | 0 | 0.0 | | Pass |
| 198 | Base peak, 100% relative abundance | 119256 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 8008 | 6.7 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 29122 | 24.4 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 3951 | 3.3 | | Pass |
| 441 | Present, but less than mass 443 | 16782 | 14.1 | (85.9) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 99488 | 83.4 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 19544 | 16.4 | (19.6) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E3M662-CC630 | 3M15024.D | 11/05/09 | 15:56 | 02:19 | Continuing cal 25 |
| E3M662-CC630 | 3M15025.D | 11/05/09 | 16:53 | 03:16 | Continuing cal 50 |
| OP40707-MB1 | 3M15026.D | 11/05/09 | 17:21 | 03:44 | Method Blank |
| OP40707-BS1 | 3M15027.D | 11/05/09 | 17:48 | 04:11 | Blank Spike |
| ZZZZZZ | 3M15028.D | 11/05/09 | 18:16 | 04:39 | (unrelated sample) |
| ZZZZZZ | 3M15029.D | 11/05/09 | 18:43 | 05:06 | (unrelated sample) |
| ZZZZZZ | 3M15030.D | 11/05/09 | 19:10 | 05:33 | (unrelated sample) |
| JA31597-2 | 3M15031.D | 11/05/09 | 19:38 | 06:01 | FIELD BLANK |
| JA31445-6 | 3M15032.D | 11/05/09 | 20:05 | 06:28 | (used for QC only; not part of job JA31597) |
| OP40707-MS | 3M15033.D | 11/05/09 | 20:32 | 06:55 | Matrix Spike |
| OP40707A-MS | 3M15033.D | 11/05/09 | 20:32 | 06:55 | Matrix Spike |
| OP40707A-MSD | 3M15034.D | 11/05/09 | 21:00 | 07:23 | Matrix Spike Duplicate |
| OP40707-MSD | 3M15034.D | 11/05/09 | 21:00 | 07:23 | Matrix Spike Duplicate |
| ZZZZZZ | 3M15035.D | 11/05/09 | 21:27 | 07:50 | (unrelated sample) |
| ZZZZZZ | 3M15036.D | 11/05/09 | 21:54 | 08:17 | (unrelated sample) |
| ZZZZZZ | 3M15037.D | 11/05/09 | 22:22 | 08:45 | (unrelated sample) |
| ZZZZZZ | 3M15038.D | 11/05/09 | 22:49 | 09:12 | (unrelated sample) |
| ZZZZZZ | 3M15039.D | 11/05/09 | 23:17 | 09:40 | (unrelated sample) |
| ZZZZZZ | 3M15040.D | 11/05/09 | 23:44 | 10:07 | (unrelated sample) |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M662-DFTPP
**Lab File ID:** 3M15023.D
**Instrument ID:** GCMS3M
**Injection Date:** 11/05/09
**Injection Time:** 13:37

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| ZZZZZZ | 3M15041.D | 11/06/09 | 00:12 | 10:35 | (unrelated sample) |
| ZZZZZZ | 3M15042.D | 11/06/09 | 00:39 | 11:02 | (unrelated sample) |
| ZZZZZZ | 3M15043.D | 11/06/09 | 01:07 | 11:30 | (unrelated sample) |
| ZZZZZZ | 3M15044.D | 11/06/09 | 01:34 | 11:57 | (unrelated sample) |
| OP40680-MB1 | 3M15050.D | 11/06/09 | 13:41 | 24:04 | Method Blank |
| OP40680-BS1 | 3M15051.D | 11/06/09 | 14:08 | 24:31 | Blank Spike |
| OP40752-MB1 | 3M15052.D | 11/06/09 | 14:36 | 24:59 | Method Blank |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M664-DFTPP
**Lab File ID:** 3M15062.D
**Instrument ID:** GCMS3M
**Injection Date:** 11/06/09
**Injection Time:** 19:53

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 70506 | 49.9 | | Pass |
| 68 | Less than 2.0% of mass 69 | 0 | 0.0 | (0.0) [a] | Pass |
| 69 | Mass 69 relative abundance | 84303 | 59.7 | | Pass |
| 70 | Less than 2.0% of mass 69 | 472 | 0.33 | (0.56) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 79766 | 56.5 | | Pass |
| 197 | Less than 1.0% of mass 198 | 0 | 0.0 | | Pass |
| 198 | Base peak, 100% relative abundance | 141269 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 9581 | 6.8 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 34973 | 24.8 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 4953 | 3.5 | | Pass |
| 441 | Present, but less than mass 443 | 19610 | 13.9 | (84.7) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 121714 | 86.2 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 23154 | 16.4 | (19.0) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E3M664-CC630 | 3M15063.D | 11/06/09 | 20:06 | 00:13 | Continuing cal 25 |
| E3M664-CC631 | 3M15064.D | 11/06/09 | 20:37 | 00:44 | Continuing cal 50 |
| OP40751-MB1 | 3M15065.D | 11/06/09 | 21:04 | 01:11 | Method Blank |
| OP40751-BS1 | 3M15066.D | 11/06/09 | 21:32 | 01:39 | Blank Spike |
| ZZZZZZ | 3M15067.D | 11/06/09 | 22:00 | 02:07 | (unrelated sample) |
| JA31630-1 | 3M15068.D | 11/06/09 | 22:27 | 02:34 | (used for QC only; not part of job JA31597) |
| ZZZZZZ | 3M15069.D | 11/06/09 | 22:55 | 03:02 | (unrelated sample) |
| ZZZZZZ | 3M15070.D | 11/06/09 | 23:22 | 03:29 | (unrelated sample) |
| ZZZZZZ | 3M15072.D | 11/07/09 | 00:17 | 04:24 | (unrelated sample) |
| ZZZZZZ | 3M15073.D | 11/07/09 | 00:44 | 04:51 | (unrelated sample) |
| ZZZZZZ | 3M15074.D | 11/07/09 | 01:11 | 05:18 | (unrelated sample) |
| ZZZZZZ | 3M15075.D | 11/07/09 | 01:38 | 05:45 | (unrelated sample) |
| ZZZZZZ | 3M15077.D | 11/07/09 | 02:33 | 06:40 | (unrelated sample) |
| OP40751-MS | 3M15078.D | 11/07/09 | 03:00 | 07:07 | Matrix Spike |
| OP40751A-MS | 3M15078.D | 11/07/09 | 03:00 | 07:07 | Matrix Spike |
| OP40751-MSD | 3M15079.D | 11/07/09 | 03:28 | 07:35 | Matrix Spike Duplicate |
| OP40751A-MSD | 3M15079.D | 11/07/09 | 03:28 | 07:35 | Matrix Spike Duplicate |
| ZZZZZZ | 3M15080.D | 11/07/09 | 03:56 | 08:03 | (unrelated sample) |
| JA31597-1 | 3M15081.D | 11/07/09 | 04:23 | 08:30 | TK-7930-TW1 |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E3M664-DFTPP
**Lab File ID:** 3M15062.D
**Instrument ID:** GCMS3M
**Injection Date:** 11/06/09
**Injection Time:** 19:53

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| ZZZZZZ | 3M15082.D | 11/07/09 | 04:51 | 08:58 | (unrelated sample) |
| ZZZZZZ | 3M15084.D | 11/07/09 | 05:45 | 09:52 | (unrelated sample) |
| ZZZZZZ | 3M15085.D | 11/07/09 | 06:13 | 10:20 | (unrelated sample) |
| ZZZZZZ | 3M15086.D | 11/07/09 | 06:40 | 10:47 | (unrelated sample) |
| ZZZZZZ | 3M15087.D | 11/07/09 | 07:07 | 11:14 | (unrelated sample) |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E4M597-DFTPP
**Lab File ID:** 4M12768.D
**Instrument ID:** GCMS4M
**Injection Date:** 10/28/09
**Injection Time:** 12:48

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 13690 | 36.1 | | Pass |
| 68 | Less than 2.0% of mass 69 | 203 | 0.53 | (1.5) [a] | Pass |
| 69 | Mass 69 relative abundance | 13781 | 36.3 | | Pass |
| 70 | Less than 2.0% of mass 69 | 0 | 0.0 | (0.0) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 18151 | 47.8 | | Pass |
| 197 | Less than 1.0% of mass 198 | 167 | 0.44 | | Pass |
| 198 | Base peak, 100% relative abundance | 37945 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 2578 | 6.8 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 8232 | 21.7 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 931 | 2.5 | | Pass |
| 441 | Present, but less than mass 443 | 3748 | 9.9 | (73.4) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 26176 | 69.0 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 5104 | 13.5 | (19.5) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E4M597-ICC597 | 4M12769.D | 10/28/09 | 12:59 | 00:11 | Initial cal 2.5 |
| E4M597-IC597 | 4M12770.D | 10/28/09 | 13:22 | 00:34 | Initial cal 5 |
| E4M597-IC597 | 4M12771.D | 10/28/09 | 13:45 | 00:57 | Initial cal 1 |
| E4M597-IC597 | 4M12772.D | 10/28/09 | 14:08 | 01:20 | Initial cal .5 |
| E4M597-IC597 | 4M12773.D | 10/28/09 | 14:31 | 01:43 | Initial cal .2 |
| E4M597-IC597 | 4M12774.D | 10/28/09 | 14:54 | 02:06 | Initial cal .1 |
| E4M597-IC597 | 4M12775.D | 10/28/09 | 15:17 | 02:29 | Initial cal .05 |
| E4M597-IC597 | 4M12776.D | 10/28/09 | 15:40 | 02:52 | Initial cal .02 |
| E4M597-IC597 | 4M12777.D | 10/28/09 | 16:02 | 03:14 | Initial cal .01 |
| E4M597-ICV597 | 4M12780.D | 10/28/09 | 17:59 | 05:11 | Initial cal verification 5 |
| E4M597-ICV597 | 4M12781.D | 10/28/09 | 19:39 | 06:51 | Initial cal verification 1 |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E4M606-DFTPP
**Lab File ID:** 4M13105.D
**Instrument ID:** GCMS4M
**Injection Date:** 11/06/09
**Injection Time:** 19:30

| m/e | Ion Abundance Criteria | Raw Abundance | % Relative Abundance | | Pass/Fail |
|---|---|---|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 16500 | 42.7 | | Pass |
| 68 | Less than 2.0% of mass 69 | 220 | 0.57 | (1.4) [a] | Pass |
| 69 | Mass 69 relative abundance | 15787 | 40.9 | | Pass |
| 70 | Less than 2.0% of mass 69 | 0 | 0.0 | (0.0) [a] | Pass |
| 127 | 40.0 - 60.0% of mass 198 | 19398 | 50.3 | | Pass |
| 197 | Less than 1.0% of mass 198 | 218 | 0.56 | | Pass |
| 198 | Base peak, 100% relative abundance | 38601 | 100.0 | | Pass |
| 199 | 5.0 - 9.0% of mass 198 | 2667 | 6.9 | | Pass |
| 275 | 10.0 - 30.0% of mass 198 | 8973 | 23.2 | | Pass |
| 365 | 1.0 - 100.0% of mass 198 | 1145 | 3.0 | | Pass |
| 441 | Present, but less than mass 443 | 4080 | 10.6 | (75.7) [b] | Pass |
| 442 | 40.0 - 100.0% of mass 198 | 27899 | 72.3 | | Pass |
| 443 | 17.0 - 23.0% of mass 442 | 5388 | 14.0 | (19.3) [c] | Pass |

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| E4M606-CC597 | 4M13106.D | 11/06/09 | 19:41 | 00:11 | Continuing cal .5 |
| OP40707A-MB1 | 4M13107.D | 11/06/09 | 20:03 | 00:33 | Method Blank |
| OP40707A-BS12 | 4M13108.D | 11/06/09 | 20:25 | 00:55 | Blank Spike |
| OP40751A-MB1 | 4M13109.D | 11/06/09 | 20:47 | 01:17 | Method Blank |
| OP40751A-BS12 | 4M13110.D | 11/06/09 | 21:09 | 01:39 | Blank Spike |
| JA31445-6 | 4M13111.D | 11/06/09 | 21:31 | 02:01 | (used for QC only; not part of job JA31597) |
| ZZZZZZ | 4M13112.D | 11/06/09 | 21:54 | 02:24 | (unrelated sample) |
| ZZZZZZ | 4M13113.D | 11/06/09 | 22:16 | 02:46 | (unrelated sample) |
| ZZZZZZ | 4M13114.D | 11/06/09 | 22:38 | 03:08 | (unrelated sample) |
| ZZZZZZ | 4M13115.D | 11/06/09 | 23:00 | 03:30 | (unrelated sample) |
| ZZZZZZ | 4M13116.D | 11/06/09 | 23:22 | 03:52 | (unrelated sample) |
| ZZZZZZ | 4M13117.D | 11/06/09 | 23:44 | 04:14 | (unrelated sample) |
| ZZZZZZ | 4M13118.D | 11/07/09 | 00:06 | 04:36 | (unrelated sample) |
| ZZZZZZ | 4M13119.D | 11/07/09 | 00:28 | 04:58 | (unrelated sample) |
| ZZZZZZ | 4M13120.D | 11/07/09 | 00:50 | 05:20 | (unrelated sample) |
| ZZZZZZ | 4M13121.D | 11/07/09 | 01:12 | 05:42 | (unrelated sample) |
| JA31597-1 | 4M13122.D | 11/07/09 | 01:34 | 06:04 | TK-7930-TW1 |
| JA31597-2 | 4M13123.D | 11/07/09 | 01:56 | 06:26 | FIELD BLANK |
| JA31630-1 | 4M13124.D | 11/07/09 | 02:18 | 06:48 | (used for QC only; not part of job JA31597) |

# Instrument Performance Check (DFTPP)



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Sample:** E4M606-DFTPP
**Lab File ID:** 4M13105.D
**Instrument ID:** GCMS4M
**Injection Date:** 11/06/09
**Injection Time:** 19:30

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---|---|---|---|---|---|
| ZZZZZZ | 4M13125.D | 11/07/09 | 02:40 | 07:10 | (unrelated sample) |
| ZZZZZZ | 4M13126.D | 11/07/09 | 03:02 | 07:32 | (unrelated sample) |
| ZZZZZZ | 4M13127.D | 11/07/09 | 03:24 | 07:54 | (unrelated sample) |
| ZZZZZZ | 4M13128.D | 11/07/09 | 03:46 | 08:16 | (unrelated sample) |
| ZZZZZZ | 4M13129.D | 11/07/09 | 04:08 | 08:38 | (unrelated sample) |
| ZZZZZZ | 4M13130.D | 11/07/09 | 04:30 | 09:00 | (unrelated sample) |
| ZZZZZZ | 4M13131.D | 11/07/09 | 04:52 | 09:22 | (unrelated sample) |
| ZZZZZZ | 4M13132.D | 11/07/09 | 05:14 | 09:44 | (unrelated sample) |
| ZZZZZZ | 4M13133.D | 11/07/09 | 05:36 | 10:06 | (unrelated sample) |
| ZZZZZZ | 4M13134.D | 11/07/09 | 05:58 | 10:28 | (unrelated sample) |
| ZZZZZZ | 4M13135.D | 11/07/09 | 06:20 | 10:50 | (unrelated sample) |
| ZZZZZZ | 4M13137.D | 11/07/09 | 07:04 | 11:34 | (unrelated sample) |

# Semivolatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Check Std:** E3M662-CC630 **Injection Date:** 11/05/09
**Lab File ID:** 3M15024.D **Injection Time:** 15:56
**Instrument ID:** GCMS3M **Method:** SW846 8270C

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | IS 6 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Check Std | 451674 | 3.65 | 1673408 | 5.35 | 989059 | 8.03 | 1649186 | 10.36 | 1937964 | 14.17 | 1749543 | 15.85 |
| Upper Limit [a] | 903348 | 4.15 | 3346816 | 5.85 | 1978118 | 8.53 | 3298372 | 10.86 | 3875928 | 14.67 | 3499086 | 16.35 |
| Lower Limit [b] | 225837 | 3.15 | 836704 | 4.85 | 494530 | 7.53 | 824593 | 9.86 | 968982 | 13.67 | 874772 | 15.35 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | IS 6 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OP40707-MB1 | 265925 | 3.67 | 984897 | 5.35 | 616881 | 8.03 | 993458 | 10.36 | 1131779 | 14.17 | 1053575 | 15.85 |
| OP40707-BS1 | 296869 | 3.65 | 1063723 | 5.35 | 668356 | 8.03 | 1111692 | 10.35 | 1269654 | 14.16 | 1120913 | 15.85 |
| ZZZZZZ | 308198 | 3.67 | 1126325 | 5.35 | 676429 | 8.03 | 1109710 | 10.36 | 1239549 | 14.17 | 1155591 | 15.85 |
| ZZZZZZ | 281137 | 3.67 | 1107420 | 5.35 | 654199 | 8.03 | 1079978 | 10.36 | 1232567 | 14.17 | 1169281 | 15.85 |
| ZZZZZZ | 281689 | 3.67 | 1065804 | 5.35 | 641341 | 8.03 | 1053171 | 10.36 | 1182595 | 14.17 | 1109572 | 15.85 |
| JA31597-2 | 313809 | 3.67 | 1147477 | 5.35 | 684681 | 8.03 | 1127975 | 10.36 | 1276906 | 14.17 | 1198761 | 15.85 |
| JA31445-6 | 296195 | 3.66 | 1128014 | 5.35 | 698394 | 8.03 | 1150129 | 10.35 | 1287344 | 14.17 | 1191867 | 15.85 |
| OP40707-MS | 315519 | 3.65 | 1135423 | 5.35 | 703941 | 8.03 | 1178502 | 10.35 | 1342620 | 14.16 | 1208019 | 15.85 |
| OP40707A-MS | 315519 | 3.65 | 1135423 | 5.35 | 703941 | 8.03 | 1178502 | 10.35 | 1342620 | 14.16 | 1208019 | 15.85 |
| OP40707A-MSD | 301387 | 3.65 | 1096647 | 5.34 | 670384 | 8.03 | 1134675 | 10.35 | 1292339 | 14.16 | 1154680 | 15.85 |
| OP40707-MSD | 301387 | 3.65 | 1096647 | 5.34 | 670384 | 8.03 | 1134675 | 10.35 | 1292339 | 14.16 | 1154680 | 15.85 |
| ZZZZZZ | 281772 | 3.67 | 1087512 | 5.36 | 661172 | 8.03 | 1079922 | 10.36 | 1216115 | 14.17 | 1149224 | 15.85 |
| ZZZZZZ | 247014 | 3.67 | 931514 | 5.36 | 550593 | 8.04 | 917550 | 10.37 | 1049092 | 14.17 | 969719 | 15.85 |
| ZZZZZZ | 270448 | 3.67 | 1038420 | 5.36 | 631213 | 8.03 | 1038466 | 10.37 | 1173176 | 14.17 | 1130003 | 15.85 |
| ZZZZZZ | 258538 | 3.67 | 945107 | 5.36 | 587374 | 8.03 | 944364 | 10.37 | 1084013 | 14.17 | 1012443 | 15.85 |
| ZZZZZZ | 266703 | 3.67 | 1028132 | 5.35 | 635013 | 8.03 | 1035749 | 10.36 | 1162741 | 14.17 | 1102307 | 15.85 |
| ZZZZZZ | 285152 | 3.67 | 1069896 | 5.36 | 651675 | 8.03 | 1055700 | 10.36 | 1195131 | 14.17 | 1137450 | 15.85 |
| ZZZZZZ | 277548 | 3.67 | 1086057 | 5.35 | 654035 | 8.03 | 1062612 | 10.36 | 1186338 | 14.17 | 1111116 | 15.85 |
| ZZZZZZ | 233168 | 3.67 | 931343 | 5.36 | 563951 | 8.03 | 946673 | 10.37 | 1078395 | 14.17 | 1025392 | 15.85 |
| ZZZZZZ | 277275 | 3.67 | 1020665 | 5.36 | 610258 | 8.03 | 991442 | 10.36 | 1136010 | 14.17 | 1082762 | 15.85 |
| ZZZZZZ | 300220 | 3.67 | 1113077 | 5.35 | 676452 | 8.03 | 1147042 | 10.36 | 1283446 | 14.17 | 1202826 | 15.85 |
| OP40680-MB1 | 296953 | 3.64 | 1045605 | 5.32 | 631997 | 7.99 | 959378 | 10.33 | 1120838 | 14.13 | 1054619 | 15.81 |
| OP40680-BS1 | 332933 | 3.62 | 1229090 | 5.31 | 722740 | 7.99 | 1186166 | 10.32 | 1316745 | 14.12 | 1176765 | 15.81 |
| OP40752-MB1 | 300109 | 3.64 | 1101624 | 5.32 | 660509 | 7.99 | 1080774 | 10.33 | 1214335 | 14.13 | 1146945 | 15.81 |
| OP40752-BS1 | 321428 | 3.62 | 1204136 | 5.31 | 695321 | 7.99 | 1170587 | 10.32 | 1333037 | 14.12 | 1174006 | 15.81 |
| JA29569-3 | 272323 | 3.63 | 992733 | 5.32 | 601517 | 7.99 | 995592 | 10.32 | 1104065 | 14.12 | 1027778 | 15.81 |
| JA29569-2 | 341358 | 3.62 | 1223244 | 5.32 | 731290 | 7.99 | 1218330 | 10.32 | 1344356 | 14.13 | 841709* | 15.81 |
| ZZZZZZ | 309293 | 3.62 | 1094710 | 5.32 | 660036 | 7.99 | 1112681 | 10.32 | 1250368 | 14.13 | 902688 | 15.81 |
| ZZZZZZ | 298039 | 3.62 | 1035207 | 5.32 | 625131 | 7.99 | 1004268 | 10.32 | 1123345 | 14.13 | 1043103 | 15.81 |
| ZZZZZZ | 294654 | 3.62 | 1037042 | 5.32 | 626763 | 7.99 | 966185 | 10.32 | 1116898 | 14.13 | 997220 | 15.81 |
| OP40680-MS | 303435 | 3.62 | 1085931 | 5.31 | 662949 | 7.99 | 1106893 | 10.32 | 1238250 | 14.12 | 976979 | 15.81 |

**IS 1** = 1,4-Dichlorobenzene-d4
**IS 2** = Naphthalene-d8
**IS 3** = Acenaphthene-D10

# Semivolatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | E3M662-CC630 | **Injection Date:** | 11/05/09 |
| **Lab File ID:** | 3M15024.D | **Injection Time:** | 15:56 |
| **Instrument ID:** | GCMS3M | **Method:** | SW846 8270C |

| Lab | IS 1 | | IS 2 | | IS 3 | | IS 4 | | IS 5 | | IS 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** |

**IS 4** = Phenanthrene-d10
**IS 5** = Chrysene-d12
**IS 6** = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Check Std:** E3M664-CC630 **Injection Date:** 11/06/09
**Lab File ID:** 3M15063.D **Injection Time:** 20:06
**Instrument ID:** GCMS3M **Method:** SW846 8270C

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | IS 6 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Check Std | 432198 | 3.61 | 1625830 | 5.31 | 987190 | 7.99 | 1659674 | 10.32 | 1903071 | 14.12 | 1614218 | 15.81 |
| Upper Limit [a] | 864396 | 4.11 | 3251660 | 5.81 | 1974380 | 8.49 | 3319348 | 10.82 | 3806142 | 14.62 | 3228436 | 16.31 |
| Lower Limit [b] | 216099 | 3.11 | 812915 | 4.81 | 493595 | 7.49 | 829837 | 9.82 | 951536 | 13.62 | 807109 | 15.31 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | IS 6 AREA | RT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OP40751-MB1 | 339640 | 3.65 | 1119193 | 5.33 | 663227 | 8.00 | 1096761 | 10.33 | 1230921 | 14.14 | 1168759 | 15.82 |
| OP40751-BS1 | 300884 | 3.62 | 1077580 | 5.31 | 684209 | 7.99 | 1128334 | 10.32 | 1308768 | 14.12 | 1179257 | 15.82 |
| ZZZZZZ | 291812 | 3.65 | 1006381 | 5.33 | 625762 | 8.00 | 1024580 | 10.33 | 1198800 | 14.14 | 1132727 | 15.82 |
| JA31630-1 | 299170 | 3.63 | 1125959 | 5.32 | 664886 | 8.00 | 1070029 | 10.33 | 1239858 | 14.14 | 1180564 | 15.81 |
| ZZZZZZ | 292978 | 3.65 | 1014958 | 5.33 | 638772 | 8.00 | 966854 | 10.34 | 1140913 | 14.14 | 1108589 | 15.82 |
| ZZZZZZ | 242766 | 3.66 | 905081 | 5.34 | 539307 | 8.00 | 869404 | 10.35 | 999032 | 14.15 | 933787 | 15.82 |
| ZZZZZZ | 290360 | 3.63 | 1095613 | 5.32 | 639244 | 7.99 | 1049313 | 10.33 | 1183593 | 14.14 | 1111799 | 15.81 |
| ZZZZZZ | 311863 | 3.65 | 1177459 | 5.33 | 703810 | 8.00 | 1081587 | 10.33 | 1305349 | 14.14 | 1146840 | 15.81 |
| ZZZZZZ | 313533 | 3.65 | 1093609 | 5.33 | 669105 | 8.00 | 1028083 | 10.34 | 1293005 | 14.14 | 1216545 | 15.81 |
| ZZZZZZ | 259101 | 3.65 | 983840 | 5.34 | 578259 | 8.00 | 946698 | 10.34 | 1094635 | 14.15 | 1043145 | 15.82 |
| ZZZZZZ | 283361 | 3.65 | 986881 | 5.33 | 616429 | 8.00 | 957592 | 10.34 | 1172005 | 14.14 | 1140838 | 15.81 |
| OP40751-MS | 301001 | 3.62 | 1079519 | 5.31 | 677681 | 7.99 | 1102209 | 10.32 | 1280463 | 14.12 | 1153138 | 15.81 |
| OP40751A-MS | 301001 | 3.62 | 1079519 | 5.31 | 677681 | 7.99 | 1102209 | 10.32 | 1280463 | 14.12 | 1153138 | 15.81 |
| OP40751-MSD | 297837 | 3.62 | 1042938 | 5.31 | 656349 | 7.99 | 1087403 | 10.32 | 1251390 | 14.12 | 1127064 | 15.82 |
| OP40751A-MSD | 297837 | 3.62 | 1042938 | 5.31 | 656349 | 7.99 | 1087403 | 10.32 | 1251390 | 14.12 | 1127064 | 15.82 |
| ZZZZZZ | 283209 | 3.65 | 1042231 | 5.33 | 645010 | 7.99 | 1077723 | 10.33 | 1214486 | 14.14 | 1144963 | 15.82 |
| JA31597-1 | 287456 | 3.65 | 1075179 | 5.33 | 665286 | 8.00 | 1134145 | 10.33 | 1382441 | 14.13 | 1322279 | 15.81 |
| ZZZZZZ | 281415 | 3.65 | 1072543 | 5.33 | 691335 | 7.99 | 1090667 | 10.33 | 1325334 | 14.13 | 1240331 | 15.81 |
| ZZZZZZ | 276744 | 3.65 | 1075430 | 5.33 | 670581 | 7.99 | 1102127 | 10.33 | 1266142 | 14.14 | 1197232 | 15.81 |
| ZZZZZZ | 299717 | 3.65 | 1143655 | 5.32 | 708483 | 7.99 | 1169532 | 10.33 | 1345166 | 14.13 | 1282943 | 15.81 |
| ZZZZZZ | 276457 | 3.65 | 1089953 | 5.33 | 695308 | 7.99 | 1081659 | 10.33 | 1325444 | 14.13 | 1256757 | 15.81 |
| ZZZZZZ | 337196 | 3.63 | 1223828 | 5.32 | 766331 | 7.99 | 1232981 | 10.32 | 1405486 | 14.13 | 1321355 | 15.81 |

**IS 1** = 1,4-Dichlorobenzene-d4
**IS 2** = Naphthalene-d8
**IS 3** = Acenaphthene-D10
**IS 4** = Phenanthrene-d10
**IS 5** = Chrysene-d12
**IS 6** = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | E4M606-CC597 | **Injection Date:** | 11/06/09 |
| **Lab File ID:** | 4M13106.D | **Injection Time:** | 19:41 |
| **Instrument ID:** | GCMS4M | **Method:** | SW846 8270C BY SIM |

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT |
|---|---|---|---|---|---|---|---|---|
| Check Std | 53592 | 6.08 | 65357 | 8.36 | 77045 | 11.66 | 45817 | 14.73 |
| Upper Limit [a] | 107184 | 6.58 | 130714 | 8.86 | 154090 | 12.16 | 91634 | 15.23 |
| Lower Limit [b] | 26796 | 5.58 | 32679 | 7.86 | 38523 | 11.16 | 22909 | 14.23 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT |
|---|---|---|---|---|---|---|---|---|
| OP40707A-MB1 | 50715 | 6.08 | 60912 | 8.36 | 74145 | 11.66 | 41856 | 14.73 |
| OP40707A-BS12 | 50622 | 6.08 | 62445 | 8.36 | 73298 | 11.66 | 43622 | 14.71 |
| OP40751A-MB1 | 49332 | 6.08 | 59573 | 8.36 | 73837 | 11.66 | 41150 | 14.71 |
| OP40751A-BS12 | 50620 | 6.08 | 62428 | 8.36 | 75284 | 11.66 | 42891 | 14.71 |
| JA31445-6 | 62080 | 6.08 | 70880 | 8.36 | 86509 | 11.66 | 49874 | 14.73 |
| ZZZZZZ | 55052 | 6.08 | 66471 | 8.36 | 78555 | 11.66 | 46450 | 14.73 |
| ZZZZZZ | 56136 | 6.08 | 69437 | 8.36 | 84561 | 11.66 | 48495 | 14.71 |
| ZZZZZZ | 54014 | 6.08 | 66653 | 8.36 | 81646 | 11.66 | 44720 | 14.71 |
| ZZZZZZ | 55320 | 6.08 | 67315 | 8.36 | 82666 | 11.66 | 48888 | 14.71 |
| ZZZZZZ | 54750 | 6.08 | 66835 | 8.36 | 80232 | 11.66 | 48247 | 14.71 |
| ZZZZZZ | 50196 | 6.08 | 62396 | 8.36 | 71800 | 11.66 | 42251 | 14.71 |
| ZZZZZZ | 51604 | 6.08 | 62924 | 8.36 | 76539 | 11.66 | 45453 | 14.71 |
| ZZZZZZ | 57558 | 6.08 | 71340 | 8.36 | 84147 | 11.66 | 48766 | 14.71 |
| ZZZZZZ | 52434 | 6.08 | 66647 | 8.36 | 79332 | 11.66 | 46038 | 14.71 |
| ZZZZZZ | 50835 | 6.08 | 61541 | 8.36 | 73472 | 11.66 | 42659 | 14.71 |
| JA31597-1 | 54402 | 6.08 | 66696 | 8.36 | 79845 | 11.66 | 48991 | 14.73 |
| JA31597-2 | 57033 | 6.08 | 70339 | 8.36 | 84735 | 11.66 | 51585 | 14.71 |
| JA31630-1 | 49141 | 6.08 | 61221 | 8.36 | 73683 | 11.66 | 43710 | 14.71 |
| ZZZZZZ | 48039 | 6.08 | 59609 | 8.36 | 73278 | 11.66 | 42727 | 14.71 |
| ZZZZZZ | 49905 | 6.08 | 61046 | 8.36 | 73170 | 11.66 | 44344 | 14.71 |
| ZZZZZZ | 52042 | 6.08 | 63201 | 8.36 | 80804 | 11.66 | 45020 | 14.71 |
| ZZZZZZ | 50814 | 6.08 | 62786 | 8.36 | 75733 | 11.66 | 43172 | 14.71 |
| ZZZZZZ | 51810 | 6.08 | 63206 | 8.36 | 79498 | 11.66 | 46066 | 14.71 |
| ZZZZZZ | 48525 | 6.08 | 58728 | 8.36 | 72105 | 11.66 | 42001 | 14.71 |
| ZZZZZZ | 50573 | 6.08 | 63684 | 8.36 | 76108 | 11.66 | 44530 | 14.71 |
| ZZZZZZ | 46484 | 6.08 | 56212 | 8.36 | 69576 | 11.66 | 39160 | 14.71 |
| ZZZZZZ | 46791 | 6.08 | 58134 | 8.36 | 70678 | 11.66 | 40965 | 14.71 |
| ZZZZZZ | 48266 | 6.08 | 59544 | 8.36 | 73513 | 11.66 | 40891 | 14.71 |
| ZZZZZZ | 53003 | 6.08 | 67015 | 8.36 | 81105 | 11.66 | 46961 | 14.71 |
| ZZZZZZ | 42718 | 6.10 | 56903 | 8.36 | 71215 | 11.66 | 43771 | 14.71 |

**IS 1** = 1-Methylnaphthalene-d10
**IS 2** = Fluorene-d10
**IS 3** = Fluoranthene-d10
**IS 4** = Benzo(a)pyrene-d12

# Semivolatile Internal Standard Area Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | E4M606-CC597 | **Injection Date:** | 11/06/09 |
| **Lab File ID:** | 4M13106.D | **Injection Time:** | 19:41 |
| **Instrument ID:** | GCMS4M | **Method:** | SW846 8270C BY SIM |

| Lab | IS 1 | | IS 2 | | IS 3 | | IS 4 | |
|---|---|---|---|---|---|---|---|---|
| **Sample ID** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** | **AREA** | **RT** |

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Surrogate Recovery Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Method:** SW846 8270C **Matrix:** AQ

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 | S2 | S3 |
|---|---|---|---|---|
| JA31597-1 | 3M15081.D | 90.0 | 88.0 | 44.0 |
| JA31597-2 | 3M15031.D | 104.0 | 108.0* [a] | 75.0 |
| OP40707-BS1 | 3M15027.D | 125.0* [b] | 117.0* [b] | 56.0 |
| OP40707-MB1 | 3M15026.D | 114.0* [a] | 110.0* [a] | 76.0 |
| OP40707-MS | 3M15033.D | 95.0 | 94.0 | 58.0 |
| OP40707-MSD | 3M15034.D | 107.0 | 99.0 | 50.0 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = Nitrobenzene-d5 | 25-112% |
| **S2** = 2-Fluorobiphenyl | 31-106% |
| **S3** = Terphenyl-d14 | 14-122% |

(a) Outside of in house control limits, but within reasonable method recovery limits.
(b) Outside of in house control limits.

# Semivolatile Surrogate Recovery Summary



**Job Number:** JA31597
**Account:** ENVNJSP EnviroTrac, Ltd.
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

**Method:** SW846 8270C BY SIM **Matrix:** AQ

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 | S2 | S3 |
|---|---|---|---|---|
| JA31597-1 | 4M13122.D | 102.0 | 79.0 | 41.0 |
| JA31597-2 | 4M13123.D | 114.0 | 96.0 | 64.0 |
| OP40707A-BS12 | 4M13108.D | 113.0 | 96.0 | 61.0 |
| OP40707A-MB1 | 4M13107.D | 122.0* [a] | 103.0 | 66.0 |
| OP40707A-MS | 3M15033.D | 95.0 | 94.0 | 58.0 |
| OP40707A-MSD | 3M15034.D | 107.0 | 99.0 | 50.0 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = Nitrobenzene-d5 | 18-119% |
| **S2** = 2-Fluorobiphenyl | 18-104% |
| **S3** = Terphenyl-d14 | 13-109% |

(a) Outside of in house control limits.

# Initial Calibration Summary



**Job Number:** JA31597 **Sample:** E3M630-ICC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14192.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
                         Response Factor Report  MS3M

  Method       : C:\msdchem\1\METHODS\M3M630.M (RTE Integrator)
  Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
  Last Update  : Tue Sep 29 16:08:16 2009
  Response via : Initial Calibration

  Calibration Files
  100 =3m14190.D   80  =3m14191.D   50  =3m14192.D   25  =3m14193.D
  10  =3m14194.D   5   =3m14195.D   2   =3m14196.D   1   =3m14197.D

   Compound         100   80    50    25    10    5     2     1     Avg %RSD
  ---------------------------------------------------------------------------



102)     1,4-Dichlorobenzene-d ----------------ISTD---------------------
103) Benzaldehyde       0.919 1.049 0.874 1.061 1.014 0.863 1.031 0.973   8.75

104)     Phenanthrene-d10a     ----------------ISTD---------------------
105) Atrazine     0.110 0.113 0.130 0.104 0.116 0.105 0.083 0.093 0.107  13.37

106)     Acenaphthene-d10a     ----------------ISTD---------------------
107) 1,2,4,5-Tetr 0.570 0.591 0.632 0.513 0.570 0.490 0.402       0.538  14.21

108)     Chrysene-d12a         ----------------ISTD---------------------
109) Benzidine    0.427 0.474 0.597 0.452 0.485 0.375             0.468  15.86
          ----- Quadratic regression -----                Coefficient =  0.9900
               Response Ratio = -0.06936 + 0.75773 *A + -0.12108 *A^2

110) Methyl Parat 0.148 0.152 0.195 0.152 0.163 0.126             0.156  14.55
111) Parathion    0.143 0.147 0.163 0.128 0.136 0.111             0.138  12.76
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M3M630.M          Tue Sep 29 16:27:57 2009   MS3M
```

8.7.1

8

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** E3M631-ICC631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14202.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Response Factor Report MS3M

Method : C:\msdchem\1\METHODS\M3M630.M (RTE Integrator)
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update : Tue Sep 29 19:17:09 2009
Response via : Initial Calibration

Calibration Files
100 =3m14199.D 80 =3m14200.D 50 =3m14201.D 25 =3m14202.D
10 =3m14203.D 5 =3m14204.D 2 =3m14205.D 1 =3m14206.D

| Compound | 100 | 80 | 50 | 25 | 10 | 5 | 2 | 1 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) I 1,4-Dichlorobenzene-d | ----------ISTD---------- | | | | | | | | | |
| 2) 1,4-Dioxane | 0.259 | 0.255 | 0.269 | 0.265 | 0.262 | 0.262 | 0.250 | 0.302 | 0.266 | 5.99 |
| 3) Pyridine | 1.237 | 1.194 | 1.269 | 1.258 | 1.302 | 1.220 | 1.188 | 1.462 | 1.266 | 6.95 |
| 4) N-Nitrosodim | 0.661 | 0.656 | 0.700 | 0.679 | 0.677 | 0.648 | 0.647 | 0.744 | 0.677 | 4.83 |
| 5) 2-Fluorophen | 1.293 | 1.261 | 1.298 | 1.271 | 1.296 | 1.221 | 1.162 | 1.312 | 1.264 | 3.96 |
| 6) Indene | 2.085 | 2.004 | 2.078 | 2.011 | 2.056 | 1.917 | 1.886 | 2.166 | 2.026 | 4.53 |
| 7) Cumene | 2.789 | 2.704 | 2.826 | 2.760 | 2.815 | 2.684 | 2.661 | 3.011 | 2.781 | 3.99 |
| 8) Phenol-d5 | 1.618 | 1.561 | 1.609 | 1.551 | 1.552 | 1.424 | 1.373 | 1.547 | 1.529 | 5.64 |
| 9) Phenol | 1.753 | 1.684 | 1.731 | 1.668 | 1.687 | 1.527 | 1.503 | 1.682 | 1.654 | 5.48 |
| 10) Aniline | 1.491 | 1.438 | 1.854 | 1.818 | 1.715 | 1.676 | 1.615 | 1.883 | 1.686 | 9.77 |
| 11) bis(2-Chloro | 1.172 | 1.157 | 1.214 | 1.185 | 1.220 | 1.152 | 1.151 | 1.219 | 1.184 | 2.55 |
| 12) 2-Chlorophen | 1.496 | 1.449 | 1.492 | 1.448 | 1.465 | 1.380 | 1.343 | 1.462 | 1.442 | 3.71 |
| 13) Decane | 1.047 | 1.010 | 1.053 | 1.031 | 1.058 | 1.002 | 1.022 | 1.153 | 1.047 | 4.51 |
| 14) 1,3-Dichloro | 1.596 | 1.550 | 1.601 | 1.553 | 1.602 | 1.510 | 1.517 | 1.707 | 1.579 | 3.99 |
| 15) 1,4-Dichloro | 1.649 | 1.612 | 1.664 | 1.593 | 1.654 | 1.546 | 1.565 | 1.733 | 1.627 | 3.72 |
| 16) Benzyl alcoh | 0.938 | 0.902 | 0.904 | 0.861 | 0.854 | 0.772 | 0.734 | 0.763 | 0.841 | 8.96 |
| 17) 1,2-Dichloro | 1.598 | 1.543 | 1.551 | 1.495 | 1.527 | 1.435 | 1.405 | 1.648 | 1.525 | 5.26 |
| 18) Acetophenone | 1.823 | 1.768 | 1.834 | 1.798 | 1.806 | 1.700 | 1.652 | 1.903 | 1.786 | 4.43 |
| 19) 2-Methylphen | 1.231 | 1.186 | 1.249 | 1.198 | 1.205 | 1.110 | 0.968 | 1.035 | 1.148 | 8.77 |
| 20) 2,2'-oxybis( | 0.455 | 0.441 | 0.454 | 0.454 | 0.457 | 0.429 | 0.436 | 0.501 | 0.453 | 4.86 |
| 21) 3&4-Methylph | 1.366 | 1.302 | 1.352 | 1.316 | 1.311 | 1.136 | 0.979 | 1.015 | 1.222 | 12.76 |
| 22) n-Nitroso-di | 0.775 | 0.746 | 0.781 | 0.752 | 0.765 | 0.705 | 0.678 | 0.749 | 0.744 | 4.76 |
| 23) Hexachloroet | 0.553 | 0.531 | 0.532 | 0.514 | 0.524 | 0.479 | 0.481 | 0.570 | 0.523 | 6.08 |
| 24) I Naphthalene-d8 | ----------ISTD---------- | | | | | | | | | |
| 25) Nitrobenzene | 0.386 | 0.376 | 0.387 | 0.378 | 0.385 | 0.360 | 0.357 | 0.398 | 0.378 | 3.70 |
| 26) Nitrobenzene | 0.192 | 0.186 | 0.191 | 0.186 | 0.190 | 0.174 | 0.171 | 0.187 | 0.185 | 4.38 |
| 27) Quinoline | 0.680 | 0.665 | 0.685 | 0.662 | 0.664 | 0.605 | 0.540 | | 0.643 | 8.18 |
| 28) Isophorone | 0.575 | 0.568 | 0.608 | 0.592 | 0.605 | 0.542 | 0.509 | 0.573 | 0.572 | 5.79 |
| 29) 2-Nitropheno | 0.233 | 0.228 | 0.225 | 0.212 | 0.212 | 0.189 | 0.168 | 0.189 | 0.207 | 11.00 |
| 30) 2,4-Dimethyl | 0.354 | 0.339 | 0.358 | 0.340 | 0.293 | 0.261 | | | 0.324 | 11.92 |
| 31) Benzoic Acid | 0.297 | 0.281 | 0.265 | 0.222 | 0.170 | 0.107 | | | 0.224 | 32.78 |
| ----- Linear regression ----- Coefficient = 0.9978 | | | | | | | | | | |
| Response Ratio = -0.03921 + 0.30593 *A | | | | | | | | | | |
| 32) bis(2-Chloro | 0.368 | 0.359 | 0.374 | 0.360 | 0.371 | 0.338 | 0.319 | 0.367 | 0.357 | 5.34 |
| 33) 2,4-Dichloro | 0.318 | 0.310 | 0.315 | 0.298 | 0.293 | 0.257 | | | 0.299 | 7.59 |
| 34) 2,6-Dichloro | 0.322 | 0.312 | 0.316 | 0.299 | 0.302 | 0.281 | 0.222 | | 0.293 | 11.71 |
| 35) 1,3,5-Trichl | 0.368 | 0.357 | 0.358 | 0.343 | 0.347 | 0.323 | 0.325 | 0.363 | 0.348 | 4.83 |
| 36) 1,2,4-Trichl | 0.337 | 0.329 | 0.333 | 0.316 | 0.327 | 0.308 | 0.306 | 0.333 | 0.324 | 3.74 |
| 37) 1,2,3-Trichl | 0.347 | 0.338 | 0.330 | 0.317 | 0.322 | 0.305 | 0.300 | 0.325 | 0.323 | 4.89 |
| 38) Naphthalene | 1.181 | 1.152 | 1.174 | 1.119 | 1.140 | 1.065 | 1.058 | 1.166 | 1.132 | 4.21 |
| 39) 4-Chloroanil | 0.456 | 0.443 | 0.481 | 0.457 | 0.452 | 0.415 | 0.385 | 0.379 | 0.433 | 8.44 |
| 40) 2,3-Dichloro | 0.388 | 0.376 | 0.378 | 0.361 | 0.358 | 0.324 | 0.295 | 0.310 | 0.349 | 9.87 |
| 41) Caprolactam | 0.122 | 0.118 | 0.116 | 0.112 | 0.114 | 0.105 | 0.077 | | 0.109 | 13.97 |
| 42) Hexachlorobu | 0.202 | 0.195 | 0.187 | 0.178 | 0.183 | 0.175 | 0.169 | 0.197 | 0.186 | 6.26 |

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** E3M631-ICC631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14202.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
43) 4-Chloro-3-m 0.303 0.305 0.311 0.293 0.291 0.244             0.291   8.32
44) 2-Methylnaph 0.801 0.772 0.777 0.733 0.744 0.683 0.632 0.606 0.718   9.89
45) 1-Methylnaph 0.773 0.751 0.758 0.718 0.736 0.694 0.703 0.830 0.745   5.86
46) Dimethylnaph 0.712 0.687 0.681 0.644 0.644 0.601 0.583 0.642 0.649   6.69

47) I   Acenaphthene-d10      ----------------ISTD---------------------
48) Hexachlorocy 0.332 0.321 0.338 0.301 0.278 0.229             0.300  13.65
49) 2,4,6-Trichl 0.425 0.414 0.408 0.368 0.353 0.294             0.377  13.09
50) 2,4,5-Trichl 0.444 0.427 0.435 0.403 0.379 0.343 0.293       0.389  14.17
51) 2-Fluorobiph 1.556 1.508 1.535 1.422 1.458 1.302 1.276 1.321 1.422   7.76
52) 2-Chloronaph 1.301 1.260 1.276 1.171 1.203 1.083 1.086 1.109 1.186   7.39
53) Biphenyl     1.784 1.730 1.696 1.566 1.600 1.446 1.454 1.524 1.600   7.90
54) 2-Nitroanili 0.335 0.323 0.328 0.311 0.308 0.278 0.223       0.301  12.96
55) Dimethylphth 1.448 1.405 1.410 1.305 1.340 1.231 1.252 1.396 1.348   5.88
56) Acenaphthyle 2.145 2.075 2.088 1.946 1.955 1.788 1.793 1.994 1.973   6.67
57) 2,6-Dinitrot 0.319 0.312 0.317 0.288 0.292 0.265 0.226 0.223 0.280  13.80
58) 3-Nitroanili 0.374 0.358 0.360 0.330 0.329 0.294 0.253 0.298 0.325  12.54
59) Acenaphthene 1.325 1.283 1.296 1.221 1.251 1.175 1.215 1.369 1.267   5.03
60) 2,4-Dinitrop 0.190 0.182 0.168 0.128 0.108 0.060             0.139  35.97
            ----- Linear regression -----  Coefficient =  0.9969
              Response Ratio = -0.05712 + 0.19780 *A

61) 4-Nitropheno 0.198 0.189 0.188 0.155 0.142 0.094             0.161  24.55
            ----- Linear regression -----  Coefficient =  0.9984
              Response Ratio = -0.01934 + 0.20273 *A

62) Dibenzofuran 1.742 1.680 1.709 1.608 1.635 1.512 1.540 1.721 1.643   5.17
63) 2,4-Dinitrot 0.433 0.419 0.435 0.398 0.403 0.351 0.278       0.388  14.50
64) 2,3,4,6-Tetr 0.369 0.353 0.348 0.315 0.311 0.269             0.327  11.18
65) Diethylphtha 1.518 1.455 1.457 1.361 1.396 1.313 1.270 1.499 1.409   6.32
66) Fluorene     1.484 1.431 1.446 1.350 1.382 1.262 1.294 1.460 1.388   5.82
67) 4-Chlorophen 0.725 0.688 0.667 0.615 0.622 0.585 0.601 0.656 0.645   7.38
68) 4-Nitroanili 0.351 0.340 0.352 0.331 0.333 0.284 0.229       0.317  14.22

69) I   Phenanthrene-d10      ----------------ISTD---------------------
70) 4,6-Dinitro- 0.155 0.150 0.151 0.138 0.131 0.095             0.137  16.35
            ----- Linear regression -----  Coefficient =  0.9993
              Response Ratio = -0.00864 + 0.15689 *A

71) n-Nitrosodip 0.593 0.578 0.585 0.565 0.577 0.519 0.536 0.588 0.568   4.66
72) 1,2-Diphenyl 0.799 0.775 0.789 0.782 0.743 0.690 0.727 0.776 0.760   4.86
73) 2,4,6-Tribro 0.103 0.099 0.099 0.091 0.093 0.080 0.070 0.074 0.089  14.03
74) 4-Bromopheny 0.209 0.203 0.207 0.200 0.204 0.187 0.188 0.214 0.202   4.78
75) Hexachlorobe 0.216 0.211 0.215 0.208 0.212 0.200 0.217 0.237 0.214   4.98
76) Pentachlorop 0.167 0.159 0.156 0.141 0.140 0.111 0.093       0.138  19.56
            ----- Linear regression -----  Coefficient =  0.9987
              Response Ratio = -0.01768 + 0.16679 *A

77) Phenanthrene 1.166 1.139 1.179 1.149 1.179 1.121 1.190 1.397 1.190   7.30
78) Anthracene   1.181 1.156 1.223 1.194 1.226 1.161 1.196 1.349 1.211   5.07
79) Carbazole    1.032 0.986 1.043 1.010 1.030 1.000 1.018 1.224 1.043   7.24
80) Di-n-butylph 1.369 1.343 1.412 1.365 1.408 1.249 1.168 1.413 1.341   6.58
81) Fluoranthene 1.239 1.215 1.257 1.205 1.243 1.137 1.162 1.421 1.235   6.94
82) Octadecane   0.396 0.383 0.400 0.394 0.419 0.390 0.375 0.415 0.396   3.71

83) I   Chrysene-d12          ----------------ISTD---------------------
84) Pyrene       1.189 1.165 1.259 1.211 1.253 1.194 1.196 1.540 1.251   9.67
85) Butyl steara 0.253 0.240 0.258 0.250 0.282 0.284 0.314       0.269   9.58
86) Terphenyl-d1 0.875 0.849 0.879 0.831 0.878 0.826 0.833 1.026 0.875   7.43
87) Butylbenzylp 0.561 0.539 0.585 0.552 0.570 0.516 0.482 0.571 0.547   6.19
```

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** E3M631-ICC631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14202.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
 88) Benzo[a]anth 1.082 1.042 1.101 1.043 1.077 1.009 1.023 1.322 1.087   9.19
 89) 3,3'-Dichlor 0.426 0.406 0.408 0.374 0.386 0.352 0.326 0.344 0.378   9.32
 90) Chrysene     1.122 1.064 1.133 1.068 1.138 1.055 1.069 1.403 1.131  10.13
 91) bis(2-Ethylh 0.818 0.783 0.833 0.779 0.802 0.715 0.655 0.733 0.765   7.81

 92) I   Perylene-d12          ----------------ISTD---------------------
 93) Di-n-octylph 1.757 1.694 1.669 1.506 1.517 1.298 1.118 1.237 1.474  15.87
             ----- Linear regression -----  Coefficient =  0.9989
               Response Ratio = -0.06441 + 1.75106 *A

 94) Benzo[b]fluo 1.876 1.792 1.461 1.175 1.173 1.034 1.067 1.087 1.333  25.24
          ----- Quadratic regression -----                Coefficient =  0.9991
               Response Ratio = -0.01418 + 1.09221 *A + 0.32519 *A^2

 95) Benzo[k]fluo 0.999 1.009 1.206 1.255 1.319 1.192 1.108 1.531 1.202  14.49
 96) Benzo[a]pyre 1.241 1.215 1.212 1.113 1.136 1.045 1.084 1.080 1.141   6.41
 97) Indeno[1,2,3 1.385 1.337 1.270 1.169 1.180 1.047 1.034 1.131 1.194  10.72
 98) Dibenz(a,h)a 1.044 1.015 0.978 0.888 0.905 0.800 0.795 0.875 0.912  10.19
 99) Dibenz[a,h]a 1.286 1.250 1.156 1.015 1.029 0.914 0.927 1.024 1.075  13.05
100) 7,12-Dimethy 0.652 0.637 0.631 0.560 0.452 0.336 0.312       0.511  28.36
             ----- Linear regression -----  Coefficient =  0.9994
               Response Ratio = -0.04290 + 0.66378 *A

101) Benzo[g,h,i] 1.133 1.086 1.077 0.998 1.023 0.912 0.930 1.015 1.022   7.46


 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M3M630.M          Tue Sep 29 19:17:23 2009   MS3M
```

8.7.2

8

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14207.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m631\3m14207.D          Vial: 18
Acq On    : 29 Sep 2009   1:00 pm                   Operator: kristis
Sample    : icv631-50                               Inst    : MS3M
Misc      : op39946,E3M631,1000,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Tue Sep 29 16:08:16 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 138 | 0.00 | 3.96 |
| 9 | t | Phenol | 1.654 | 1.566 | 5.3 | 125 | 0.02 | 3.62 |
| 12 | t | 2-Chlorophenol | 1.442 | 1.489 | -3.3 | 138 | 0.01 | 3.75 |
| 19 | t | 2-Methylphenol | 1.148 | 1.192 | -3.8 | 132 | 0.01 | 4.35 |
| 21 | t | 3&4-Methylphenol | 1.222 | 1.245 | -1.9 | 127 | 0.02 | 4.55 |
| 24 | I | Naphthalene-d8 | 1.000 | 1.000 | 0.0 | 136 | 0.00 | 5.68 |
| 29 | t | 2-Nitrophenol | 0.207 | 0.212 | -2.4 | 128 | 0.00 | 5.18 |
| 30 | t | 2,4-Dimethylphenol | 0.324 | 0.347 | -7.1 | 132 | 0.01 | 5.28 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 31 | | Benzoic Acid | 50.000 | 40.517 | 19.0 | 111 | 0.12 | 5.58 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 32 | t | bis(2-Chloroethoxy)methan | | ----------NA---------- | | | | |
| 33 | t | 2,4-Dichlorophenol | 0.299 | 0.289 | 3.3 | 125 | 0.01 | 5.52 |
| 34 | | 2,6-Dichlorophenol | 0.293 | 0.292 | 0.3 | 126 | 0.00 | 5.85 |
| 43 | t | 4-Chloro-3-methylphenol | 0.291 | 0.300 | -3.1 | 131 | 0.01 | 6.63 |
| 47 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 133 | 0.00 | 8.38 |
| 49 | t | 2,4,6-Trichlorophenol | 0.377 | 0.379 | -0.5 | 124 | 0.01 | 7.26 |
| 50 | t | 2,4,5-Trichlorophenol | 0.389 | 0.410 | -5.4 | 126 | 0.01 | 7.30 |
| | | ---------- | True | Calc. | % Drif t | ---------- | | |
| 60 | t | 2,4-Dinitrophenol | 50.000 | 47.148 | 5.7 | 112 | 0.00 | 8.56 |
| 61 | t | 4-Nitrophenol | 50.000 | 43.872 | 12.3 | 115 | 0.01 | 8.74 |
| 64 | | 2,3,4,6-Tetrachlorophenol | 0.327 | 0.332 | -1.5 | 127 | 0.01 | 8.98 |
| 69 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 125 | 0.00 | 10.70 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 70 | t | 4,6-Dinitro-2-methylpheno | 50.000 | 48.278 | 3.4 | 120 | 0.01 | 9.43 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 76 | t | Pentachlorophenol | 50.000 | 49.297 | 1.4 | 120 | 0.00 | 10.53 |

8.7.3

8

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14207.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
--------------------------------------------------------------------------
--------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    3m14201.D  M3M630.M         Tue Sep 29 17:02:03 2009   MS3M
```

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14208.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m631\3m14208.D          Vial: 19
Acq On    : 29 Sep 2009   1:28 pm                   Operator: kristis
Sample    : icv631-50                               Inst    : MS3M
Misc      : op39946,E3M631,1000,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Tue Sep 29 19:17:09 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 139 | 0.01 | 3.96 |
| 2 | t | 1,4-Dioxane | 0.266 | 0.227 | 14.7 | 117 | 0.02 | 1.59 |
| 3 | t | Pyridine | 1.266 | 1.076 | 15.0 | 118 | -0.01 | 1.77 |
| 4 | t | N-Nitrosodimethylamine | 0.677 | 0.643 | 5.0 | 128 | 0.02 | 1.77 |
| 5 | S | 2-Fluorophenol | | ----------NA---------- | | | | |
| 6 | t | Indene | 2.026 | 2.148 | -6.0 | 144 | 0.00 | 4.31 |
| 7 | t | Cumene | 2.781 | 2.454 | 11.8 | 121 | 0.01 | 3.13 |
| 8 | S | Phenol-d5 | | ----------NA---------- | | | | |
| 9 | t | Phenol | | ----------NA---------- | | | | |
| 11 | t | bis(2-Chloroethyl)ether | 1.184 | 1.101 | 7.0 | 126 | 0.00 | 3.70 |
| 12 | t | 2-Chlorophenol | | ----------NA---------- | | | | |
| 13 | t | Decane | 1.047 | 0.942 | 10.0 | 124 | 0.00 | 3.81 |
| 14 | t | 1,3-Dichlorobenzene | 1.579 | 1.443 | 8.6 | 125 | 0.00 | 3.91 |
| 15 | t | 1,4-Dichlorobenzene | 1.627 | 1.496 | 8.1 | 125 | 0.00 | 3.98 |
| 16 | t | Benzyl alcohol | 0.841 | 0.775 | 7.8 | 119 | 0.02 | 4.19 |
| 17 | t | 1,2-Dichlorobenzene | 1.525 | 1.398 | 8.3 | 125 | 0.00 | 4.21 |
| 18 | t | Acetophenone | 1.786 | 1.783 | 0.2 | 135 | 0.01 | 4.52 |
| 19 | t | 2-Methylphenol | | ----------NA---------- | | | | |
| 20 | t | 2,2'-oxybis(1-Chloropropa | 0.453 | 0.409 | 9.7 | 126 | 0.00 | 4.38 |
| 21 | t | 3&4-Methylphenol | | ----------NA---------- | | | | |
| 22 | t | n-Nitroso-di-n-propylamin | 0.744 | 0.704 | 5.4 | 125 | 0.01 | 4.57 |
| 23 | t | Hexachloroethane | 0.523 | 0.478 | 8.6 | 125 | 0.00 | 4.60 |
| 24 | I | Naphthalene-d8 | 1.000 | 1.000 | 0.0 | 139 | 0.00 | 5.68 |
| 25 | S | Nitrobenzene-d5 | | ----------NA---------- | | | | |
| 26 | t | Nitrobenzene | 0.185 | 0.167 | 9.7 | 122 | 0.01 | 4.74 |
| 27 | t | Quinoline | 0.643 | 0.673 | -4.7 | 136 | 0.00 | 6.22 |
| 28 | t | Isophorone | 0.572 | 0.519 | 9.3 | 118 | 0.00 | 5.06 |
| 29 | t | 2-Nitrophenol | | ----------NA---------- | | | | |
| 30 | t | 2,4-Dimethylphenol | | ----------NA---------- | | | | |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 31 | | Benzoic Acid | | ----------NA---------- | | | | |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 32 | t | bis(2-Chloroethoxy)methan | 0.357 | 0.339 | 5.0 | 126 | 0.01 | 5.42 |
| 33 | t | 2,4-Dichlorophenol | | ----------NA---------- | | | | |
| 34 | | 2,6-Dichlorophenol | | ----------NA---------- | | | | |
| 35 | t | 1,3,5-Trichlorobenzene | | ----------NA---------- | | | | |
| 36 | t | 1,2,4-Trichlorobenzene | 0.324 | 0.303 | 6.5 | 126 | 0.00 | 5.63 |
| 37 | t | 1,2,3-Trichlorobenzene | | ----------NA---------- | | | | |
| 38 | t | Naphthalene | 1.132 | 1.013 | 10.5 | 120 | 0.01 | 5.71 |

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14208.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 40 | t | 2,3-Dichloroaniline | 0.349 | 0.320 | 8.3 | 118 | 0.02 | 7.26 |
| 41 | t | Caprolactam | 0.109 | 0.100 | 8.3 | 120 | 0.04 | 6.36 |
| 42 | t | Hexachlorobutadiene | 0.186 | 0.175 | 5.9 | 130 | 0.00 | 6.00 |
| 43 | t | 4-Chloro-3-methylphenol | | ----------NA---------- | | | | |
| 44 | t | 2-Methylnaphthalene | 0.718 | 0.694 | 3.3 | 124 | 0.01 | 6.75 |
| 45 | t | 1-Methylnaphthalene | 0.745 | 0.685 | 8.1 | 125 | 0.01 | 6.91 |
| 46 | t | Dimethylnaphthalene | 0.649 | 0.626 | 3.5 | 128 | 0.01 | 7.73 |
| 47 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 130 | 0.00 | 8.39 |
| 48 | t | Hexachlorocyclopentadiene | 0.300 | 0.290 | 3.3 | 111 | 0.01 | 7.12 |
| 49 | t | 2,4,6-Trichlorophenol | | ----------NA---------- | | | | |
| 50 | t | 2,4,5-Trichlorophenol | | ----------NA---------- | | | | |
| 51 | S | 2-Fluorobiphenyl | | ----------NA---------- | | | | |
| 52 | t | 2-Chloronaphthalene | 1.186 | 1.168 | 1.5 | 119 | 0.01 | 7.49 |
| 53 | t | Biphenyl | 1.600 | 1.644 | -2.7 | 126 | 0.02 | 7.51 |
| 54 | t | 2-Nitroaniline | 0.301 | 0.310 | -3.0 | 122 | 0.02 | 7.75 |
| 55 | t | Dimethylphthalate | 1.348 | 1.291 | 4.2 | 119 | 0.02 | 8.13 |
| 56 | t | Acenaphthylene | 1.973 | 1.721 | 12.8 | 107 | 0.02 | 8.14 |
| 57 | t | 2,6-Dinitrotoluene | 0.280 | 0.290 | -3.6 | 119 | 0.02 | 8.22 |
| 58 | t | 3-Nitroaniline | 0.325 | 0.298 | 8.3 | 107 | 0.03 | 8.42 |
| 59 | t | Acenaphthene | 1.267 | 1.184 | 6.6 | 118 | 0.02 | 8.44 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 60 | t | 2,4-Dinitrophenol | | ----------NA---------- | | | | |
| 61 | t | 4-Nitrophenol | | ----------NA---------- | | | | |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 62 | t | Dibenzofuran | 1.643 | 1.633 | 0.6 | 124 | 0.02 | 8.69 |
| 63 | t | 2,4-Dinitrotoluene | 0.388 | 0.379 | 2.3 | 113 | 0.03 | 8.82 |
| 64 | | 2,3,4,6-Tetrachlorophenol | | ----------NA---------- | | | | |
| 65 | t | Diethylphthalate | 1.409 | 1.336 | 5.2 | 119 | 0.02 | 9.26 |
| 66 | t | Fluorene | 1.388 | 1.349 | 2.8 | 121 | 0.02 | 9.23 |
| 67 | t | 4-Chlorophenyl-phenylethe | 0.645 | 0.617 | 4.3 | 120 | 0.02 | 9.28 |
| 68 | t | 4-Nitroaniline | 0.317 | 0.288 | 9.1 | 106 | 0.03 | 9.40 |
| 69 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 122 | 0.00 | 10.69 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 70 | t | 4,6-Dinitro-2-methylpheno | | ----------NA---------- | | | | |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 71 | t | n-Nitrosodiphenylamine | 0.568 | 0.584 | -2.8 | 122 | 0.02 | 9.50 |
| 72 | t | 1,2-Diphenylhydrazine | 0.760 | 0.798 | -5.0 | 123 | 0.02 | 9.53 |
| 73 | S | 2,4,6-Tribromophenol | | ----------NA---------- | | | | |
| 74 | t | 4-Bromophenyl-phenylether | 0.202 | 0.204 | -1.0 | 120 | 0.01 | 10.04 |
| 75 | t | Hexachlorobenzene | 0.214 | 0.212 | 0.9 | 120 | 0.02 | 10.23 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 76 | t | Pentachlorophenol | | ----------NA---------- | | | | |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 77 | t | Phenanthrene | 1.190 | 1.158 | 2.7 | 120 | 0.02 | 10.73 |
| 78 | t | Anthracene | 1.211 | 1.167 | 3.6 | 116 | 0.03 | 10.81 |
| 79 | t | Carbazole | 1.043 | 1.084 | -3.9 | 127 | 0.02 | 11.11 |
| 80 | t | Di-n-butylphthalate | 1.341 | 1.382 | -3.1 | 119 | 0.02 | 11.82 |
| 81 | t | Fluoranthene | 1.235 | 1.198 | 3.0 | 116 | 0.02 | 12.52 |
| 82 | t | Octadecane | 0.396 | 0.421 | -6.3 | 128 | 0.02 | 10.71 |
| 83 | I | Chrysene-d12 | 1.000 | 1.000 | 0.0 | 130 | 0.01 | 14.43 |
| 84 | t | Pyrene | 1.251 | 1.111 | 11.2 | 115 | 0.02 | 12.81 |

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14208.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 85 | | Butyl stearate | | ----------NA---------- | | | | |
| 86 | S | Terphenyl-d14 | | ----------NA---------- | | | | |
| 87 | t | Butylbenzylphthalate | 0.547 | 0.525 | 4.0 | 116 | 0.02 | 13.85 |
| 88 | t | Benzo[a]anthracene | 1.087 | 0.976 | 10.2 | 115 | 0.02 | 14.40 |
| 89 | t | 3,3'-Dichlorobenzidine | 0.378 | 0.316 | 16.4 | 101 | 0.01 | 14.43 |
| 90 | t | Chrysene | 1.131 | 1.000 | 11.6 | 115 | 0.03 | 14.47 |
| 91 | t | bis(2-Ethylhexyl)phthalat | 0.765 | 0.753 | 1.6 | 118 | 0.01 | 14.63 |
| 92 | I | Perylene-d12 | 1.000 | 1.000 | 0.0 | 123 | 0.00 | 16.08 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 93 | t | Di-n-octylphthalate | 50.000 | 46.750 | 6.5 | 117 | 0.02 | 15.35 |
| 94 | t | Benzo[b]fluoranthene | 50.000 | 45.217 | 9.6 | 111 | 0.03 | 15.69 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 95 | t | Benzo[k]fluoranthene | 1.202 | 1.159 | 3.6 | 119 | 0.04 | 15.72 |
| 96 | t | Benzo[a]pyrene | 1.141 | 1.067 | 6.5 | 109 | 0.03 | 16.02 |
| 97 | t | Indeno[1,2,3-cd]pyrene | 1.194 | 1.205 | -0.9 | 117 | -0.24 | 17.16 |
| 98 | t | Dibenz(a,h)acridine | 0.912 | 0.956 | -4.8 | 121 | 0.03 | 16.93 |
| 99 | t | Dibenz[a,h]anthracene | 1.075 | 1.047 | 2.6 | 112 | 0.04 | 17.18 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 100 | t | 7,12-Dimethylbenz(a)anthr | 50.000 | 44.385 | 11.2 | 109 | 0.03 | 15.71 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 101 | t | Benzo[g,h,i]perylene | 1.022 | 0.977 | 4.4 | 112 | 0.05 | 17.45 |

---
---

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14201.D M3M630.M Tue Sep 29 19:25:45 2009 MS3M

8.7.4

8

# Initial Calibration Verification



**Job Number:** JA31597 **Sample:** E3M631-ICV631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M14209.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m631\3m14209.D          Vial: 20
Acq On    : 29 Sep 2009   1:56 pm                   Operator: kristis
Sample    : icv631-50                               Inst    : MS3M
Misc      : op39946,E3M631,1000,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Tue Sep 29 16:08:16 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 105 | 0.00 | 3.95 |
| 10 | t | Aniline | 1.686 | 1.732 | -2.7 | 98 | 0.00 | 3.63 |
| 24 | I | Naphthalene-d8 | 1.000 | 1.000 | 0.0 | 105 | 0.00 | 5.68 |
| 39 | t | 4-Chloroaniline | 0.433 | 0.454 | -4.8 | 99 | 0.00 | 5.85 |
| 102 | | 1,4-Dichlorobenzene-d4a | 1.000 | 1.000 | 0.0 | 135 | 0.00 | 3.95 |
| 103 | | Benzaldehyde | 0.973 | 0.890 | 8.5 | 115 | -0.01 | 3.47 |
| 108 | | Chrysene-d12a | 1.000 | 1.000 | 0.0 | 134 | 0.00 | 14.42 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 109 | | Benzidine | 50.000 | 53.520 | -7.0 | 131 | -0.01 | 12.76 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14201.D M3M630.M Tue Sep 29 17:25:54 2009 MS3M

8.7.5

8

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M662-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15024.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m662\3m15024.D          Vial: 2
Acq On    :  5 Nov 2009   3:56 pm                   Operator: larisap
Sample    : cc630-25                                Inst    : MS3M
Misc      : op40736,E3M662,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Wed Nov 04 15:50:07 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 79 | -0.03 | 3.65 |
| 2 | t | 1,4-Dioxane | 0.266 | 0.381 | -43.2# | 114 | -0.03 | 1.38 |
| 3 | t | Pyridine | 1.266 | 1.283 | -1.3 | 81 | -0.02 | 1.58 |
| 4 | t | N-Nitrosodimethylamine | 0.677 | 0.677 | 0.0 | 79 | -0.02 | 1.58 |
| 5 | S | 2-Fluorophenol | 1.264 | 1.232 | 2.5 | 77 | -0.04 | 2.52 |
| 6 | t | Indene | 2.026 | 2.042 | -0.8 | 80 | -0.03 | 3.99 |
| 7 | t | Cumene | 2.781 | 2.856 | -2.7 | 82 | -0.02 | 2.83 |
| 8 | S | Phenol-d5 | 1.529 | 1.715 | -12.2 | 87 | -0.06 | 3.45 |
| 9 | t | Phenol | 1.654 | 1.626 | 1.7 | 77 | -0.06 | 3.47 |
| 10 | t | Aniline | 1.686 | 0.994 | 41.0# | 43# | -0.02 | 3.38 |
| 11 | t | bis(2-Chloroethyl)ether | 1.184 | 1.635 | -38.1# | 109 | -0.02 | 3.42 |
| 12 | t | 2-Chlorophenol | 1.442 | 1.441 | 0.1 | 79 | -0.03 | 3.52 |
| 13 | t | Decane | 1.047 | 1.569 | -49.9# | 120 | -0.02 | 3.47 |
| 14 | t | 1,3-Dichlorobenzene | 1.579 | 1.509 | 4.4 | 77 | -0.03 | 3.60 |
| 15 | t | 1,4-Dichlorobenzene | 1.627 | 1.664 | -2.3 | 83 | -0.03 | 3.67 |
| 16 | t | Benzyl alcohol | 0.841 | 0.753 | 10.5 | 69 | -0.03 | 3.96 |
| 17 | t | 1,2-Dichlorobenzene | 1.525 | 1.499 | 1.7 | 79 | -0.03 | 3.90 |
| 18 | t | Acetophenone | 1.786 | 1.840 | -3.0 | 81 | -0.02 | 4.24 |
| 19 | t | 2-Methylphenol | 1.148 | 1.178 | -2.6 | 78 | -0.03 | 4.15 |
| 20 | t | 2,2'-oxybis(1-Chloropropa | 0.453 | 0.434 | 4.2 | 76 | -0.03 | 4.06 |
| 21 | t | 3&4-Methylphenol | 1.222 | 1.228 | -0.5 | 74 | -0.03 | 4.39 |
| 22 | t | n-Nitroso-di-n-propylamin | 0.744 | 0.828 | -11.3 | 87 | -0.02 | 4.27 |
| 23 | t | Hexachloroethane | 0.523 | 0.552 | -5.5 | 85 | -0.03 | 4.25 |
| 24 | I | Naphthalene-d8 | 1.000 | 1.000 | 0.0 | 78 | -0.03 | 5.35 |
| 25 | S | Nitrobenzene-d5 | 0.378 | 0.405 | -7.1 | 84 | -0.02 | 4.43 |
| 26 | t | Nitrobenzene | 0.185 | 0.183 | 1.1 | 77 | -0.02 | 4.46 |
| 27 | t | Quinoline | 0.643 | 0.659 | -2.5 | 78 | -0.02 | 5.96 |
| 28 | t | Isophorone | 0.572 | 0.645 | -12.8 | 85 | -0.03 | 4.77 |
| 29 | t | 2-Nitrophenol | 0.207 | 0.210 | -1.4 | 78 | -0.02 | 4.90 |
| 30 | t | 2,4-Dimethylphenol | 0.324 | 0.314 | 3.1 | 72 | -0.01 | 5.06 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 31 | | Benzoic Acid | 25.000 | 23.990 | 4.0 | 82 | -0.02 | 5.48 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 32 | t | bis(2-Chloroethoxy)methan | 0.357 | 0.368 | -3.1 | 80 | -0.03 | 5.11 |
| 33 | t | 2,4-Dichlorophenol | 0.299 | 0.289 | 3.3 | 76 | 0.00 | 5.34 |
| 34 | | 2,6-Dichlorophenol | 0.293 | 0.313 | -6.8 | 82 | -0.02 | 5.59 |
| 35 | t | 1,3,5-Trichlorobenzene | 0.348 | 0.360 | -3.4 | 82 | -0.10 | 4.85 |
| 36 | t | 1,2,4-Trichlorobenzene | 0.324 | 0.340 | -4.9 | 84 | -0.03 | 5.30 |
| 37 | t | 1,2,3-Trichlorobenzene | 0.323 | 0.339 | -5.0 | 84 | -0.10 | 5.65 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M662-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15024.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 38 | t | Naphthalene | 1.132 | 1.129 | 0.3 | 79 | -0.03 | 5.37 |
| 39 | t | 4-Chloroaniline | 0.433 | 0.405 | 6.5 | 70 | -0.02 | 5.61 |
| 40 | t | 2,3-Dichloroaniline | 0.349 | 0.362 | -3.7 | 79 | -0.03 | 6.95 |
| 41 | t | Caprolactam | 0.109 | 0.132 | -21.1# | 93 | -0.09 | 6.19 |
| 42 | t | Hexachlorobutadiene | 0.186 | 0.198 | -6.5 | 87 | -0.03 | 5.63 |
| 43 | t | 4-Chloro-3-methylphenol | 0.291 | 0.326 | -12.0 | 87 | 0.00 | 6.50 |
| 44 | t | 2-Methylnaphthalene | 0.718 | 0.732 | -1.9 | 78 | -0.03 | 6.41 |
| 45 | t | 1-Methylnaphthalene | 0.745 | 0.835 | -12.1 | 91 | -0.03 | 6.57 |
| 46 | t | Dimethylnaphthalene | 0.649 | 0.669 | -3.1 | 81 | -0.03 | 7.38 |
| 47 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 81 | -0.03 | 8.03 |
| 48 | t | Hexachlorocyclopentadiene | 0.300 | 0.198 | 34.0# | 54 | -0.03 | 6.74 |
| 49 | t | 2,4,6-Trichlorophenol | 0.377 | 0.370 | 1.9 | 82 | -0.02 | 7.00 |
| 50 | t | 2,4,5-Trichlorophenol | 0.389 | 0.424 | -9.0 | 86 | 0.00 | 7.16 |
| 51 | S | 2-Fluorobiphenyl | 1.422 | 1.462 | -2.8 | 84 | -0.03 | 7.03 |
| 52 | t | 2-Chloronaphthalene | 1.186 | 1.218 | -2.7 | 85 | -0.03 | 7.15 |
| 53 | t | Biphenyl | 1.600 | 1.587 | 0.8 | 83 | -0.03 | 7.15 |
| 54 | t | 2-Nitroaniline | 0.301 | 0.344 | -14.3 | 90 | -0.02 | 7.51 |
| 55 | t | Dimethylphthalate | 1.348 | 1.349 | -0.1 | 84 | -0.03 | 7.80 |
| 56 | t | Acenaphthylene | 1.973 | 1.922 | 2.6 | 80 | -0.03 | 7.80 |
| 57 | t | 2,6-Dinitrotoluene | 0.280 | 0.287 | -2.5 | 81 | -0.02 | 7.92 |
| 58 | t | 3-Nitroaniline | 0.325 | 0.269 | 17.2 | 66 | -0.01 | 8.21 |
| 59 | t | Acenaphthene | 1.267 | 1.238 | 2.3 | 83 | -0.03 | 8.08 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 60 | t | 2,4-Dinitrophenol | 50.000 | 43.528 | 12.9 | 80 | 0.02 | 8.43 |
| 61 | t | 4-Nitrophenol | 25.000 | 18.574 | 25.7# | 63 | -0.09 | 8.88 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 62 | t | Dibenzofuran | 1.643 | 1.637 | 0.4 | 83 | -0.03 | 8.35 |
| 63 | t | 2,4-Dinitrotoluene | 0.388 | 0.422 | -8.8 | 86 | -0.02 | 8.58 |
| 64 | | 2,3,4,6-Tetrachlorophenol | 0.327 | 0.309 | 5.5 | 80 | -0.02 | 8.72 |
| 65 | t | Diethylphthalate | 1.409 | 1.389 | 1.4 | 83 | -0.03 | 8.90 |
| 66 | t | Fluorene | 1.388 | 1.405 | -1.2 | 85 | -0.03 | 8.88 |
| 67 | t | 4-Chlorophenyl-phenylethe | 0.645 | 0.673 | -4.3 | 89 | -0.03 | 8.91 |
| 68 | t | 4-Nitroaniline | 0.317 | 0.265 | 16.4 | 65 | -0.04 | 9.22 |
| 69 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 82 | -0.03 | 10.36 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 70 | t | 4,6-Dinitro-2-methylpheno | 25.000 | 24.369 | 2.5 | 83 | -0.02 | 9.23 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 71 | t | n-Nitrosodiphenylamine | 0.568 | 0.580 | -2.1 | 84 | -0.03 | 9.17 |
| 72 | t | 1,2-Diphenylhydrazine | 0.760 | 0.847 | -11.4 | 89 | -0.03 | 9.17 |
| 73 | S | 2,4,6-Tribromophenol | 0.089 | 0.127 | -42.7# | 114 | -0.03 | 9.35 |
| 74 | t | 4-Bromophenyl-phenylether | 0.202 | 0.234 | -15.8 | 96 | -0.04 | 9.67 |
| 75 | t | Hexachlorobenzene | 0.214 | 0.260 | -21.5# | 103 | -0.03 | 9.88 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 76 | t | Pentachlorophenol | 50.000 | 44.724 | 10.6 | 79 | -0.04 | 10.27 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 77 | t | Phenanthrene | 1.190 | 1.165 | 2.1 | 83 | -0.03 | 10.39 |
| 78 | t | Anthracene | 1.211 | 1.179 | 2.6 | 81 | -0.03 | 10.46 |
| 79 | t | Carbazole | 1.043 | 0.976 | 6.4 | 79 | -0.02 | 10.84 |
| 80 | t | Di-n-butylphthalate | 1.341 | 1.390 | -3.7 | 84 | -0.03 | 11.47 |
| 81 | t | Fluoranthene | 1.235 | 1.266 | -2.5 | 86 | -0.02 | 12.22 |
| 82 | t | Octadecane | 0.396 | 0.477 | -20.5# | 100 | -0.04 | 10.31 |

8.7.6

8

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M662-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15024.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 83 | I | Chrysene-d12 | 1.000 | 1.000 | 0.0 | 91 | -0.02 | 14.17 |
| 84 | t | Pyrene | 1.251 | 1.127 | 9.9 | 85 | -0.02 | 12.52 |
| 85 | | Butyl stearate | 0.269 | 0.317 | -17.8 | 115 | 0.03 | 13.59 |
| 86 | S | Terphenyl-d14 | 0.875 | 0.866 | 1.0 | 95 | -0.03 | 12.80 |
| 87 | t | Butylbenzylphthalate | 0.547 | 0.524 | 4.2 | 86 | -0.03 | 13.53 |
| 88 | t | Benzo[a]anthracene | 1.087 | 1.080 | 0.6 | 94 | -0.02 | 14.14 |
| 89 | t | 3,3'-Dichlorobenzidine | 0.378 | 0.377 | 0.3 | 92 | -0.02 | 14.19 |
| 90 | t | Chrysene | 1.131 | 1.083 | 4.2 | 92 | -0.03 | 14.19 |
| 91 | t | bis(2-Ethylhexyl)phthalat | 0.765 | 0.783 | -2.4 | 91 | -0.03 | 14.31 |
| 92 | I | Perylene-d12 | 1.000 | 1.000 | 0.0 | 95 | -0.02 | 15.85 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 93 | t | Di-n-octylphthalate | 25.000 | 22.497 | 10.0 | 93 | -0.03 | 15.03 |
| 94 | t | Benzo[b]fluoranthene | 25.000 | 23.537 | 5.9 | 96 | -0.02 | 15.44 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 95 | t | Benzo[k]fluoranthene | 1.202 | 1.312 | -9.2 | 100 | -0.02 | 15.47 |
| 96 | t | Benzo[a]pyrene | 1.141 | 1.148 | -0.6 | 99 | -0.02 | 15.79 |
| 97 | t | Indeno[1,2,3-cd]pyrene | 1.194 | 1.353 | -13.3 | 111 | -0.03 | 16.92 |
| 98 | t | Dibenz(a,h)acridine | 0.912 | 1.023 | -12.2 | 110 | -0.02 | 16.69 |
| 99 | t | Dibenz[a,h]anthracene | 1.075 | 1.166 | -8.5 | 110 | -0.03 | 16.90 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 100 | t | 7,12-Dimethylbenz(a)anthr | 25.000 | 19.515 | 21.9# | 77 | -0.03 | 15.42 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 101 | t | Benzo[g,h,i]perylene | 1.022 | 1.130 | -10.6 | 108 | -0.01 | 17.19 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14961.D M3M630.M Fri Nov 06 14:27:20 2009 MS3M

8.7.6

8

# Continuing Calibration Summary



**Job Number:** JA31597 **Sample:** E3M662-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15025.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m662\3m15025.D          Vial: 3
Acq On    :  5 Nov 2009   4:53 pm                   Operator: larisap
Sample    : cc630-50                                Inst    : MS3M
Misc      : op40736,E3M662,                         Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Wed Nov 04 15:50:07 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|
| 102 | 1,4-Dichlorobenzene-d4a | 1.000 | 1.000 | 0.0 | 91 | -0.02 | 3.66 |
| 103 | Benzaldehyde | 0.973 | 0.804 | 17.4 | 69 | -0.02 | 3.23 |
| 104 | Phenanthrene-d10a | 1.000 | 1.000 | 0.0 | 96 | -0.03 | 10.36 |
| 105 | Atrazine | 0.107 | 0.119 | -11.2 | 88 | -0.03 | 10.14 |
| 106 | Acenaphthene-d10a | 1.000 | 1.000 | 0.0 | 95 | -0.03 | 8.03 |
| 107 | 1,2,4,5-Tetrachlorobenzen | 0.538 | 0.582 | -8.2 | 88 | -0.03 | 6.74 |
| 108 | Chrysene-d12a | 1.000 | 1.000 | 0.0 | 102 | -0.03 | 14.16 |
| | ---------- | True | Calc. | % Drift | ---------- | | |
| 109 | Benzidine | 50.000 | 30.180 | 39.6# | 59 | -0.07 | 12.55 |
| | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 110 T | Methyl Parathion | 0.156 | 0.150 | 3.8 | 79 | -0.03 | 11.12 |
| 111 | Parathion | 0.138 | 0.138 | 0.0 | 87 | -0.03 | 11.73 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14758.D M3M630.M Fri Nov 06 14:29:48 2009 MS3M

8.7.7

8

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M664-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15063.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m664\3m15063.D          Vial: 2
Acq On    :  6 Nov 2009   8:06 pm                   Operator: larisap
Sample    : cc630-25                                Inst    : MS3M
Misc      : op40736,E3M664                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Wed Nov 04 15:50:07 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 76 | -0.06 | 3.61 |
| 2 | t | 1,4-Dioxane | 0.266 | 0.386 | -45.1# | 110 | -0.05 | 1.36 |
| 3 | t | Pyridine | 1.266 | 1.218 | 3.8 | 73 | -0.04 | 1.56 |
| 4 | t | N-Nitrosodimethylamine | 0.677 | 0.661 | 2.4 | 74 | -0.04 | 1.56 |
| 5 | S | 2-Fluorophenol | 1.264 | 1.226 | 3.0 | 73 | -0.05 | 2.51 |
| 6 | t | Indene | 2.026 | 2.020 | 0.3 | 76 | -0.05 | 3.96 |
| 7 | t | Cumene | 2.781 | 2.815 | -1.2 | 77 | -0.05 | 2.80 |
| 8 | S | Phenol-d5 | 1.529 | 1.800 | -17.7 | 88 | -0.09 | 3.42 |
| 9 | t | Phenol | 1.654 | 1.619 | 2.1 | 73 | -0.09 | 3.44 |
| 10 | t | Aniline | 1.686 | 0.950 | 43.7# | 40# | -0.05 | 3.36 |
| 11 | t | bis(2-Chloroethyl)ether | 1.184 | 1.545 | -30.5# | 99 | -0.05 | 3.39 |
| 12 | t | 2-Chlorophenol | 1.442 | 1.433 | 0.6 | 75 | -0.06 | 3.49 |
| 13 | t | Decane | 1.047 | 1.506 | -43.8# | 111 | -0.05 | 3.44 |
| 14 | t | 1,3-Dichlorobenzene | 1.579 | 1.500 | 5.0 | 73 | -0.06 | 3.57 |
| 15 | t | 1,4-Dichlorobenzene | 1.627 | 1.656 | -1.8 | 79 | -0.06 | 3.63 |
| 16 | t | Benzyl alcohol | 0.841 | 0.758 | 9.9 | 67 | -0.04 | 3.94 |
| 17 | t | 1,2-Dichlorobenzene | 1.525 | 1.519 | 0.4 | 77 | -0.06 | 3.86 |
| 18 | t | Acetophenone | 1.786 | 1.878 | -5.2 | 79 | -0.05 | 4.21 |
| 19 | t | 2-Methylphenol | 1.148 | 1.181 | -2.9 | 75 | -0.05 | 4.13 |
| 20 | t | 2,2'-oxybis(1-Chloropropa | 0.453 | 0.440 | 2.9 | 73 | -0.05 | 4.04 |
| 21 | t | 3&4-Methylphenol | 1.222 | 1.237 | -1.2 | 71 | -0.05 | 4.37 |
| 22 | t | n-Nitroso-di-n-propylamin | 0.744 | 0.803 | -7.9 | 81 | -0.05 | 4.24 |
| 23 | t | Hexachloroethane | 0.523 | 0.576 | -10.1 | 85 | -0.06 | 4.21 |
| 24 | I | Naphthalene-d8 | 1.000 | 1.000 | 0.0 | 76 | -0.06 | 5.31 |
| 25 | S | Nitrobenzene-d5 | 0.378 | 0.402 | -6.3 | 81 | -0.05 | 4.40 |
| 26 | t | Nitrobenzene | 0.185 | 0.178 | 3.8 | 73 | -0.05 | 4.43 |
| 27 | t | Quinoline | 0.643 | 0.639 | 0.6 | 74 | -0.03 | 5.95 |
| 28 | t | Isophorone | 0.572 | 0.641 | -12.1 | 83 | -0.05 | 4.74 |
| 29 | t | 2-Nitrophenol | 0.207 | 0.204 | 1.4 | 73 | -0.04 | 4.88 |
| 30 | t | 2,4-Dimethylphenol | 0.324 | 0.317 | 2.2 | 71 | -0.04 | 5.04 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 31 | | Benzoic Acid | 25.000 | 25.405 | -1.6 | 85 | -0.01 | 5.49 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 32 | t | bis(2-Chloroethoxy)methan | 0.357 | 0.365 | -2.2 | 77 | -0.05 | 5.08 |
| 33 | t | 2,4-Dichlorophenol | 0.299 | 0.299 | 0.0 | 77 | -0.03 | 5.31 |
| 34 | | 2,6-Dichlorophenol | 0.293 | 0.313 | -6.8 | 80 | -0.05 | 5.56 |
| 35 | t | 1,3,5-Trichlorobenzene | 0.348 | 0.359 | -3.2 | 80 | -0.13 | 4.82 |
| 36 | t | 1,2,4-Trichlorobenzene | 0.324 | 0.342 | -5.6 | 82 | -0.06 | 5.27 |
| 37 | t | 1,2,3-Trichlorobenzene | 0.323 | 0.346 | -7.1 | 83 | -0.13 | 5.62 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M664-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15063.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 38 | t | Naphthalene | 1.132 | 1.117 | 1.3 | 76 | -0.06 | 5.34 |
| 39 | t | 4-Chloroaniline | 0.433 | 0.372 | 14.1 | 62 | -0.03 | 5.60 |
| 40 | t | 2,3-Dichloroaniline | 0.349 | 0.360 | -3.2 | 76 | -0.06 | 6.92 |
| 41 | t | Caprolactam | 0.109 | 0.142 | -30.3# | 97 | -0.10 | 6.18 |
| 42 | t | Hexachlorobutadiene | 0.186 | 0.208 | -11.8 | 89 | -0.06 | 5.60 |
| 43 | t | 4-Chloro-3-methylphenol | 0.291 | 0.325 | -11.7 | 84 | -0.03 | 6.47 |
| 44 | t | 2-Methylnaphthalene | 0.718 | 0.724 | -0.8 | 75 | -0.06 | 6.38 |
| 45 | t | 1-Methylnaphthalene | 0.745 | 0.852 | -14.4 | 90 | -0.06 | 6.53 |
| 46 | t | Dimethylnaphthalene | 0.649 | 0.663 | -2.2 | 78 | -0.06 | 7.35 |
| 47 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 81 | -0.07 | 7.99 |
| 48 | t | Hexachlorocyclopentadiene | 0.300 | 0.205 | 31.7# | 55 | -0.07 | 6.70 |
| 49 | t | 2,4,6-Trichlorophenol | 0.377 | 0.373 | 1.1 | 82 | -0.04 | 6.98 |
| 50 | t | 2,4,5-Trichlorophenol | 0.389 | 0.411 | -5.7 | 83 | -0.03 | 7.14 |
| 51 | S | 2-Fluorobiphenyl | 1.422 | 1.430 | -0.6 | 82 | -0.07 | 6.99 |
| 52 | t | 2-Chloronaphthalene | 1.186 | 1.210 | -2.0 | 84 | -0.06 | 7.12 |
| 53 | t | Biphenyl | 1.600 | 1.557 | 2.7 | 81 | -0.07 | 7.12 |
| 54 | t | 2-Nitroaniline | 0.301 | 0.357 | -18.6 | 93 | -0.04 | 7.50 |
| 55 | t | Dimethylphthalate | 1.348 | 1.315 | 2.4 | 82 | -0.06 | 7.77 |
| 56 | t | Acenaphthylene | 1.973 | 1.867 | 5.4 | 78 | -0.06 | 7.76 |
| 57 | t | 2,6-Dinitrotoluene | 0.280 | 0.259 | 7.5 | 73 | -0.05 | 7.90 |
| 58 | t | 3-Nitroaniline | 0.325 | 0.320 | 1.5 | 79 | -0.02 | 8.20 |
| 59 | t | Acenaphthene | 1.267 | 1.196 | 5.6 | 80 | -0.07 | 8.04 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 60 | t | 2,4-Dinitrophenol | 50.000 | 41.838 | 16.3 | 76 | -0.01 | 8.40 |
| 61 | t | 4-Nitrophenol | 25.000 | 25.863 | -3.5 | 94 | -0.11 | 8.87 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 62 | t | Dibenzofuran | 1.643 | 1.585 | 3.5 | 80 | -0.06 | 8.31 |
| 63 | t | 2,4-Dinitrotoluene | 0.388 | 0.404 | -4.1 | 82 | -0.04 | 8.55 |
| 64 | | 2,3,4,6-Tetrachlorophenol | 0.327 | 0.302 | 7.6 | 78 | -0.05 | 8.68 |
| 65 | t | Diethylphthalate | 1.409 | 1.417 | -0.6 | 85 | -0.06 | 8.87 |
| 66 | t | Fluorene | 1.388 | 1.370 | 1.3 | 82 | -0.07 | 8.84 |
| 67 | t | 4-Chlorophenyl-phenylethe | 0.645 | 0.674 | -4.5 | 89 | -0.07 | 8.88 |
| 68 | t | 4-Nitroaniline | 0.317 | 0.263 | 17.0 | 65 | -0.04 | 9.22 |
| 69 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 83 | -0.07 | 10.32 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 70 | t | 4,6-Dinitro-2-methylpheno | 25.000 | 23.441 | 6.2 | 80 | -0.05 | 9.20 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 71 | t | n-Nitrosodiphenylamine | 0.568 | 0.572 | -0.7 | 84 | -0.06 | 9.13 |
| 72 | t | 1,2-Diphenylhydrazine | 0.760 | 0.881 | -15.9 | 93 | -0.06 | 9.13 |
| 73 | S | 2,4,6-Tribromophenol | 0.089 | 0.126 | -41.6# | 115 | -0.06 | 9.32 |
| 74 | t | 4-Bromophenyl-phenylether | 0.202 | 0.233 | -15.3 | 97 | -0.07 | 9.63 |
| 75 | t | Hexachlorobenzene | 0.214 | 0.258 | -20.6# | 103 | -0.07 | 9.83 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 76 | t | Pentachlorophenol | 50.000 | 38.725 | 22.5# | 67 | -0.08 | 10.23 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 77 | t | Phenanthrene | 1.190 | 1.122 | 5.7 | 81 | -0.07 | 10.35 |
| 78 | t | Anthracene | 1.211 | 1.120 | 7.5 | 78 | -0.07 | 10.43 |
| 79 | t | Carbazole | 1.043 | 0.912 | 12.6 | 75 | -0.04 | 10.82 |
| 80 | t | Di-n-butylphthalate | 1.341 | 1.368 | -2.0 | 83 | -0.07 | 11.43 |
| 81 | t | Fluoranthene | 1.235 | 1.222 | 1.1 | 84 | -0.05 | 12.19 |
| 82 | t | Octadecane | 0.396 | 0.457 | -15.4 | 96 | -0.07 | 10.27 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E3M664-CC630
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15063.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 83 | I | Chrysene-d12 | 1.000 | 1.000 | 0.0 | 89 | -0.06 | 14.12 |
| 84 | t | Pyrene | 1.251 | 1.108 | 11.4 | 82 | -0.05 | 12.49 |
| 85 | | Butyl stearate | 0.269 | 0.307 | -14.1 | 109 | 0.00 | 13.55 |
| 86 | S | Terphenyl-d14 | 0.875 | 0.861 | 1.6 | 93 | -0.06 | 12.76 |
| 87 | t | Butylbenzylphthalate | 0.547 | 0.536 | 2.0 | 87 | -0.06 | 13.49 |
| 88 | t | Benzo[a]anthracene | 1.087 | 1.089 | -0.2 | 93 | -0.06 | 14.10 |
| 89 | t | 3,3'-Dichlorobenzidine | 0.378 | 0.355 | 6.1 | 85 | -0.04 | 14.16 |
| 90 | t | Chrysene | 1.131 | 1.068 | 5.6 | 89 | -0.06 | 14.16 |
| 91 | t | bis(2-Ethylhexyl)phthalat | 0.765 | 0.790 | -3.3 | 90 | -0.06 | 14.27 |
| 92 | I | Perylene-d12 | 1.000 | 1.000 | 0.0 | 88 | -0.05 | 15.81 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 93 | t | Di-n-octylphthalate | 25.000 | 24.214 | 3.1 | 93 | -0.06 | 14.99 |
| 94 | t | Benzo[b]fluoranthene | 25.000 | 20.239 | 19.0 | 75 | -0.06 | 15.40 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 95 | t | Benzo[k]fluoranthene | 1.202 | 1.592 | -32.4# | 112 | -0.06 | 15.43 |
| 96 | t | Benzo[a]pyrene | 1.141 | 1.196 | -4.8 | 95 | -0.06 | 15.74 |
| 97 | t | Indeno[1,2,3-cd]pyrene | 1.194 | 1.381 | -15.7 | 104 | -0.07 | 16.87 |
| 98 | t | Dibenz(a,h)acridine | 0.912 | 1.044 | -14.5 | 104 | -0.05 | 16.65 |
| 99 | t | Dibenz[a,h]anthracene | 1.075 | 1.231 | -14.5 | 107 | -0.08 | 16.86 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 100 | t | 7,12-Dimethylbenz(a)anthr | 25.000 | 20.288 | 18.8 | 74 | -0.06 | 15.38 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 101 | t | Benzo[g,h,i]perylene | 1.022 | 1.129 | -10.5 | 100 | -0.05 | 17.15 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14961.D M3M630.M Mon Nov 09 13:47:36 2009 MS3M

8.7.8

8

# Continuing Calibration Summary



**Job Number:** JA31597 **Sample:** E3M664-CC631
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 3M15064.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\e3m664\3m15064.D          Vial: 3
Acq On    :  6 Nov 2009   8:37 pm                   Operator: larisap
Sample    : cc631-50                                Inst    : MS3M
Misc      : op40736,E3M664                          Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\METHODS\M3M630.M (RTE Integrator)
Title        : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
Last Update  : Wed Nov 04 15:50:07 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 202%
```

| | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|
| 102 | 1,4-Dichlorobenzene-d4a | 1.000 | 1.000 | 0.0 | 106 | -0.05 | 3.62 |
| 103 | Benzaldehyde | 0.973 | 0.825 | 15.2 | 83 | -0.04 | 3.21 |
| 104 | Phenanthrene-d10a | 1.000 | 1.000 | 0.0 | 112 | -0.06 | 10.32 |
| 105 | Atrazine | 0.107 | 0.119 | -11.2 | 103 | -0.06 | 10.11 |
| 106 | Acenaphthene-d10a | 1.000 | 1.000 | 0.0 | 113 | -0.07 | 7.99 |
| 107 | 1,2,4,5-Tetrachlorobenzen | 0.538 | 0.576 | -7.1 | 103 | -0.06 | 6.71 |
| 108 | Chrysene-d12a | 1.000 | 1.000 | 0.0 | 121 | -0.05 | 14.13 |
| | ---------- | True | Calc. | % Drift | ---------- | | |
| 109 | Benzidine | 50.000 | 22.797 | 54.4# | 53 | -0.06 | 12.56 |
| | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 110 T | Methyl Parathion | 0.156 | 0.149 | 4.5 | 93 | -0.06 | 11.09 |
| 111 | Parathion | 0.138 | 0.139 | -0.7 | 103 | -0.07 | 11.69 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3m14758.D M3M630.M Mon Nov 09 13:53:42 2009 MS3M

8.7.9

8

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** E4M597-ICC597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M12769.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
                         Response Factor Report  MS4M

 Method       : C:\msdchem\1\METHODS\M4M597SIM.M (RTE Integrator)
 Title        : Semi Volatile  GC/MS,zb-5 15m x .25mm x .25um
 Last Update  : Thu Oct 29 10:47:30 2009
 Response via : Initial Calibration

 Calibration Files
 5   =4m12770.D   0.05=4m12775.D   .2  =4m12773.D   2.5 =4m12769.D
 .02 =4m12776.D   .1  =4m12774.D   1   =4m12771.D   .01 =4m12777.D
 .5  =4m12772.D       =

  Compound
            5     0.05  .2    2.5   .02   .1    1     .01   .5      Avg    %RSD
 ---------------------------------------------------------------------------

 1) I   1-Methylnaphthalene-d ----------------ISTD---------------------
 2)  2-Fluorophenol
           0.505 0.769 0.684 0.601 0.739 0.812 0.656       0.680   0.681   14.31
 3)  Phenol-d5
           0.699 0.787 0.675 0.718 0.821 0.791 0.752       0.681   0.740    7.47
 4)  Phenol
                 1.120 0.986       1.103 1.153 1.023 0.992 1.005   1.054    6.52
 5)  bis(2-Chloroethyl)ether
           0.798 0.882 0.671 0.722 0.943 0.810 0.630 0.912 0.638   0.779   15.31
            ----- Linear regression -----  Coefficient =  0.9967
              Response Ratio = -0.01018 + 0.78885 *A

 6)  Nitrobenzene-d5
           0.485 0.688 0.618 0.546 0.681 0.714 0.597       0.612   0.617   12.44
 7)  Naphthalene
           2.040 2.369 2.054 2.053 2.498 2.360 2.028       1.945   2.168    9.52
 8)  Hexachlorobutadiene
           0.358 0.440 0.371 0.363 0.448 0.434 0.359       0.348   0.390   10.88
 9)  2-Methylnaphthalene
           1.791       1.772 1.739       2.184 1.745       1.655   1.814   10.30
10)  1-Methylnaphthalene
           1.581       1.517 1.572       1.832 1.519       1.478   1.583    8.06
11)  2-Fluorobiphenyl
           1.290 2.109 1.758 1.514 2.138 2.098 1.660       1.652   1.777   17.53

12) I   Fluorene-d10          ----------------ISTD---------------------
13)  Acenaphthylene
           2.076 2.159 1.893 1.945 2.278 2.163 1.961       1.886   2.045    7.10
14)  Acenaphthene
           1.285 1.414 1.192 1.271 1.485 1.418 1.268       1.209   1.318    8.14
15)  Fluorene
           1.511 1.610 1.438 1.479 1.854 1.603 1.428       1.425   1.544    9.42
16)  2,6-Dinitrotoluene
           0.609 0.362 0.358 0.568       0.386 0.465       0.401   0.450   22.67
         ----- Quadratic regression -----                Coefficient =  0.9994
              Response Ratio = -0.00812 + 0.51782 *A + 0.07940 *A^2

17)  2,4,6-Tribromophenol
           0.194 0.201 0.198 0.219 0.191 0.235 0.216 0.166 0.209   0.203    9.68
18)  Hexachlorobenzene
           0.384 0.468 0.388 0.374 0.529 0.465 0.369       0.371   0.418   14.51
19)  Pentachlorophenol
           0.244 0.145 0.147 0.222       0.160 0.175       0.162   0.179   21.56
            ----- Linear regression -----  Coefficient =  0.9966
```

# Initial Calibration Summary

**Job Number:** JA31597 **Sample:** E4M597-ICC597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M12769.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

```
                Response Ratio = -0.03766 + 0.24530 *A

20)  Phenanthrene
           1.573 1.762 1.536 1.540       1.767 1.515       1.469   1.594    7.55
21)  Anthracene
           1.521 1.518 1.224 1.455       1.386 1.372       1.313   1.398    7.77
22)  2,4-Dinitrotoluene
                 0.268 0.293             0.295 0.519       0.376   0.350   29.42
          ----- Quadratic regression -----                Coefficient =  1.0000
                Response Ratio = 0.00058 + 0.22656 *A + 1.16172 *A^2


23) I   Fluoranthene-d10      ----------------ISTD---------------------
24)  Fluoranthene
           1.420 1.969 1.540 1.451       1.882 1.448       1.496   1.601   14.15
25)  Pyrene
           1.465 1.709 1.353 1.442       1.670 1.421       1.384   1.492    9.40
26)  Terphenyl-d14
           0.332 0.788 0.654 0.408       0.786 0.576       0.642   0.598   29.29
27)  Benzo[a]anthracene
           1.251 1.151 1.048 1.208       1.173 1.169       1.098   1.157    5.84
28)  Chrysene
           1.196       1.300 1.196       1.493 1.136       1.059   1.230   12.30
29)  bis(2-Ethylhexyl)phthalate
           0.852 1.386 0.740 0.828       0.996 0.740       0.725   0.895   26.37
          ----- Quadratic regression -----                Coefficient =  0.9996
                Response Ratio = 0.00014 + 0.77145 *A + 0.06538 *A^2


30) I   Benzo(a)pyrene-d12    ----------------ISTD---------------------
31)  Benzo[b]fluoranthene
           0.523       0.406 0.461       0.436 0.504       0.472   0.467    9.19
32)  Benzo[k]fluoranthene
           0.367 0.483 0.400 0.451       0.533 0.363       0.369   0.424   15.78
          ----- Quadratic regression -----                Coefficient =  0.9952
                Response Ratio = -0.00698 + 0.50073 *A + -0.10044 *A^2

33)  Benzo[a]pyrene
           1.797       2.057 1.876       2.777 1.910       1.948   2.061   17.52
          ----- Quadratic regression -----                Coefficient =  0.9999
                Response Ratio = 0.01145 + 1.90996 *A + -0.09709 *A^2

34)  Indeno[1,2,3-cd]pyrene
           2.899 2.754 2.179 2.962       2.659 2.588       2.387   2.632   10.55
35)  Dibenz[a,h]anthracene
           2.484 2.100 1.726 2.490       2.081 2.125       1.953   2.137   12.85
36)  Benzo[g,h,i]perylene
           2.608 3.242 2.413 2.726       3.131 2.511       2.536   2.738   11.77
-------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M4M597SIM.M        Thu Oct 29 15:39:02 2009   RPT1
```

8.7.10

8

# Initial Calibration Verification



**Job Number:** JA31597 **Sample:** E4M597-ICV597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M12780.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E4M597\4m12780.D          Vial: 13
Acq On    : 28 Oct 2009   5:59 pm                   Operator: ninap
Sample    : icv597-5                                Inst    : MS4M
Misc      : op40477,e4m597,2nd source bn            Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M4M597SIM.M (RTE Integrator)
Title        : Semi Volatile  GC/MS,zb-5 15m x .25mm x .25um
Last Update  : Thu Oct 29 10:47:30 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%

       Compound                    AvgRF   CCRF      %Dev Area%  Dev(min)R.T.
-----------------------------------------------------------------------------
1 I   1-Methylnaphthalene-d10      1.000   1.000      0.0  100   0.00    6.08
4 t   Phenol                       1.054   0.966      8.3   94   0.00    2.96


12 I   Fluorene-d10                1.000   1.000      0.0   97   0.00    8.38
           ----------------------- True    Calc.   % Drift  ------------
19 t   Pentachlorophenol           5.000   4.400     12.0  102   0.00    9.71

           ----------------------- AvgRF   CCRF     % Dev   -------------
23 I   Fluoranthene-d10            1.000   1.000      0.0   94   0.02   11.67
30 I   Benzo(a)pyrene-d12          1.000   1.000      0.0   82   0.00   14.73
-----------------------------------------------------------------------------
-----------------------------------------------------------------------------

   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    4m12771.D  M4M597SIM.M       Thu Oct 29 15:40:46 2009   RPT1
```

8.7.11

8

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E4M597-ICV597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M12781.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E4M597\4m12781.D          Vial: 14
Acq On    : 28 Oct 2009   7:39 pm                   Operator: ninap
Sample    : icv597-1                                Inst    : MS4M
Misc      : op40477,e4m597,2nd source bn            Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M4M597SIM.M (RTE Integrator)
Title        : Semi Volatile  GC/MS,zb-5 15m x .25mm x .25um
Last Update  : Thu Oct 29 10:47:30 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1-Methylnaphthalene-d10 | 1.000 | 1.000 | 0.0 | 154 | 0.00 | 6.08 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 5 | t | bis(2-Chloroethyl)ether | 1.000 | 0.800 | 20.0 | 144 | 0.00 | 3.04 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 7 | t | Naphthalene | 2.168 | 2.174 | -0.3 | 165 | 0.00 | 4.96 |
| 8 | t | Hexachlorobutadiene | 0.390 | 0.379 | 2.8 | 162 | 0.00 | 5.27 |
| 9 | t | 2-Methylnaphthalene | 1.814 | 1.836 | -1.2 | 162 | 0.00 | 5.98 |
| 12 | I | Fluorene-d10 | 1.000 | 1.000 | 0.0 | 141 | 0.00 | 8.38 |
| 13 | t | Acenaphthylene | 2.045 | 1.881 | 8.0 | 135 | 0.00 | 7.33 |
| 14 | t | Acenaphthene | 1.318 | 1.389 | -5.4 | 154 | 0.02 | 7.64 |
| 15 | t | Fluorene | 1.544 | 1.590 | -3.0 | 157 | 0.01 | 8.42 |
| 18 | t | Hexachlorobenzene | 0.418 | 0.396 | 5.3 | 151 | 0.00 | 9.40 |
| 20 | t | Phenanthrene | 1.594 | 1.683 | -5.6 | 157 | 0.00 | 9.88 |
| 21 | t | Anthracene | 1.398 | 1.487 | -6.4 | 153 | 0.02 | 9.96 |
| 23 | I | Fluoranthene-d10 | 1.000 | 1.000 | 0.0 | 133 | 0.02 | 11.67 |
| 24 | t | Fluoranthene | 1.601 | 1.639 | -2.4 | 150 | 0.00 | 11.69 |
| 25 | t | Pyrene | 1.492 | 1.559 | -4.5 | 146 | 0.00 | 11.97 |
| 27 | t | Benzo[a]anthracene | 1.157 | 1.337 | -15.6 | 152 | 0.01 | 13.41 |
| 28 | t | Chrysene | 1.230 | 1.249 | -1.5 | 146 | 0.01 | 13.45 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 29 | | bis(2-Ethylhexyl)phthalat | 1.000 | 1.081 | -8.1 | 153 | 0.01 | 13.67 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 30 | I | Benzo(a)pyrene-d12 | 1.000 | 1.000 | 0.0 | 122 | 0.00 | 14.73 |
| 31 | t | Benzo[b]fluoranthene | 0.467 | 0.540 | -15.6 | 131 | 0.01 | 14.47 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 32 | t | Benzo[k]fluoranthene | 1.000 | 0.853 | 14.7 | 128 | 0.01 | 14.49 |
| 33 | t | Benzo[a]pyrene | 1.000 | 1.052 | -5.2 | 129 | 0.01 | 14.74 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 34 | t | Indeno[1,2,3-cd]pyrene | 2.632 | 3.111 | -18.2 | 147 | 0.01 | 15.64 |
| 35 | t | Dibenz[a,h]anthracene | 2.137 | 2.508 | -17.4 | 144 | 0.02 | 15.67 |
| 36 | t | Benzo[g,h,i]perylene | 2.738 | 3.004 | -9.7 | 146 | 0.02 | 15.85 |

# Initial Calibration Verification

**Job Number:** JA31597 **Sample:** E4M597-ICV597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M12781.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

---

```
-----------------------------------------------------------------------------
-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    4m12771.D  M4M597SIM.M       Thu Oct 29 11:30:04 2009   RPT1
```

# Continuing Calibration Summary



**Job Number:** JA31597 **Sample:** E4M606-CC597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M13106.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E4M605\4m13106.D          Vial: 2
Acq On    :  6 Nov 2009   7:41 pm                   Operator: ninap
Sample    : cc597-.5                                Inst    : MS4M
Misc      : op40692a,e4m606,1000                    Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\msdchem\1\METHODS\M4M597SIM.M (RTE Integrator)
Title        : Semi Volatile  GC/MS,zb-5 15m x .25mm x .25um
Last Update  : Thu Nov 05 14:22:27 2009
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  20%     Max. Rel. Area : 200%
```

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | 1-Methylnaphthalene-d10 | 1.000 | 1.000 | 0.0 | 75 | -0.02 | 6.08 |
| 2 | S | 2-Fluorophenol | 0.681 | 0.624 | 8.4 | 69 | 0.00 | 2.08 |
| 3 | S | Phenol-d5 | 0.740 | 0.786 | -6.2 | 86 | -0.02 | 2.96 |
| 4 | t | Phenol | 1.054 | 0.845 | 19.8 | 63 | 0.00 | 2.98 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 5 | t | bis(2-Chloroethyl)ether | 0.500 | 0.505 | -1.0 | 84 | 0.00 | 3.04 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 6 | S | Nitrobenzene-d5 | 0.617 | 0.689 | -11.7 | 84 | -0.02 | 3.98 |
| 7 | t | Naphthalene | 2.168 | 2.022 | 6.7 | 78 | -0.02 | 4.94 |
| 8 | t | Hexachlorobutadiene | 0.390 | 0.364 | 6.7 | 78 | 0.00 | 5.27 |
| 9 | t | 2-Methylnaphthalene | 1.814 | 1.828 | -0.8 | 83 | -0.02 | 5.98 |
| 10 | t | 1-Methylnaphthalene | 1.583 | 1.582 | 0.1 | 80 | -0.02 | 6.13 |
| 11 | S | 2-Fluorobiphenyl | 1.777 | 1.661 | 6.5 | 75 | -0.02 | 6.61 |
| 12 | I | Fluorene-d10 | 1.000 | 1.000 | 0.0 | 76 | -0.03 | 8.36 |
| 13 | t | Acenaphthylene | 2.045 | 2.063 | -0.9 | 83 | -0.02 | 7.33 |
| 14 | t | Acenaphthene | 1.318 | 1.463 | -11.0 | 92 | -0.02 | 7.62 |
| 15 | t | Fluorene | 1.544 | 1.512 | 2.1 | 80 | -0.03 | 8.40 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 16 | t | 2,6-Dinitrotoluene | 0.500 | 0.583 | -16.6 | 104 | 0.00 | 7.43 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 17 | S | 2,4,6-Tribromophenol | 0.203 | 0.218 | -7.4 | 79 | -0.01 | 8.83 |
| 18 | t | Hexachlorobenzene | 0.418 | 0.351 | 16.0 | 72 | -0.02 | 9.40 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 19 | t | Pentachlorophenol | 2.500 | 3.011 | -20.4# | 110 | -0.02 | 9.71 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 20 | t | Phenanthrene | 1.594 | 1.487 | 6.7 | 77 | -0.03 | 9.86 |
| 21 | t | Anthracene | 1.398 | 1.475 | -5.5 | 85 | -0.02 | 9.94 |
| | | ---------- | True | Calc. | % Drift | | ---------- | |
| 22 | t | 2,4-Dinitrotoluene | 0.500 | 0.654 | -30.8# | 111 | -0.02 | 8.01 |
| | | ---------- | AvgRF | CCRF | % Dev | | ---------- | |
| 23 | I | Fluoranthene-d10 | 1.000 | 1.000 | 0.0 | 79 | -0.03 | 11.66 |
| 24 | t | Fluoranthene | 1.601 | 1.388 | 13.3 | 74 | -0.02 | 11.69 |

# Continuing Calibration Summary

**Job Number:** JA31597 **Sample:** E4M606-CC597
**Account:** ENVNJSP EnviroTrac, Ltd. **Lab FileID:** 4M13106.D
**Project:** Hess-Port Reading Refinery, 750 Cliff Road, Port Reading, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25 | t | Pyrene | 1.492 | 1.396 | 6.4 | 80 | -0.02 | 11.97 |
| 26 | S | Terphenyl-d14 | 0.598 | 0.556 | 7.0 | 69 | -0.03 | 12.28 |
| 27 | t | Benzo[a]anthracene | 1.157 | 1.183 | -2.2 | 86 | -0.03 | 13.39 |
| 28 | t | Chrysene | 1.230 | 1.238 | -0.7 | 93 | -0.03 | 13.43 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 29 | | bis(2-Ethylhexyl)phthalat | 0.500 | 0.622 | -24.4# | 107 | -0.01 | 13.64 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 30 | I | Benzo(a)pyrene-d12 | 1.000 | 1.000 | 0.0 | 84 | -0.01 | 14.73 |
| 31 | t | Benzo[b]fluoranthene | 0.467 | 0.471 | -0.9 | 84 | -0.03 | 14.45 |
| | | ---------- | True | Calc. | % Drift | ---------- | | |
| 32 | t | Benzo[k]fluoranthene | 0.500 | 0.490 | 2.0 | 96 | 0.00 | 14.48 |
| 33 | t | Benzo[a]pyrene | 0.500 | 0.466 | 6.8 | 80 | -0.01 | 14.74 |
| | | ---------- | AvgRF | CCRF | % Dev | ---------- | | |
| 34 | t | Indeno[1,2,3-cd]pyrene | 2.632 | 2.759 | -4.8 | 97 | -0.02 | 15.63 |
| 35 | t | Dibenz[a,h]anthracene | 2.137 | 2.139 | -0.1 | 92 | -0.02 | 15.65 |
| 36 | t | Benzo[g,h,i]perylene | 2.738 | 2.517 | 8.1 | 83 | -0.03 | 15.83 |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4m12772.D M4M597SIM.M Mon Nov 09 14:12:28 2009 RPT1

8.7.13

8

New Jersey

ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 09 16:20:04 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1,4-Dichlorobenzene-d4 | 3.651 | 152 | 287456 | 40.00 | ppb | -0.02 |
| 24) Naphthalene-d8 | 5.330 | 136 | 1075179 | 40.00 | ppb | -0.04 |
| 47) Acenaphthene-d10 | 7.999 | 164 | 665286 | 40.00 | ppb | -0.06 |
| 69) Phenanthrene-d10 | 10.326 | 188 | 1134145 | 40.00 | ppb | -0.06 |
| 83) Chrysene-d12 | 14.134 | 240 | 1382441 | 40.00 | ppb | -0.05 |
| 92) Perylene-d12 | 15.808 | 264 | 1322279 | 40.00 | ppb | -0.05 |
| 102) 1,4-Dichlorobenzene-d4a | 3.651 | 152 | 287456 | 40.00 | ppb | -0.02 |
| 104) Phenanthrene-d10a | 10.326 | 188 | 1134145 | 40.00 | ppb | -0.06 |
| 106) Acenaphthene-d10a | 7.999 | 164 | 665286 | 40.00 | ppb | -0.06 |
| 108) Chrysene-d12a | 14.134 | 240 | 1382441 | 40.00 | ppb | -0.05 |
| 112) Chrysene-d12b | 14.134 | 240 | 1382441 | 40.00 | ppb | -0.05 |
| System Monitoring Compounds | | | | | | |
| 5) 2-Fluorophenol | 0.000 | 112 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 8) Phenol-d5 | 0.000 | 99 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 25) Nitrobenzene-d5 | 4.453 | 82 | 460105 | 45.24 | ppb | 0.00 |
| Spiked Amount 50.000 | | | Recovery = 90.48% | | | |
| 51) 2-Fluorobiphenyl | 7.005 | 172 | 1039744 | 43.96 | ppb | -0.06 |
| Spiked Amount 50.000 | | | Recovery = 87.92% | | | |
| 73) 2,4,6-Tribromophenol | 0.000 | 330 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 86) Terphenyl-d14 | 12.765 | 244 | 667437 | 22.08 | ppb | -0.06 |
| Spiked Amount 50.000 | | | Recovery = 44.16% | | | |

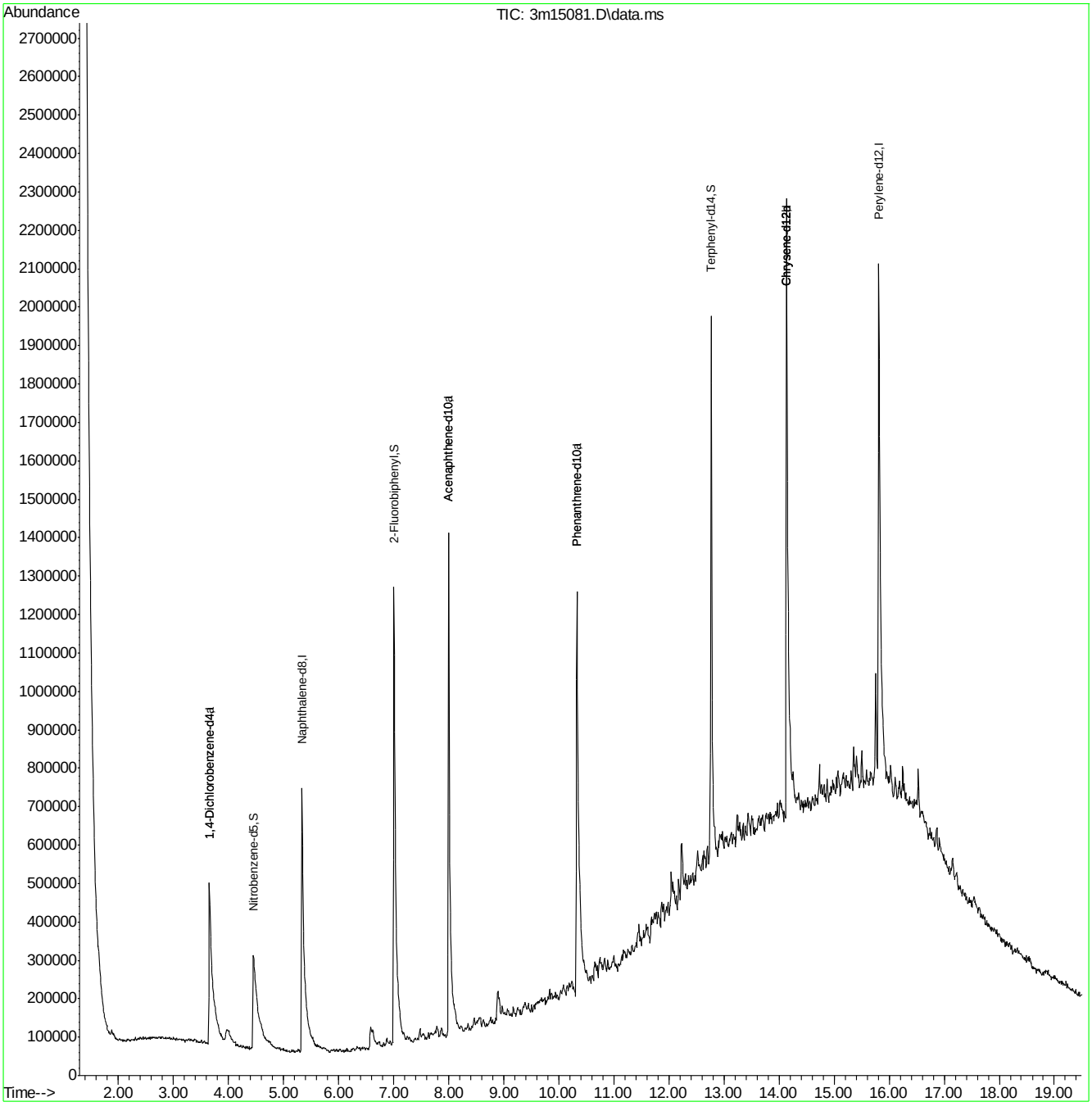
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 09 16:20:04 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration




M3M630.M Mon Nov 09 16:20:08 2009 MS3M

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

Signal : TIC: 3m15081.D\data.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.651 | 438 | 442 | 492 | rBB2 | 418309 | 1812484 | 54.14% | 6.487% |
| 2 | 3.967 | 494 | 501 | 503 | rBB7 | 7262 | 18656 | 0.56% | 0.067% |
| 3 | 4.453 | 587 | 592 | 631 | rBB | 238511 | 1210762 | 36.17% | 4.333% |
| 4 | 5.330 | 751 | 756 | 802 | rBB | 687674 | 2290393 | 68.42% | 8.197% |
| 5 | 6.336 | 936 | 944 | 949 | rBB | 10092 | 17785 | 0.53% | 0.064% |
| 6 | 6.582 | 986 | 990 | 993 | rBB4 | 27771 | 53369 | 1.59% | 0.191% |
| 7 | 6.823 | 1029 | 1035 | 1038 | rBB8 | 10523 | 17582 | 0.53% | 0.063% |
| 8 | 6.876 | 1038 | 1045 | 1051 | rBB10 | 17439 | 39687 | 1.19% | 0.142% |
| 9 | 7.005 | 1061 | 1069 | 1100 | rBB | 1186728 | 2976660 | 88.92% | 10.653% |
| 10 | 7.245 | 1107 | 1114 | 1119 | rBB | 10113 | 17091 | 0.51% | 0.061% |
| 11 | 7.390 | 1133 | 1141 | 1144 | rBB10 | 7453 | 17381 | 0.52% | 0.062% |
| 12 | 7.475 | 1152 | 1157 | 1161 | rBB7 | 24843 | 38947 | 1.16% | 0.139% |
| 13 | 7.630 | 1180 | 1186 | 1189 | rBB7 | 16446 | 21546 | 0.64% | 0.077% |
| 14 | 7.679 | 1189 | 1195 | 1198 | rBB8 | 7581 | 17088 | 0.51% | 0.061% |
| 15 | 7.785 | 1211 | 1215 | 1222 | rBB10 | 22477 | 40289 | 1.20% | 0.144% |
| 16 | 7.871 | 1222 | 1231 | 1235 | rBB10 | 19893 | 41992 | 1.25% | 0.150% |
| 17 | 7.994 | 1246 | 1254 | 1283 | rBB | 1306174 | 2846433 | 85.03% | 10.187% |
| 18 | 8.219 | 1293 | 1296 | 1304 | rBB10 | 9301 | 18365 | 0.55% | 0.066% |
| 19 | 8.352 | 1317 | 1321 | 1325 | rBB7 | 15508 | 17319 | 0.52% | 0.062% |
| 20 | 8.465 | 1329 | 1342 | 1346 | rBB7 | 21308 | 46106 | 1.38% | 0.165% |
| 21 | 8.577 | 1352 | 1363 | 1366 | rBB7 | 23567 | 61282 | 1.83% | 0.219% |
| 22 | 8.625 | 1367 | 1372 | 1381 | rBB7 | 18893 | 42949 | 1.28% | 0.154% |
| 23 | 8.759 | 1387 | 1397 | 1400 | rBB7 | 18189 | 32566 | 0.97% | 0.117% |
| 24 | 8.898 | 1416 | 1423 | 1425 | rBB5 | 35102 | 69069 | 2.06% | 0.247% |
| 25 | 8.968 | 1434 | 1436 | 1441 | rBB6 | 21692 | 23998 | 0.72% | 0.086% |
| 26 | 9.064 | 1451 | 1454 | 1462 | rBB10 | 16918 | 25004 | 0.75% | 0.089% |
| 27 | 9.171 | 1469 | 1474 | 1482 | rBB10 | 25792 | 51643 | 1.54% | 0.185% |
| 28 | 9.246 | 1483 | 1488 | 1497 | rBB10 | 20279 | 49244 | 1.47% | 0.176% |
| 29 | 9.390 | 1502 | 1515 | 1519 | rBB10 | 22868 | 69719 | 2.08% | 0.250% |
| 30 | 9.449 | 1520 | 1526 | 1531 | rBB10 | 20050 | 28460 | 0.85% | 0.102% |
| 31 | 9.502 | 1534 | 1536 | 1540 | rBB5 | 19101 | 23180 | 0.69% | 0.083% |
| 32 | 9.545 | 1540 | 1544 | 1547 | rBB6 | 15693 | 21814 | 0.65% | 0.078% |
| 33 | 9.615 | 1547 | 1557 | 1558 | rBB10 | 7605 | 25626 | 0.77% | 0.092% |
| 34 | 9.684 | 1563 | 1570 | 1574 | rBB10 | 12662 | 21019 | 0.63% | 0.075% |

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 9.839 | 1594 | 1599 | 1601 | rBB6 | 25515 | 33795 | 1.01% | 0.121% |
| 36 | 9.866 | 1601 | 1604 | 1607 | rBB5 | 15373 | 17070 | 0.51% | 0.061% |
| 37 | 10.032 | 1630 | 1635 | 1638 | rBB7 | 16170 | 25931 | 0.77% | 0.093% |
| 38 | 10.085 | 1640 | 1645 | 1653 | rBB7 | 24944 | 55007 | 1.64% | 0.197% |
| 39 | 10.155 | 1653 | 1658 | 1661 | rBB7 | 18003 | 33231 | 0.99% | 0.119% |
| 40 | 10.235 | 1669 | 1673 | 1677 | rBB7 | 17393 | 23317 | 0.70% | 0.083% |
| 41 | 10.326 | 1686 | 1690 | 1713 | rBB2 | 1041392 | 2657669 | 79.39% | 9.511% |
| 42 | 10.604 | 1738 | 1742 | 1746 | rBB7 | 17215 | 25877 | 0.77% | 0.093% |
| 43 | 10.658 | 1746 | 1752 | 1756 | rBB8 | 32597 | 68804 | 2.06% | 0.246% |
| 44 | 10.743 | 1762 | 1768 | 1775 | rBB10 | 41771 | 93723 | 2.80% | 0.335% |
| 45 | 10.834 | 1779 | 1785 | 1790 | rBB10 | 34952 | 60854 | 1.82% | 0.218% |
| 46 | 10.888 | 1790 | 1795 | 1799 | rBB7 | 27633 | 38270 | 1.14% | 0.137% |
| 47 | 11.000 | 1813 | 1816 | 1819 | rBB5 | 22237 | 19551 | 0.58% | 0.070% |
| 48 | 11.086 | 1829 | 1832 | 1835 | rBB5 | 14249 | 18475 | 0.55% | 0.066% |
| 49 | 11.144 | 1839 | 1843 | 1845 | rBB5 | 20725 | 25880 | 0.77% | 0.093% |
| 50 | 11.177 | 1845 | 1849 | 1851 | rBB4 | 15310 | 18276 | 0.55% | 0.065% |
| 51 | 11.257 | 1861 | 1864 | 1869 | rBB6 | 21750 | 28620 | 0.85% | 0.102% |
| 52 | 11.332 | 1874 | 1878 | 1882 | rBB6 | 21628 | 32593 | 0.97% | 0.117% |
| 53 | 11.449 | 1893 | 1900 | 1909 | rBB6 | 60960 | 154649 | 4.62% | 0.553% |
| 54 | 11.540 | 1909 | 1917 | 1920 | rBB9 | 25680 | 52507 | 1.57% | 0.188% |
| 55 | 11.583 | 1922 | 1925 | 1927 | rBB4 | 19796 | 20664 | 0.62% | 0.074% |
| 56 | 11.685 | 1939 | 1944 | 1950 | rBB9 | 45079 | 82492 | 2.46% | 0.295% |
| 57 | 11.738 | 1950 | 1954 | 1957 | rBB6 | 21176 | 27367 | 0.82% | 0.098% |
| 58 | 11.808 | 1964 | 1967 | 1974 | rBB9 | 33300 | 53053 | 1.58% | 0.190% |
| 59 | 11.867 | 1974 | 1978 | 1980 | rBB4 | 39355 | 51869 | 1.55% | 0.186% |
| 60 | 11.952 | 1989 | 1994 | 1996 | rBB6 | 23212 | 35817 | 1.07% | 0.128% |
| 61 | 11.984 | 1997 | 2000 | 2004 | rBB6 | 28339 | 23896 | 0.71% | 0.086% |
| 62 | 12.043 | 2004 | 2011 | 2015 | rBB7 | 76121 | 104085 | 3.11% | 0.373% |
| 63 | 12.134 | 2026 | 2028 | 2031 | rBB4 | 29510 | 20089 | 0.60% | 0.072% |
| 64 | 12.177 | 2031 | 2036 | 2041 | rBB7 | 68834 | 96005 | 2.87% | 0.344% |
| 65 | 12.230 | 2042 | 2046 | 2054 | rBB2 | 134748 | 262607 | 7.84% | 0.940% |
| 66 | 12.294 | 2055 | 2058 | 2060 | rBB4 | 28332 | 22563 | 0.67% | 0.081% |
| 67 | 12.359 | 2066 | 2070 | 2072 | rBB5 | 27170 | 32489 | 0.97% | 0.116% |
| 68 | 12.524 | 2094 | 2101 | 2105 | rBB7 | 55773 | 99863 | 2.98% | 0.357% |
| 69 | 12.637 | 2120 | 2122 | 2129 | rBB8 | 48552 | 84291 | 2.52% | 0.302% |
| 70 | 12.701 | 2130 | 2134 | 2138 | rBB6 | 49098 | 72790 | 2.17% | 0.261% |
| 71 | 12.765 | 2138 | 2146 | 2168 | rBB | 1419727 | 2403424 | 71.80% | 8.601% |

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0.3 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 12.899 | 2169 | 2171 | 2173 | rBB3 | 28554 | 27092 | 0.81% | 0.097% |
| 73 | 12.926 | 2173 | 2176 | 2180 | rBB6 | 25490 | 38794 | 1.16% | 0.139% |
| 74 | 13.236 | 2230 | 2234 | 2240 | rBB9 | 64790 | 105796 | 3.16% | 0.379% |
| 75 | 13.353 | 2252 | 2256 | 2258 | rBB5 | 42598 | 38767 | 1.16% | 0.139% |
| 76 | 13.386 | 2260 | 2262 | 2267 | rBB6 | 29205 | 28764 | 0.86% | 0.103% |
| 77 | 13.444 | 2268 | 2273 | 2280 | rBB10 | 60423 | 131903 | 3.94% | 0.472% |
| 78 | 13.498 | 2280 | 2283 | 2284 | rBB3 | 31564 | 20933 | 0.63% | 0.075% |
| 79 | 13.637 | 2304 | 2309 | 2313 | rBB7 | 28561 | 45813 | 1.37% | 0.164% |
| 80 | 13.771 | 2330 | 2334 | 2337 | rBB6 | 28814 | 46200 | 1.38% | 0.165% |
| 81 | 13.969 | 2368 | 2371 | 2376 | rBB6 | 36964 | 43394 | 1.30% | 0.155% |
| 82 | 14.017 | 2376 | 2380 | 2392 | rBB6 | 49597 | 156761 | 4.68% | 0.561% |
| 83 | 14.134 | 2398 | 2402 | 2420 | rBB | 1596255 | 3347602 | 100.00% | 11.981% |
| 84 | 14.605 | 2486 | 2490 | 2497 | rBB9 | 27559 | 51338 | 1.53% | 0.184% |
| 85 | 14.739 | 2511 | 2515 | 2517 | rBB5 | 79435 | 91021 | 2.72% | 0.326% |
| 86 | 14.872 | 2536 | 2540 | 2546 | rBB9 | 59206 | 101844 | 3.04% | 0.364% |
| 87 | 15.065 | 2574 | 2576 | 2585 | rBB9 | 48473 | 98245 | 2.93% | 0.352% |
| 88 | 15.311 | 2619 | 2622 | 2625 | rBB5 | 43012 | 44165 | 1.32% | 0.158% |
| 89 | 15.354 | 2627 | 2630 | 2637 | rBB9 | 104250 | 161764 | 4.83% | 0.579% |
| 90 | 15.407 | 2637 | 2640 | 2650 | rBB9 | 61284 | 104793 | 3.13% | 0.375% |
| 91 | 15.504 | 2655 | 2658 | 2664 | rBB8 | 89137 | 118204 | 3.53% | 0.423% |
| 92 | 15.584 | 2671 | 2673 | 2678 | rBB6 | 36116 | 39863 | 1.19% | 0.143% |
| 93 | 15.755 | 2700 | 2705 | 2711 | rBB | 261674 | 320722 | 9.58% | 1.148% |
| 94 | 15.808 | 2711 | 2715 | 2740 | rBB | 1316784 | 3251857 | 97.14% | 11.638% |
| 95 | 16.028 | 2754 | 2756 | 2763 | rBB8 | 46931 | 66104 | 1.97% | 0.237% |
| 96 | 16.108 | 2767 | 2771 | 2778 | rBB10 | 48893 | 84557 | 2.53% | 0.303% |
| 97 | 16.247 | 2793 | 2797 | 2800 | rBB5 | 68193 | 65016 | 1.94% | 0.233% |
| 98 | 16.531 | 2846 | 2850 | 2856 | rBB4 | 105945 | 132094 | 3.95% | 0.473% |
| 99 | 16.867 | 2909 | 2913 | 2917 | rBB7 | 48487 | 58971 | 1.76% | 0.211% |
| 100 | 17.151 | 2964 | 2966 | 2974 | rBB9 | 28567 | 36676 | 1.10% | 0.131% |

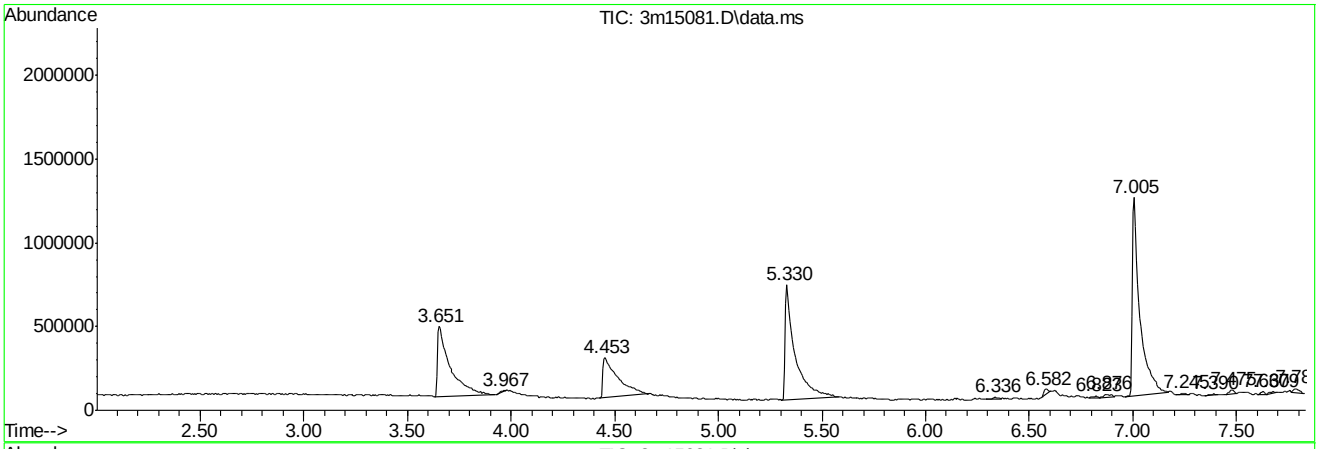
Sum of corrected areas: 27942024

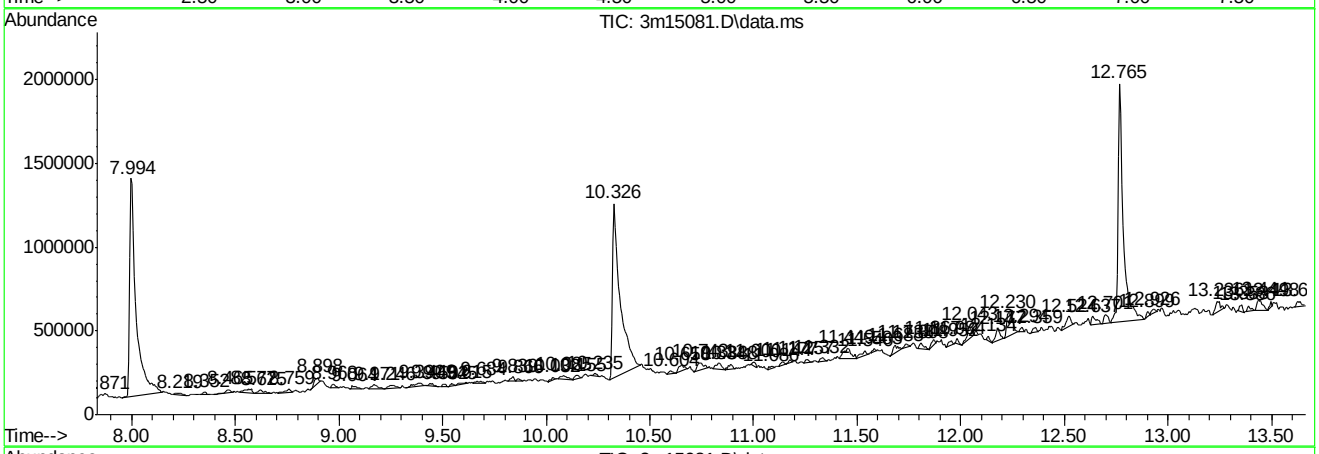
LSC Report - Integrated Chromatogram

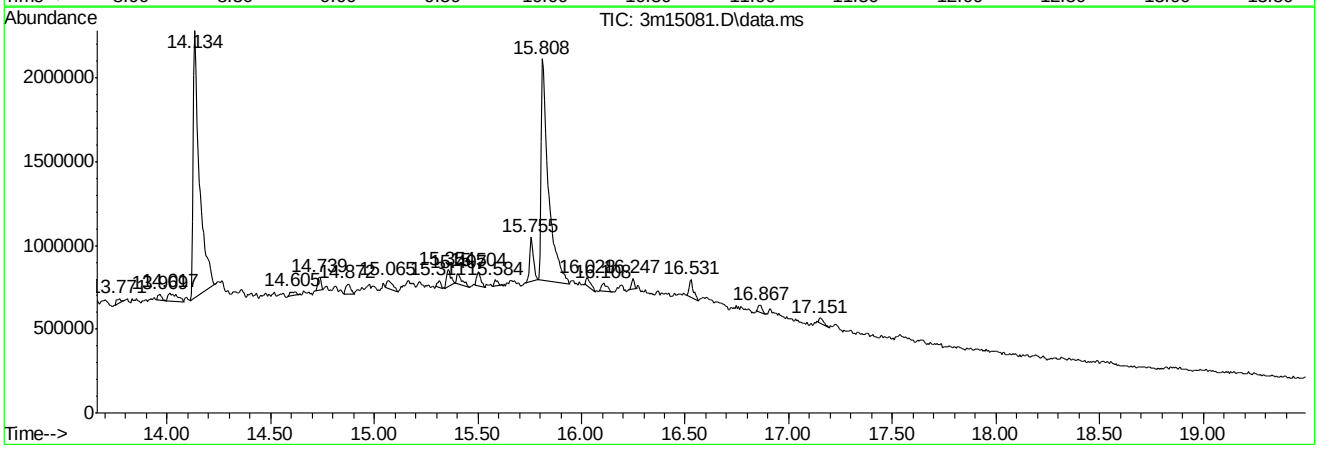
Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On : 7 Nov 2009 4:23 am
Operator : larisap
Sample : ja31597-1
Misc : op40707,E3M664,1000
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p




M3M630.M Mon Nov 09 16:20:25 2009 MS3M

Library Search Compound Report

```
Data Path : C:\msdchem\1\DATA\e3m664\
Data File : 3m15081.D
Acq On    :  7 Nov 2009   4:23 am
Operator  : larisap
Sample    : ja31597-1
Misc      : op40707,E3M664,1000
ALS Vial  : 20   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library   : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p

No Library Search Compounds Detected
```

**********

Tentatively Identified Compound (LSC) summary

```
  Data Path : C:\msdchem\1\DATA\e3m664\
  Data File : 3m15081.D
  Acq On    :  7 Nov 2009   4:23 am
  Operator  : larisap
  Sample    : ja31597-1
  Misc      : op40707,E3M664,1000
  ALS Vial  : 20   Sample Multiplier: 1

  Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
  Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

  TIC Library   : C:\DATABASE\NIST98.L
  TIC Integration Parameters: lscint.p

                                                    |--Internal Standard---|
  TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-------------------------------------------------------------------------------
```

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On : 5 Nov 2009 7:38 pm
Operator : larisap
Sample : ja31597-2
Misc : op40707,E3M662,1000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 06 14:44:36 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1,4-Dichlorobenzene-d4 | 3.667 | 152 | 313809 | 40.00 | ppb | 0.00 |
| 24) Naphthalene-d8 | 5.352 | 136 | 1147477 | 40.00 | ppb | -0.02 |
| 47) Acenaphthene-d10 | 8.032 | 164 | 684681 | 40.00 | ppb | -0.03 |
| 69) Phenanthrene-d10 | 10.364 | 188 | 1127975 | 40.00 | ppb | -0.02 |
| 83) Chrysene-d12 | 14.166 | 240 | 1276906 | 40.00 | ppb | -0.02 |
| 92) Perylene-d12 | 15.846 | 264 | 1198761 | 40.00 | ppb | -0.02 |
| 102) 1,4-Dichlorobenzene-d4a | 3.667 | 152 | 313809 | 40.00 | ppb | 0.00 |
| 104) Phenanthrene-d10a | 10.364 | 188 | 1127975 | 40.00 | ppb | -0.02 |
| 106) Acenaphthene-d10a | 8.032 | 164 | 684681 | 40.00 | ppb | -0.03 |
| 108) Chrysene-d12a | 14.166 | 240 | 1276906 | 40.00 | ppb | -0.02 |
| 112) Chrysene-d12b | 14.166 | 240 | 1276906 | 40.00 | ppb | -0.02 |
| System Monitoring Compounds | | | | | | |
| 5) 2-Fluorophenol | 0.000 | 112 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 8) Phenol-d5 | 0.000 | 99 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 25) Nitrobenzene-d5 | 4.448 | 82 | 566468 | 52.19 | ppb | 0.00 |
| Spiked Amount 50.000 | | | Recovery = 104.38% | | | |
| 51) 2-Fluorobiphenyl | 7.031 | 172 | 1317289 | 54.11 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery = 108.22% | | | |
| 73) 2,4,6-Tribromophenol | 0.000 | 330 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 86) Terphenyl-d14 | 12.797 | 244 | 1041705 | 37.31 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery = 74.62% | | | |

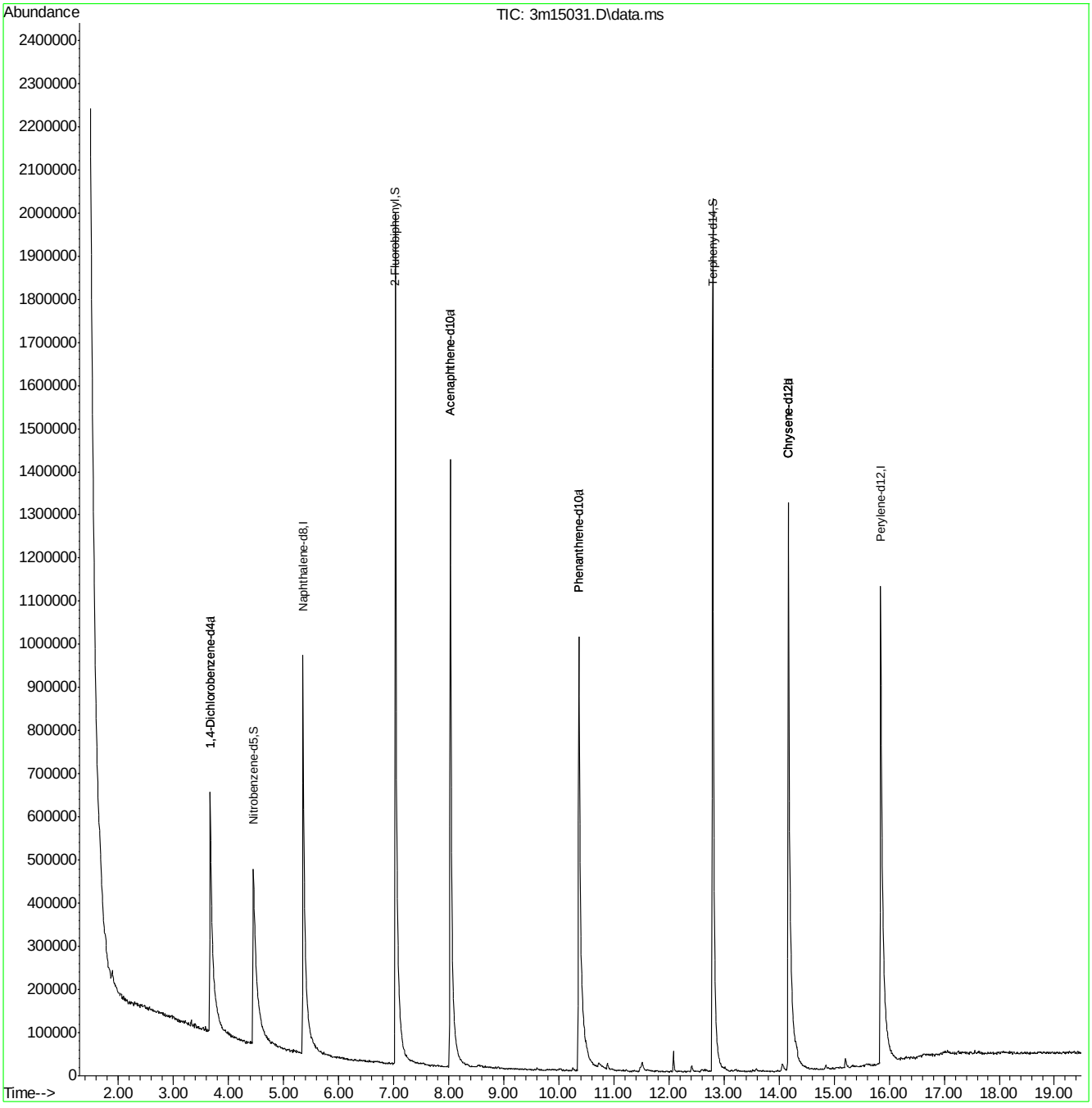
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On : 5 Nov 2009 7:38 pm
Operator : larisap
Sample : ja31597-2
Misc : op40707,E3M662,1000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 06 14:44:36 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration




M3M630.M Fri Nov 06 14:44:42 2009 MS3M

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On : 5 Nov 2009 7:38 pm
Operator : larisap
Sample : ja31597-2
Misc : op40707,E3M662,1000
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

Signal : TIC: 3m15031.D\data.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.319 | 377 | 380 | 386 | rBB5 | 14422 | 15691 | 0.40% | 0.059% |
| 2 | 3.394 | 392 | 394 | 399 | rBB4 | 10336 | 9205 | 0.24% | 0.035% |
| 3 | 3.608 | 433 | 434 | 438 | rBB3 | 6293 | 5060 | 0.13% | 0.019% |
| 4 | 3.667 | 441 | 445 | 489 | rBB | 553552 | 1858754 | 47.57% | 7.004% |
| 5 | 4.448 | 588 | 591 | 641 | rBB | 403741 | 1695521 | 43.40% | 6.389% |
| 6 | 4.774 | 650 | 652 | 654 | rBB3 | 5783 | 4873 | 0.12% | 0.018% |
| 7 | 4.844 | 664 | 665 | 670 | rBB4 | 4395 | 5283 | 0.14% | 0.020% |
| 8 | 5.020 | 695 | 698 | 704 | rBB4 | 4618 | 6469 | 0.17% | 0.024% |
| 9 | 5.058 | 704 | 705 | 710 | rBB5 | 4160 | 4479 | 0.11% | 0.017% |
| 10 | 5.181 | 726 | 728 | 733 | rBB5 | 6599 | 6353 | 0.16% | 0.024% |
| 11 | 5.224 | 733 | 736 | 738 | rBB4 | 4192 | 3400 | 0.09% | 0.013% |
| 12 | 5.250 | 739 | 741 | 745 | rBB5 | 3996 | 3501 | 0.09% | 0.013% |
| 13 | 5.293 | 745 | 749 | 751 | rBB4 | 3194 | 3130 | 0.08% | 0.012% |
| 14 | 5.352 | 755 | 760 | 802 | rBB | 922569 | 2413610 | 61.78% | 9.095% |
| 15 | 6.384 | 949 | 953 | 957 | rBB7 | 4062 | 4667 | 0.12% | 0.018% |
| 16 | 6.646 | 1000 | 1002 | 1006 | rBB4 | 3833 | 3708 | 0.09% | 0.014% |
| 17 | 6.785 | 1025 | 1028 | 1033 | rBB6 | 2684 | 3806 | 0.10% | 0.014% |
| 18 | 6.919 | 1046 | 1053 | 1059 | rBB9 | 5035 | 6752 | 0.17% | 0.025% |
| 19 | 6.978 | 1059 | 1064 | 1066 | rBB6 | 3511 | 4236 | 0.11% | 0.016% |
| 20 | 7.031 | 1068 | 1074 | 1110 | rBB | 1969248 | 3907047 | 100.00% | 14.722% |
| 21 | 7.679 | 1191 | 1195 | 1197 | rBB5 | 3820 | 3815 | 0.10% | 0.014% |
| 22 | 7.732 | 1202 | 1205 | 1211 | rBB7 | 3673 | 6187 | 0.16% | 0.023% |
| 23 | 8.032 | 1254 | 1261 | 1305 | rBB | 1406295 | 2921349 | 74.77% | 11.008% |
| 24 | 8.764 | 1394 | 1398 | 1403 | rBB8 | 3003 | 3555 | 0.09% | 0.013% |
| 25 | 8.850 | 1410 | 1414 | 1418 | rBB6 | 4010 | 3467 | 0.09% | 0.013% |
| 26 | 9.604 | 1550 | 1555 | 1559 | rBB7 | 4394 | 5130 | 0.13% | 0.019% |
| 27 | 9.690 | 1569 | 1571 | 1581 | rBB10 | 2410 | 3169 | 0.08% | 0.012% |
| 28 | 9.781 | 1581 | 1588 | 1592 | rBB9 | 2686 | 4501 | 0.12% | 0.017% |
| 29 | 9.941 | 1611 | 1618 | 1620 | rBB8 | 1867 | 3527 | 0.09% | 0.013% |
| 30 | 10.139 | 1647 | 1655 | 1660 | rBB10 | 3002 | 5941 | 0.15% | 0.022% |
| 31 | 10.257 | 1670 | 1677 | 1682 | rBB7 | 6418 | 10497 | 0.27% | 0.040% |
| 32 | 10.364 | 1689 | 1697 | 1752 | rBB2 | 1004986 | 2977159 | 76.20% | 11.218% |
| 33 | 10.722 | 1759 | 1764 | 1781 | rBB2 | 9194 | 29202 | 0.75% | 0.110% |
| 34 | 10.882 | 1790 | 1794 | 1804 | rBB | 13533 | 21887 | 0.56% | 0.082% |

M3M630.M Fri Nov 06 14:45:00 2009 MS3M

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On : 5 Nov 2009 7:38 pm
Operator : larisap
Sample : ja31597-2
Misc : op40707,E3M662,1000
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 11.225 | 1855 | 1858 | 1870 | rBB | 3979 | 7117 | 0.18% | 0.027% |
| 36 | 11.514 | 1898 | 1912 | 1922 | rBB4 | 20309 | 61229 | 1.57% | 0.231% |
| 37 | 11.770 | 1958 | 1960 | 1968 | rBB8 | 3226 | 5592 | 0.14% | 0.021% |
| 38 | 12.043 | 2004 | 2011 | 2013 | rBB8 | 2925 | 4230 | 0.11% | 0.016% |
| 39 | 12.080 | 2013 | 2018 | 2027 | rBB5 | 48627 | 64121 | 1.64% | 0.242% |
| 40 | 12.417 | 2074 | 2081 | 2090 | rBB5 | 14279 | 25921 | 0.66% | 0.098% |
| 41 | 12.605 | 2108 | 2116 | 2119 | rBB10 | 3918 | 9208 | 0.24% | 0.035% |
| 42 | 12.647 | 2121 | 2124 | 2127 | rBB6 | 4326 | 4994 | 0.13% | 0.019% |
| 43 | 12.674 | 2127 | 2129 | 2137 | rBB8 | 3350 | 4080 | 0.10% | 0.015% |
| 44 | 12.744 | 2137 | 2142 | 2145 | rBB6 | 3165 | 3597 | 0.09% | 0.014% |
| 45 | 12.797 | 2145 | 2152 | 2184 | rBB | 2021588 | 3382316 | 86.57% | 12.745% |
| 46 | 13.017 | 2190 | 2193 | 2205 | rBB | 5245 | 7711 | 0.20% | 0.029% |
| 47 | 13.220 | 2226 | 2231 | 2235 | rBB8 | 3900 | 4806 | 0.12% | 0.018% |
| 48 | 13.487 | 2278 | 2281 | 2283 | rBB4 | 3210 | 3109 | 0.08% | 0.012% |
| 49 | 13.514 | 2283 | 2286 | 2290 | rBB6 | 4421 | 4748 | 0.12% | 0.018% |
| 50 | 13.589 | 2295 | 2300 | 2305 | rBB9 | 5543 | 7395 | 0.19% | 0.028% |
| 51 | 13.878 | 2347 | 2354 | 2358 | rBB9 | 2063 | 5381 | 0.14% | 0.020% |
| 52 | 13.974 | 2369 | 2372 | 2377 | rBB7 | 3019 | 3564 | 0.09% | 0.013% |
| 53 | 14.059 | 2381 | 2388 | 2401 | rBB7 | 15572 | 41252 | 1.06% | 0.155% |
| 54 | 14.166 | 2401 | 2408 | 2464 | rBB | 1314951 | 3442126 | 88.10% | 12.970% |
| 55 | 14.851 | 2529 | 2536 | 2541 | rBB | 9435 | 14851 | 0.38% | 0.056% |
| 56 | 14.894 | 2541 | 2544 | 2550 | rBB7 | 2752 | 4353 | 0.11% | 0.016% |
| 57 | 14.974 | 2554 | 2559 | 2561 | rBB6 | 2507 | 3347 | 0.09% | 0.013% |
| 58 | 15.054 | 2565 | 2574 | 2576 | rBB10 | 1763 | 5090 | 0.13% | 0.019% |
| 59 | 15.108 | 2581 | 2584 | 2590 | rBB8 | 3881 | 3295 | 0.08% | 0.012% |
| 60 | 15.204 | 2598 | 2602 | 2616 | rBB7 | 20969 | 38217 | 0.98% | 0.144% |
| 61 | 15.332 | 2618 | 2626 | 2627 | rBB8 | 3075 | 5872 | 0.15% | 0.022% |
| 62 | 15.541 | 2655 | 2665 | 2666 | rBB10 | 3059 | 5368 | 0.14% | 0.020% |
| 63 | 15.600 | 2668 | 2676 | 2679 | rBB10 | 2612 | 7690 | 0.20% | 0.029% |
| 64 | 15.723 | 2698 | 2699 | 2704 | rBB5 | 3167 | 3906 | 0.10% | 0.015% |
| 65 | 15.792 | 2704 | 2712 | 2714 | rBB9 | 2422 | 5569 | 0.14% | 0.021% |
| 66 | 15.846 | 2714 | 2722 | 2763 | rBB | 1105264 | 3200765 | 81.92% | 12.061% |
| 67 | 16.210 | 2788 | 2790 | 2796 | rBB7 | 6254 | 9104 | 0.23% | 0.034% |
| 68 | 16.306 | 2806 | 2808 | 2811 | rBB4 | 5173 | 5029 | 0.13% | 0.019% |
| 69 | 16.391 | 2822 | 2824 | 2830 | rBB7 | 5592 | 6654 | 0.17% | 0.025% |
| 70 | 16.541 | 2846 | 2852 | 2855 | rBB8 | 2689 | 5475 | 0.14% | 0.021% |
| 71 | 16.563 | 2855 | 2856 | 2861 | rBB5 | 2670 | 4015 | 0.10% | 0.015% |

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On : 5 Nov 2009 7:38 pm
Operator : larisap
Sample : ja31597-2
Misc : op40707,E3M662,1000
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 16.616 | 2865 | 2866 | 2868 | rBB2 | 4264 | 3421 | 0.09% | 0.013% |
| 73 | 16.766 | 2893 | 2894 | 2898 | rBB4 | 4912 | 3717 | 0.10% | 0.014% |
| 74 | 16.798 | 2898 | 2900 | 2905 | rBB6 | 5675 | 7395 | 0.19% | 0.028% |
| 75 | 16.942 | 2921 | 2927 | 2929 | rBB7 | 4995 | 8510 | 0.22% | 0.032% |
| 76 | 17.156 | 2964 | 2967 | 2969 | rBB4 | 3019 | 3211 | 0.08% | 0.012% |
| 77 | 17.210 | 2975 | 2977 | 2980 | rBB4 | 4753 | 3791 | 0.10% | 0.014% |
| 78 | 17.263 | 2980 | 2987 | 2989 | rBB8 | 6228 | 12138 | 0.31% | 0.046% |
| 79 | 17.402 | 3012 | 3013 | 3018 | rBB5 | 3608 | 3387 | 0.09% | 0.013% |
| 80 | 17.483 | 3025 | 3028 | 3034 | rBB8 | 3129 | 4450 | 0.11% | 0.017% |
| 81 | 17.557 | 3040 | 3042 | 3047 | rBB6 | 8321 | 8392 | 0.21% | 0.032% |
| 82 | 17.697 | 3066 | 3068 | 3073 | rBB6 | 4291 | 6312 | 0.16% | 0.024% |
| 83 | 17.964 | 3116 | 3118 | 3121 | rBB4 | 4335 | 3197 | 0.08% | 0.012% |
| 84 | 18.060 | 3130 | 3136 | 3137 | rBB5 | 1996 | 4678 | 0.12% | 0.018% |
| 85 | 18.183 | 3156 | 3159 | 3161 | rBB4 | 5080 | 4344 | 0.11% | 0.016% |
| 86 | 18.205 | 3161 | 3163 | 3167 | rBB5 | 4171 | 4334 | 0.11% | 0.016% |
| 87 | 18.264 | 3171 | 3174 | 3179 | rBB7 | 5717 | 7344 | 0.19% | 0.028% |
| 88 | 18.403 | 3195 | 3200 | 3201 | rBB5 | 3941 | 4171 | 0.11% | 0.016% |
| 89 | 18.510 | 3217 | 3220 | 3224 | rBB6 | 3190 | 3732 | 0.10% | 0.014% |
| 90 | 18.563 | 3228 | 3230 | 3233 | rBB3 | 4521 | 4163 | 0.11% | 0.016% |
| 91 | 18.718 | 3254 | 3259 | 3263 | rBB8 | 3293 | 6293 | 0.16% | 0.024% |
| 92 | 18.879 | 3285 | 3289 | 3290 | rBB4 | 5204 | 4639 | 0.12% | 0.017% |
| 93 | 18.959 | 3299 | 3304 | 3310 | rBB10 | 4425 | 6880 | 0.18% | 0.026% |
| 94 | 19.060 | 3318 | 3323 | 3326 | rBB7 | 4776 | 5850 | 0.15% | 0.022% |
| 95 | 19.157 | 3336 | 3341 | 3345 | rBB8 | 3059 | 5282 | 0.14% | 0.020% |
| 96 | 19.226 | 3352 | 3354 | 3359 | rBB6 | 3700 | 3971 | 0.10% | 0.015% |
| 97 | 19.274 | 3359 | 3363 | 3365 | rBB5 | 4137 | 4094 | 0.10% | 0.015% |
| 98 | 19.365 | 3375 | 3380 | 3383 | rBB7 | 5829 | 7293 | 0.19% | 0.027% |
| 99 | 19.387 | 3383 | 3384 | 3387 | rBB3 | 4450 | 3362 | 0.09% | 0.013% |
| 100 | 19.424 | 3389 | 3391 | 3395 | rBB5 | 6085 | 4279 | 0.11% | 0.016% |

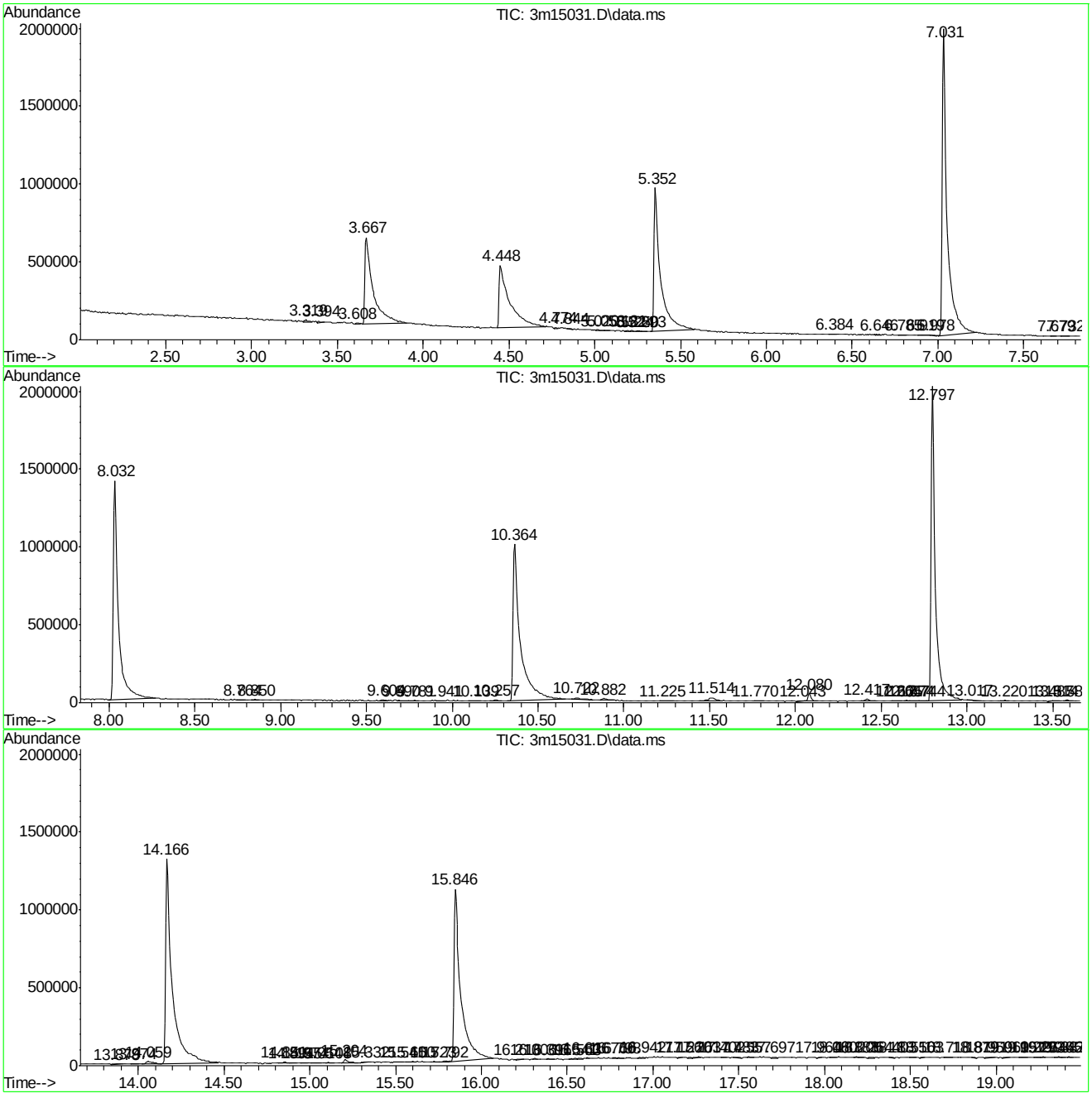
Sum of corrected areas: 26538658

LSC Report - Integrated Chromatogram

```
Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On    :  5 Nov 2009   7:38 pm
Operator  : larisap
Sample    : ja31597-2
Misc      : op40707,E3M662,1000
ALS Vial  : 9   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library    : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p
```



Library Search Compound Report

```
Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15031.D
Acq On    :  5 Nov 2009   7:38 pm
Operator  : larisap
Sample    : ja31597-2
Misc      : op40707,E3M662,1000
ALS Vial  : 9   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library    : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p

No Library Search Compounds Detected
```

**********

Tentatively Identified Compound (LSC) summary

```
  Data Path : C:\msdchem\1\DATA\e3m662\
  Data File : 3m15031.D
  Acq On    :  5 Nov 2009   7:38 pm
  Operator  : larisap
  Sample    : ja31597-2
  Misc      : op40707,E3M662,1000
  ALS Vial  : 9   Sample Multiplier: 1

  Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
  Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

  TIC Library   : C:\DATABASE\NIST98.L
  TIC Integration Parameters: lscint.p

                                                    |--Internal Standard---|
  TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-------------------------------------------------------------------------------
```

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M605\
Data File : 4m13122.D
Acq On : 7 Nov 2009 1:34 am
Operator : ninap
Sample : ja31597-1
Misc : op40707a,e4m606,1000
ALS Vial : 49 Sample Multiplier: 1

Quant Time: Nov 12 08:43:50 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1-Methylnaphthalene-d10 | 6.085 | 152 | 54402 | 4.00 | ppb | -0.02 |
| 12) Fluorene-d10 | 8.362 | 174 | 66696 | 4.00 | ppb | -0.03 |
| 23) Fluoranthene-d10 | 11.659 | 212 | 79845 | 4.00 | ppb | -0.03 |
| 30) Benzo(a)pyrene-d12 | 14.728 | 264 | 48991 | 4.00 | ppb | -0.01 |
| System Monitoring Compounds | | | | | | |
| 2) 2-Fluorophenol | 0.000 | 112 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 3) Phenol-d5 | 0.000 | 99 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 6) Nitrobenzene-d5 | 3.982 | 82 | 427019 | 50.85 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 101.70% | |
| 11) 2-Fluorobiphenyl | 6.610 | 172 | 959647 | 39.70 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 79.40% | |
| 17) 2,4,6-Tribromophenol | 0.000 | 330 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 26) Terphenyl-d14 | 12.277 | 244 | 243353 | 20.39 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery | = | 40.78% | |

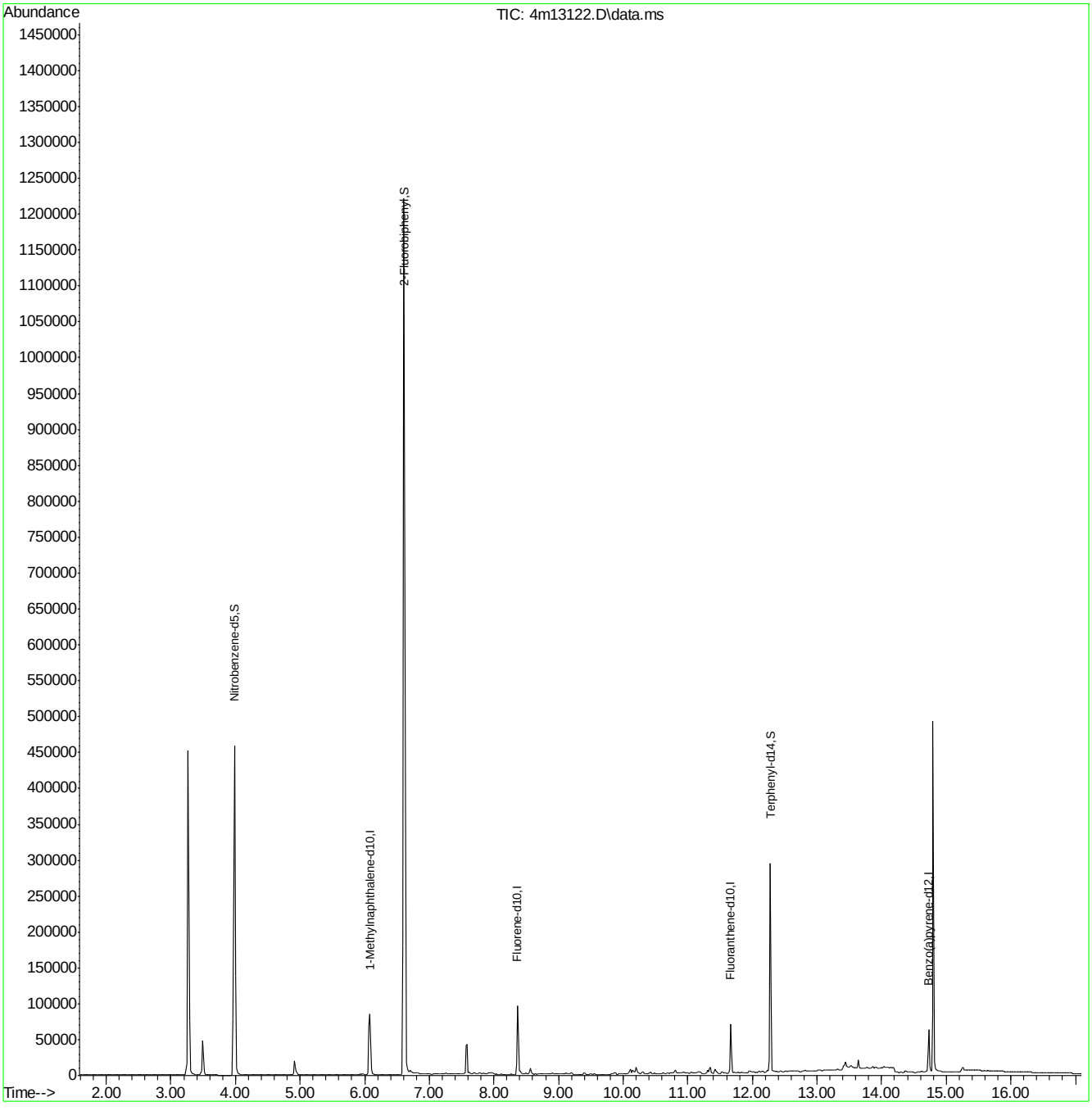
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M605\
Data File : 4m13122.D
Acq On : 7 Nov 2009 1:34 am
Operator : ninap
Sample : ja31597-1
Misc : op40707a,e4m606,1000
ALS Vial : 49 Sample Multiplier: 1

Quant Time: Nov 12 08:43:50 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 4m13123.d
Acq On : 7 Nov 2009 1:56 am
Operator : ninap
Sample : ja31597-2
Misc : op40707a,e4m606,1000
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Nov 12 09:14:20 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1-Methylnaphthalene-d10 | 6.085 | 152 | 57033 | 4.00 | ppb | -0.02 |
| 12) Fluorene-d10 | 8.361 | 174 | 70339 | 4.00 | ppb | -0.03 |
| 23) Fluoranthene-d10 | 11.659 | 212 | 84735 | 4.00 | ppb | -0.03 |
| 30) Benzo(a)pyrene-d12 | 14.714 | 264 | 51585 | 4.00 | ppb | -0.03 |
| System Monitoring Compounds | | | | | | |
| 2) 2-Fluorophenol | 0.000 | 112 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 3) Phenol-d5 | 0.000 | 99 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 6) Nitrobenzene-d5 | 3.982 | 82 | 500008 | 56.79 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 113.58% | |
| 11) 2-Fluorobiphenyl | 6.610 | 172 | 1221280 | 48.19 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 96.38% | |
| 17) 2,4,6-Tribromophenol | 0.000 | 330 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 26) Terphenyl-d14 | 12.277 | 244 | 403190 | 31.83 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery | = | 63.66% | |
| Target Compounds | | | | | | Qvalue |
| 7) Naphthalene | 4.941 | 128 | 15852 | 0.51 | ppb | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

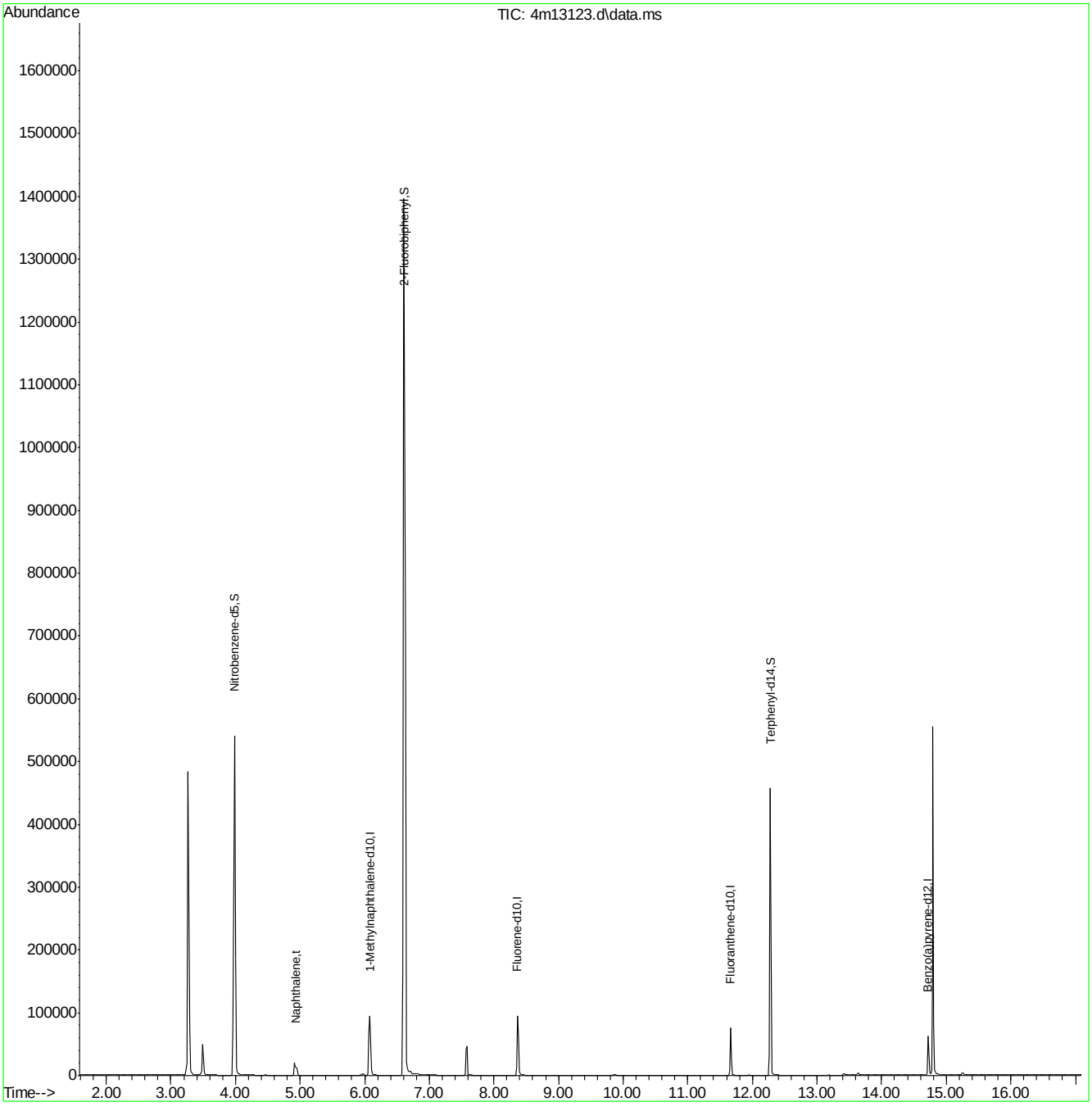
9.1.6

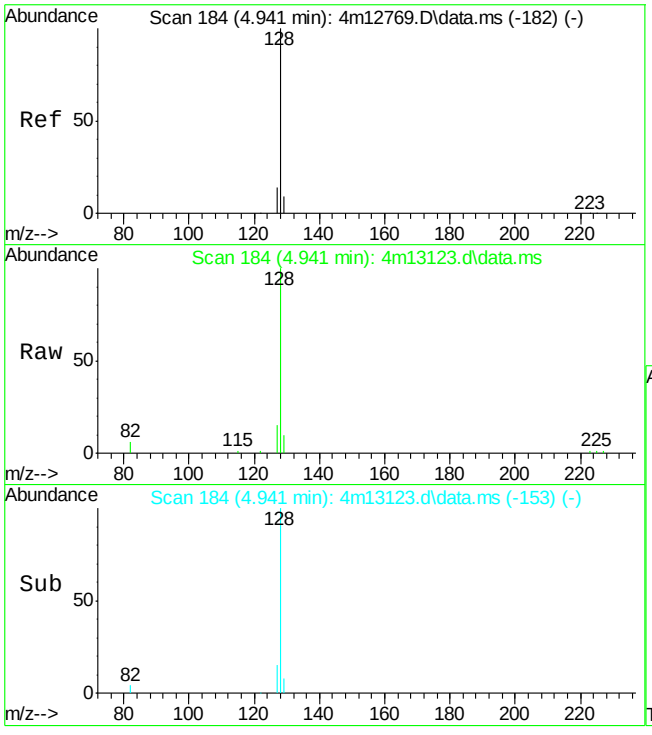
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 4m13123.d
Acq On : 7 Nov 2009 1:56 am
Operator : ninap
Sample : ja31597-2
Misc : op40707a,e4m606,1000
ALS Vial : 50 Sample Multiplier: 1

Quant Time: Nov 12 09:14:20 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration

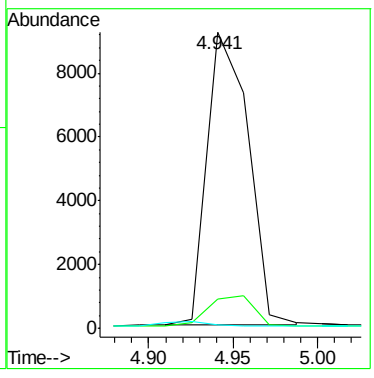





#7
Naphthalene
Concen: 0.51 ppb
RT: 4.941 min Scan# 184
Delta R.T. -0.015 min
Lab File: 4m13123.d
Acq: 7 Nov 2009 1:56 am

Tgt Ion:128 Resp: 15852

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 9.2 | 0.0 | 39.3 |
| 122 | 0.0 | 0.0 | 30.3 |




9.1.6

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On : 5 Nov 2009 5:21 pm
Operator : larisap
Sample : op40707-mb1
Misc : op40707,E3M662,1000
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 06 14:32:15 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration

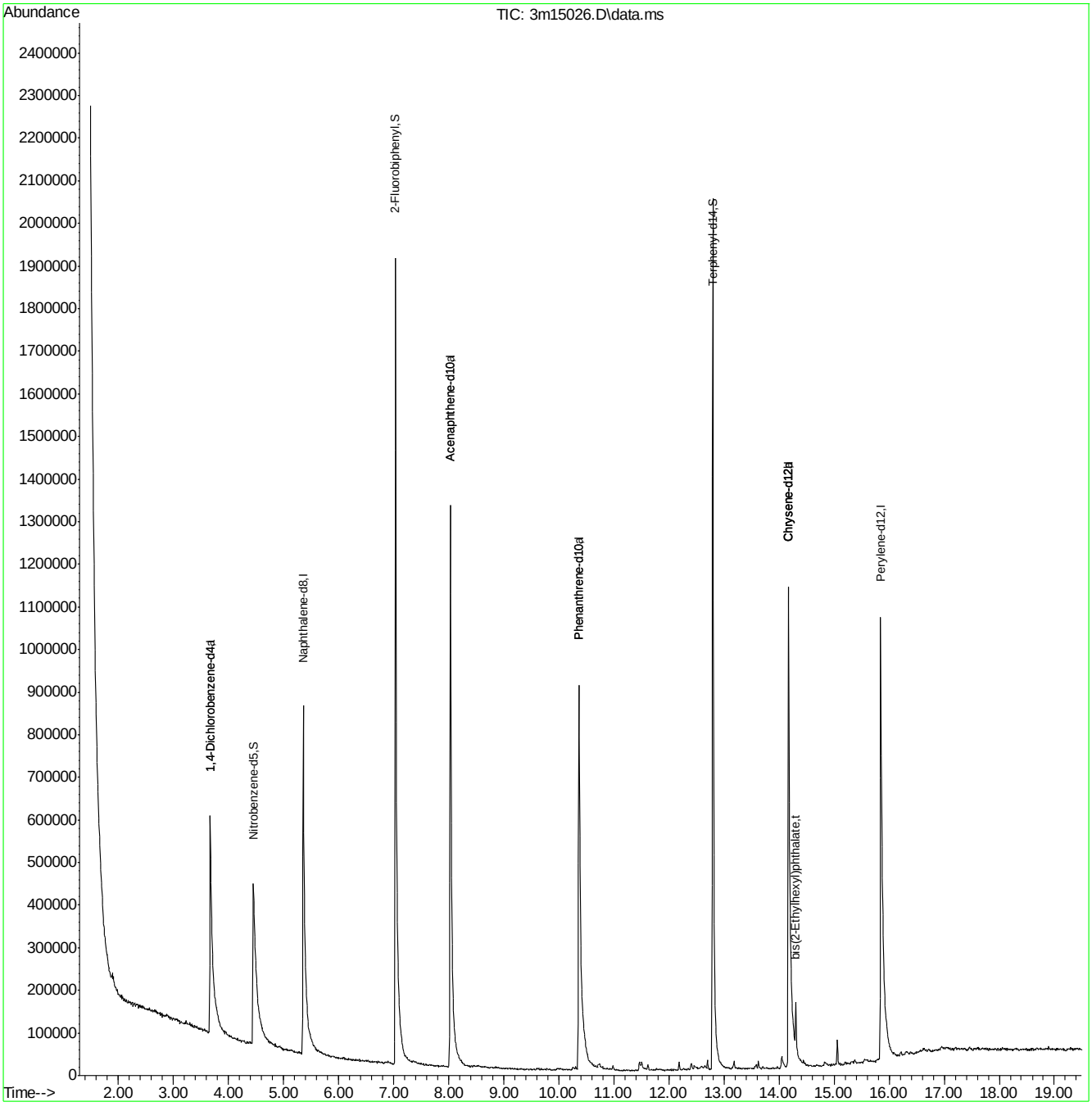
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1,4-Dichlorobenzene-d4 | 3.667 | 152 | 265925 | 40.00 | ppb | 0.00 |
| 24) Naphthalene-d8 | 5.352 | 136 | 984897 | 40.00 | ppb | -0.02 |
| 47) Acenaphthene-d10 | 8.031 | 164 | 616881 | 40.00 | ppb | -0.03 |
| 69) Phenanthrene-d10 | 10.363 | 188 | 993458 | 40.00 | ppb | -0.02 |
| 83) Chrysene-d12 | 14.166 | 240 | 1131779 | 40.00 | ppb | -0.02 |
| 92) Perylene-d12 | 15.851 | 264 | 1053575 | 40.00 | ppb | -0.01 |
| 102) 1,4-Dichlorobenzene-d4a | 3.667 | 152 | 265925 | 40.00 | ppb | 0.00 |
| 104) Phenanthrene-d10a | 10.363 | 188 | 993458 | 40.00 | ppb | -0.02 |
| 106) Acenaphthene-d10a | 8.031 | 164 | 616881 | 40.00 | ppb | -0.03 |
| 108) Chrysene-d12a | 14.166 | 240 | 1131779 | 40.00 | ppb | -0.02 |
| 112) Chrysene-d12b | 14.166 | 240 | 1131779 | 40.00 | ppb | -0.02 |
| System Monitoring Compounds | | | | | | |
| 5) 2-Fluorophenol | 0.000 | 112 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 8) Phenol-d5 | 0.000 | 99 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 25) Nitrobenzene-d5 | 4.448 | 82 | 531965 | 57.11 | ppb | 0.00 |
| Spiked Amount 50.000 | | | Recovery = 114.22% | | | |
| 51) 2-Fluorobiphenyl | 7.031 | 172 | 1206200 | 55.00 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery = 110.00% | | | |
| 73) 2,4,6-Tribromophenol | 0.000 | 330 | 0 | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery = 0.00% | | | |
| 86) Terphenyl-d14 | 12.797 | 244 | 943942 | 38.14 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery = 76.28% | | | |
| Target Compounds | | | | | | Qvalue |
| 91) bis(2-Ethylhexyl)phtha... | 14.305 | 149 | 34061 | 1.57 | ppb | 96 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

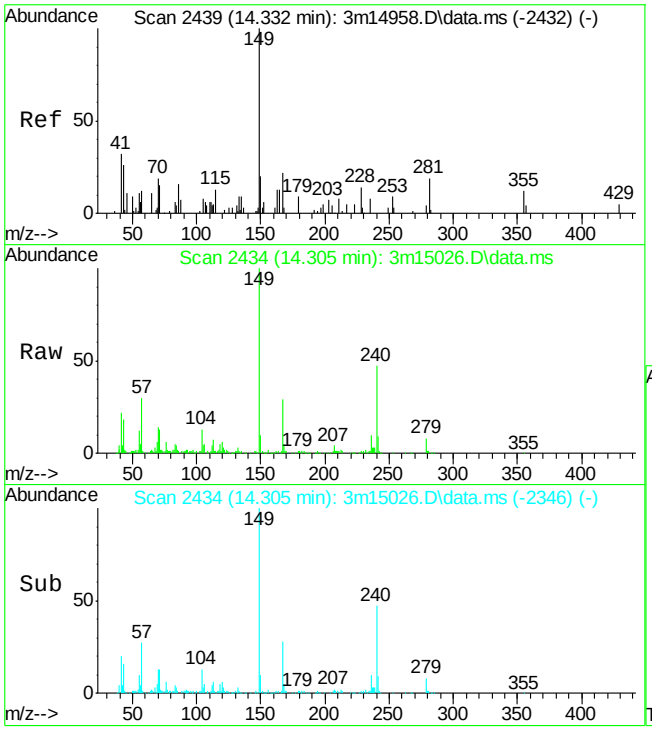
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On : 5 Nov 2009 5:21 pm
Operator : larisap
Sample : op40707-mb1
Misc : op40707,E3M662,1000
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 06 14:32:15 2009
Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u
QLast Update : Wed Nov 04 15:50:07 2009
Response via : Initial Calibration



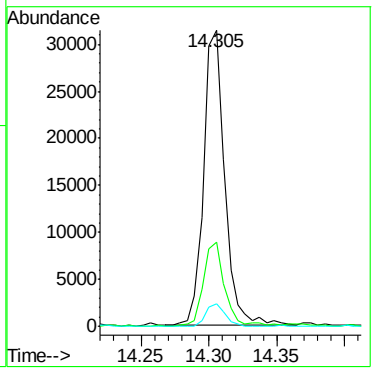

M3M630.M Fri Nov 06 14:32:58 2009 MS3M




#91
bis(2-Ethylhexyl)phthalate
Concen: 1.57 ppb
RT: 14.305 min Scan# 2434
Delta R.T. -0.027 min
Lab File: 3m15026.D
Acq: 5 Nov 2009 5:21 pm

Tgt Ion:149 Resp: 34061

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 149 | 100 | | |
| 167 | 28.3 | 0.3 | 60.3 |
| 279 | 7.7 | 0.0 | 36.2 |




9.2.1

9

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On : 5 Nov 2009 5:21 pm
Operator : larisap
Sample : op40707-mb1
Misc : op40707,E3M662,1000
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

Signal : TIC: 3m15026.D\data.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.988 | 317 | 318 | 325 | rBB6 | 6906 | 10104 | 0.28% | 0.043% |
| 2 | 3.127 | 343 | 344 | 355 | rBB7 | 5392 | 9063 | 0.25% | 0.038% |
| 3 | 3.383 | 391 | 392 | 396 | rBB4 | 7220 | 4802 | 0.13% | 0.020% |
| 4 | 3.667 | 441 | 445 | 483 | rBB | 507757 | 1617260 | 44.31% | 6.804% |
| 5 | 4.170 | 538 | 539 | 542 | rBB3 | 6839 | 3430 | 0.09% | 0.014% |
| 6 | 4.378 | 575 | 578 | 581 | rBB3 | 3652 | 3933 | 0.11% | 0.017% |
| 7 | 4.448 | 587 | 591 | 638 | rBB | 374617 | 1565533 | 42.89% | 6.586% |
| 8 | 4.983 | 690 | 691 | 694 | rBB3 | 5102 | 3356 | 0.09% | 0.014% |
| 9 | 5.197 | 730 | 731 | 734 | rBB3 | 4073 | 3023 | 0.08% | 0.013% |
| 10 | 5.357 | 756 | 761 | 810 | rBB | 816951 | 2216580 | 60.73% | 9.325% |
| 11 | 6.175 | 911 | 914 | 916 | rBB4 | 4443 | 3427 | 0.09% | 0.014% |
| 12 | 6.609 | 991 | 995 | 997 | rBB3 | 3752 | 3773 | 0.10% | 0.016% |
| 13 | 6.721 | 1012 | 1016 | 1017 | rBB4 | 3566 | 4724 | 0.13% | 0.020% |
| 14 | 6.790 | 1027 | 1029 | 1035 | rBB5 | 2381 | 3234 | 0.09% | 0.014% |
| 15 | 6.849 | 1035 | 1040 | 1042 | rBB6 | 3251 | 3434 | 0.09% | 0.014% |
| 16 | 6.892 | 1045 | 1048 | 1053 | rBB7 | 3924 | 3976 | 0.11% | 0.017% |
| 17 | 7.031 | 1069 | 1074 | 1119 | rBB | 1891778 | 3650040 | 100.00% | 15.356% |
| 18 | 7.341 | 1131 | 1132 | 1137 | rBB6 | 3245 | 3196 | 0.09% | 0.013% |
| 19 | 7.550 | 1164 | 1171 | 1172 | rBB6 | 3547 | 3627 | 0.10% | 0.015% |
| 20 | 7.587 | 1174 | 1178 | 1183 | rBB8 | 3643 | 3854 | 0.11% | 0.016% |
| 21 | 7.743 | 1205 | 1207 | 1212 | rBB6 | 2082 | 3050 | 0.08% | 0.013% |
| 22 | 7.807 | 1212 | 1219 | 1221 | rBB8 | 3802 | 7155 | 0.20% | 0.030% |
| 23 | 8.031 | 1253 | 1261 | 1295 | rBB | 1316048 | 2548267 | 69.81% | 10.720% |
| 24 | 8.449 | 1335 | 1339 | 1342 | rBB6 | 3180 | 4352 | 0.12% | 0.018% |
| 25 | 8.657 | 1377 | 1378 | 1386 | rBB8 | 1784 | 3100 | 0.08% | 0.013% |
| 26 | 8.850 | 1411 | 1414 | 1417 | rBB5 | 4217 | 3122 | 0.09% | 0.013% |
| 27 | 9.475 | 1527 | 1531 | 1537 | rBB9 | 2470 | 4146 | 0.11% | 0.017% |
| 28 | 9.550 | 1540 | 1545 | 1548 | rBB7 | 2826 | 3644 | 0.10% | 0.015% |
| 29 | 9.598 | 1550 | 1554 | 1558 | rBB7 | 3690 | 4692 | 0.13% | 0.020% |
| 30 | 9.786 | 1586 | 1589 | 1594 | rBB7 | 4097 | 4563 | 0.13% | 0.019% |
| 31 | 9.962 | 1618 | 1622 | 1628 | rBB8 | 3248 | 5662 | 0.16% | 0.024% |
| 32 | 10.246 | 1671 | 1675 | 1683 | rBB7 | 5934 | 11809 | 0.32% | 0.050% |
| 33 | 10.305 | 1683 | 1686 | 1691 | rBB5 | 6726 | 6048 | 0.17% | 0.025% |
| 34 | 10.363 | 1692 | 1697 | 1753 | rBB2 | 902422 | 2657403 | 72.80% | 11.180% |

M3M630.M Fri Nov 06 14:33:15 2009 MS3M

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On : 5 Nov 2009 5:21 pm
Operator : larisap
Sample : op40707-mb1
Misc : op40707,E3M662,1000
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 10.732 | 1759 | 1766 | 1774 | rBB2 | 8967 | 22315 | 0.61% | 0.094% |
| 36 | 10.871 | 1790 | 1792 | 1800 | rBB8 | 3791 | 5802 | 0.16% | 0.024% |
| 37 | 10.984 | 1809 | 1813 | 1818 | rBB6 | 9784 | 10899 | 0.30% | 0.046% |
| 38 | 11.460 | 1899 | 1902 | 1908 | rBB8 | 14897 | 23603 | 0.65% | 0.099% |
| 39 | 11.503 | 1908 | 1910 | 1916 | rBB2 | 9775 | 11323 | 0.31% | 0.048% |
| 40 | 11.615 | 1927 | 1931 | 1936 | rBB6 | 11839 | 14841 | 0.41% | 0.062% |
| 41 | 11.775 | 1955 | 1961 | 1965 | rBB9 | 3667 | 3892 | 0.11% | 0.016% |
| 42 | 12.037 | 2003 | 2010 | 2014 | rBB9 | 2862 | 6002 | 0.16% | 0.025% |
| 43 | 12.096 | 2018 | 2021 | 2028 | rBB9 | 2236 | 3373 | 0.09% | 0.014% |
| 44 | 12.182 | 2032 | 2037 | 2043 | rBB4 | 19763 | 21507 | 0.59% | 0.090% |
| 45 | 12.348 | 2063 | 2068 | 2073 | rBB9 | 3371 | 4399 | 0.12% | 0.019% |
| 46 | 12.407 | 2073 | 2079 | 2085 | rBB9 | 15328 | 26306 | 0.72% | 0.111% |
| 47 | 12.460 | 2085 | 2089 | 2094 | rBB8 | 6803 | 9025 | 0.25% | 0.038% |
| 48 | 12.647 | 2120 | 2124 | 2130 | rBB9 | 7385 | 9461 | 0.26% | 0.040% |
| 49 | 12.701 | 2130 | 2134 | 2142 | rBB2 | 22183 | 23033 | 0.63% | 0.097% |
| 50 | 12.797 | 2142 | 2152 | 2190 | rBB | 2044246 | 3115606 | 85.36% | 13.107% |
| 51 | 13.182 | 2219 | 2224 | 2229 | rBB3 | 18453 | 19805 | 0.54% | 0.083% |
| 52 | 13.262 | 2236 | 2239 | 2244 | rBB7 | 2936 | 3600 | 0.10% | 0.015% |
| 53 | 13.300 | 2244 | 2246 | 2251 | rBB6 | 2906 | 3005 | 0.08% | 0.013% |
| 54 | 13.353 | 2251 | 2256 | 2260 | rBB8 | 2793 | 4335 | 0.12% | 0.018% |
| 55 | 13.583 | 2290 | 2299 | 2303 | rBB8 | 10096 | 18467 | 0.51% | 0.078% |
| 56 | 13.626 | 2303 | 2307 | 2316 | rBB3 | 18172 | 22344 | 0.61% | 0.094% |
| 57 | 13.706 | 2316 | 2322 | 2325 | rBB7 | 4266 | 6287 | 0.17% | 0.026% |
| 58 | 13.968 | 2368 | 2371 | 2379 | rBB9 | 4352 | 6663 | 0.18% | 0.028% |
| 59 | 14.049 | 2379 | 2386 | 2401 | rBB5 | 27635 | 64527 | 1.77% | 0.271% |
| 60 | 14.166 | 2404 | 2408 | 2430 | rBB | 1116815 | 2608881 | 71.48% | 10.975% |
| 61 | 14.300 | 2430 | 2433 | 2441 | rBB | 99302 | 101813 | 2.79% | 0.428% |
| 62 | 14.444 | 2457 | 2460 | 2467 | rBB8 | 8959 | 11449 | 0.31% | 0.048% |
| 63 | 14.557 | 2476 | 2481 | 2488 | rBB8 | 2704 | 6125 | 0.17% | 0.026% |
| 64 | 14.685 | 2500 | 2505 | 2514 | rBB8 | 3108 | 6633 | 0.18% | 0.028% |
| 65 | 14.781 | 2519 | 2523 | 2527 | rBB6 | 2461 | 3301 | 0.09% | 0.014% |
| 66 | 14.829 | 2527 | 2532 | 2540 | rBB10 | 8926 | 16764 | 0.46% | 0.071% |
| 67 | 15.059 | 2566 | 2575 | 2582 | rBB2 | 56929 | 65498 | 1.79% | 0.276% |
| 68 | 15.199 | 2595 | 2601 | 2604 | rBB8 | 5074 | 6766 | 0.19% | 0.028% |
| 69 | 15.311 | 2621 | 2622 | 2624 | rBB2 | 3880 | 3065 | 0.08% | 0.013% |
| 70 | 15.375 | 2630 | 2634 | 2641 | rBB7 | 9637 | 14046 | 0.38% | 0.059% |
| 71 | 15.498 | 2650 | 2657 | 2661 | rBB10 | 3597 | 6155 | 0.17% | 0.026% |

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On : 5 Nov 2009 5:21 pm
Operator : larisap
Sample : op40707-mb1
Misc : op40707,E3M662,1000
ALS Vial : 4 Sample Multiplier: 1

Integration Parameters: lscint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 1000 Area counts
Start Thrs: 0.02 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\M3M630.M
Title : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 15.552 | 2661 | 2667 | 2669 | rBB7 | 3830 | 6489 | 0.18% | 0.027% |
| 73 | 15.787 | 2705 | 2711 | 2712 | rBB6 | 2747 | 6116 | 0.17% | 0.026% |
| 74 | 15.846 | 2715 | 2722 | 2765 | rBB | 1035997 | 2895304 | 79.32% | 12.180% |
| 75 | 16.215 | 2785 | 2791 | 2797 | rBB10 | 8838 | 14959 | 0.41% | 0.063% |
| 76 | 16.397 | 2819 | 2825 | 2829 | rBB9 | 4885 | 7681 | 0.21% | 0.032% |
| 77 | 16.493 | 2836 | 2843 | 2844 | rBB7 | 4757 | 5779 | 0.16% | 0.024% |
| 78 | 16.573 | 2850 | 2858 | 2861 | rBB10 | 4223 | 5454 | 0.15% | 0.023% |
| 79 | 16.621 | 2864 | 2867 | 2868 | rBB3 | 4787 | 4172 | 0.11% | 0.018% |
| 80 | 16.718 | 2881 | 2885 | 2891 | rBB9 | 5762 | 10146 | 0.28% | 0.043% |
| 81 | 16.894 | 2917 | 2918 | 2923 | rBB5 | 3522 | 3256 | 0.09% | 0.014% |
| 82 | 16.953 | 2923 | 2929 | 2935 | rBB5 | 8281 | 14588 | 0.40% | 0.061% |
| 83 | 17.215 | 2974 | 2978 | 2981 | rBB5 | 5895 | 7892 | 0.22% | 0.033% |
| 84 | 17.247 | 2981 | 2984 | 2990 | rBB8 | 4565 | 9558 | 0.26% | 0.040% |
| 85 | 17.349 | 3002 | 3003 | 3006 | rBB3 | 3848 | 3200 | 0.09% | 0.013% |
| 86 | 17.461 | 3020 | 3024 | 3027 | rBB6 | 4530 | 6174 | 0.17% | 0.026% |
| 87 | 17.536 | 3036 | 3038 | 3041 | rBB3 | 4029 | 3610 | 0.10% | 0.015% |
| 88 | 17.819 | 3088 | 3091 | 3095 | rBB6 | 6512 | 7854 | 0.22% | 0.033% |
| 89 | 17.980 | 3117 | 3121 | 3124 | rBB6 | 7280 | 7800 | 0.21% | 0.033% |
| 90 | 18.023 | 3124 | 3129 | 3131 | rBB6 | 7211 | 8002 | 0.22% | 0.034% |
| 91 | 18.146 | 3151 | 3152 | 3155 | rBB3 | 4997 | 3264 | 0.09% | 0.014% |
| 92 | 18.386 | 3193 | 3197 | 3199 | rBB5 | 2782 | 3083 | 0.08% | 0.013% |
| 93 | 18.536 | 3223 | 3225 | 3227 | rBB3 | 3820 | 3024 | 0.08% | 0.013% |
| 94 | 18.579 | 3230 | 3233 | 3235 | rBB4 | 5131 | 5046 | 0.14% | 0.021% |
| 95 | 18.595 | 3235 | 3236 | 3241 | rBB5 | 6280 | 7807 | 0.21% | 0.033% |
| 96 | 18.686 | 3249 | 3253 | 3254 | rBB4 | 3227 | 3909 | 0.11% | 0.016% |
| 97 | 18.809 | 3272 | 3276 | 3279 | rBB6 | 2953 | 4252 | 0.12% | 0.018% |
| 98 | 18.900 | 3290 | 3293 | 3295 | rBB4 | 6716 | 3558 | 0.10% | 0.015% |
| 99 | 19.296 | 3366 | 3367 | 3372 | rBB5 | 6403 | 5120 | 0.14% | 0.022% |
| 100 | 19.344 | 3375 | 3376 | 3380 | rBB4 | 4343 | 4681 | 0.13% | 0.020% |

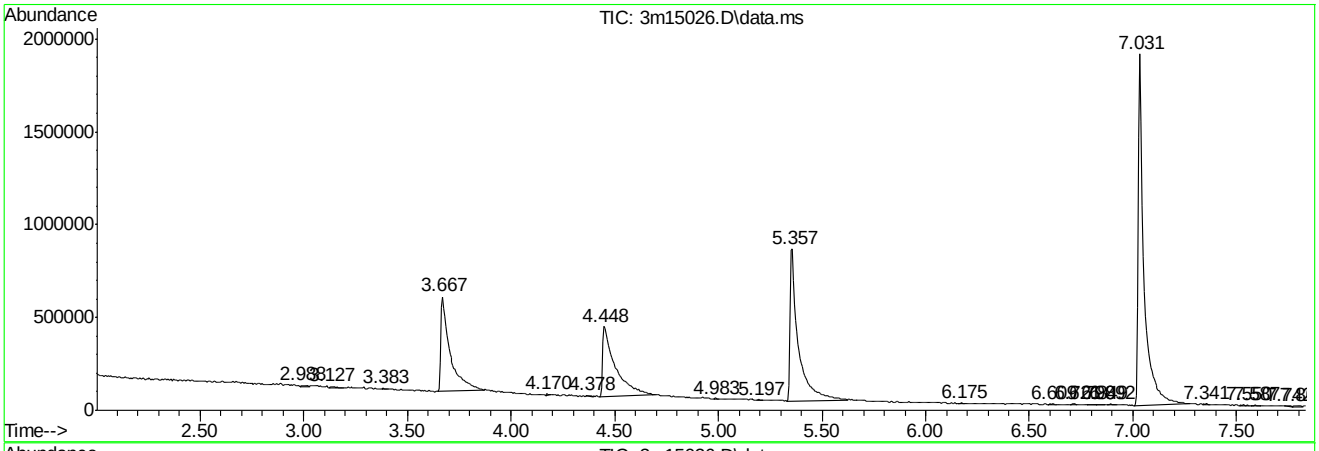
Sum of corrected areas: 23770076

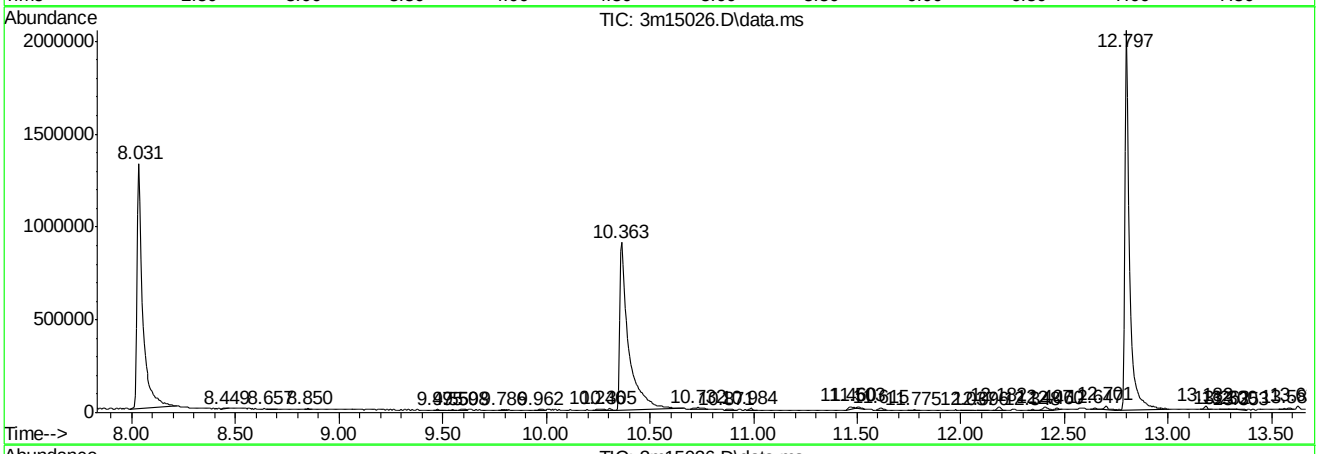
LSC Report - Integrated Chromatogram

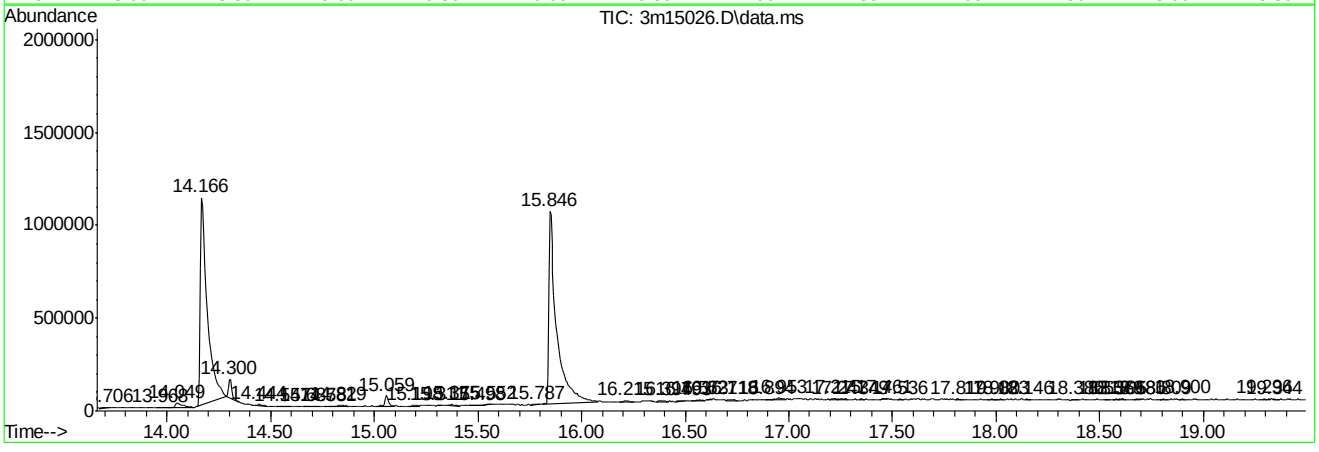
```
Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On    :  5 Nov 2009   5:21 pm
Operator  : larisap
Sample    : op40707-mb1
Misc      : op40707,E3M662,1000
ALS Vial  : 4   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library    : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p
```



Library Search Compound Report

```
Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On    :  5 Nov 2009   5:21 pm
Operator  : larisap
Sample    : op40707-mb1
Misc      : op40707,E3M662,1000
ALS Vial  : 4   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library   : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p

No Library Search Compounds Detected
```

**********

Tentatively Identified Compound (LSC) summary

```
Data Path : C:\msdchem\1\DATA\e3m662\
Data File : 3m15026.D
Acq On    :  5 Nov 2009   5:21 pm
Operator  : larisap
Sample    : op40707-mb1
Misc      : op40707,E3M662,1000
ALS Vial  : 4   Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M3M630.M
Quant Title  : SEMI-VOA METHOD. Column ZB-5ms 20mX0.18mmIDX0.18u

TIC Library   : C:\DATABASE\NIST98.L
TIC Integration Parameters: lscint.p

                                                  |--Internal Standard---|
TIC Top Hit name      RT  EstConc Units Response |#    RT     Resp  Conc|
-------------------------------------------------------------------------
```

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M605\
Data File : 4m13107.D
Acq On : 6 Nov 2009 8:03 pm
Operator : ninap
Sample : op40707a-mb1
Misc : op40707a,e4m606,1000
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Nov 09 14:14:40 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration

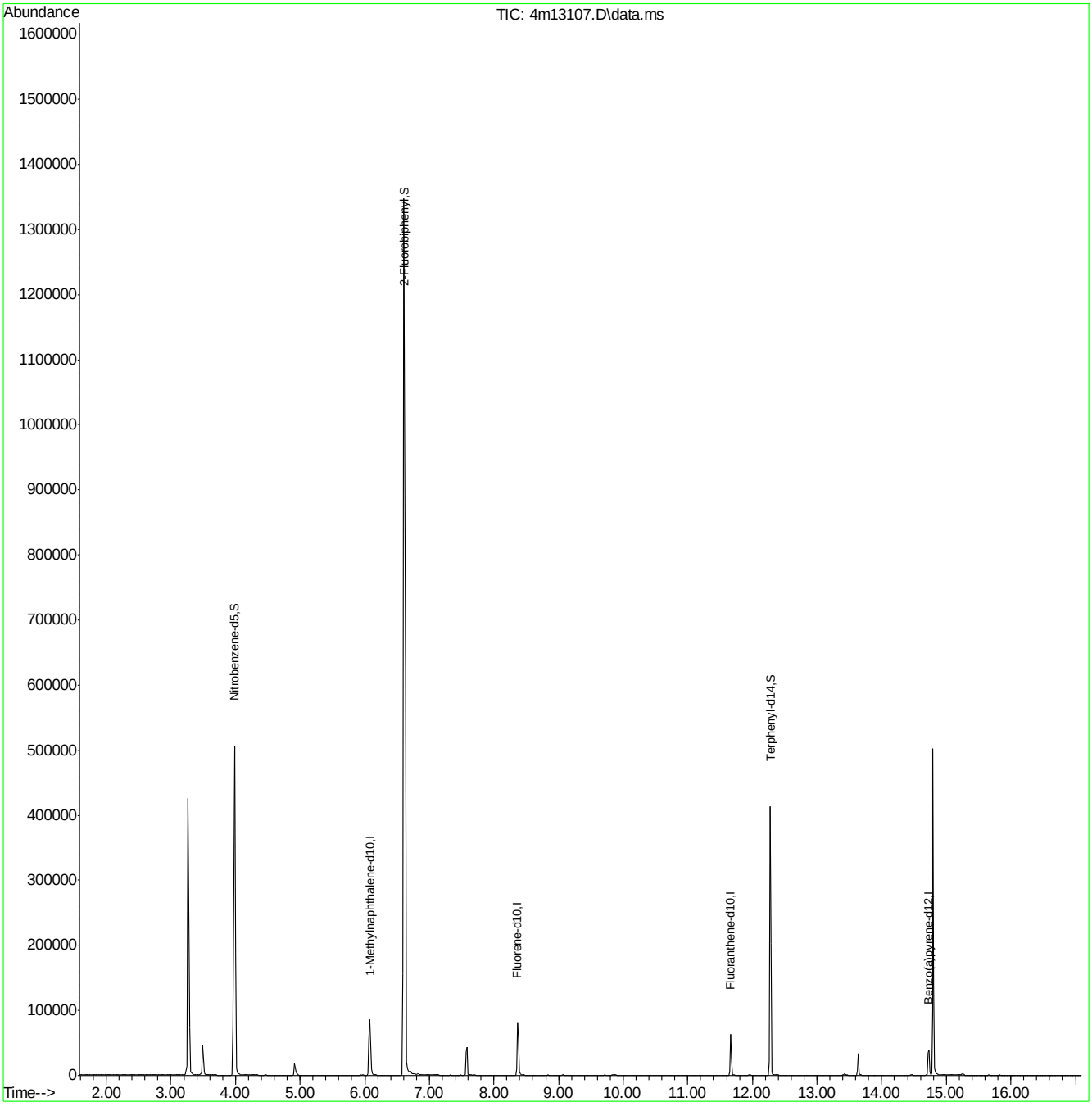
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1-Methylnaphthalene-d10 | 6.085 | 152 | 50715 | 4.00 | ppb | -0.02 |
| 12) Fluorene-d10 | 8.361 | 174 | 60912 | 4.00 | ppb | -0.03 |
| 23) Fluoranthene-d10 | 11.659 | 212 | 74145 | 4.00 | ppb | -0.03 |
| 30) Benzo(a)pyrene-d12 | 14.728 | 264 | 41856 | 4.00 | ppb | -0.01 |
| System Monitoring Compounds | | | | | | |
| 2) 2-Fluorophenol | 0.000 | 112 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 3) Phenol-d5 | 0.000 | 99 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 6) Nitrobenzene-d5 | 3.982 | 82 | 476413 | 60.85 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 121.70% | |
| 11) 2-Fluorobiphenyl | 6.610 | 172 | 1160745 | 51.51 | ppb | -0.02 |
| Spiked Amount 50.000 | | | Recovery | = | 103.02% | |
| 17) 2,4,6-Tribromophenol | 0.000 | 330 | 0d | 0.00 | ppb | |
| Spiked Amount 50.000 | | | Recovery | = | 0.00% | |
| 26) Terphenyl-d14 | 12.277 | 244 | 363236 | 32.77 | ppb | -0.03 |
| Spiked Amount 50.000 | | | Recovery | = | 65.54% | |
| Target Compounds | | | | | | Qvalue |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

9.2.3

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M605\
Data File : 4m13107.D
Acq On : 6 Nov 2009 8:03 pm
Operator : ninap
Sample : op40707a-mb1
Misc : op40707a,e4m606,1000
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Nov 09 14:14:40 2009
Quant Method : C:\msdchem\1\METHODS\M4M597SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .25um
QLast Update : Thu Nov 05 14:22:27 2009
Response via : Initial Calibration