ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: WRB Refining LP - Wood River Refinery

Street Address: 900 South Central Ave.

City: Roxana, IL 62084

County: Madison

Site No. (IEPA): 1191150002

Site No. (USEPA): ILD 080 012 305

2.0 OWNER INFORMATION

Name: Not Applicable

Mailing Address:

3.0 OPERATOR INFORMATION

Equilon Enterprises LLC d/b/a Shell Oil Products US

17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Contact Name: Kevin Dyer

Contact Title: Principal Program Manager

Phone No.: 618-288-7237

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Groundwater Sampling Report – 3rd Quarter 2012
Date of Submittal _____

IEPA Permit Log No. B-43R
Date of Last IEPA Letter on Project 3/14/12
Log No. of Last IEPA Letter on Project B-43R-CA-25
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Groundwater sampling report for the 3rd quarter 2012 sampling event in the project area in the Village of Roxana.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Cover letter, RCRA Corrective Action Certification and Groundwater Sampling Report – 3rd Quarter 2012

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: _____

Operator Signature: Kevin E Myers 10/10/12 (Date)

Title: Principal Program Manager

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: Robert Billman Date: 10/12/12

Professional's Name: Robert B. Billman

Professional's Address: URS Corporation
1001 Highlands Plaza Drive West
St. Louis, MO 63110

Professional's Phone No.: 314-743-4108

Professional's Seal:

7.3 LABORATORY CERTIFICATION *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

Mailing Address of Laboratory

Accutest Laboratories
495 Technology Center West
Building One
Marlboro, MA 01752
(508) 481-6200

[signature] 9/28/12
Signature of Laboratory Responsible Officer — Date

Reza Tamadi, Director
Name and Title of Laboratory Responsible Officer

URS

October 15, 2012

Mr. Steven F. Nightingale, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Avenue East
Springfield, Illinois 62794

Subject: **Groundwater Monitoring Report – 3rd Quarter 2012**
Roxana, Illinois
119115002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43-CA-21

Dear Mr. Nightingale:

On behalf of Shell Oil Products US, URS Corporation is submitting the enclosed report for your review. This sampling was required by Condition 7 of the Agency's letter dated August 5, 2010.

If you have any questions during your review, please contact Kevin Dyer, SOPUS Principal Program Manager, at kevin.dyer@shell.com (618/288-7237), or me at robert.mooshegian@urs.com (314/743-4106).

Sincerely,

URS Corporation, on behalf of Shell Oil Products US

Kelly Hurst
Senior Environmental Scientist

Robert Mooshegian, CHMM
Senior Project Manager

Enclosures: RCRA Corrective Action Certification and Report (original plus 2 copies)

Cc: Kevin Dyer, SOPUS
Marty Reynolds, Village of Roxana
Eric Petersen, ConocoPhillips
Amy Boley, IEPA, Springfield
Gina Search, IEPA, Collinsville
Repository – Roxana Public Library

1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
Phone: 314.429.0100
Fax: 314.429.0462

REPORT

INTERIM GROUNDWATER MONITORING PROGRAM – 3RD QUARTER 2012

Roxana, Illinois

Prepared for:

Shell Oil Products US
17 Junction Drive
PMB#399
Glen Carbon, Illinois 62034

October 2012

URS Corporation
1001 Highlands Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project 21562735.00008

TABLE OF CONTENTS

Certification **Resource Conservation and Recovery Act (RCRA) Corrective Action Form**

SECTION 1 INTRODUCTION 1-1

SECTION 2 GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES 2-1

2.1 Additional Activities or Modifications 2-1
2.2 Groundwater Monitoring Well Gauging and Sampling 2-1
2.3 Health & Safety, Decontamination, and Investigative Derived Wastes 2-3
2.4 Groundwater Sample Handling and Laboratory Testing 2-4
2.5 Data Quality Review and Data Management 2-5

SECTION 3 GROUNDWATER SAMPLING RESULTS 3-1

3.1 Groundwater Monitoring Well Gauging Results 3-1
3.2 Data Quality Review Results 3-1
3.3 Analytical Results and Discussion 3-2

SECTION 4 REFERENCES 4-1

List of Tables

Table 1 Cumulative Groundwater Monitoring Well Gauging Results
Table 2a Cumulative Summary of Groundwater Monitoring Well Field Parameters
Table 2b Cumulative Summary of Perched Groundwater Monitoring Well Field Parameters
Table 3 Cumulative Summary of Groundwater Monitoring Well Analytical Results and Exceedances

List of Figures

Figure 1 Investigation Area Location Map
Figure 2 Groundwater Monitoring Well Sampling Locations
Figure 3a Groundwater Contours 3Q12
Figure 3b Groundwater Contours 3Q12-West Fenceline
Figure 4a 3Q12 Thickness of LNAPL-West Fenceline
Figure 4b 3Q12 Thickness of LNAPL
Figure 5 3Q12 Groundwater Monitoring Well Analytical Exceedances
Figure 6 3Q12 Dissolved Phase Benzene Concentrations in Groundwater
Figure 7 Cross-Section of Benzene 3Q12 Groundwater Analytical Results-Chaffer Street
Figure 8 Cross-Section of Benzene 3Q12 Groundwater Analytical Results-Route 111 to Chaffer Street

List of Appendices

Appendix A Groundwater Sampling Data Forms
Appendix B Data Review Forms and Laboratory Analytical Reports

URS Corporation (URS) is submitting this report on behalf of Shell Oil Products US (SOPUS) for the 3rd Quarter 2012 (3Q12) groundwater monitoring well gauging and sampling conducted in the Village of Roxana, Illinois (**Figure 1**). The study area within the Village of Roxana (Village) is generally bounded by the alley north of First Street, Illinois Route 111, the West Fenceline of the WRB Refining, LP (WRB)[1] Wood River Refinery (WRR), and the Roxana Public Works Yard. Some monitoring wells within the WRR were also sampled as part of this event, conducted in cooperation with WRB/Phillips 66 (P66)[2]. For purposes of presentation in this report only, the combined area is collectively referred to as the "Investigation Area."

In an August 5, 2010 letter from the Illinois Environmental Protection Agency (IEPA) to SOPUS, IEPA requested various site characterization and monitoring activities, along with initiation of an interim groundwater monitoring program. This program began in the 4th Quarter 2010 (4Q10), and the first report was submitted on January 14, 2011. On March 3, 2011, a conference call was held among representatives of SOPUS, IEPA and URS to discuss the groundwater monitoring program and IEPA's general comments on the 4Q10 report. Subsequent modifications were incorporated during the 1st Quarter 2011 (1Q11) and 2nd Quarter 2011 (2Q11) Roxana Interim Groundwater Monitoring Program. Additional items/comments regarding the Roxana Interim Groundwater Monitoring Program were presented by IEPA in June 16, 2011 and August 31, 2011 letters. These items/comments were presented in the 3rd quarter 2011 (3Q11) and 4th Quarter 2011 (4Q11) reports.

In a March 14, 2012 letter (CA-24) from IEPA to SOPUS, IEPA requested groundwater piezometer ROST-3-PZ and groundwater monitoring well ROST-4-PZ(C) be added to the Roxana Interim Groundwater Monitoring Program. These monitoring locations have been incorporated into this report. In a second letter (CA-25) dated March 14, 2012 from IEPA to SOPUS, IEPA requested that perched groundwater be evaluated at the following groundwater monitoring wells and piezometers: P-60-12S, P-60-13S, ROST-5-PZ, ROST-7-PZ, ROST-10-PZ, and ROST-21-PZ. These groundwater monitoring wells and piezometers were incorporated into the Roxana Interim Groundwater Monitoring Program beginning in 2Q12.

Lastly, on May 31, 2012, IEPA verbally requested the following be incorporated into the 2Q12 report:

[1] WRB, formed January 1, 2007, is a 50/50 joint venture between ConocoPhillips (COP) and EnCana US Refineries, LLC (now known as Cenovus Energy, Inc.).

[2] ConocoPhillips Company announced the separation of the Refining and Marketing business from the Exploration & Production business on July 14, 2011. The separation included an ownership change as well as a name change that became effective May 1, 2012. Phillips 66 is now the operator of the WRB WRR.

- The ROST-4 series of groundwater monitoring wells and piezometers in the groundwater elevation contour maps **(Figures 3a and 3b)**;
- A groundwater contour map focusing on the west Fenceline area in the Village **(Figure 3b)**; and
- A regional light non-aqueous phase liquid (LNAPL) map **(Figure 4b)**.

Groundwater samples were collected and analyzed during the 3Q12 to meet the requirements of the Interim Groundwater Monitoring Program, as specified in the March 14, 2012 letters from IEPA. **Figure 2** shows the monitoring wells that are part of the interim monitoring well network.

The groundwater monitoring well gauging and sampling procedures are discussed in this section as part of Interim Groundwater Monitoring Program, as outlined in the IEPA's letter dated August 5, 2010 and modified based on the two March 14, 2012 letters.

2.1 ADDITIONAL ACTIVITIES OR MODIFICATIONS

The following additional work activities or modifications were conducted in the 3Q12 sampling event:

- Weekly groundwater monitoring well gauging of the WRR and Village groundwater monitoring wells has continued to date to determine groundwater control at the WRR.
- Split samples were collected with IEPA from groundwater monitoring wells MW-4, MW-5, MW-8, ROST-3-PZ and ROST-4-PZ(C) from July 25-26, 2012. The samples for MW-8 and ROST-3-PZ arrived at the laboratory with temperatures outside criteria, and as such were resampled on August 7, 2012. Analytical results obtained by IEPA at these groundwater monitoring wells are not included in this report.
- Perched groundwater monitoring piezometers ROST-5-PZ, ROST-7-PZ, ROST-10-PZ, and ROST-21-PZ in the Village, and P-60-12S and P-60-13S in the WRR could not be sampled according to the SOP due to low volume of water.
- Groundwater monitoring well P-55 was found to be compromised during this event and was not sampled. A replacement groundwater monitoring well will be installed during 4th Quarter 2012 (4Q12).
- Groundwater monitoring well MW-7 was sampled on July 26, 2012. The sample arrived at the laboratory with temperature outside criteria, and as such was resampled on August 7, 2012.

2.2 GROUNDWATER MONITORING WELL GAUGING AND SAMPLING

Groundwater Monitoring Well Gauging

The comprehensive groundwater monitoring well gauging event was conducted on July 2-3, 5-6, and 9, 2012, in conjunction with the 3Q12 gauging event for the WRR to evaluate groundwater flow direction and identify possible separate phase product in the Investigation Area. Depth to product (if present) and depth to water were noted in electronic format using Panasonic Toughbook® technology (Toughbook®). The cumulative groundwater monitoring well gauging data can be found in **Table 1**.

Low Flow Groundwater Purging and Sampling

Groundwater monitoring well samples were collected from July 25 – August 9, 2012 via low-flow groundwater purging and sampling procedures. Prior to groundwater monitoring well sampling, the initial water level was measured and recorded in the Toughbook®.

Groundwater monitoring wells MW-1 through MW-14, P-54, P-56 through P-59, P-66, P-74, P-93D, ROST-4-PZ(C), and T-12 were purged and sampled using a stainless steel submersible pump, low flow controller, and designated polyethylene tubing[3]. The submersible pump, with the proper length of designated polyethylene tubing, was slowly lowered into the groundwater monitoring well to be sampled and the pump intake was set near the midpoint of the groundwater monitoring well screen.

Groundwater monitoring wells P-93A, P-93B, and P-93C located on the WRR North Property, and P-114 located on the WRR West Property, were purged and sampled using a dedicated submersible stainless steel QED Environmental Systems, Inc. (QED) Well Wizard® groundwater monitoring well sampling pump and bonded designated polyethylene tubing. The dedicated pump intake is positioned near the midpoint of the well screen and the pump is operated using a QED MicroPurge Engine/Compressor with a QED Control Box.

Groundwater monitoring well ROST-3-PZ, located in the Village, was purged and sampled using a stainless steel submersible bladder pump and bonded designated polyethylene tubing. The submersible bladder pump was powered by the QED Sample Pro controller unit. The submersible bladder pump with the proper length of designated polyethylene tubing was slowly lowered into the groundwater monitoring well to be sampled and the pump intake was set near the midpoint of groundwater monitoring well screen.

The tubing from the sampling pump was connected to a flow-through cell, which discharged into a 5-gallon plastic container. Pumping was performed at a low flow rate (≤300 mL/minute) to minimize drawdown of the water level within the groundwater monitoring well. During groundwater purging, water quality parameters (pH, temperature, specific conductivity, turbidity, dissolved oxygen (DO) and oxidation-reduction (ORP)) were measured and recorded on the field forms after every flow-through cell volume. Purging continued until a minimum of three flow-through cell volumes of water were removed and the groundwater quality parameters stabilized. The final water quality parameters were recorded in the Toughbook®. Once stabilization was achieved, the groundwater flow was diverted from the flow-through cell and groundwater

[3] All designated tubing is stored in a sealed bag designated for the particular well between sampling events.

samples were collected for volatile organic compound (VOC) and semivolatile organic compound (SVOC) analysis. Groundwater sampling field parameters can be found in **Tables 2a and 2b,** and field data forms are included in **Appendix A**.

2.3 HEALTH & SAFETY, DECONTAMINATION, AND INVESTIGATIVE DERIVED WASTE

Health & Safety

The quarterly sampling activities were performed and governed by the *Roxana / Route 111, WRR, and Rand Avenue Investigation Health and Safety Plan,* dated July 2012 (URS, 2012a), as prepared by URS.

Prior to beginning site work and at the start of work each day, a daily safety meeting was held. The purpose of this meeting was to discuss the day's planned activities and to address any potential health and safety concerns. As a part of the daily safety meeting, job safety analyses (JSAs) were reviewed to address task specific safety concerns.

URS field personnel wore U.S. Environmental Protection Agency (USEPA) modified Level D personal protective equipment (PPE), which included hard hat, steel-toed boots, safety glasses, etc. In addition, work within the WRR was performed wearing flame retardant clothing (FRCs) per WRR requirements (in areas where required).

A photoionization detector (PID) with a 10.6 electron volt (eV) lamp, combustible gas indicator (CGI), and individual hydrogen sulfide gas detectors (for locations inside WRR) were used during the field activities to monitor air quality. Field instruments were calibrated prior to use each day in accordance with the manufacturer's specifications.

Decontamination

Field personnel and equipment underwent decontamination procedures to ensure the health and safety of those present, to maintain sample integrity, and to minimize cross contamination. Sampling equipment (e.g., groundwater pump) was decontaminated prior to the collection of each analytical sample, between sample locations, and prior to leaving the investigation site by washing with LiquiNox® and a distilled water rinse. Interface probes were decontaminated using isopropyl alcohol. Personnel and small equipment decontamination were performed at the sample locations.

Investigation Derived Waste

Investigative derived waste (IDW), such as purge water and decontamination water generated during groundwater sampling activities was collected, stored and disposed of in accordance with

RCRA and United States Department of Transportation (DOT) regulations. Expendable materials (e.g., disposable sampling equipment such as gloves and tubing) were collected in trash bags and disposed as municipal waste.

Decontamination fluids and purge water from groundwater monitoring wells located at the Public Works Yard (MW-7 and MW-8) were staged in 55-gallon steel drums at the Public Works Yard and removed by Heritage Environmental Services the following day. This material is managed as hazardous waste based on prior characterization and was disposed at the Heritage Environmental Services, LLC facility in Indianapolis, Indiana.

Decontamination fluids and purge water from other groundwater monitoring wells in the Village were staged in 55-gallon steel drums located near the northeastern portion of the former Tannery Property. This material is managed as non-hazardous waste based on prior characterization and was disposed at the Heritage Environmental Services, LLC facility in Indianapolis, Indiana.

Decontamination fluids and purge water related to, or generated from, work within the WRR were collected and disposed through the WRR's National Pollutant Discharge Elimination System (NPDES) permitted Wastewater Treatment Plant (WWTP).

2.4 GROUNDWATER SAMPLE HANDLING AND LABORATORY TESTING

Samples were collected in laboratory-supplied containers and labeled in the field. Sample information was recorded on a chain of custody (COC) form at the time of collection. The sample identification data (ID) format is "well ID-ROX-date". COCs are included with laboratory analytical reports in **Appendix B**.

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below 4°C. The samples were then delivered via overnight courier, under the proper COC documentation, to the laboratory for analysis.

Samples were analyzed by Accutest Laboratories in Marlborough, Massachusetts for VOCs via USEPA Methods 8260B and 8011, for SVOCs via USEPA Method 8270C, and for Polycyclic Aromatic Hydrocarbons (PAHs) via USEPA Method 8270LL. The 8011 method for VOCs was used in order to achieve lower reporting limits for 1,2-dibromoethane and 1,2-dibromo-3-chloropropane, and the 8270LL method was used for PAHs. The lower reporting limits necessary to meet the concentration limits are specified in the WRR RCRA Part B permit. Per direction from IEPA the Interim Groundwater Monitoring Program concentration limits need to be consistent with those in the permit.

2.5 DATA QUALITY REVIEW AND DATA MANAGEMENT

Laboratory data were provided in electronic form and were independently reviewed and qualified by URS. One hundred percent of the data were subjected to a data quality review (Level III data review) and 10% of the data was subjected to a data validation (Level IV data validation). Evaluation of the data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2008). The laboratory assigned data qualifiers on the basis of their quality control or to indicate sample analysis information. Data qualifiers were also added by URS, as appropriate, and are included on the data table and the laboratory results in **Appendix B**. The results of the data review are discussed in **Section 3.2**.

Field data and documentation collected as part of this scope of work became part of the project file. URS maintains the files for the site, and the database management system.

The following documentation was completed and supplements the COC records:

- Field logbooks;
- Field sample collection forms;
- Field sample collection data via electronic; and
- Safety documentation

This section presents the results of the 3Q12 groundwater sampling event.

3.1 GROUNDWATER MONITORING WELL GAUGING RESULTS

Comprehensive groundwater monitoring well gauging for the 3Q12 event were conducted July 2-3, 5-6, and 9, 2012 in accordance with the Interim Groundwater Monitoring Program and the data can be found in **Table 1**. Water levels were above the top of the screens in many of the wells gauged during the 3Q12 event, which is similar to recent groundwater monitoring well gauging events. The potentiometric surface observed during the 3Q12 groundwater monitoring well gauging (**Figures 3a and 3b**) illustrates groundwater flow toward the refinery groundwater depression wells.

Perched groundwater was evaluated in the Village during 3Q12. The 3Q12 gauging results for perched groundwater monitoring wells and piezometers P-60-12S, P-60-13S, ROST-5-PZ, ROST-7-PZ, ROST-10-PZ, and ROST-21-PZ can be found in **Table 1**. The cumulative summary of perched groundwater monitoring well field parameters can be found in **Table 2b**.

During the 3Q12 monitoring well gauging event, LNAPL was detected in nine groundwater monitoring wells, eight of which are in the WRR (**Table 1**). LNAPL was observed above the top of the groundwater monitoring well screens in wells P-62, P-64, P-66, P-68, P-92A, and T-7. LNAPL was observed below the top of the groundwater monitoring well screens in wells ROST-4-PZ(E), P-60, and P-60-S.

LNAPL observed in groundwater monitoring wells located on the WRR property was removed for on-site reprocessing by P66. LNAPL located in groundwater monitoring wells within the Village was removed and placed into a labeled 55-gallon drum at the Tannery Property, for removal by a licensed waste transporter. LNAPL removal in the Village is conducted during quarterly and weekly gauging events. **Figures 4a and 4b** illustrate the measured LNAPL thickness observed during the 3Q12 gauging event.

3.2 DATA QUALITY REVIEW RESULTS

A total of eleven sample delivery groups were prepared and sent to Accutest Laboratories in Marlborough, MA. Forty-two groundwater sample sets were prepared and analyzed for VOCs and SVOCs (including PAHs). This included 32 investigative sample sets, four field duplicate sets, and three matrix spike/matrix spike duplicate (MS/MSDs) sets.

Trip blanks, equipment blanks, and laboratory method blanks were analyzed to evaluate for the existence and magnitude of any contamination resulting from field and laboratory activities. Four equipment blank sets were collected for this quarter's sampling event. A trip blank set was included in every cooler which contained samples for VOC analysis. A total of twelve trip blank

sets were analyzed for VOCs for the groundwater sampling event. Compounds qualified by URS are specified in the data reviews presented in **Appendix B**.

Based on laboratory control/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), surrogate, holding time, and field duplicate criteria, the groundwater results reported were accepted for their intended use with the exception of rejected data. Data for up to seven analytes (aniline, 3,3-dichlorobenzidine, pyridine, 4-nitrophenol, hexachlorocyclopentadiene, 1,4-dioxane and/or 2-chloroethyl vinyl ether) were rejected in samples due to LCS/LCSD recoveries, initial calibration response factors, and/or initial calibration verification percent differences outside evaluation criteria. Additional information is provided in the Data Reviews and Data Validation Reports in **Appendix B**.

3.3 ANALYTICAL RESULTS AND DISCUSSION

Tables 2a and 2b present cumulative information on groundwater sampling field parameters for main aquifer and perched wells, respectively. The laboratory analytical results for the groundwater samples collected during this event are presented in **Table 3**.

The following compounds were reported at concentrations at or above the laboratory reporting limit in groundwater samples during the 3Q12 sampling event. Italic font denotes constituent detected for the first time.

VOCs	
Benzene	n-Propylbenzene
n-Butylbenzene	Toluene
sec-Butylbenzene	1,2,4-Trimethylbenzene
tert-Butylbenzene	1,3,5-Trimethylbenzene
Cymene (p-Isopropyltoluene)	m,p-Xylene
Ethylbenzene	o-Xylenes
Isopropylbenzene (Cumene)	Xylenes (total)
Methyl tert-Butyl Ether (MTBE)	

SVOCs	
Acenapthene	Fluoranthene
Acenaphthylene	Fluorene
Anthracene	1-Methylnaphthalene
Benzo(a)anthracene	2-Methylnapthalene
Benzo(a)pyrene	3&4-Methylphenol(m&p-cresol)
Benzo(a)fluoranthene	Napthalene
bis(2-Ethylhexyl)phthalate	Phenanthrene
Chrysene (1,2-Benzphenanthracene)	Phenol
Dibenzofuran	Pyrene
2,4-Dimethylphenol	

One SVOC, Dibenzofuran, was detected in this event but was not detected in past events. The analytical detections were compared to the concentration limits as provided in Section IV E of the Permit for the WRB Refining LP Wood River Refinery[4]. These concentration limits include the IEPA Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route (35 IAC 742 Appendix B, Table E), and the Groundwater Quality Standards for Class I: Potable Resource Groundwater (35 IAC 620, Subpart D), the IEPA Toxicity Assessment Unit (Chemicals not in TACO, Tier 1 Tables), and R2008-018, Proposed Amendments to Groundwater Quality Standards (35 IAC 620). The results of this comparison are presented in **Table 3**. IEPA published screening values were not available for the following VOCs: sec-butylbenzene, tert-butylbenzene, chloroethane, chloromethane, cymene (p-isopropyltoluene), ethyl methacrylate, 2-heaxone (methyl n-butyl ketone), and 1,2,4-trimethylbenzene. Screening values were not available for the following SVOCs: indene and 3-nitroaniline.

Laboratory analytical results for the following VOCs exceeded their respective groundwater screening criteria in one or more samples this event: benzene, ethylbenzene, MTBE, and 1,3,5-trimethylbenzene. The laboratory analytical results for the following SVOCs exceeded their respective groundwater screening criteria in one or more samples this event: benzo(a)anthracene, bis(2-ethylhexyl)phthalate, 2-methylnapthalene, naphthalene, and phenol. The analytical results from these groundwater samples are on **Table 3**. **Figure 5** presents concentrations of analytes that exceeded the indicated screening criteria for 3Q12.

Figure 6 presents a plan view depiction of benzene analytical results in groundwater across the site. **Figure 7** presents a cross-section along Chaffer Street with a vertical distribution of the

[4] IEPA requested that the Interim Groundwater Program be consistent with the RCRA Part B Permit.

benzene concentrations in groundwater superimposed. **Figure 8** presents a cross-section across the Roxana Public Works Yard with a vertical distribution of the benzene analytical results in groundwater superimposed.

URS conducted the 3Q12 Roxana Interim Groundwater Monitoring Program and the following conclusions are based on the data and information collected as part of this program.

- During 3Q12, groundwater flow from the Investigation Area moved towards groundwater depressions wells at the WRR.
- Perched groundwater was evaluated at groundwater monitoring wells P-60-12S, P-60-13S, ROST-5-PZ, ROST-7-PZ, ROST-10-PZ, and ROST-21-PZ. During the evaluation, groundwater sampling could not be performed because slow recharge prevented sampling per the Standard Operating Procedure (SOP) or the perched groundwater monitoring well was dry.
- Analytical results were collected from 32 groundwater monitoring wells during 3Q12 and the results are similar from the prior quarter, except for one SVOC, Dibenzofuran, which was detected in this event but was not detected in past events. The analytical detection for Dibenzofuran was below its corresponding screening level.

Illinois Environmental Protection Agency (IEPA), 2010; (IEPA, 2010); *Letter providing approval with comments the SOPUS 2010 Delineation Report*. Issued to Shell Oil Products US (SOPUS), dated August 5, 2010.

Illinois Environmental Protection Agency Hazardous Waste Management RCRA Post-Closure Permit. Issued to Shell Oil Products US (SOPUS) September 23, 2010.Illinois Environmental Protection Agency (IEPA), 2011; (IEPA, 2011); *Letter regarding Corrective Action Conditions*. Issued to Shell Oil Products US (SOPUS), dated June 16, 2011.

Illinois Environmental Protection Agency (IEPA), 2011, (IEPA, 2011), *Letter Regarding Corrective Action Efforts for Contaminated Groundwater and Potential Free Product*. Issued to Shell Oil Products US (SOPUS), dated August 31, 2011.

Illinois Environmental Protection Agency (IEPA), 2012, (IEPA, 2012), *Letter (CA-24) in response to ROST-4-PZ Delineation and Sampling Report.* Issued to Shell Oil Products US (SOPUS), dated March 14, 2012.

Illinois Environmental Protection Agency (IEPA), 2012, (IEPA, 2012), *Letter (CA-25) in Response to Agency Comments Provided in June 16, 2011 Letter.* Issued to Shell Oil Products US (SOPUS), dated March 14, 2012.

URS Corporation (URS), 2012 (URS, 2012a); *Route 111/Rand Avenue Vicinity Investigation Health and Safety Plan – Roxana, Illinois*; Prepared for Shell Oil Products US (SOPUS); dated July 2012.

URS Corporation (URS), 2011 (URS, 2011b); *Groundwater Sampling Report for 3rd Quarter 2011 for Roxana, Illinois*; dated October 2011. Prepared for Shell Oil Products US.

URS Corporation (URS), 2011 (URS, 2011c); *ROST-4-PZ Delineation and Sampling*; dated September 2011. Prepared for Shell Oil Products US.

US Environmental Protection Agency (USEPA), June 2008; *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
MW-01										
4Q10	442.86	11/12/2010	NE	36.91	NA	NA	NA	405.95	399.45 - 384.45	*
1Q11	442.86	1/13/2011	NE	37.58	NA	NA	NA	405.28		*
2Q11	442.86	4/25/2011	NE	38.38	NA	NA	NA	404.48		*
3Q11	442.86	7/5/2011	NE	35.77	NA	NA	NA	407.09		*
	442.86	9/19/2011	NE	35.15	NA	NA	NA	407.71		*
4Q11	442.86	10/5/2011	NE	35.48	NA	NA	NA	407.38		*
1Q12	442.65	1/3/2012	NE	37.65	NA	NA	NA	405.00	392.67 - 382.67	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	442.65	4/2/2012	NE	38.85	NA	NA	NA	403.80		*
3Q12	442.65	7/2/2012	NE	39.12	NA	NA	NA	403.53		*
MW-02										
4Q10	443.93	11/12/2010	NE	38.12	NA	NA	NA	405.81	396.74 - 381.74	*
1Q11	443.93	1/13/2011	NE	38.67	NA	NA	NA	405.26		*
2Q11	443.93	4/25/2011	NE	39.61	NA	NA	NA	404.32		*
3Q11	443.93	7/5/2011	NE	37.04	NA	NA	NA	406.89		*
	443.93	9/19/2011	NE	36.36	NA	NA	NA	407.57		*
4Q11	443.93	10/5/2011	NE	36.65	NA	NA	NA	407.28		*
1Q12	443.77	1/3/2012	NE	38.88	NA	NA	NA	404.89	392.45 - 382.45	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	443.77	4/2/2012	NE	40.04	NA	NA	NA	403.73		*
3Q12	443.77	7/2/2012	NE	40.32	NA	NA	NA	403.45		*
MW-03										
4Q10	430.36	11/12/2010	NE	24.05	NA	NA	NA	406.31	399.38 - 384 38	*
1Q11	430.36	1/13/2011	NE	24.92	NA	NA	NA	405.44		*
2Q11	430.36	4/25/2011	NE	25.42	NA	NA	NA	404.94		*
3Q11	430.36	7/5/2011	NE	22.72	NA	NA	NA	407.64		*
	430.36	9/19/2011	NE	22.40	NA	NA	NA	407.96		*
4Q11	430.36	10/5/2011	NE	22.76	NA	NA	NA	407.60		*
1Q12	430.08	1/3/2012	NE	24.84	NA	NA	NA	405.24	395.41 - 385.41	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	430.08	4/2/2012	NE	26.04	NA	NA	NA	404.04		*
3Q12	430.08	7/2/2012	NE	26.30	NA	NA	NA	403.78		*
MW-04										
4Q10	441.58	11/12/2010	NE	35.38	NA	NA	NA	406.20	398.95 - 383.95	*
1Q11	441.58	1/13/2011	NE	36.04	NA	NA	NA	405.54		*
2Q11	441.58	4/25/2011	NE	36.74	NA	NA	NA	404.84		*
3Q11	441.58	7/5/2011	NE	34.15	NA	NA	NA	407.43		*
	441.58	9/19/2011	NE	33.65	NA	NA	NA	407.93		*
4Q11	441.58	10/5/2011	NE	33.99	NA	NA	NA	407.59		*
1Q12	441.14	1/3/2012	NE	35.97	NA	NA	NA	405.17	395.08 - 385.08	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	441.14	4/2/2012	NE	37.11	NA	NA	NA	404.03		*
3Q12	441.14	7/2/2012	NE	37.43	NA	NA	NA	403.71		*
MW-05										
4Q10	429.73	11/12/2010	NE	23.32	NA	NA	NA	406.41	398.60 - 383.60	*
1Q11	429.73	1/13/2011	NE	24.15	NA	NA	NA	405.58		*
2Q11	429.73	4/25/2011	NE	24.65	NA	NA	NA	405.08		*
3Q11	429.73	7/5/2011	NE	22.00	NA	NA	NA	407.73		*
	429.73	9/19/2011	NE	21.72	NA	NA	NA	408.01		*
4Q11	429.73	10/5/2011	NE	22.06	NA	NA	NA	407.67		*
1Q12	429.80	1/3/2012	NE	24.45	NA	NA	NA	405.35	395.83 - 385.83	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	429.80	4/2/2012	NE	25.65	NA	NA	NA	404.15		*
3Q12	429.80	7/2/2012	NE	25.91	NA	NA	NA	403.89		*
MW-06A										
4Q10	432.42	11/12/2010	NE	25.62	NA	NA	NA	406.80	400.44 - 385.44	*
1Q11	432.42	1/13/2011	NE	26.36	NA	NA	NA	406.06		*
2Q11	432.42	4/25/2011	NE	26.78	NA	NA	NA	405.64		*
3Q11	432.42	7/5/2011	NE	24.21	NA	NA	NA	408.21		*
	432.42	9/19/2011	NE	24.07	NA	NA	NA	408.35		*
4Q11	432.42	10/5/2011	NE	24.44	NA	NA	NA	407.98		*
1Q12	432.14	1/3/2012	NE	26.34	NA	NA	NA	405.80	397.31 - 387 31	* 1" Piezometer replaced with a 2" groundwater monitoring well
2Q12	432.14	4/2/2012	NE	27.57	NA	NA	NA	404.57		*
3Q12	432.14	7/2/2012	NE	27.88	NA	NA	NA	404.26		*
MW-06B										
4Q10	432.29	11/12/2010	NE	25.47	NA	NA	NA	406.82	368.24 - 363.24	*
1Q11	432.29	1/13/2011	NE	26.21	NA	NA	NA	406.08		*
2Q11	432.29	4/25/2011	NE	26.65	NA	NA	NA	405.64		*
3Q11	432.29	7/5/2011	NE	24.08	NA	NA	NA	408.21		*
4Q11	432.29	10/5/2011	NE	24.28	NA	NA	NA	408.01		*
1Q12	432.29	1/3/2012	NE	26.40	NA	NA	NA	405.89		*
2Q12	432.29	4/2/2012	NE	27.61	NA	NA	NA	404.68		*
3Q12	432.29	7/2/2012	NE	27.92	NA	NA	NA	404.37		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
MW-06C										
4Q10	432.11	11/12/2010	NE	25.25	NA	NA	NA	406.86	347.16 - 342.16	*
1Q11	432.11	1/13/2011	NE	25.97	NA	NA	NA	406.14		*
2Q11	432.11	4/25/2011	NE	26.73	NA	NA	NA	405.38		*
3Q11	432.11	7/5/2011	NE	23.80	NA	NA	NA	408.31		*
4Q11	432.11	10/5/2011	NE	24.03	NA	NA	NA	408.08		*
1Q12	432.11	1/3/2012	NE	26.17	NA	NA	NA	405.94		*
2Q12	432.11	4/2/2012	NE	27.40	NA	NA	NA	404.71		*
3Q12	432.11	7/2/2012	NE	27.71	NA	NA	NA	404.40		*
MW-06D										
4Q10	431.99	11/12/2010	NE	25.13	NA	NA	NA	406.86	327.27 - 322.27	*
1Q11	431.99	1/13/2011	NE	25.87	NA	NA	NA	406.12		*
2Q11	431.99	4/25/2011	NE	26.30	NA	NA	NA	405.69		*
3Q11	431.99	7/5/2011	NE	23.67	NA	NA	NA	408.32		*
4Q11	431.99	10/5/2011	NE	23.95	NA	NA	NA	408.04		*
1Q12	431.99	1/3/2012	NE	26.05	NA	NA	NA	405.94		*Well depth greater than 101 ft.
2Q12	431.99	4/2/2012	NE	27.46	NA	NA	NA	404.53		*
3Q12	431.99	7/2/2012	NE	27.58	NA	NA	NA	404.41		*
MW-07										
4Q10	443.10	11/12/2010	NE	36.93	NA	NA	NA	406.17	400.18 - 390.18	*
1Q11	443.10	1/13/2011	NE	37.52	NA	NA	NA	405.58		*
2Q11	443.10	4/25/2011	NE	38.18	NA	NA	NA	404.92		*
3Q11	443.10	7/5/2011	NE	35.65	NA	NA	NA	407.45		*
	443.10	9/19/2011	NE	35.22	NA	NA	NA	407.88		*
4Q11	443.10	10/5/2011	NE	25.52	NA	NA	NA	417.58		*
1Q12	443.10	1/3/2012	NE	37.79	NA	NA	NA	405.31		*
2Q12	443.10	4/2/2012	NE	38.91	NA	NA	NA	404.19		*
3Q12	443.10	7/2/2012	NE	39.23	NA	NA	NA	403.87		*
MW-08										
4Q10	434.11	11/12/2010	NE	27.84	NA	NA	NA	406.27	400.51 - 390 51	*
1Q11	434.11	1/13/2011	NE	28.59	NA	NA	NA	405.52		*
2Q11	434.11	4/25/2011	NE	29.15	NA	NA	NA	404.96		*
3Q11	434.11	7/5/2011	NE	26.55	NA	NA	NA	407.56		*
4Q11	434.11	10/5/2011	NE	26.57	NA	NA	NA	407.54		*
1Q12	434.11	1/3/2012	NE	28.84	NA	NA	NA	405.27		*
2Q12	434.11	4/2/2012	NE	30.01	NA	NA	NA	404.10		*
3Q12	434.11	7/2/2012	NE	30.29	NA	NA	NA	403.82		*
MW-09										
4Q10	445.20	11/12/2010	NE	39.00	NA	NA	NA	406.20	398.75 - 388.75	*
1Q11	445.20	1/13/2011	NE	39.62	NA	NA	NA	405.58		*
2Q11	445.20	4/25/2011	NE	NM	NA	NA	NA	NA		Area flooded; unable to access to well
3Q11	445.20	7/5/2011	NE	38.06	NA	NA	NA	407.14		*
	445.20	9/19/2011	NE	37.27	NA	NA	NA	407.93		*
4Q11	445.20	10/5/2011	NE	37.56	NA	NA	NA	407.64		*
1Q12	445.20	1/3/2012	NE	39.50	NA	NA	NA	405.70		*
2Q12	445.20	4/2/2012	NE	40.77	NA	NA	NA	404.43		*
3Q12	445.20	7/2/2012	NE	40.07	NA	NA	NA	405.13		*
MW-10										
4Q10	445.03	11/12/2010	NE	38.97	NA	NA	NA	406.06	400.60 - 390.60	*
1Q11	445.03	1/13/2011	NE	39.40	NA	NA	NA	405.63		*
2Q11	445.03	4/25/2011	NE	40.26	NA	NA	NA	404.77		*
3Q11	445.03	7/5/2011	NE	38.01	NA	NA	NA	407.02		*
	445.03	9/19/2011	NE	37.24	NA	NA	NA	407.79		*
4Q11	445.03	10/5/2011	NE	37.47	NA	NA	NA	407.56		*
1Q12	445.03	1/3/2012	NE	39.39	NA	NA	NA	405.64		*
2Q12	445.03	4/2/2012	NE	40.58	NA	NA	NA	404.45		*
3Q12	445.03	7/2/2012	NE	40.92	NA	NA	NA	404.11		*
MW-11										
4Q10	442.33	11/12/2010	NE	36.39	NA	NA	NA	405.94	400.67 - 390.67	*
1Q11	442.33	1/13/2011	NE	37.15	NA	NA	NA	405.18		*
2Q11	442.33	4/25/2011	NE	38.00	NA	NA	NA	404.33		*
3Q11	442.33	7/5/2011	NE	35.46	NA	NA	NA	406.87		*
	442.33	9/19/2011	NE	34.68	NA	NA	NA	407.65		*
4Q11	442.33	10/5/2011	NE	34.07	NA	NA	NA	408.26		*
1Q12	442.33	1/3/2012	NE	37.21	NA	NA	NA	405.12		*
2Q12	442.33	4/2/2012	NE	38.44	NA	NA	NA	403.89		*
3Q12	442.33	7/2/2012	NE	38.68	NA	NA	NA	403.65		*
MW-12										
4Q10	442.60	11/12/2010	NE	36.63	NA	NA	NA	405.97	400.68 - 390.68	*
1Q11	442.60	1/13/2011	NE	37.42	NA	NA	NA	405.18		*
2Q11	442.60	4/25/2011	NE	38.20	NA	NA	NA	404.40		*
3Q11	442.60	7/5/2011	NE	35.55	NA	NA	NA	407.05		*
	442.60	9/19/2011	NE	34.88	NA	NA	NA	407.72		*
4Q11	442.60	10/5/2011	NE	35.20	NA	NA	NA	407.40		*
1Q12	442.60	1/3/2012	NE	37.57	NA	NA	NA	405.03		*
2Q12	442.60	4/2/2012	NE	38.75	NA	NA	NA	403.85		*
3Q12	442.60	7/2/2012	NE	39.01	NA	NA	NA	403.59		*
MW-13										
1Q11	430.27	1/13/2011	NE	24.28	NA	NA	NA	405.99	404.70 - 394.70	*
2Q11	430.27	4/25/2011	NE	24.47	NA	NA	NA	405.80		*
3Q11	430.27	7/5/2011	NE	21.67	NA	NA	NA	408.60		*
	430.27	9/19/2011	NE	21.88	NA	NA	NA	408.39		*
4Q11	430.27	10/6/2011	NE	21.20	NA	NA	NA	409.07		*
1Q12	430.27	1/3/2012	NE	24.35	NA	NA	NA	405.92		*
2Q12	430.27	4/2/2012	NE	25.48	NA	NA	NA	404.79		*
3Q12	430.27	7/3/2012	NE	25.95	NA	NA	NA	404.32		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
MW-14										
1Q12	434.44	1/3/2012	NE	NM	NA	NA	NA	NA	401.02 - 391.02	Restricted Area
2Q12	434.44	4/2/2012	NE	NM	NA	NA	NA	NA		Restricted Area
3Q12	434.44	7/5/2012	NE	29.87	NA	NA	NA	404.57		*
P-01										
4Q09	442.56	10/1/2009	NE	35.56	NA	NA	NA	407.00	380.61 - 375.61	*
1Q10	442.56	1/1/2010	NE	31.87	NA	NA	NA	410.69		*
2Q10	442.56	4/1/2010	NE	30.11	NA	NA	NA	412.45		*
3Q10	442.56	7/1/2010	NE	29.49	NA	NA	NA	413.07		*
4Q10	442.56	10/1/2010	NE	27.86	NA	NA	NA	414.70		*
1Q11	442.56	1/1/2011	NE	28.52	NA	NA	NA	414.04		*
2Q11	442.56	4/1/2011	NE	27.30	NA	NA	NA	415.26		*
3Q11	442.56	7/5/2011	NE	25.51	NA	NA	NA	417.05		*
	442.56	9/19/2011	NE	27.75	NA	NA	NA	414.81		*
4Q11	442.56	10/6/2011	NE	28.15	NA	NA	NA	414.41		*
1Q12	442.56	1/3/2012	NE	28.93	NA	NA	NA	413.63		*
2Q12	442.56	4/2/2012	NE	29.38	NA	NA	NA	413.18		*
3Q12	442.56	7/2/2012	NE	30.60	NA	NA	NA	411.96		*
P-4U										
4Q09	442.50	10/1/2009	NE	37.38	NA	NA	NA	405.12	361.35 - 359 35	*
1Q10	442.50	1/1/2010	NE	33.47	NA	NA	NA	409.03		*
2Q10	442.50	4/1/2010	NE	32.06	NA	NA	NA	410.44		*
3Q10	442.50	7/1/2010	NE	31.00	NA	NA	NA	411.50		*
4Q10	442.50	10/1/2010	NE	29.68	NA	NA	NA	412.82		*
1Q11	442.50	1/1/2011	NE	29.81	NA	NA	NA	412.69		*
2Q11	442.50	4/1/2011	NE	29.10	NA	NA	NA	413.40		*
3Q11	442.50	7/5/2011	NE	27.02	NA	NA	NA	415.48		*
	442.50	9/19/2011	NE	28.71	NA	NA	NA	413.79		*
4Q11	442.50	10/6/2011	NE	29.17	NA	NA	NA	413.33		*
1Q12	442.50	1/3/2012	NE	40.32	NA	NA	NA	402.18		*
2Q12	442.50	4/2/2012	NE	30.80	NA	NA	NA	411.70		*
3Q12	442.50	7/2/2012	NE	31.70	NA	NA	NA	410.80		*
P-5L										
4Q09	443.79	10/1/2009	NE	36.90	NA	NA	NA	406.89	301.89 - 299.89	*
1Q10	443.79	1/1/2010	NE	32.56	NA	NA	NA	411.23		*
2Q10	443.79	4/1/2010	NE	32.79	NA	NA	NA	411.00		*
3Q10	443.79	7/1/2010	NE	30.30	NA	NA	NA	413.49		*
4Q10	443.79	10/1/2010	NE	29.21	NA	NA	NA	414.58		*
1Q11	443.79	1/1/2011	NE	29.55	NA	NA	NA	414.24		*
2Q11	443.79	4/1/2011	NE	28.10	NA	NA	NA	415.69		*
3Q11	443.79	7/5/2011	NE	25.87	NA	NA	NA	417.92		*
	443.79	9/19/2011	NE	28.47	NA	NA	NA	415.32		*
4Q11	443.79	10/6/2011	NE	29.16	NA	NA	NA	414.63		*
1Q12	443.79	1/3/2012	NE	30.42	NA	NA	NA	413.37		*
2Q12	443.79	4/2/2012	NE	30.56	NA	NA	NA	413.23		*
3Q12	443.79	7/2/2012	NE	31.60	NA	NA	NA	412.19		*
P-5U										
4Q09	444.15	10/1/2009	NE	38.44	NA	NA	NA	405.71	313.52 - 311 52	*
1Q10	444.15	1/1/2010	NE	34.48	NA	NA	NA	409.67		*
2Q10	444.15	4/1/2010	NE	30.97	NA	NA	NA	413.18		*
3Q10	444.15	7/1/2010	NE	31.95	NA	NA	NA	412.20		*
4Q10	444.15	10/1/2010	NE	30.82	NA	NA	NA	413.33		*
1Q11	444.15	1/1/2011	NE	30.96	NA	NA	NA	413.19		*
2Q11	444.15	4/1/2011	NE	29.91	NA	NA	NA	414.24		*
3Q11	444.15	7/5/2011	NE	27.80	NA	NA	NA	416.35		*
	444.15	9/19/2011	NE	29.84	NA	NA	NA	414.31		*
4Q11	444.15	10/6/2011	NE	30.41	NA	NA	NA	413.74		*
1Q12	444.15	1/3/2012	NE	30.42	NA	NA	NA	413.73		*
2Q12	444.15	4/2/2012	NE	31.96	NA	NA	NA	412.19		*
3Q12	444.15	7/2/2012	NE	32.80	NA	NA	NA	411.35		*
P-6L										
4Q11	443.20	10/6/2011	NE	28.92	NA	NA	NA	414.28	Unknown	
1Q12	443.20	1/3/2012	NE	30.21	NA	NA	NA	412.99		
2Q12	443.20	4/2/2012	NE	30.38	NA	NA	NA	412.82		
3Q12	443.20	7/2/2012	NE	31.18	NA	NA	NA	412.02		
P-6U										
4Q09	443.35	10/1/2009	NE	38.03	NA	NA	NA	405.32	362.85 - 360.85	*
1Q10	443.35	1/1/2010	NE	33.94	NA	NA	NA	409.41		*
2Q10	443.35	4/1/2010	NE	32.49	NA	NA	NA	410.86		*
3Q10	443.35	7/1/2010	NE	31.43	NA	NA	NA	411.92		*
4Q10	443.35	10/1/2010	NE	30.33	NA	NA	NA	413.02		*
1Q11	443.35	1/1/2011	NE	30.53	NA	NA	NA	412.82		*
2Q11	443.35	4/1/2011	NE	29.57	NA	NA	NA	413.78		*
3Q11	443.35	7/5/2011	NE	27.35	NA	NA	NA	416.00		*
	443.35	9/19/2011	NE	29.26	NA	NA	NA	414.09		*
4Q11	443.35	10/6/2011	NE	29.78	NA	NA	NA	413.57		*
1Q12	443.35	1/3/2012	NE	30.97	NA	NA	NA	412.38		*
2Q12	443.35	4/2/2012	NE	31.42	NA	NA	NA	411.93		*
3Q12	443.35	7/2/2012	NE	32.25	NA	NA	NA	411.10		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-7L										
4Q11	443.42	10/6/2011	NE	29.57	NA	NA	NA	413.85	Unknown	
1Q12	443.42	1/3/2012	NE	30.91	NA	NA	NA	412.51		
2Q12	443.42	4/2/2012	NE	31.28	NA	NA	NA	412.14		
3Q12	443.42	7/2/2012	NE	32.60	NA	NA	NA	410.82		
P-7U										
4Q09	443.80	10/1/2009	NE	38.26	NA	NA	NA	405.54	382.72 - 380.72	*
1Q10	443.80	1/1/2010	NE	34.95	NA	NA	NA	408.85		*
2Q10	443.80	4/1/2010	NE	32.49	NA	NA	NA	411.31		*
3Q10	443.80	7/1/2010	NE	31.63	NA	NA	NA	412.17		*
4Q10	443.80	10/1/2010	NE	30.65	NA	NA	NA	413.15		*
1Q11	443.80	1/1/2011	NE	30.70	NA	NA	NA	413.10		*
2Q11	443.80	4/1/2011	NE	29.66	NA	NA	NA	414.14		*
3Q11	443.80	7/5/2011	NE	27.30	NA	NA	NA	416.50		*
	443.80	9/19/2011	NE	29.51	NA	NA	NA	414.29		*
4Q11	443.80	10/6/2011	NE	30.02	NA	NA	NA	413.78		*
1Q12	443.80	1/3/2012	NE	31.23	NA	NA	NA	412.57		*
2Q12	443.80	4/2/2012	NE	31.63	NA	NA	NA	412.17		*
3Q12	443.80	7/2/2012	NE	31.86	NA	NA	NA	411.94		*
P-8L										
4Q11	443.10	10/6/2011	NE	31.01	NA	NA	NA	412.09	Unknown	
1Q12	443.10	1/3/2012	NE	30.92	NA	NA	NA	412.18		
2Q12	443.10	4/2/2012	NE	31.22	NA	NA	NA	411.88		
3Q12	443.10	7/2/2012	NE	31.81	NA	NA	NA	411.29		
P-8U										
4Q09	441.87	10/1/2009	NE	40.56	NA	NA	NA	401.31	381.77 - 379.77	*
1Q10	441.87	1/1/2010	NE	NM	NA	NA	NA	NA		
2Q10	441.87	4/1/2010	NE	33.69	NA	NA	NA	408.18		*
3Q10	441.87	7/1/2010	NE	32.28	NA	NA	NA	409.59		*
4Q10	441.87	10/1/2010	NE	31.14	NA	NA	NA	410.73		*
1Q11	443.70	1/1/2011	NE	30.79	NA	NA	NA	412.91		*
2Q11	443.70	4/1/2011	NE	30.50	NA	NA	NA	413.20		*
3Q11	441.87	7/5/2011	NE	28.20	NA	NA	NA	413.67		*
	441.87	9/19/2011	NE	29.46	NA	NA	NA	412.41		*
4Q11	441.87	10/6/2011	NE	29.86	NA	NA	NA	412.01		*
1Q12	441.87	1/3/2012	NE	30.99	NA	NA	NA	410.88		*
2Q12	441.87	4/2/2012	NE	31.73	NA	NA	NA	410.14		*
3Q12	441.87	7/9/2012	NE	32.51	NA	NA	NA	409.36		*
P-9L										
4Q11	444.41	10/6/2011	NE	33.58	NA	NA	NA	410.83	Unknown	
1Q12	444.41	1/3/2012	NE	34.82	NA	NA	NA	409.59		
2Q12	444.41	4/2/2012	NE	35.95	NA	NA	NA	408.46		
3Q12	444.41	7/2/2012	NE	36.48	NA	NA	NA	407.93		
P-9U										
4Q09	444.91	10/1/2009	NE	43.97	NA	NA	NA	400.94	344.32 - 342 32	*
1Q10	444.91	1/1/2010	NE	41.13	NA	NA	NA	403.78		*
2Q10	444.91	4/1/2010	NE	39.62	NA	NA	NA	405.29		*
3Q10	444.91	7/1/2010	NE	38.85	NA	NA	NA	406.06		*
4Q10	444.91	10/1/2010	NE	38.71	NA	NA	NA	406.20		*
1Q11	444.91	1/13/2011	NE	36.87	NA	NA	NA	408.04		*
2Q11	444.91	4/1/2011	NE	35.71	NA	NA	NA	409.20		*
3Q11	444.91	7/5/2011	NE	34.92	NA	NA	NA	409.99		*
	444.91	9/19/2011	NE	34.52	NA	NA	NA	410.39		*
4Q11	444.91	10/6/2011	NE	34.56	NA	NA	NA	410.35		*screw-cap only
1Q12	444.91	1/3/2012	NE	34.52	NA	NA	NA	410.39		*
2Q12	444.91	4/2/2012	NE	36.34	NA	NA	NA	408.57		*
3Q12	444.91	7/2/2012	NE	36.81	NA	NA	NA	408.10		*
P-11L										
4Q09	442.80	10/1/2009	NE	39.42	NA	NA	NA	403.38	332.59 - 330 59	*
1Q10	442.80	1/1/2010	NE	35.97	NA	NA	NA	406.83		*
2Q10	442.80	4/1/2010	NE	34.58	NA	NA	NA	408.22		*
3Q10	442.80	7/1/2010	NE	33.22	NA	NA	NA	409.58		*
4Q10	442.80	10/1/2010	NE	31.80	NA	NA	NA	411.00		*
1Q11	442.80	1/1/2011	NE	31.62	NA	NA	NA	411.18		*
2Q11	442.80	4/1/2011	NE	31.28	NA	NA	NA	411.52		*
3Q11	442.80	7/5/2011	NE	29.34	NA	NA	NA	413.46		*
	442.80	9/19/2011	NE	30.37	NA	NA	NA	412.43		*
4Q11	442.80	10/6/2011	NE	30.67	NA	NA	NA	412.13		*
1Q12	442.80	1/3/2012	NE	31.77	NA	NA	NA	411.03		*
2Q12	442.80	4/2/2012	NE	32.68	NA	NA	NA	410.12		*
3Q12	442.80	7/2/2012	NE	33.52	NA	NA	NA	409.28		*
P-11U										
4Q09	443.09	10/1/2009	NE	40.05	NA	NA	NA	403.04	343.17 - 341.17	*
1Q10	443.09	1/1/2010	NE	36.62	NA	NA	NA	406.47		*
2Q10	443.09	4/1/2010	NE	35.20	NA	NA	NA	407.89		*
3Q10	443.09	7/1/2010	NE	33.83	NA	NA	NA	409.26		*
4Q10	443.09	10/1/2010	NE	32.45	NA	NA	NA	410.64		*
1Q11	443.09	1/1/2011	NE	32.21	NA	NA	NA	410.88		*
2Q11	443.09	4/1/2011	NE	31.92	NA	NA	NA	411.17		*
3Q11	443.09	7/5/2011	NE	29.95	NA	NA	NA	413.14		*
	443.09	9/19/2011	NE	31.03	NA	NA	NA	412.06		*
4Q11	443.09	10/6/2011	NE	31.12	NA	NA	NA	411.97		*
1Q12	443.09	1/3/2012	NE	32.35	NA	NA	NA	410.74		*
2Q12	443.09	4/2/2012	NE	33.34	NA	NA	NA	409.75		*
3Q12	443.09	7/2/2012	NE	34.15	NA	NA	NA	408.94		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-14										
4Q09	442.65	10/1/2009	NE	35.73	NA	NA	NA	406.92		*
1Q10	442.65	1/1/2010	NE	31.95	NA	NA	NA	410.70		*
2Q10	442.65	4/1/2010	NE	30.20	NA	NA	NA	412.45		*
3Q10	442.65	7/1/2010	NE	29.56	NA	NA	NA	413.09		*
4Q10	442.65	10/1/2010	NE	27.94	NA	NA	NA	414.71		*
1Q11	442.65	1/1/2011	NE	28.57	NA	NA	NA	414.08		*
2Q11	442.65	4/1/2011	NE	27.38	NA	NA	NA	415.27	395.32 - 385 32	*
3Q11	442.65	7/5/2011	NE	25.57	NA	NA	NA	417.08		*
	442.65	9/19/2011	NE	27.77	NA	NA	NA	414.88		*
4Q11	442.65	10/6/2011	NE	28.20	NA	NA	NA	414.45		*
1Q12	442.65	1/3/2012	NE	28.98	NA	NA	NA	413.67		*
2Q12	442.65	4/2/2012	NE	29.42	NA	NA	NA	413.23		*
3Q12	442.65	7/2/2012	NE	30.55	NA	NA	NA	412.10		*
P-15										
4Q09	443.35	10/1/2009	NE	38.16	NA	NA	NA	405.19		*
1Q10	443.35	1/1/2010	NE	34.15	NA	NA	NA	409.20		*
2Q10	443.35	4/1/2010	NE	32.80	NA	NA	NA	410.55		*
3Q10	443.35	7/1/2010	NE	31.68	NA	NA	NA	411.67		*
4Q10	443.35	10/1/2010	NE	30.43	NA	NA	NA	412.92		*
1Q11	443.35	1/1/2011	NE	30.55	NA	NA	NA	412.80		*
2Q11	443.35	4/1/2011	NE	29.80	NA	NA	NA	413.55	397.90 - 387.90	*
3Q11	443.35	7/5/2011	NE	27.75	NA	NA	NA	415.60		*
	443.35	9/19/2011	NE	29.45	NA	NA	NA	413.90		*
4Q11	443.35	10/6/2011	NE	29.93	NA	NA	NA	413.42		*
1Q12	443.35	1/3/2012	31.05	31.06	412.29	412 30	0.01	412.30		*
2Q12	443.35	4/2/2012	NE	31.55	NA	NA	NA	411.80		*
3Q12	443.35	7/2/2012	NE	32.40	NA	NA	NA	410.95		*
P-16										
4Q09	442.31	10/1/2009	NE	36.93	NA	NA	NA	405.38		*
1Q10	442.31	1/1/2010	NE	32.86	NA	NA	NA	409.45		*
2Q10	442.31	4/1/2010	NE	31.43	NA	NA	NA	410.88		*
3Q10	442.31	7/1/2010	NE	30.32	NA	NA	NA	411.99		*
4Q10	442.31	10/1/2010	NE	29.21	NA	NA	NA	413.10		*
1Q11	442.31	1/1/2011	NE	29.40	NA	NA	NA	412.91		*
2Q11	442.31	4/1/2011	NE	28.54	NA	NA	NA	413.77	396.57 - 386 57	*
3Q11	442.31	7/5/2011	NE	26.34	NA	NA	NA	415.97		*
	442.31	9/19/2011	NE	28.26	NA	NA	NA	414.05		*
4Q11	442.31	10/6/2011	NE	28.77	NA	NA	NA	413.54		*
1Q12	442.31	1/3/2012	NE	30.00	NA	NA	NA	412.31		*
2Q12	442.31	NA	NM	NM	NA	NA	NA	NA		
3Q12	442.31	7/6/2012	NE	31.16	NA	NA	NA	411.15		*
P-43										
4Q09	444.07	10/1/2009	NE	40.91	NA	NA	NA	403.16		*
1Q10	444.07	1/1/2010	NE	37.44	NA	NA	NA	406.63		*
2Q10	444.07	4/1/2010	NE	36.02	NA	NA	NA	408.05		*
3Q10	444.07	7/1/2010	NE	34.68	NA	NA	NA	409.39		*
4Q10	444.07	10/1/2010	NE	33.29	NA	NA	NA	410.78		*
1Q11	444.07	1/1/2011	NE	33.09	NA	NA	NA	410.98		*
2Q11	444.07	4/1/2011	NE	32.75	NA	NA	NA	411.32	380.51 - 370 51	*
3Q11	444.07	7/5/2011	NE	30.78	NA	NA	NA	413.29		*
	444.07	9/19/2011	NE	31.87	NA	NA	NA	412.20		*
4Q11	444.07	10/6/2011	NE	32.18	NA	NA	NA	411.89		*
1Q12	444.07	1/3/2012	NE	33.24	NA	NA	NA	410.83		*
2Q12	444.07	4/2/2012	NE	34.17	NA	NA	NA	409.90		*
3Q12	444.07	7/2/2012	NE	34.95	NA	NA	NA	409.12		*
P-53										
4Q09	446.23	10/1/2009	NE	45.52	NA	NA	NA	400.71		
1Q10	446.23	1/1/2010	NE	43.35	NA	NA	NA	402.88		
2Q10	446.23	4/1/2010	NE	42.17	NA	NA	NA	404.06		
3Q10	446.23	7/1/2010	NE	40.83	NA	NA	NA	405.40		
4Q10	446.23	10/1/2010	NE	39.33	NA	NA	NA	406.90		
1Q11	446.23	1/13/2011	NE	39.46	NA	NA	NA	406.77		
2Q11	446.23	4/1/2011	NE	39.99	NA	NA	NA	406.24	407.73 - 382.73	
3Q11	446.23	7/5/2011	NE	38.28	NA	NA	NA	407.95		*
	446.23	9/19/2011	NE	37.39	NA	NA	NA	408.84		*
4Q11	446.23	10/5/2011	NE	37.58	NA	NA	NA	408.65		*
1Q12	446.23	1/3/2012	NE	38.73	NA	NA	NA	407.50		
2Q12	446.23	4/2/2012	NE	NM	NA	NA	NA	NA		
3Q12	446.23	7/2/2012	NE	40.46	NA	NA	NA	405.77		
P-54										
4Q09	442.18	10/1/2009	NE	41.89	NA	NA	NA	400.29		
1Q10	442.18	1/1/2010	NE	39.88	NA	NA	NA	402.30		
2Q10	442.18	4/1/2010	NE	38.53	NA	NA	NA	403.65		
3Q10	442.18	7/1/2010	NE	37.33	NA	NA	NA	404.85		*
4Q10	442.18	11/12/2010	NE	36.43	NA	NA	NA	405.75		*
1Q11	442.18	1/13/2011	NE	37.24	NA	NA	NA	404.94		*
2Q11	442.18	4/25/2011	NE	38.00	NA	NA	NA	404.18	404.18 - 379.18	
3Q11	442.18	7/5/2011	NE	35.38	NA	NA	NA	406.80		*
	442.18	9/19/2011	NE	34.78	NA	NA	NA	407.40		*
4Q11	442.18	10/5/2011	NE	35.01	NA	NA	NA	407.17		*
1Q12	442.18	1/3/2012	NE	37.17	NA	NA	NA	405.01		*
2Q12	442.18	4/2/2012	NE	38.48	NA	NA	NA	403.70		
3Q12	442.18	7/2/2012	NE	38.73	NA	NA	NA	403.45		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-55										
4Q09	445.95	10/1/2009	NE	46.02	NA	NA	NA	399.93		
1Q10	445.95	1/1/2010	NE	44.14	NA	NA	NA	401.81		
2Q10	445.95	4/1/2010	NE	42.69	NA	NA	NA	403.26		
3Q10	445.95	7/1/2010	NE	41.81	NA	NA	NA	404.14		
4Q10	445.95	11/12/2010	NE	40.50	NA	NA	NA	405.45		
1Q11	445.95	1/13/2011	NE	40.56	NA	NA	NA	405.39		
2Q11	445.95	4/25/2011	41 52	41.54	404.41	404.43	0.02	404.43	406.13 - 381.13	
3Q11	445.95	7/5/2011	39.41	39.42	406 53	406 54	0.01	406.54		*
	445.95	9/19/2011	NE	38.57	NA	NA	NA	407.38		*
4Q11	445.95	10/6/2011	NE	38.61	NA	NA	NA	407.34		*
1Q12	445.95	1/4/2012	NE	40.71	NA	NA	NA	405.24		
2Q12	445.95	4/2/2012	NE	42.04	NA	NA	NA	403.91		
3Q12	445.95	7/2/2012	NE	42.33	NA	NA	NA	403.62		
P-56										
4Q09	446.02	10/1/2009	NE	45.79	NA	NA	NA	400.23		
1Q10	446.02	1/1/2010	NE	43.99	NA	NA	NA	402.03		
2Q10	446.02	4/1/2010	NE	42.71	NA	NA	NA	403.31		
3Q10	446.02	7/1/2010	NE	41.99	NA	NA	NA	404.03		
4Q10	446.02	11/11/2010	NE	40.94	NA	NA	NA	405.08		
1Q11	446.02	1/13/2011	NE	41.03	NA	NA	NA	404.99		
2Q11	446.02	4/25/2011	NE	42.16	NA	NA	NA	403.86	405.20 - 380.20	
3Q11	446.02	7/5/2011	NE	39.63	NA	NA	NA	406.39		*
	446.02	9/19/2011	NE	38.88	NA	NA	NA	407.14		*
4Q11	446.02	10/6/2011	NE	39.10	NA	NA	NA	406.92		*
1Q12	446.02	1/4/2012	NE	41.51	NA	NA	NA	404.51		
2Q12	446.02	4/3/2012	NE	42.88	NA	NA	NA	403.14		
3Q12	446.02	7/5/2012	NE	43.01	NA	NA	NA	403.01		
P-57										
4Q09	446.53	10/1/2009	NE	46.01	NA	NA	NA	400.52		
1Q10	446.53	1/1/2010	NE	44.02	NA	NA	NA	402.51		
2Q10	446.53	4/1/2010	NE	42.73	NA	NA	NA	403.80		
3Q10	446.53	7/1/2010	NE	41.60	NA	NA	NA	404.93		
4Q10	446.53	11/12/2010	NE	40.64	NA	NA	NA	405.89		
1Q11	446.53	1/13/2011	NE	41.04	NA	NA	NA	405.49		
2Q11	446.53	4/25/2011	NE	41.88	NA	NA	NA	404.65	406.07 - 381.07	
3Q11	446.53	7/5/2011	NE	39.48	NA	NA	NA	407.05		*
	446.53	9/19/2011	NE	39.92	NA	NA	NA	406.61		*
4Q11	446.53	10/6/2011	NE	39.20	NA	NA	NA	407.33		*
1Q12	446.53	2/13/2012	NE	42.13	NA	NA	NA	404.40		
2Q12	446.53	4/4/2012	NE	42.61	NA	NA	NA	403.92		
3Q12	446.53	7/5/2012	NE	43.00	NA	NA	NA	403.53		
P-58										
4Q09	444.92	10/1/2009	NE	44.06	NA	NA	NA	400.86		
1Q10	444.92	1/1/2010	NE	42.00	NA	NA	NA	402.92		
2Q10	444.92	4/1/2010	NE	40.76	NA	NA	NA	404.16		Oily film observed on probe but no product response observed from probe or product paste.
3Q10	444.92	7/1/2010	39.42	39.46	405.46	405 50	0.04	405.49		*Product confirmed on interface probe.
4Q10	444.92	11/12/2010	NE	38.51	NA	NA	NA	406.41		*
1Q11	444.92	1/13/2011	NE	39.10	NA	NA	NA	405.82		*No tone; produt paste turned
2Q11	444.92	4/25/2011	NE	39.78	NA	NA	NA	405.14	404.70 - 379.70	*NO TONE; PRODUCT PASTE TURNED
3Q11	444.92	7/5/2011	NE	37.42	NA	NA	NA	407.50		*
	444.92	9/19/2011	NE	37.02	NA	NA	NA	407.90		*
4Q11	444.92	10/6/2011	NE	37.31	NA	NA	NA	407.61		*
1Q12	444.92	1/4/2012	NE	39.41	NA	NA	NA	405.51		*
2Q12	444.92	4/3/2012	NE	40.81	NA	NA	NA	404.11		
3Q12	444.92	7/5/2012	NE	41.04	NA	NA	NA	403.88		
P-59										
4Q09	446.78	10/1/2009	NE	46.67	NA	NA	NA	400.11		*
1Q10	446.78	1/1/2010	NE	44.91	NA	NA	NA	401.87		*
2Q10	446.78	4/1/2010	NE	43.59	NA	NA	NA	403.19		*Oily film observed on probe but no product response observed from probe or product paste.
3Q10	446.78	7/1/2010	43.21	43.23	403 55	403 57	0.02	403.57		*Product confirmed on interface probe.
4Q10	446.78	11/12/2010	NE	42.13	NA	NA	NA	404.65		*
1Q11	446.78	1/13/2011	NE	42.16	NA	NA	NA	404.62		*No tone; product paste turned
2Q11	446.78	4/25/2011	43.25	43.26	403 52	403 53	0.01	403.53	398.87 - 373.87	*NO TONE; PRODUCT PASTE TURNED
3Q11	446.78	7/5/2011	NE	41.44	NA	NA	NA	405.34		*
	446.78	9/19/2011	NE	40.56	NA	NA	NA	406.22		*
4Q11	446.78	10/6/2011	NE	40.77	NA	NA	NA	406.01		*
1Q12	446.78	1/4/2012	NE	42.61	NA	NA	NA	404.17		*
2Q12	446.78	4/4/2012	NE	43.82	NA	NA	NA	402.96		*
3Q12	446.78	7/5/2012	NE	44.00	NA	NA	NA	402.78		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-60										
4Q09	446.57	10/1/2009	46.48	47.35	399.22	400.09	0.87	399.92		
1Q10	446.57	1/1/2010	44.83	45.08	401.49	401.74	0.25	401.69		Product confirmed on interface probe.
2Q10	446.57	4/1/2010	43.45	43.73	402.84	403.12	0.28	403.07		Product confirmed on interface probe.
3Q10	446.57	7/1/2010	42.61	43.18	403 39	403.96	0.57	403.85		*Product confirmed on interface probe.
4Q10	446.57	11/11/2010	41.40	41.44	405.13	405.17	0.04	405.16		*
1Q11	446.57	1/14/2011	41.68	41.72	404.85	404.89	0.04	404.88		*
2Q11	446.57	4/25/2011	42.72	43.18	403 39	403.85	0.46	403.76	403.12 - 383.12	*
3Q11	446.57	7/5/2011	40.41	40.77	405.80	406.16	0.36	406.09		*
	446.57	9/19/2011	39 54	39.89	406.68	407.03	0.35	406.96		*
4Q11	446.57	10/6/2011	39.72	40.06	406 51	406.85	0.34	406.79		*
1Q12	446.57	1/4/2012	NE	41.98	NA	NA	NA	404.59		*
2Q12	446.57	4/3/2012	43.46	43.48	403.09	403.11	0.02	403.11		
3Q12	446.57	7/5/2012	43 51	43.55	403.02	403.06	0.04	403.05		
P-60-11										
4Q10	443.39	11/11/2010	NE	40.91	NA	NA	NA	402.48		
1Q11	443.39	1/14/2011	NE	41.14	NA	NA	NA	402.25		
2Q11	443.39	4/25/2011	NE	42.22	NA	NA	NA	401.17		
3Q11	446.18	7/5/2011	NE	39.97	NA	NA	NA	406.21		
	446.18	9/19/2011	NE	39.07	NA	NA	NA	407.11	413.03 - 383.03	
4Q11	446.18	10/6/2011	NE	39.25	NA	NA	NA	406.93		
1Q12	446.18	1/4/2012	NE	41.22	NA	NA	NA	404.96		
2Q12	446.18	4/3/2012	NE	42.65	NA	NA	NA	403.53		
3Q12	446.18	7/5/2012	NE	42.64	NA	NA	NA	403.54		
P-60-12										
4Q10	443.31	11/11/2010	NE	38.19	NA	NA	NA	405.12		*
1Q11	443.31	1/14/2011	NE	38.51	NA	NA	NA	404.80		*
2Q11	443.31	4/25/2011	NE	39.63	NA	NA	NA	403.68		*
3Q11	443.31	7/5/2011	NE	37.27	NA	NA	NA	406.04		*
	443.31	9/19/2011	NE	36.41	NA	NA	NA	406.90	383.31 - 373 31	*
4Q11	443.31	10/6/2011	NE	36.53	NA	NA	NA	406.78		*
1Q12	443.31	1/4/2012	NE	38.76	NA	NA	NA	404.55		*
2Q12	443.31	4/3/2012	NE	40.25	NA	NA	NA	403.06		*
3Q12	443.31	7/5/2012	NE	40.23	NA	NA	NA	403.08		*
P-60-12S	***(PERCHED WELL)***									
4Q10	443.33	11/11/2010	NE	23.36	NA	NA	NA	419.97		
1Q11	443.33	1/14/2011	NE	NM	NA	NA	NA	NA		
2Q11	443.33	4/25/2011	NE	21.84	NA	NA	NA	421.49		
3Q11	443.33	7/5/2011	21.10	21.11	422.22	422.23	0.01	422.23		
4Q11	443.33	10/6/2011	NE	23.36	NA	NA	NA	419.97	429.49 - 419.49	
1Q12	443.33	1/4/2012	NE	22.81	NA	NA	NA	420.52		
2Q12	443.33	4/3/2012	NE	20.21	NA	NA	NA	423.12		
3Q12	443.33	7/5/2012	NE	19.48	NA	NA	NA	423.85		
P-60-13										
4Q10	442.43	11/11/2010	37 50	37.87	404 56	404.93	0.37	404.86		*
1Q11	442.43	1/14/2011	37.73	37.74	404.69	404.70	0.01	404.70		*
2Q11	442.43	4/25/2011	38.80	39.10	403 33	403.63	0.30	403.57		*
3Q11	442.43	7/5/2011	36.85	36.99	405.44	405 58	0.14	405.55		*
	442.43	9/19/2011	NE	35.72	NA	NA	NA	406.71	402.43 - 382.43	*
4Q11	442.43	10/6/2011	NE	35.86	NA	NA	NA	406.57		*
1Q12	442.43	1/4/2012	NE	37.82	NA	NA	NA	404.61		*
2Q12	442.43	4/3/2012	NE	39.21	NA	NA	NA	403.22		*
3Q12	442.43	7/5/2012	NE	39.37	NA	NA	NA	403.06		*
P-60-13S	***(PERCHED WELL)***									
4Q10	442.39	11/11/2010	NE	13.36	NA	NA	NA	429.03		
1Q11	442.39	1/14/2011	NE	NM	NA	NA	NA	NA		
2Q11	442.39	4/25/2011	NE	17.45	NA	NA	NA	424.94		
3Q11	442.39	7/5/2011	NE	17.08	NA	NA	NA	425.31		
4Q11	442.39	10/6/2011	NE	18.44	NA	NA	NA	423.95	432.39 - 422 39	
1Q12	442.39	1/4/2012	NE	17.66	NA	NA	NA	424.73		
2Q12	442.39	4/3/2012	NE	17.58	NA	NA	NA	424.81		
3Q12	442.39	7/5/2012	NE	17.87	NA	NA	NA	424.52		
P-60-S										
3Q11	446.98	7/5/2011	NE	40.81	NA	NA	NA	406.17		
	446.98	9/19/2011	39.40	39.61	407 37	407 58	0.21	407.54		
1Q12	446.98	1/4/2012	41 39	41.90	405.08	405 59	0.51	405.49	410.50 - 395 50	
2Q12	446.98	4/3/2012	42.85	43.28	403.70	404.13	0.43	404.04		
3Q12	446.98	7/5/2012	43.12	43.26	403.72	403.86	0.14	403.83		
P-61										
4Q09	444.27	10/1/2009	44.44	44.62	399.65	399.83	0.18	399.79		*
1Q10	444.27	1/1/2010	43 33	43.53	400.74	400.94	0.20	400.90		*Product confirmed on interface probe.
2Q10	444.27	4/1/2010	41.97	42.09	402.18	402 30	0.12	402.27		*Product confirmed on interface probe.
3Q10	444.27	7/1/2010	41.04	41.18	403.09	403.23	0.14	403.20		*Product confirmed on interface probe.
4Q10	444.27	11/11/2010	39.91	40.03	404.24	404 36	0.12	404.33		*
1Q11	444.27	1/13/2011	38.81	38.94	405 33	405.46	0.13	405.43		*
2Q11	444.27	4/25/2011	NE	40.93	NA	NA	NA	403.34	398.59 - 373 59	*
3Q11	444.27	7/5/2011	37 58	37.59	406.68	406.69	0.01	406.69		*
	444.27	9/19/2011	NE	37.36	NA	NA	NA	406.91		*
4Q11	444.27	10/6/2011	NE	37.63	NA	NA	NA	406.64		*
1Q12	444.27	1/3/2012	NE	40.34	NA	NA	NA	403.93		*
2Q12	444.27	4/3/2012	NE	41.50	NA	NA	NA	402.77		*
3Q12	444.27	7/3/2012	NE	41.53	NA	NA	NA	402.74		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-62										
4Q09	442.32	10/1/2009	42.68	44.16	398.16	399.64	1.48	399.35		
1Q10	442.32	1/1/2010	41.02	42.62	399.70	401 30	1.60	400.98		*Product confirmed on interface probe.
2Q10	442.32	4/1/2010	39 56	40.90	401.42	402.76	1.34	402.50		*Product confirmed on interface probe.
3Q10	442.32	7/1/2010	38 51	39.96	402 36	403.81	1.45	403.52		*Product confirmed on interface probe.
4Q10	442.32	11/11/2010	37.14	38.57	403.75	405.18	1.43	404.90		*
1Q11	442.32	1/13/2011	36 39	37.81	404 51	405.93	1.42	405.65		*
2Q11	442.32	4/25/2011	NE	38.18	NA	NA	NA	404.14	400.85 - 375.85	*
3Q11	442.32	7/5/2011	35.62	35.63	406.69	406.70	0.01	406.70		*
	442.32	9/19/2011	35 39	35.41	406.91	406.93	0.02	406.93		*
4Q11	442.32	10/6/2011	NE	35.64	NA	NA	NA	406.68		*
1Q12	442.32	1/3/2012	37.68	37.71	404.61	404.64	0.03	404.64		*
2Q12	442.32	4/3/2012	NE	30.94	NA	NA	NA	411.38		*Result is suspect
3Q12	442.32	7/3/2012	39.13	39.15	403.17	403.19	0.02	403.19		*
P-63										
4Q09	445.75	10/1/2009	47.14	47.28	398.47	398.61	0.14	398.58		*
1Q10	445.75	1/1/2010	45.08	45.26	400.49	400.67	0.18	400.63		*Product confirmed on interface probe.
2Q10	445.75	4/1/2010	43 53	43.72	402.03	402.22	0.19	402.18		*Product confirmed on interface probe.
3Q10	445.75	7/1/2010	42 32	42.52	403.23	403.43	0.20	403.39		*Product confirmed on interface probe.
4Q10	445.75	10/1/2010	40 58	40.79	404.96	405.17	0.21	405.13		*Product confirmed on interface probe.
1Q11	445.75	1/13/2011	39.48	39.68	406.07	406.27	0.20	406.23		*
2Q11	445.75	4/1/2011	NE	41.11	NA	NA	NA	404.64	398.46 - 373.46	*
3Q11	445.75	7/5/2011	NE	38.56	NA	NA	NA	407.19		*
	445.75	9/19/2011	NE	39.12	NA	NA	NA	406.63		*
4Q11	445.75	10/6/2011	NE	39.20	NA	NA	NA	406.55		*
1Q12	445.75	1/3/2012	NE	40.65	NA	NA	NA	405.10		*
2Q12	445.75	4/3/2012	NE	42.09	NA	NA	NA	403.66		*
3Q12	445.75	7/3/2012	NE	42.94	NA	NA	NA	402.81		*
P-64										
4Q09	446.52	10/1/2009	NE	48.52	NA	NA	NA	398.00		
1Q10	446.52	1/1/2010	46 32	46.37	400.15	400.20	0.05	400.19		*Product confirmed on interface probe.
2Q10	446.52	4/1/2010	44.61	44.70	401.82	401.91	0.09	401.89		*Product confirmed on interface probe.
3Q10	446.52	7/1/2010	43.46	43.61	402.91	403.06	0.15	403.03		*Product confirmed on interface probe.
4Q10	446.52	10/1/2010	41.45	41.56	404.96	405.07	0.11	405.05		*Product confirmed on interface probe.
1Q11	446.52	1/13/2011	40.14	40.46	406.06	406 38	0.32	406.32		*
2Q11	446.52	4/1/2011	41.77	41.86	404.66	404.75	0.09	404.73	399.29 - 374.29	*
3Q11	446.52	7/5/2011	39.25	39.42	407.10	407.27	0.17	407.24		*
	446.52	9/19/2011	40.10	41.10	405.42	406.42	1.00	406.22		*
4Q11	446.52	10/6/2011	40 35	40.53	405.99	406.17	0.18	406.13		*
1Q12	446.52	1/3/2012	41.68	41.75	404.77	404.84	0.07	404.83		*
2Q12	446.52	4/3/2012	43.18	43.19	403 33	403 34	0.01	403.34		*
3Q12	446.52	7/3/2012	44.40	44.41	402.11	402.12	0.01	402.12		*
P-65										
4Q09	444.53	10/1/2009	NE	45.05	NA	NA	NA	399.48		*
1Q10	444.53	1/1/2010	NE	34.11	NA	NA	NA	410.42		*
2Q10	444.53	4/1/2010	41 33	41.34	403.19	403.20	0.01	403.20		*Product confirmed on interface probe.
3Q10	444.53	7/1/2010	44 34	44.35	400.18	400.19	0.01	400.19		*Product confirmed on interface probe.
4Q10	444.53	10/1/2010	38.61	38.63	405.90	405.92	0.02	405.92		*Product confirmed on interface probe.
1Q11	444.53	1/13/2011	37.73	37.74	406.79	406.80	0.01	406.80		*
2Q11	444.53	4/1/2011	NE	39.20	NA	NA	NA	405.33	396.91 - 371.91	*
3Q11	444.53	7/5/2011	NE	36.87	NA	NA	NA	407.66		*
	444.53	9/19/2011	NE	37.54	NA	NA	NA	406.99		*
4Q11	444.53	10/6/2011	NE	37.67	NA	NA	NA	406.86		*
1Q12	444.53	1/3/2012	NE	39.15	NA	NA	NA	405.38		*
2Q12	444.53	4/3/2012	NE	40.76	NA	NA	NA	403.77		*
3Q12	444.53	7/3/2012	NE	41.76	NA	NA	NA	402.77		*
P-66										
4Q09	436.70	10/1/2009	NE	35.62	NA	NA	NA	401.08		
1Q10	436.70	1/1/2010	NE	33.49	NA	NA	NA	403.21		*
2Q10	436.70	4/1/2010	NE	32.30	NA	NA	NA	404.40		*
3Q10	436.70	7/1/2010	30.81	30.83	405.87	405.89	0.02	405.89		*Product confirmed on interface probe.
4Q10	436.70	11/12/2010	NE	30.02	NA	NA	NA	406.68		*
1Q11	436.70	1/13/2011	NE	30.70	NA	NA	NA	406.00		*
2Q11	436.70	4/25/2011	NE	31.26	NA	NA	NA	405.44	401.98 - 376.98	*
3Q11	436.70	7/5/2011	NE	28.87	NA	NA	NA	407.83		*
	436.70	9/19/2011	NE	28.64	NA	NA	NA	408.06		*
4Q11	436.70	10/5/2011	NE	28.92	NA	NA	NA	407.78		*
1Q12	436.70	1/3/2012	NE	NM	NA	NA	NA	NA		Restricted Area
2Q12	436.70	1/3/2012	NE	NM	NA	NA	NA	NA		Restricted Area
3Q12	436.70	7/5/2012	32.60	32.61	404.09	404.10	0.01	404.10		*
P-67										
4Q09	444.13	10/1/2009	42.15	42.17	401.96	401.98	0.02	401.98		Product confirmed on interface probe.
1Q10	444.13	1/1/2010	39.96	39.98	404.15	404.17	0.02	404.17		*Product confirmed on interface probe.
2Q10	444.13	4/1/2010	38.78	38.80	405 33	405 35	0.02	405.35		*Product confirmed on interface probe.
3Q10	444.13	7/1/2010	37.27	37.46	406.67	406.86	0.19	406.82		*Product confirmed on interface probe.
4Q10	444.13	10/1/2010	36.27	36.31	407.82	407.86	0.04	407.85		*Product confirmed on interface probe.
1Q11	444.13	1/13/2011	36.75	36.78	407 35	407 38	0.03	407.37		*
2Q11	444.13	4/1/2011	NE	37.24	NA	NA	NA	406.89	402.16 - 377.16	*
3Q11	444.13	7/5/2011	NE	35.17	NA	NA	NA	408.96		*
	444.13	9/19/2011	NE	35.16	NA	NA	NA	408.97		*
4Q11	444.13	10/5/2011	NE	35.38	NA	NA	NA	408.75		*
1Q12	444.13	1/4/2012	NE	37.08	NA	NA	NA	407.05		*
2Q12	444.13	4/3/2012	NE	38.50	NA	NA	NA	405.63		*
3Q12	444.13	7/2/2012	NE	38.90	NA	NA	NA	405.23		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-68										
4Q09	445.07	10/1/2009	44.10	47.76	397 31	400.97	3.66	400.24		*
1Q10	445.07	1/1/2010	42.44	46.62	398.45	402.63	4.18	401.80		*Product confirmed on interface probe.
2Q10	445.07	4/1/2010	40.94	48.15	396.92	404.13	7.21	402.69		*Product confirmed on interface probe.
3Q10	445.07	7/1/2010	40 50	44.65	400.42	404 57	4.15	403.74		*Product confirmed on interface probe.
4Q10	445.07	11/12/2010	39 32	43.42	401.65	405.75	4.10	404.93		*
1Q11	445.07	1/13/2011	39.15	43.18	401.89	405.92	4.03	405.12		*
2Q11	445.07	4/25/2011	41.42	41.51	403 56	403.65	0.09	403.63	399.81 - 374.81	*
3Q11	445.07	7/5/2011	39.06	39.13	405.94	406.01	0.07	406.00		*
	445.07	9/19/2011	39.01	39.03	406.04	406.06	0.02	406.06		*
4Q11	445.07	10/6/2011	38 53	38.58	406.49	406 54	0.05	406.53		*
1Q12	445.07	1/4/2012	40 53	40.61	404.46	404 54	0.08	404.52		*
2Q12	445.07	4/3/2012	NE	42.08	NA	NA	NA	402.99		*
3Q12	445.07	7/5/2012	42.08	42.12	402.95	402.99	0.04	402.98		*
P-69										
4Q09	443.18	10/1/2009	43.41	43.45	399.73	399.77	0.04	399.77		
1Q10	443.18	1/1/2010	41.87	41.92	401.26	401 31	0.05	401.30		Product confirmed on interface probe.
2Q10	443.18	4/1/2010	40 39	40.42	402.76	402.79	0.03	402.79		*Product confirmed on interface probe.
3Q10	443.18	7/1/2010	NE	40.14	NA	NA	NA	403.04		*
4Q10	443.18	11/11/2010	38.99	39.02	404.16	404.19	0.03	404.19		*
1Q11	443.18	1/13/2011	38.62	38.63	404 55	404 56	0.01	404.56		*
2Q11	443.18	4/25/2011	NE	39.98	NA	NA	NA	403.20	402.36 - 377 36	*
3Q11	443.18	7/5/2011	NE	37.41	NA	NA	NA	405.77		*
	443.18	9/19/2011	NE	36.62	NA	NA	NA	406.56		*
4Q11	443.18	10/6/2011	NE	36.77	NA	NA	NA	406.41		*
1Q12	443.18	1/4/2012	NE	39.18	NA	NA	NA	404.00		*
2Q12	443.18	4/3/2012	NE	40.59	NA	NA	NA	402.59		*
3Q12	443.18	7/5/2012	NE	40.61	NA	NA	NA	402.57		*
P-70										
4Q09	442.83	10/1/2009	43.09	43.69	399.14	399.74	0.60	399.62		*
1Q10	442.83	1/1/2010	41.65	41.84	400.99	401.18	0.19	401.14		*Product confirmed on interface probe.
2Q10	442.83	4/1/2010	40.21	40.67	402.16	402.62	0.46	402.53		*Product confirmed on interface probe.
3Q10	442.83	7/1/2010	39.42	39.86	402.97	403.41	0.44	403.32		*Product confirmed on interface probe.
4Q10	442.83	11/11/2010	38.20	38.69	404.14	404.63	0.49	404.53		*
1Q11	442.83	1/13/2011	37.48	37.90	404.93	405 35	0.42	405.27		*
2Q11	442.83	4/25/2011	39.20	39.22	403.61	403.63	0.02	403.62	398.16 - 373.16	*
3Q11	442.83	7/5/2011	36.42	36.43	406.40	406.41	0.01	406.41		*
	442.83	9/19/2011	NE	35.98	NA	NA	NA	406.85		*
4Q11	442.83	10/6/2011	NE	36.25	NA	NA	NA	406.58		*
1Q12	442.83	1/3/2012	NE	38.62	NA	NA	NA	404.21		*
2Q12	442.83	4/3/2012	NE	39.80	NA	NA	NA	403.03		*
3Q12	442.83	7/3/2012	NE	39.83	NA	NA	NA	403.00		*
P-71										
4Q09	444.83	10/1/2009	NE	44.52	NA	NA	NA	400.31		
1Q10	444.83	1/1/2010	NE	42.64	NA	NA	NA	402.19		
2Q10	444.83	4/1/2010	NE	41.31	NA	NA	NA	403.52		*
3Q10	444.83	7/1/2010	NE	40.20	NA	NA	NA	404.63		*
4Q10	444.83	11/11/2010	NE	38.92	NA	NA	NA	405.91		*
1Q11	444.83	1/13/2011	NE	38.32	NA	NA	NA	406.51		*
2Q11	444.83	4/25/2011	NE	39.52	NA	NA	NA	405.31	402.22 - 377.22	*
3Q11	444.83	7/5/2011	NE	37.91	NA	NA	NA	406.92		*
	444.83	9/19/2011	NE	37.71	NA	NA	NA	407.12		*
4Q11	444.83	10/6/2011	NE	47.31	NA	NA	NA	397.52		winch present prevents cap from fitting
1Q12	444.83	1/3/2012	NE	38.91	NA	NA	NA	405.92		*
2Q12	444.83	4/3/2012	NE	40.34	NA	NA	NA	404.49		*
3Q12	444.83	7/3/2012	NE	40.90	NA	NA	NA	403.93		*
P-72										
4Q09	444.43	10/1/2009	43.85	43.88	400 55	400 58	0.03	400.57		*
1Q10	444.43	1/1/2010	41.83	41.87	402 56	402.60	0.04	402.59		*Product confirmed on interface probe.
2Q10	444.43	4/1/2010	40 36	40.39	404.04	404.07	0.03	404.06		*Product confirmed on interface probe.
3Q10	444.43	7/1/2010	NE	NM	NA	NA	NA	NA		Tank yard flooded, unable to access.
4Q10	444.43	11/11/2010	38.01	38.06	406 37	406.42	0.05	406.41		*
1Q11	444.43	1/13/2011	37.65	37.66	406.77	406.78	0.01	406.78		*
2Q11	444.43	4/25/2011	38.78	38.80	405.63	405.65	0.02	405.65	398.66 - 373.66	*
3Q11	444.43	7/5/2011	37.02	37.03	407.40	407.41	0.01	407.41		*
	444.43	9/19/2011	NE	36.60	NA	NA	NA	407.83		*
4Q11	444.43	10/6/2011	NE	36.82	NA	NA	NA	407.61		*
1Q12	444.43	1/3/2012	NE	38.43	NA	NA	NA	406.00		*
2Q12	444.43	4/3/2012	NE	39.58	NA	NA	NA	404.85		*
3Q12	444.43	7/3/2012	NE	40.30	NA	NA	NA	404.13		*
P-73										
4Q09	443.76	10/1/2009	NE	43.38	NA	NA	NA	400.38		
1Q10	443.76	1/1/2010	NE	41.39	NA	NA	NA	402.37		*
2Q10	443.76	4/1/2010	NE	40.15	NA	NA	NA	403.61		*
3Q10	443.76	7/1/2010	40.24	41.26	402 50	403 52	1.02	403.32		*Product confirmed on interface probe.
4Q10	443.76	11/11/2010	NE	38.10	NA	NA	NA	405.66		*
1Q11	443.76	1/13/2011	NE	38.10	NA	NA	NA	405.66		*
2Q11	443.76	4/25/2011	NE	39.13	NA	NA	NA	404.63	402.17 - 377.17	*
3Q11	443.76	7/5/2011	NE	36.88	NA	NA	NA	406.88		*
	443.76	9/19/2011	NE	36.38	NA	NA	NA	407.38		*
4Q11	443.76	10/6/2011	NE	36.68	NA	NA	NA	407.08		*
1Q12	443.76	1/4/2012	NE	38.68	NA	NA	NA	405.08		*
2Q12	443.76	4/3/2012	NE	40.03	NA	NA	NA	403.73		*
3Q12	443.76	7/5/2012	NE	40.28	NA	NA	NA	403.48		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-74										
4Q09	442.63	10/1/2009	NE	42.60	NA	NA	NA	400.03		*
1Q10	442.63	1/1/2010	NE	40.90	NA	NA	NA	401.73		*
2Q10	442.63	4/1/2010	NE	39.07	NA	NA	NA	403.56		*
3Q10	442.63	7/1/2010	NE	38.88	NA	NA	NA	403.75		*
4Q10	442.63	11/12/2010	NE	38.29	NA	NA	NA	404.34		*
1Q11	442.63	1/13/2011	NE	37.94	NA	NA	NA	404.69		*
2Q11	442.63	4/25/2011	NE	39.18	NA	NA	NA	403.45	398.20 - 373.20	*
3Q11	442.63	7/5/2011	NE	36.51	NA	NA	NA	406.12		*
	442.63	9/19/2011	NE	35.86	NA	NA	NA	406.77		*
4Q11	442.63	10/6/2011	NE	36.26	NA	NA	NA	406.37		*
1Q12	442.63	1/4/2012	NE	38.56	NA	NA	NA	404.07		*
2Q12	442.63	4/3/2012	NE	39.94	NA	NA	NA	402.69		*
3Q12	442.63	7/5/2012	NE	40.00	NA	NA	NA	402.63		*
P-75										
4Q09	446.32	10/1/2009	NE	45.35	NA	NA	NA	400.97		
1Q10	446.32	1/1/2010	NE	43.05	NA	NA	NA	403.27		*
2Q10	446.32	4/1/2010	42.01	42.30	404.02	404 31	0.29	404.26		*Product confirmed on interface probe.
3Q10	446.32	7/1/2010	40 58	40.87	405.45	405.74	0.29	405.69		*Product confirmed on interface probe.
4Q10	446.32	11/11/2010	39.72	40.00	406 32	406.60	0.28	406.55		*
1Q11	446.32	1/13/2011	40.04	40.43	405.89	406.28	0.39	406.21		*
2Q11	446.32	4/25/2011	40.81	40.83	405.49	405 51	0.02	405.51	403.19 - 378.19	*
3Q11	446.32	7/5/2011	38 57	38.59	407.73	407.75	0.02	407.75		*
	446.32	9/19/2011	NE	38.31	NA	NA	NA	408.01		*
4Q11	446.32	10/5/2011	38 52	38.53	407.79	407.80	0.01	407.80		*
1Q12	446.32	1/4/2012	NE	40.48	NA	NA	NA	405.84		*
2Q12	446.32	4/4/2012	NE	41.62	NA	NA	NA	404.70		*
3Q12	446.32	7/2/2012	NE	42.14	NA	NA	NA	404.18		*
P-82A										
4Q09	434.69	10/1/2009	NE	30.12	NA	NA	NA	404.57		*
1Q10	434.69	1/1/2010	NE	27.98	NA	NA	NA	406.71		*
2Q10	434.69	4/1/2010	NE	26.62	NA	NA	NA	408.07		*
3Q10	434.69	7/1/2010	NE	25.00	NA	NA	NA	409.69		*
4Q10	434.69	10/1/2010	NE	24.07	NA	NA	NA	410.62		*
1Q11	434.69	1/13/2011	NE	25.29	NA	NA	NA	409.40		*
2Q11	434.69	4/1/2011	NE	25.12	NA	NA	NA	409.57	401.48 - 386.48	*
3Q11	434.69	7/5/2011	NE	23.01	NA	NA	NA	411.68		*
	434.69	9/19/2011	NE	23.62	NA	NA	NA	411.07		*
4Q11	434.69	10/5/2011	NE	24.00	NA	NA	NA	410.69		*
1Q12	434.69	1/3/2012	NE	25.50	NA	NA	NA	409.19		*
2Q12	434.69	4/2/2012	NE	26.82	NA	NA	NA	407.87		*
3Q12	434.69	7/2/2012	NE	27.34	NA	NA	NA	407.35		*
P-82B										
4Q09	434.44	10/1/2009	NE	29.85	NA	NA	NA	404.59		*
1Q10	434.44	1/1/2010	NE	27.69	NA	NA	NA	406.75		*
2Q10	434.44	4/1/2010	NE	26.33	NA	NA	NA	408.11		*
3Q10	434.44	7/1/2010	NE	24.71	NA	NA	NA	409.73		*
4Q10	434.44	10/1/2010	NE	23.78	NA	NA	NA	410.66		*
1Q11	434.44	1/13/2011	NE	25.01	NA	NA	NA	409.43		*
2Q11	434.44	4/1/2011	NE	24.85	NA	NA	NA	409.59	370.84 - 368.84	*
3Q11	434.44	7/5/2011	NE	22.71	NA	NA	NA	411.73		*
	434.44	9/19/2011	NE	23.36	NA	NA	NA	411.08		*
4Q11	434.44	10/5/2011	NE	23.73	NA	NA	NA	410.71		*
1Q12	434.44	1/3/2012	NE	25.21	NA	NA	NA	409.23		*
2Q12	434.44	4/2/2012	NE	26.55	NA	NA	NA	407.89		*
3Q12	434.44	7/2/2012	NE	27.07	NA	NA	NA	407.37		*
P-82C										
4Q09	434.16	10/1/2009	NE	29.40	NA	NA	NA	404.76		*
1Q10	434.16	1/1/2010	NE	27.39	NA	NA	NA	406.77		*
2Q10	434.16	4/1/2010	NE	26.05	NA	NA	NA	408.11		*
3Q10	434.16	7/1/2010	NE	25.47	NA	NA	NA	408.69		*
4Q10	434.16	10/1/2010	NE	23.49	NA	NA	NA	410.67		*
1Q11	434.16	1/13/2011	NE	24.73	NA	NA	NA	409.43		*
2Q11	434.16	4/1/2011	NE	24.87	NA	NA	NA	409.29	351.39 - 349 39	*
3Q11	434.16	7/5/2011	NE	22.75	NA	NA	NA	411.41		*
	434.16	9/19/2011	NE	23.40	NA	NA	NA	410.76		*
4Q11	434.16	10/5/2011	NE	23.81	NA	NA	NA	410.35		*
1Q12	434.16	1/3/2012	NE	25.26	NA	NA	NA	408.90		*
2Q12	434.16	4/2/2012	NE	26.61	NA	NA	NA	407.55		*
3Q12	434.16	7/2/2012	NE	27.11	NA	NA	NA	407.05		*
P-82D										
4Q09	434.85	10/1/2009	NE	30.14	NA	NA	NA	404.71		*
1Q10	434.85	1/1/2010	NE	28.60	NA	NA	NA	406.25		*
2Q10	434.85	4/1/2010	NE	26.82	NA	NA	NA	408.03		*
3Q10	434.85	7/1/2010	NE	25.20	NA	NA	NA	409.65		*
4Q10	434.85	10/1/2010	NE	24.26	NA	NA	NA	410.59		*
1Q11	434.85	1/13/2011	NE	25.48	NA	NA	NA	409.37		*
2Q11	434.85	4/1/2011	NE	25.63	NA	NA	NA	409.22	323.43 - 321.43	*
3Q11	434.85	7/5/2011	NE	23.54	NA	NA	NA	411.31		*
	434.85	9/19/2011	NE	24.16	NA	NA	NA	410.69		*
4Q11	434.85	10/5/2011	NE	24.56	NA	NA	NA	410.29		*
1Q12	434.85	1/3/2012	NE	26.06	NA	NA	NA	408.79		*
2Q12	434.85	4/2/2012	NE	27.37	NA	NA	NA	407.48		*
3Q12	434.85	7/2/2012	NE	27.91	NA	NA	NA	406.94		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-83A										
4Q09	445.23	10/1/2009	NE	46.03	NA	NA	NA	399.20	398.58 - 383 58	*
1Q10	445.23	1/1/2010	NE	43.61	NA	NA	NA	401.62		*
2Q10	445.23	4/1/2010	NE	42.05	NA	NA	NA	403.18		*
3Q10	445.23	7/1/2010	NE	40.64	NA	NA	NA	404.59		*
4Q10	445.23	10/1/2010	NE	38.82	NA	NA	NA	406.41		*
1Q11	445.23	1/13/2011	NE	37.93	NA	NA	NA	407.30		*
2Q11	445.23	4/1/2011	NE	38.42	NA	NA	NA	406.81		*
3Q11	445.23	7/5/2011	NE	36.25	NA	NA	NA	408.98		*
	445.23	9/19/2011	NE	37.21	NA	NA	NA	408.02		*
4Q11	445.23	10/6/2011	NE	37.41	NA	NA	NA	407.82		*
1Q12	445.23	1/3/2012	NE	38.31	NA	NA	NA	406.92		*
2Q12	445.23	4/2/2012	NE	39.85	NA	NA	NA	405.38		*
3Q12	445.23	7/2/2012	NE	40.50	NA	NA	NA	404.73		*
P-83B										
4Q09	445.47	10/1/2009	NE	46.32	NA	NA	NA	399.15	375.82 - 373.82	*
1Q10	445.47	1/1/2010	NE	43.88	NA	NA	NA	401.59		*
2Q10	445.47	4/1/2010	NE	42.31	NA	NA	NA	403.16		*
3Q10	445.47	7/1/2010	NE	40.91	NA	NA	NA	404.56		*
4Q10	445.47	10/1/2010	NE	39.08	NA	NA	NA	406.39		*
1Q11	445.47	1/13/2011	NE	38.20	NA	NA	NA	407.27		*
2Q11	445.47	4/1/2011	NE	38.69	NA	NA	NA	406.78		*
3Q11	445.47	7/5/2011	NE	36.57	NA	NA	NA	408.90		*
	445.47	9/19/2011	NE	37.48	NA	NA	NA	407.99		*
4Q11	445.47	10/6/2011	NE	37.68	NA	NA	NA	407.79		*
1Q12	445.47	1/3/2012	NE	38.58	NA	NA	NA	406.89		*
2Q12	445.47	4/2/2012	NE	40.13	NA	NA	NA	405.34		*
3Q12	445.47	7/2/2012	NE	40.85	NA	NA	NA	404.62		*
P-83C										
4Q09	445.64	10/1/2009	NE	46.31	NA	NA	NA	399.33	353.25 - 351.25	*
1Q10	445.64	1/1/2010	NE	44.03	NA	NA	NA	401.61		*
2Q10	445.64	4/1/2010	NE	42.46	NA	NA	NA	403.18		*
3Q10	445.64	7/1/2010	NE	41.08	NA	NA	NA	404.56		*
4Q10	445.64	10/1/2010	NE	39.24	NA	NA	NA	406.40		*
1Q11	445.64	1/13/2011	NE	38.68	NA	NA	NA	406.96		*
2Q11	445.64	4/1/2011	NE	38.85	NA	NA	NA	406.79		*
3Q11	445.64	7/5/2011	NE	37.02	NA	NA	NA	408.62		*
	445.64	9/19/2011	NE	37.94	NA	NA	NA	407.70		*
4Q11	445.64	10/6/2011	NE	38.15	NA	NA	NA	407.49		*
1Q12	445.64	1/3/2012	NE	39.05	NA	NA	NA	406.59		*
2Q12	445.64	4/2/2012	NE	40.61	NA	NA	NA	405.03		*
3Q12	445.64	7/2/2012	NE	40.96	NA	NA	NA	404.68		*
P-83D										
4Q09	445.55	10/1/2009	NE	46.26	NA	NA	NA	399.29	311.84 - 309.84	*
1Q10	445.55	1/1/2010	NE	43.99	NA	NA	NA	401.56		*
2Q10	445.55	4/1/2010	NE	42.40	NA	NA	NA	403.15		*
3Q10	445.55	7/1/2010	NE	41.00	NA	NA	NA	404.55		*
4Q10	445.55	10/1/2010	NE	39.11	NA	NA	NA	406.44		*
1Q11	445.55	1/13/2011	NE	38.59	NA	NA	NA	406.96		*
2Q11	445.55	4/1/2011	NE	38.31	NA	NA	NA	407.24		*
3Q11	445.55	7/5/2011	NE	36.98	NA	NA	NA	408.57		*
	445.55	9/19/2011	NE	37.87	NA	NA	NA	407.68		*
4Q11	445.55	10/6/2011	NE	38.07	NA	NA	NA	407.48		*
1Q12	445.55	1/3/2012	NE	39.01	NA	NA	NA	406.54		*
2Q12	445.55	4/2/2012	NE	40.53	NA	NA	NA	405.02		*
3Q12	445.55	7/2/2012	NE	40.12	NA	NA	NA	405.43		*
P-84A										
4Q09	446.39	10/1/2009	NE	46.33	NA	NA	NA	400.06	392.57 - 377 57	*
1Q10	446.39	1/1/2010	NE	44.20	NA	NA	NA	402.19		*
2Q10	446.39	4/1/2010	NE	42.91	NA	NA	NA	403.48		*
3Q10	446.39	7/1/2010	NE	41.55	NA	NA	NA	404.84		*
4Q10	446.39	11/11/2010	NE	39.95	NA	NA	NA	406.44		*
1Q11	446.39	1/13/2011	NE	39.55	NA	NA	NA	406.84		*
2Q11	446.39	4/25/2011	NE	40.11	NA	NA	NA	406.28		*
3Q11	446.39	7/5/2011	NE	38.58	NA	NA	NA	407.81		*
4Q11	446.39	10/6/2011	NE	34.36	NA	NA	NA	412.03		*
1Q12	446.39	1/5/2012	NE	39.49	NA	NA	NA	406.90		*
2Q12	446.39	4/3/2012	NE	40.70	NA	NA	NA	405.69		*
3Q12	446.39	7/5/2012	NE	41.40	NA	NA	NA	404.99		*
P-84B										
4Q09	446.10	10/1/2009	NE	46.05	NA	NA	NA	400.05	372.60 - 370.60	*
1Q10	446.10	1/1/2010	NE	43.91	NA	NA	NA	402.19		*
2Q10	446.10	4/1/2010	NE	42.61	NA	NA	NA	403.49		*
3Q10	446.10	7/1/2010	NE	41.28	NA	NA	NA	404.82		*
4Q10	446.10	11/11/2010	NE	39.67	NA	NA	NA	406.43		*
1Q11	446.10	1/13/2011	NE	39.27	NA	NA	NA	406.83		*
2Q11	446.10	4/25/2011	NE	39.85	NA	NA	NA	406.25		*
3Q11	446.10	7/5/2011	NE	38.32	NA	NA	NA	407.78		*
4Q11	446.10	10/6/2011	NE	38.09	NA	NA	NA	408.01		*
1Q12	446.10	1/5/2012	NE	39.23	NA	NA	NA	406.87		*
2Q12	446.10	4/3/2012	NE	40.43	NA	NA	NA	405.67		*
3Q12	446.10	7/5/2012	NE	41.43	NA	NA	NA	404.67		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-84C										
4Q09	446.13	10/1/2009	NE	46.07	NA	NA	NA	400.06	352.08 - 350.08	*
1Q10	446.13	1/1/2010	NE	44.39	NA	NA	NA	401.74		*
2Q10	446.13	4/1/2010	NE	42.65	NA	NA	NA	403.48		*
3Q10	446.13	7/1/2010	NE	41.32	NA	NA	NA	404.81		*
4Q10	446.13	11/11/2010	NE	39.68	NA	NA	NA	406.45		*
1Q11	446.13	1/13/2011	NE	39.29	NA	NA	NA	406.84		*
2Q11	446.13	4/25/2011	NE	39.86	NA	NA	NA	406.27		*
3Q11	446.13	7/5/2011	NE	38.64	NA	NA	NA	407.49		*
4Q11	446.13	10/6/2011	NE	38.41	NA	NA	NA	407.72		*
1Q12	446.13	1/5/2012	NE	39.53	NA	NA	NA	406.60		*
2Q12	446.13	4/3/2012	NE	40.75	NA	NA	NA	405.38		*
3Q12	446.13	7/5/2012	NE	41.45	NA	NA	NA	404.68		*
P-84D										
4Q09	446.14	10/1/2009	NE	46.07	NA	NA	NA	400.07	324.99 - 322.99	*
1Q10	446.14	1/1/2010	NE	43.92	NA	NA	NA	402.22		*
2Q10	446.14	4/1/2010	NE	42.63	NA	NA	NA	403.51		*
3Q10	446.14	7/1/2010	NE	41.34	NA	NA	NA	404.80		*
4Q10	446.14	11/11/2010	NE	39.69	NA	NA	NA	406.45		*
1Q11	446.14	1/13/2011	NE	39.31	NA	NA	NA	406.83		*
2Q11	446.14	4/25/2011	NE	39.87	NA	NA	NA	406.27		*
3Q11	446.14	7/5/2011	NE	38.68	NA	NA	NA	407.46		*
4Q11	446.14	10/6/2011	NE	38.43	NA	NA	NA	407.71		*
1Q12	446.14	1/5/2012	NE	39.55	NA	NA	NA	406.59		*Well depth greater than 101 ft.
2Q12	446.14	4/3/2012	NE	40.77	NA	NA	NA	405.37		*
3Q12	446.14	7/5/2012	NE	41.46	NA	NA	NA	404.68		*
P-88A										
4Q09	443.12	10/1/2009	NE	36.85	NA	NA	NA	406.27	404.72 - 389.72	*
1Q10	443.12	1/1/2010	NE	34.78	NA	NA	NA	408.34		*
2Q10	443.12	4/1/2010	NE	33.22	NA	NA	NA	409.90		*
3Q10	443.12	7/1/2010	NE	31.80	NA	NA	NA	411.32		*
4Q10	443.12	10/1/2010	NE	30.65	NA	NA	NA	412.47		*
1Q11	443.12	1/14/2011	NE	31.16	NA	NA	NA	411.96		*
2Q11	443.12	4/1/2011	NE	31.36	NA	NA	NA	411.76		*
3Q11	443.12	7/5/2011	NE	29.78	NA	NA	NA	413.34		*
	443.12	9/19/2011	NE	29.72	NA	NA	NA	413.40		*
4Q11	443.12	10/5/2011	NE	29.92	NA	NA	NA	413.20		*
1Q12	443.12	1/4/2012	NE	31.18	NA	NA	NA	411.94		*
2Q12	443.12	4/3/2012	NE	32.55	NA	NA	NA	410.57		*
3Q12	443.12	7/2/2012	NE	32.97	NA	NA	NA	410.15		*
P-88B										
4Q09	443.17	10/1/2009	NE	37.06	NA	NA	NA	406.11	370.62 - 368.62	*
1Q10	443.17	1/1/2010	NE	34.86	NA	NA	NA	408.31		*
2Q10	443.17	4/1/2010	NE	33.28	NA	NA	NA	409.89		*
3Q10	443.17	7/1/2010	NE	31.86	NA	NA	NA	411.31		*
4Q10	443.17	10/1/2010	NE	30.87	NA	NA	NA	412.30		*
1Q11	443.17	1/14/2011	NE	31.37	NA	NA	NA	411.80		*
2Q11	443.17	4/1/2011	NE	31.42	NA	NA	NA	411.75		*
3Q11	443.17	7/5/2011	NE	29.71	NA	NA	NA	413.46		*
	443.17	9/19/2011	NE	29.64	NA	NA	NA	413.53		*
4Q11	443.17	10/5/2011	NE	29.86	NA	NA	NA	413.31		*
1Q12	443.17	1/4/2012	NE	31.16	NA	NA	NA	412.01		*
2Q12	443.17	4/3/2012	NE	32.50	NA	NA	NA	410.67		*
3Q12	443.17	7/2/2012	NE	33.01	NA	NA	NA	410.16		*
P-88C										
4Q09	443.16	10/1/2009	NE	36.88	NA	NA	NA	406.28	350.86 - 348.86	*
1Q10	443.16	1/1/2010	NE	35.11	NA	NA	NA	408.05		*
2Q10	443.16	4/1/2010	NE	33.25	NA	NA	NA	409.91		*
3Q10	443.16	7/1/2010	NE	31.85	NA	NA	NA	411.31		*
4Q10	443.16	10/1/2010	NE	30.67	NA	NA	NA	412.49		*
1Q11	443.16	1/14/2011	NE	31.17	NA	NA	NA	411.99		*
2Q11	443.16	4/1/2011	NE	31.38	NA	NA	NA	411.78		*
3Q11	443.16	7/5/2011	NE	30.02	NA	NA	NA	413.14		*
	443.16	9/19/2011	NE	29.95	NA	NA	NA	413.21		*
4Q11	443.16	10/5/2011	NE	30.14	NA	NA	NA	413.02		*
1Q12	443.16	1/4/2012	NE	31.44	NA	NA	NA	411.72		*
2Q12	443.16	4/3/2012	NE	32.78	NA	NA	NA	410.38		*
3Q12	443.16	7/2/2012	NE	33.15	NA	NA	NA	410.01		*
P-88D										
4Q09	443.23	10/1/2009	NE	37.01	NA	NA	NA	406.22	329.53 - 327 53	*
1Q10	443.23	1/1/2010	NE	35.20	NA	NA	NA	408.03		*
2Q10	443.23	4/1/2010	NE	33.33	NA	NA	NA	409.90		*
3Q10	443.23	7/1/2010	NE	31.87	NA	NA	NA	411.36		*
4Q10	443.23	10/1/2010	NE	30.73	NA	NA	NA	412.50		*
1Q11	443.23	1/14/2011	NE	31.35	NA	NA	NA	411.88		*
2Q11	443.23	4/1/2011	NE	31.81	NA	NA	NA	411.42		*
3Q11	443.23	7/5/2011	NE	30.08	NA	NA	NA	413.15		*
	443.23	9/19/2011	NE	30.03	NA	NA	NA	413.20		*
4Q11	443.23	10/5/2011	NE	30.25	NA	NA	NA	412.98		*
1Q12	443.23	1/4/2012	NE	31.57	NA	NA	NA	411.66		*
2Q12	443.23	4/3/2012	NE	32.91	NA	NA	NA	410.32		*
3Q12	443.23	7/2/2012	NE	33.41	NA	NA	NA	409.82		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
T-37										
4Q09	447.15	10/1/2009	NE	45.68	NA	NA	NA	401.47	398.30 - 378 30	*
1Q10	447.15	1/1/2010	NE	42.55	NA	NA	NA	404.60		*
2Q10	447.15	4/1/2010	NE	41.10	NA	NA	NA	406.05		*
3Q10	447.15	7/1/2010	NE	39.78	NA	NA	NA	407.37		*
4Q10	447.15	10/1/2010	NE	38.12	NA	NA	NA	409.03		*
1Q11	447.15	1/13/2011	NE	37.61	NA	NA	NA	409.54		*
2Q11	447.15	4/1/2011	NE	37.63	NA	NA	NA	409.52		*
3Q11	447.15	7/5/2011	NE	35.84	NA	NA	NA	411.31		*
4Q11	447.15	10/6/2011	NE	36.90	NA	NA	NA	410.25		*
1Q12	447.15	1/3/2012	NE	37.95	NA	NA	NA	409.20		*
2Q12	447.15	4/2/2012	NE	39.12	NA	NA	NA	408.03		*
3Q12	447.15	7/2/2012	NE	39.91	NA	NA	NA	407.24		*
P-89B										
4Q09	447.35	10/1/2009	NE	45.84	NA	NA	NA	401.51	369.99 - 367.99	*
1Q10	447.35	1/1/2010	NE	42.73	NA	NA	NA	404.62		*
2Q10	447.35	4/1/2010	NE	41.29	NA	NA	NA	406.06		*
3Q10	447.35	7/1/2010	NE	39.97	NA	NA	NA	407.38		*
4Q10	447.35	10/1/2010	NE	38.29	NA	NA	NA	409.06		*
1Q11	447.35	1/14/2011	NE	37.78	NA	NA	NA	409.57		*
2Q11	447.35	4/1/2011	NE	37.80	NA	NA	NA	409.55		*
3Q11	447.35	7/5/2011	NE	35.99	NA	NA	NA	411.36		*
	447.35	9/19/2011	NE	36.81	NA	NA	NA	410.54		*
4Q11	447.35	10/6/2011	NE	37.05	NA	NA	NA	410.30		*
1Q12	447.35	1/3/2012	NE	38.10	NA	NA	NA	409.25		*
2Q12	447.35	4/2/2012	NE	39.30	NA	NA	NA	408.05		*
3Q12	447.35	7/2/2012	NE	40.09	NA	NA	NA	407.26		*
P-89C										
4Q09	447.68	10/1/2009	NE	46.18	NA	NA	NA	401.50	350.05 - 348.05	*
1Q10	447.68	1/1/2010	NE	43.07	NA	NA	NA	404.61		*
2Q10	447.68	4/1/2010	NE	41.63	NA	NA	NA	406.05		*
3Q10	447.68	7/1/2010	NE	40.32	NA	NA	NA	407.36		*
4Q10	447.68	10/1/2010	NE	38.64	NA	NA	NA	409.04		*
1Q11	447.68	1/14/2011	NE	38.10	NA	NA	NA	409.58		*
2Q11	447.68	4/1/2011	NE	38.14	NA	NA	NA	409.54		*
3Q11	447.68	7/5/2011	NE	36.33	NA	NA	NA	411.35		*
	447.68	9/19/2011	NE	37.13	NA	NA	NA	410.55		*
4Q11	447.68	10/6/2011	NE	37.39	NA	NA	NA	410.29		*
1Q12	447.68	1/3/2012	NE	38.42	NA	NA	NA	409.26		*
2Q12	447.68	4/2/2012	NE	39.63	NA	NA	NA	408.05		*
3Q12	447.68	7/2/2012	NE	40.42	NA	NA	NA	407.26		*
P-89D										
4Q09	447.54	10/1/2009	NE	46.19	NA	NA	NA	401.35	307.20 - 305.20	*
1Q10	447.54	1/1/2010	NE	43.11	NA	NA	NA	404.43		*
2Q10	447.54	4/1/2010	NE	41.66	NA	NA	NA	405.88		*
3Q10	447.54	7/1/2010	NE	40.30	NA	NA	NA	407.24		*
4Q10	447.54	10/1/2010	NE	38.61	NA	NA	NA	408.93		*
1Q11	447.54	1/14/2011	NE	38.11	NA	NA	NA	409.43		*
2Q11	447.54	4/1/2011	NE	38.12	NA	NA	NA	409.42		*
3Q11	447.54	7/5/2011	NE	36.23	NA	NA	NA	411.31		*
	447.54	9/19/2011	NE	37.04	NA	NA	NA	410.50		*
4Q11	447.54	10/6/2011	NE	37.35	NA	NA	NA	410.19		*
1Q12	447.54	1/3/2012	NE	38.47	NA	NA	NA	409.07		*
2Q12	447.54	4/2/2012	NE	39.56	NA	NA	NA	407.98		*
3Q12	447.54	7/2/2012	NE	40.36	NA	NA	NA	407.18		*
P-91A										
4Q09	447.19	10/1/2009	50.22	50.73	396.46	396.97	0.51	396.87	395.68 - 380.68	*
1Q10	447.19	1/1/2010	47.91	48.42	398.77	399.28	0.51	399.18		*Product confirmed on interface probe.
2Q10	447.19	4/1/2010	46.08	46.58	400.61	401.11	0.50	401.01		*Product confirmed on interface probe.
3Q10	447.19	7/1/2010	44.85	45.36	401.83	402 34	0.51	402.24		*Product confirmed on interface probe.
4Q10	447.19	10/1/2010	42.70	43.19	404.00	404.49	0.49	404.39		*Product confirmed on interface probe.
1Q11	447.19	1/14/2011	41.19	41.64	405 55	406.00	0.45	405.91		*
2Q11	447.19	4/1/2011	NE	43.10	NA	NA	NA	404.09		*
3Q11	447.19	7/5/2011	NE	40.42	NA	NA	NA	406.77		*
	447.19	9/19/2011	NE	41.69	NA	NA	NA	405.50		*
4Q11	447.19	10/6/2011	NE	41.63	NA	NA	NA	405.56		*
1Q12	447.19	1/3/2012	NE	42.91	NA	NA	NA	404.28		*
2Q12	447.19	4/3/2012	NE	44.31	NA	NA	NA	402.88		*
3Q12	447.19	7/2/2012	NE	45.76	NA	NA	NA	401.43		*
P-91B										
4Q09	447.26	10/1/2009	NE	50.48	NA	NA	NA	396.78	372.57 - 370 57	*
1Q10	447.26	1/1/2010	NE	48.19	NA	NA	NA	399.07		*
2Q10	447.26	4/1/2010	NE	46.21	NA	NA	NA	401.05		*
3Q10	447.26	7/1/2010	NE	45.08	NA	NA	NA	402.18		*
4Q10	447.26	10/1/2010	NE	42.87	NA	NA	NA	404.39		*
1Q11	447.26	1/14/2011	NE	41.41	NA	NA	NA	405.85		*
2Q11	447.26	4/1/2011	NE	43.28	NA	NA	NA	403.98		*
3Q11	447.26	7/5/2011	NE	40.62	NA	NA	NA	406.64		*
	447.26	9/19/2011	NE	41.78	NA	NA	NA	405.48		*
4Q11	447.26	10/6/2011	NE	41.53	NA	NA	NA	405.73		*
1Q12	447.26	1/3/2012	NE	43.00	NA	NA	NA	404.26		*
2Q12	447.26	4/3/2012	NE	44.11	NA	NA	NA	403.15		*
3Q12	447.26	7/2/2012	NE	45.74	NA	NA	NA	401.52		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-91C										
4Q09	447.02	10/1/2009	NE	50.21	NA	NA	NA	396.81		*
1Q10	447.02	1/1/2010	NE	48.91	NA	NA	NA	398.11		*
2Q10	447.02	4/1/2010	NE	46.08	NA	NA	NA	400.94		*
3Q10	447.02	7/1/2010	NE	44.83	NA	NA	NA	402.19		*
4Q10	447.02	10/1/2010	NE	42.57	NA	NA	NA	404.45		*
1Q11	447.02	1/14/2011	NE	41.18	NA	NA	NA	405.84		*
2Q11	447.02	4/1/2011	NE	43.00	NA	NA	NA	404.02	352.29 - 350.29	*
3Q11	447.02	7/5/2011	NE	40.35	NA	NA	NA	406.67		*
	447.02	9/19/2011	NE	41.51	NA	NA	NA	405.51		*
4Q11	447.02	10/6/2011	NE	41.47	NA	NA	NA	405.55		*
1Q12	447.02	1/3/2012	NE	42.74	NA	NA	NA	404.28		*
2Q12	447.02	4/3/2012	NE	44.11	NA	NA	NA	402.91		*
3Q12	447.02	7/2/2012	NE	45.53	NA	NA	NA	401.49		*
P-91D										
4Q09	447.02	10/1/2009	NE	50.15	NA	NA	NA	396.87		*
1Q10	447.02	1/1/2010	NE	47.87	NA	NA	NA	399.15		*
2Q10	447.02	4/1/2010	NE	46.03	NA	NA	NA	400.99		*
3Q10	447.02	7/1/2010	NE	44.77	NA	NA	NA	402.25		*
4Q10	447.02	10/1/2010	NE	42.52	NA	NA	NA	404.50		*
1Q11	447.02	1/14/2011	NE	41.14	NA	NA	NA	405.88		*
2Q11	447.02	4/1/2011	NE	42.97	NA	NA	NA	404.05	278.70 - 276.70	*
3Q11	447.02	7/5/2011	NE	40.27	NA	NA	NA	406.75		*
	447.02	9/19/2011	NE	41.49	NA	NA	NA	405.53		*
4Q11	447.02	10/6/2011	NE	41.44	NA	NA	NA	405.58		*
1Q12	447.02	1/3/2012	NE	42.73	NA	NA	NA	404.29		*
2Q12	447.02	4/3/2012	NE	44.35	NA	NA	NA	402.67		*
3Q12	447.02	7/2/2012	NE	45.55	NA	NA	NA	401.47		*
P-92A										
4Q09	446.12	10/1/2009	47.22	47.41	398.71	398.90	0.19	398.86		*
1Q10	446.12	1/1/2010	45.05	45.25	400.87	401.07	0.20	401.03		*Product confirmed on interface probe.
2Q10	446.12	4/1/2010	43.43	43.63	402.49	402.69	0.20	402.65		*Product confirmed on interface probe.
3Q10	446.12	7/1/2010	42.43	42.63	403.49	403.69	0.20	403.65		*Product confirmed on interface probe.
4Q10	446.12	10/1/2010	40 50	40.70	405.42	405.62	0.20	405.58		*Product confirmed on interface probe.
1Q11	446.12	1/14/2011	39.43	39.57	406 55	406.69	0.14	406.66		*
2Q11	446.12	4/1/2011	NE	41.02	NA	NA	NA	405.10	398.55 - 383 55	*
3Q11	446.12	7/5/2011	38 55	38.59	407 53	407 57	0.04	407.56		*
	446.12	9/19/2011	39.62	39.67	406.45	406 50	0.05	406.49		*
4Q11	446.12	10/6/2011	39.70	39.76	406 36	406.42	0.06	406.41		*
1Q12	446.12	1/4/2012	41.05	41.07	405.05	405.07	0.02	405.07		*
2Q12	446.12	4/3/2012	NE	42.77	NA	NA	NA	403.35		*
3Q12	446.12	7/3/2012	44.06	44.08	402.04	402.06	0.02	402.06		*
P-92B										
4Q09	446.07	10/1/2009	NE	47.21	NA	NA	NA	398.86		*
1Q10	446.07	1/1/2010	NE	45.04	NA	NA	NA	401.03		*
2Q10	446.07	4/1/2010	NE	43.44	NA	NA	NA	402.63		*
3Q10	446.07	7/1/2010	NE	42.43	NA	NA	NA	403.64		*
4Q10	446.07	10/1/2010	NE	40.51	NA	NA	NA	405.56		*
1Q11	446.07	1/14/2011	NE	39.41	NA	NA	NA	406.66		*
2Q11	446.07	4/1/2011	NE	40.92	NA	NA	NA	405.15	372.42 - 370.42	*
3Q11	446.07	7/5/2011	NE	38.51	NA	NA	NA	407.56		*
	446.07	9/19/2011	NE	39.61	NA	NA	NA	406.46		*
4Q11	446.07	10/6/2011	NE	39.68	NA	NA	NA	406.39		*
1Q12	446.07	1/4/2012	NE	41.02	NA	NA	NA	405.05		*
2Q12	446.07	4/3/2012	NE	42.74	NA	NA	NA	403.33		*
3Q12	446.07	7/3/2012	NE	44.02	NA	NA	NA	402.05		*
P-92C										
4Q09	445.98	10/1/2009	NE	47.13	NA	NA	NA	398.85		*
1Q10	445.98	1/1/2010	NE	44.89	NA	NA	NA	401.09		*
2Q10	445.98	4/1/2010	NE	43.17	NA	NA	NA	402.81		*
3Q10	445.98	7/1/2010	NE	42.30	NA	NA	NA	403.68		*
4Q10	445.98	10/1/2010	NE	40.38	NA	NA	NA	405.60		*
1Q11	445.98	1/14/2011	NE	39.32	NA	NA	NA	406.66		*
2Q11	445.98	4/1/2011	NE	40.77	NA	NA	NA	405.21	352.54 - 350 54	*
3Q11	445.98	7/5/2011	NE	38.33	NA	NA	NA	407.65		*
	445.98	9/19/2011	NE	39.50	NA	NA	NA	406.48		*
4Q11	445.98	10/6/2011	NE	39.63	NA	NA	NA	406.35		*
1Q12	445.98	1/4/2012	NE	39.95	NA	NA	NA	406.03		*
2Q12	445.98	4/3/2012	NE	42.61	NA	NA	NA	403.37		*
3Q12	445.98	7/3/2012	NE	44.07	NA	NA	NA	401.91		*
P-92D										
4Q09	445.90	10/1/2009	NE	47.09	NA	NA	NA	398.81		*
1Q10	445.90	1/1/2010	NE	44.92	NA	NA	NA	400.98		*
2Q10	445.90	4/1/2010	NE	43.24	NA	NA	NA	402.66		*
3Q10	445.90	7/1/2010	NE	42.31	NA	NA	NA	403.59		*
4Q10	445.90	10/1/2010	NE	40.37	NA	NA	NA	405.53		*
1Q11	445.90	1/14/2011	NE	39.24	NA	NA	NA	406.66		*
2Q11	445.90	4/1/2011	NE	40.73	NA	NA	NA	405.17	304.90 - 302.90	*
3Q11	445.90	7/5/2011	NE	38.33	NA	NA	NA	407.57		*
	445.90	9/19/2011	NE	39.46	NA	NA	NA	406.44		*
4Q11	445.90	10/6/2011	NE	39.57	NA	NA	NA	406.33		*
1Q12	445.90	1/4/2012	NE	39.89	NA	NA	NA	406.01		*Well depth greater than 101 ft.
2Q12	445.90	4/3/2012	NE	42.67	NA	NA	NA	403.23		*
3Q12	445.90	7/3/2012	NE	43.96	NA	NA	NA	401.94		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-93A										
4Q09	446.58	10/1/2009	NE	45.92	NA	NA	NA	400.66		*
1Q10	446.58	1/1/2010	NE	43.92	NA	NA	NA	402.66		*
2Q10	446.58	4/1/2010	NE	42.67	NA	NA	NA	403.91		*
3Q10	446.58	7/1/2010	NE	41.47	NA	NA	NA	405.11		*
4Q10	446.58	11/11/2010	NE	40.75	NA	NA	NA	405.83		*
1Q11	446.58	1/14/2011	NE	40.97	NA	NA	NA	405.61		*
2Q11	446.58	4/25/2011	NE	41.80	NA	NA	NA	404.78	398.41 - 383.41	*
3Q11	446.58	7/5/2011	NE	39.40	NA	NA	NA	407.18		*
	446.58	9/19/2011	NE	38.86	NA	NA	NA	407.72		*
4Q11	446.58	10/6/2011	NE	39.16	NA	NA	NA	407.42		*
1Q12	446.58	1/4/2012	NE	41.32	NA	NA	NA	405.26		*
2Q12	446.58	4/3/2012	NE	42.72	NA	NA	NA	403.86		*
3Q12	446.58	7/5/2012	NE	42.95	NA	NA	NA	403.63		*
P-93B										
4Q09	446.46	10/1/2009	NE	45.95	NA	NA	NA	400.51		*
1Q10	446.46	1/1/2010	NE	44.34	NA	NA	NA	402.12		*
2Q10	446.46	4/1/2010	NE	42.56	NA	NA	NA	403.90		*
3Q10	446.46	7/1/2010	NE	41.38	NA	NA	NA	405.08		*
4Q10	446.46	11/11/2010	NE	40.73	NA	NA	NA	405.73		*
1Q11	446.46	1/14/2011	NE	41.03	NA	NA	NA	405.43		*
2Q11	446.46	4/25/2011	NE	41.69	NA	NA	NA	404.77	371.86 - 369.86	*
3Q11	446.46	7/5/2011	NE	39.44	NA	NA	NA	407.02		*
	446.46	9/19/2011	NE	38.91	NA	NA	NA	407.55		*
4Q11	446.46	10/6/2011	NE	39.19	NA	NA	NA	407.27		*
1Q12	446.46	1/4/2012	NE	41.38	NA	NA	NA	405.08		*
2Q12	446.46	4/3/2012	NE	42.80	NA	NA	NA	403.66		*
3Q12	446.46	7/5/2012	NE	42.86	NA	NA	NA	403.60		*
P-93C										
4Q09	446.51	10/1/2009	NE	45.85	NA	NA	NA	400.66		*
1Q10	446.51	1/1/2010	NE	43.86	NA	NA	NA	402.65		*
2Q10	446.51	4/1/2010	NE	42.59	NA	NA	NA	403.92		*
3Q10	446.51	7/1/2010	NE	41.42	NA	NA	NA	405.09		*
4Q10	446.51	11/11/2010	NE	40.69	NA	NA	NA	405.82		*
1Q11	446.51	1/14/2011	NE	40.91	NA	NA	NA	405.60		*
2Q11	446.51	4/25/2011	NE	41.70	NA	NA	NA	404.81	352.26 - 350.26	*
3Q11	446.51	7/5/2011	NE	39.32	NA	NA	NA	407.19		*
	446.51	9/19/2011	NE	38.79	NA	NA	NA	407.72		*
4Q11	446.51	10/6/2011	NE	39.15	NA	NA	NA	407.36		*
1Q12	446.51	1/4/2012	NE	41.27	NA	NA	NA	405.24		*
2Q12	446.51	4/3/2012	NE	42.62	NA	NA	NA	403.89		*
3Q12	446.51	7/5/2012	NE	42.98	NA	NA	NA	403.53		*
P-93D										
4Q09	446.89	10/1/2009	NE	45.75	NA	NA	NA	401.14		*
1Q10	446.89	1/1/2010	NE	43.76	NA	NA	NA	403.13		*
2Q10	446.89	4/1/2010	NE	42.51	NA	NA	NA	404.38		*
3Q10	446.89	7/1/2010	NE	41.32	NA	NA	NA	405.57		*
4Q10	446.36	11/11/2010	NE	40.59	NA	NA	NA	405.77		*
1Q11	446.36	1/14/2011	NE	40.81	NA	NA	NA	405.55		*
2Q11	446.89	4/25/2011	NE	41.84	NA	NA	NA	405.05	321.14 - 319.14	*
3Q11	446.89	7/5/2011	NE	39.46	NA	NA	NA	407.43		*
	446.89	9/19/2011	NE	38.94	NA	NA	NA	407.95		*
4Q11	446.89	10/6/2011	NE	39.22	NA	NA	NA	407.67		*
1Q12	446.89	1/4/2012	NE	41.41	NA	NA	NA	405.48		*Well depth greater than 101 ft.
2Q12	446.89	4/3/2012	NE	42.81	NA	NA	NA	404.08		*
3Q12	446.89	7/5/2012	NE	43.02	NA	NA	NA	403.87		*
P-94										
4Q09	444.65	10/1/2009	NE	42.62	NA	NA	NA	402.03		*
1Q10	444.65	1/1/2010	NE	38.86	NA	NA	NA	405.79		*
2Q10	444.65	4/1/2010	NE	37.55	NA	NA	NA	407.10		*
3Q10	444.65	7/1/2010	NE	36.11	NA	NA	NA	408.54		*
4Q10	444.65	10/1/2010	NE	35.13	NA	NA	NA	409.52		*
1Q11	444.65	1/13/2011	NE	34.66	NA	NA	NA	409.99		*
2Q11	444.65	4/1/2011	NE	34.27	NA	NA	NA	410.38	398.80 - 383.80	*
3Q11	444.65	7/5/2011	NE	32.14	NA	NA	NA	412.51		*
	444.65	9/19/2011	NE	33.17	NA	NA	NA	411.48		*
4Q11	444.65	10/6/2011	NE	33.53	NA	NA	NA	411.12		*
1Q12	444.65	1/3/2012	NE	34.75	NA	NA	NA	409.90		*
2Q12	444.65	4/2/2012	NE	35.68	NA	NA	NA	408.97		*
3Q12	444.65	7/2/2012	NE	36.20	NA	NA	NA	408.45		*
P-95										
4Q09	443.44	10/1/2009	NE	35.74	NA	NA	NA	407.70		*
1Q10	443.44	1/1/2010	NE	33.06	NA	NA	NA	410.38		*
2Q10	443.44	4/1/2010	NE	31.77	NA	NA	NA	411.67		*
3Q10	443.44	7/1/2010	NE	30.42	NA	NA	NA	413.02		*
4Q10	443.44	10/1/2010	NE	29.31	NA	NA	NA	414.13		*
1Q11	443.44	1/13/2011	NE	29.68	NA	NA	NA	413.76	406.92 - 391.92	*
2Q11	443.44	4/1/2011	NE	29.75	NA	NA	NA	413.69		*
3Q11	443.44	7/5/2011	NE	28.12	NA	NA	NA	415.32		*
4Q11	443.44	10/5/2011	NE	28.24	NA	NA	NA	415.20		*
1Q12	443.44	1/5/2012	NE	29.50	NA	NA	NA	413.94		*
2Q12	443.44	4/3/2012	NE	30.58	NA	NA	NA	412.86		*
3Q12	443.44	7/3/2012	NE	31.04	NA	NA	NA	412.40		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-102										
4Q09	444.91	10/1/2009	NE	39.56	NA	NA	NA	405.35		*
1Q10	444.91	1/1/2010	NE	36.48	NA	NA	NA	408.43		*
2Q10	444.91	4/1/2010	NE	35.31	NA	NA	NA	409.60		*
3Q10	444.91	7/1/2010	NE	33.97	NA	NA	NA	410.94		*
4Q10	444.91	10/1/2010	NE	33.62	NA	NA	NA	411.29		*
1Q11	444.91	1/3/2011	NE	32.61	NA	NA	NA	412.30		*
2Q11	444.91	4/1/2011	NE	32.41	NA	NA	NA	412.50	402.16 - 382.16	*
3Q11	444.91	7/5/2011	NE	30.91	NA	NA	NA	414.00		*
	444.91	9/19/2011	NE	31.18	NA	NA	NA	413.73		*
4Q11	444.91	10/6/2011	NE	31.47	NA	NA	NA	413.44		*
1Q12	444.91	1/4/2012	NE	32.45	NA	NA	NA	412.46		*
2Q12	444.91	4/3/2012	NE	33.41	NA	NA	NA	411.50		*
3Q12	444.91	7/2/2012	NE	34.10	NA	NA	NA	410.81		*
P-114										
4Q09	432.41	10/1/2009	NE	30.71	NA	NA	NA	401.70		*
1Q10	432.41	1/1/2010	NE	28.40	NA	NA	NA	404.01		*
2Q10	432.41	4/1/2010	NE	27.05	NA	NA	NA	405.36		*
3Q10	432.41	7/1/2010	NE	25.00	NA	NA	NA	407.41		*
4Q10	432.41	11/12/2010	NE	24.66	NA	NA	NA	407.75		*
1Q11	432.41	1/13/2011	NE	26.84	NA	NA	NA	405.57		*
2Q11	432.41	4/25/2011	NE	26.61	NA	NA	NA	405.80	399.73 - 379.73	*
3Q11	432.41	7/5/2011	NE	23.48	NA	NA	NA	408.93		*
	432.41	9/19/2011	NE	24.20	NA	NA	NA	408.21		*
4Q11	432.41	10/5/2011	NE	24.59	NA	NA	NA	407.82		*
1Q12	432.41	1/3/2012	NE	26.88	NA	NA	NA	405.53		*
2Q12	432.41	4/2/2012	NE	28.33	NA	NA	NA	404.08		*
3Q12	432.41	7/3/2012	NE	28.39	NA	NA	NA	404.02		*
P-115										
4Q09	433.31	10/1/2009	NE	31.52	NA	NA	NA	401.79		*
1Q10	433.31	1/1/2010	NE	29.31	NA	NA	NA	404.00		*
2Q10	433.31	4/1/2010	NE	27.77	NA	NA	NA	405.54		*
3Q10	433.31	7/1/2010	NE	25.59	NA	NA	NA	407.72		*
4Q10	433.31	11/11/2010	NE	25.41	NA	NA	NA	407.90		*
1Q11	433.31	1/13/2011	NE	27.88	NA	NA	NA	405.43		*
2Q11	433.31	4/25/2011	NE	27.38	NA	NA	NA	405.93	401.01 - 381.01	*
3Q11	433.31	7/5/2011	NE	NM	NA	NA	NA	NA		Not Accessible
	433.31	9/19/2011	NE	25.10	NA	NA	NA	408.21		*
4Q11	433.31	10/6/2011	NE	25.67	NA	NA	NA	407.64		*
1Q12	433.31	1/3/2012	NE	27.86	NA	NA	NA	405.45		*
2Q12	433.31	4/2/2012	NE	29.30	NA	NA	NA	404.01		*
3Q12	433.31	7/3/2012	NE	29.35	NA	NA	NA	403.96		*
P-116										
4Q09	436.45	10/1/2009	NE	34.84	NA	NA	NA	401.61		*
1Q10	436.45	1/1/2010	NE	32.68	NA	NA	NA	403.77		*
2Q10	436.45	4/1/2010	NE	31.05	NA	NA	NA	405.40		*
3Q10	436.45	7/1/2010	NE	28.82	NA	NA	NA	407.63		*
4Q10	436.45	11/11/2010	NE	28.76	NA	NA	NA	407.69		*
1Q11	436.45	1/13/2011	NE	31.35	NA	NA	NA	405.10		*
2Q11	436.45	4/25/2011	NE	30.76	NA	NA	NA	405.69	399.01 - 379.01	*
3Q11	436.45	7/5/2011	NE	27.41	NA	NA	NA	409.04		*
	436.45	9/19/2011	NE	28.52	NA	NA	NA	407.93		*
4Q11	436.45	10/5/2011	NE	28.96	NA	NA	NA	407.49		*
1Q12	436.45	1/3/2012	NE	31.35	NA	NA	NA	405.10		*
2Q12	436.45	4/2/2012	NE	32.72	NA	NA	NA	403.73		*
3Q12	436.45	7/3/2012	NE	32.80	NA	NA	NA	403.65		*
P-117										
4Q09	432.67	10/1/2009	NE	31.05	NA	NA	NA	401.62		*
1Q10	432.67	1/1/2010	NE	28.87	NA	NA	NA	403.80		*
2Q10	432.67	4/1/2010	NE	27.19	NA	NA	NA	405.48		*
3Q10	432.67	7/1/2010	NE	24.91	NA	NA	NA	407.76		*
4Q10	432.67	11/11/2010	NE	24.11	NA	NA	NA	408.56		*
1Q11	432.67	1/13/2011	NE	27.62	NA	NA	NA	405.05		*
2Q11	432.67	4/25/2011	NE	26.96	NA	NA	NA	405.71	399.74 - 379.74	*
3Q11	432.67	7/5/2011	NE	23.54	NA	NA	NA	409.13		*
	432.67	9/19/2011	NE	24.71	NA	NA	NA	407.96		*
4Q11	432.67	10/5/2011	NE	25.16	NA	NA	NA	407.51		*
1Q12	432.67	1/3/2012	NE	27.56	NA	NA	NA	405.11		*
2Q12	432.67	4/2/2012	NE	29.00	NA	NA	NA	403.67		*
3Q12	432.67	7/3/2012	NE	29.00	NA	NA	NA	403.67		*
P-118										
4Q09	431.32	10/1/2009	NE	29.92	NA	NA	NA	401.40		*
1Q10	431.32	1/1/2010	NE	27.78	NA	NA	NA	403.54		*
2Q10	431.32	4/1/2010	NE	25.81	NA	NA	NA	405.51		*
3Q10	431.32	7/1/2010	NE	23.27	NA	NA	NA	408.05		*
4Q10	431.32	10/1/2010	NE	23.80	NA	NA	NA	407.52		*
1Q11	431.32	1/13/2011	NE	26.95	NA	NA	NA	404.37		*
2Q11	431.32	4/1/2011	NE	25.75	NA	NA	NA	405.57	400.20 - 384.27	*
3Q11	431.32	7/5/2011	NE	22.11	NA	NA	NA	409.21		*
	431.32	9/19/2011	NE	23.78	NA	NA	NA	407.54		*
4Q11	431.32	10/5/2011	NE	34.28	NA	NA	NA	397.04		
1Q12	431.32	1/3/2012	NE	26.78	NA	NA	NA	404.54		*
2Q12	431.32	4/2/2012	NE	28.13	NA	NA	NA	403.19		*
3Q12	431.32	7/3/2012	NE	28.12	NA	NA	NA	403.20		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
P-119										
4Q09	431.92	10/1/2009	NE	30.09	NA	NA	NA	401.83	401.25 - 385 32	*
1Q10	431.92	1/1/2010	NE	27.74	NA	NA	NA	404.18		*
2Q10	431.92	4/1/2010	NE	26.49	NA	NA	NA	405.43		*
3Q10	431.92	7/1/2010	NE	24.71	NA	NA	NA	407.21		*
4Q10	431.92	11/11/2010	NE	24.93	NA	NA	NA	406.99		*
1Q11	431.92	1/13/2011	NE	25.64	NA	NA	NA	406.28		*
2Q11	431.92	4/25/2011	NE	25.77	NA	NA	NA	406.15		*
3Q11	431.92	7/5/2011	NE	23.06	NA	NA	NA	408.86		*
	431.92	9/19/2011	NE	23.40	NA	NA	NA	408.52		*
4Q11	431.92	10/5/2011	NE	23.70	NA	NA	NA	408.22		*
1Q12	431.92	1/3/2012	NE	29.80	NA	NA	NA	402.12		*
2Q12	431.92	4/2/2012	NE	27.21	NA	NA	NA	404.71		*
3Q12	431.92	7/3/2012	NE	27.40	NA	NA	NA	404.52		*
P-120										
4Q09	432.78	10/1/2009	NE	30.21	NA	NA	NA	402.57	401.40 - 385.47	*
1Q10	432.78	1/1/2010	NE	27.86	NA	NA	NA	404.92		*
2Q10	432.78	4/1/2010	NE	26.60	NA	NA	NA	406.18		*
3Q10	432.78	7/1/2010	NE	24.53	NA	NA	NA	408.25		*
4Q10	432.78	10/1/2010	NE	24.13	NA	NA	NA	408.65		*
1Q11	432.78	1/13/2011	NE	26.14	NA	NA	NA	406.64		*
2Q11	432.78	4/1/2011	NE	25.82	NA	NA	NA	406.96		*
3Q11	432.78	7/5/2011	NE	22.85	NA	NA	NA	409.93		*
	432.78	9/19/2011	NE	23.82	NA	NA	NA	408.96		*
4Q11	432.78	10/5/2011	NE	24.15	NA	NA	NA	408.63		*
1Q12	432.78	1/3/2012	NE	26.22	NA	NA	NA	406.56		*
2Q12	432.78	4/4/2012	NE	27.58	NA	NA	NA	405.20		*
3Q12	432.78	7/3/2012	NE	27.84	NA	NA	NA	404.94		*
P-129										
4Q09	432.46	10/1/2009	NE	31.45	NA	NA	NA	401.01	400.49 - 384 56	*
1Q10	432.46	1/1/2010	NE	29.33	NA	NA	NA	403.13		*
2Q10	432.46	4/1/2010	NE	27.11	NA	NA	NA	405.35		*
3Q10	432.46	7/1/2010	NE	23.82	NA	NA	NA	408.64		*
4Q10	432.46	10/1/2010	NE	25.46	NA	NA	NA	407.00		*
1Q11	432.46	1/1/2011	NE	29.82	NA	NA	NA	402.64		*
2Q11	432.46	4/1/2011	NE	26.85	NA	NA	NA	405.61		*
3Q11	432.46	7/5/2011	NE	22.74	NA	NA	NA	409.72		*
4Q11	432.46	10/5/2011	NE	26.57	NA	NA	NA	405.89		*
1Q12	432.46	1/5/2012	NE	29.31	NA	NA	NA	403.15		*
2Q12	432.46	4/2/2012	NE	30.31	NA	NA	NA	402.15		*
3Q12	432.46	7/3/2012	NE	30.33	NA	NA	NA	402.13		*
GP-9-PZ										
4Q10	442.41	11/11/2010	NE	37.38	NA	NA	NA	405.03	404.81 - 394.81	*
1Q11	442.41	1/14/2011	NE	37.53	NA	NA	NA	404.88		*
2Q11	442.41	4/25/2011	NE	38.85	NA	NA	NA	403.56		
3Q11	442.41	7/5/2011	NE	NM	NA	NA	NA	NA		
	442.41	9/19/2011	NE	35.44	NA	NA	NA	406.97		*
4Q11	442.41	10/6/2011	NE	36.65	NA	NA	NA	405.76		*
1Q12	442.41	1/4/2012	NE	38.13	NA	NA	NA	404.28		
2Q12	442.41	4/3/2012	NE	39.51	NA	NA	NA	402.90		
3Q12	442.41	7/5/2012	NE	39.62	NA	NA	NA	402.79		
ROST-3-PZ										
4Q10	442.29	11/12/2010	NE	36.60	NA	NA	NA	405.69	402.29 - 392.29	*
1Q11	442.29	1/13/2011	NE	37.29	NA	NA	NA	405.00		*
2Q11	442.29	4/25/2011	NE	38.21	NA	NA	NA	404.08		*
3Q11	442.29	7/5/2011	NE	35.83	NA	NA	NA	406.46		*
	442.29	9/19/2011	NE	34.89	NA	NA	NA	407.40		*
4Q11	442.29	10/5/2011	NE	35.18	NA	NA	NA	407.11		*
1Q12	442.29	1/3/2012	NE	37.33	NA	NA	NA	404.96		*
2Q12	442.29	4/2/2012	NE	38.57	NA	NA	NA	403.72		*
3Q12	442.29	7/2/2012	NE	38.84	NA	NA	NA	403.45		*
ROST-4-PZ										
4Q10	442.27	11/12/2010	NE	36.48	NA	NA	NA	405.79	407.20 - 397.20	
1Q11	442.27	1/13/2011	NE	36.97	NA	NA	NA	405.30		
2Q11	442.13	4/25/2011	NE	37.69	NA	NA	NA	404.44		
3Q11	442.13	7/5/2011	NE	35.85	NA	NA	NA	406.28		
4Q11	442.13	10/5/2011	NE	35.64	NA	NA	NA	406.49		
1Q12	442.13	1/3/2012	NE	36.62	NA	NA	NA	405.51		
2Q12	442.13	4/2/2012	37.81	37.84	404.29	404 32	0.03	404.31		
3Q12	442.13	7/2/2012	NE	38.24	NA	NA	NA	403.89		
ROST-4-PZ(A)										
2Q11	442.11	4/25/2011	NE	37.18	NA	NA	NA	404.93	407.34 - 397 34	
3Q11	442.11	7/5/2011	NE	35.21	NA	NA	NA	406.90		
4Q11	442.11	10/5/2011	NE	34.03	NA	NA	NA	408.08		*
1Q12	442.11	1/3/2012	NE	35.92	NA	NA	NA	406.19		
2Q12	442.11	4/2/2012	NE	37.17	NA	NA	NA	404.94		
3Q12	442.11	7/2/2012	NE	38.64	NA	NA	NA	403.47		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
ROST-4-PZ(B)										
2Q11	442.38	4/25/2011	NE	37.80	NA	NA	NA	404.58	407.33 - 397 33	
3Q11	442.38	7/5/2011	NE	35.93	NA	NA	NA	406.45		
4Q11	442.38	10/5/2011	NE	34.70	NA	NA	NA	407.68		*
1Q12	442.38	1/3/2012	NE	36.65	NA	NA	NA	405.73		
2Q12	442.38	4/2/2012	NE	37.87	NA	NA	NA	404.51		
3Q12	442.38	7/2/2012	NE	38.28	NA	NA	NA	404.10		
ROST-4-PZ(C)										
2Q11	442.66	4/25/2011	NE	38.52	NA	NA	NA	404.14	407.71 - 397.71	
3Q11	442.66	7/5/2011	NE	36.62	NA	NA	NA	406.04		
4Q11	442.66	10/5/2011	NE	35.41	NA	NA	NA	407.25		
1Q12	442.66	1/3/2012	NE	37.40	NA	NA	NA	405.26		
2Q12	442.66	4/2/2012	NE	38.62	NA	NA	NA	404.04		
3Q12	442.66	7/2/2012	NE	39.09	NA	NA	NA	403.57		
ROST-4-PZ(D)										
2Q11	442.98	4/25/2011	NE	38.41	NA	NA	NA	404.57	408.01 - 398.01	
3Q11	442.98	7/5/2011	NE	36.58	NA	NA	NA	406.40		
4Q11	442.98	10/5/2011	NE	35.37	NA	NA	NA	407.61		
1Q12	442.98	1/3/2012	37.23	37.68	405 30	405.75	0.45	405.66		
2Q12	442.98	4/2/2012	38 57	38.59	404 39	404.41	0.02	404.41		
3Q12	442.98	7/2/2012	NE	39.99	NA	NA	NA	402.99		sheen; lock not tight
ROST-4-PZ(E)										
2Q11	441.96	4/25/2011	NE	37.63	NA	NA	NA	404.33	407.21 - 397.21	
3Q11	441.96	7/5/2011	NE	35.81	NA	NA	NA	406.15		
4Q11	441.96	10/5/2011	NE	34.61	NA	NA	NA	407 35		*
1Q12	441.96	1/3/2012	36.48	36.92	405.04	405.48	0.44	405.39		
2Q12	441.96	4/2/2012	37.72	38.11	403.85	404.24	0.39	404.16		
3Q12	441.96	7/2/2012	38.13	38.19	403.77	403.83	0.06	403.82		
ROST-4-PZ(F)										
2Q11	442.12	4/25/2011	NE	37.87	NA	NA	NA	404.25	407.59 - 397 59	
3Q11	442.12	7/5/2011	NE	35.99	NA	NA	NA	406.13		
4Q11	442.12	10/5/2011	NE	34.84	NA	NA	NA	407.28		
1Q12	442.12	1/3/2012	NE	36.83	NA	NA	NA	405.29		
2Q12	442.12	4/2/2012	NE	37.96	NA	NA	NA	404.16		
3Q12	442.12	7/2/2012	NE	38.29	NA	NA	NA	403.83		
ROST-4-PZ(G)										
2Q11	442.13	4/25/2011	NE	38.08	NA	NA	NA	404.05	407.85 - 397.85	
3Q11	442.13	7/5/2011	NE	35.76	NA	NA	NA	406.37		
4Q11	442.13	10/5/2011	NE	35.07	NA	NA	NA	407.06		
1Q12	442.13	1/3/2012	NE	37.44	NA	NA	NA	404.69		
2Q12	442.13	4/2/2012	NE	38.61	NA	NA	NA	403.52		
3Q12	442.13	7/2/2012	NE	38.79	NA	NA	NA	403.34		
ROST-5-PZ ***(PERCHED WELL)***										
4Q10	442.22	11/12/2010	NE	NE	NA	NA	NA	NA	429.02 - 419.02	
1Q11	442.22	1/13/2011	NE	NE	NA	NA	NA	NA		
2Q11	442.22	4/25/2011	NE	NE	NA	NA	NA	NA		
3Q11	442.22	7/5/2011	NE	NE	NA	NA	NA	NA		
	442.22	9/19/2011	NE	NE	NA	NA	NA	NA		
4Q11	442.22	10/5/2011	NE	NE	NA	NA	NA	NA		
1Q12	442.22	1/3/2012	NE	NE	NA	NA	NA	NA		Well dry.
2Q12	442.22	4/2/2012	NE	NE	NA	NA	NA	NA		
3Q12	442.22	7/2/2012	NE	NE	NA	NA	NA	NA		
ROST-7-PZ ***(PERCHED WELL)***										
4Q10	442.19	11/12/2010	NE	22.93	NA	NA	NA	419.26	422.19 - 412.19	
1Q11	442.19	1/13/2011	NE	23.74	NA	NA	NA	418.45		
2Q11	442.19	4/25/2011	NE	23.72	NA	NA	NA	418.47		
3Q11	442.19	7/5/2011	NE	22.05	NA	NA	NA	420.14		
	442.19	9/19/2011	NE	22.63	NA	NA	NA	419.56		
4Q11	442.19	10/5/2011	NE	22.52	NA	NA	NA	419.67		
1Q12	442.19	1/3/2012	NE	23.64	NA	NA	NA	418.55		
2Q12	442.19	4/2/2012	NE	24.08	NA	NA	NA	418.11		
3Q12	442.19	7/2/2012	NE	23.33	NA	NA	NA	418.86		
ROST-10-PZ ***(PERCHED WELL)***										
4Q10	444.51	11/12/2010	NE	NE	NA	NA	NA	NA	434.51 - 424 51	
1Q11	444.51	1/13/2011	NE	NE	NA	NA	NA	NA		
2Q11	444.51	4/25/2011	NE	NE	NA	NA	NA	NA		
3Q11	444.51	7/5/2011	NE	19.67	NA	NA	NA	424.84		
	444.51	9/19/2011	NE	19.88	NA	NA	NA	424.63		
4Q11	444.51	10/5/2011	NE	NE	NA	NA	NA	NA		
1Q12	444.51	1/3/2012	NE	NE	NA	NA	NA	NA		Well dry.
2Q12	444.51	4/2/2012	NE	NE	NA	NA	NA	NA		
3Q12	444.51	7/2/2012	NE	NE	NA	NA	NA	NA		
ROST-21-PZ ***(PERCHED WELL)***										
4Q10	443.72	11/12/2010	NE	19.30	NA	NA	NA	424.42	433.72 - 423.72	
1Q11	443.72	1/13/2011	NE	19.59	NA	NA	NA	424.13		
2Q11	443.72	4/25/2011	NE	19.04	NA	NA	NA	424.68		
3Q11	443.72	7/5/2011	NE	18.37	NA	NA	NA	425.35		
	443.72	9/19/2011	NE	19.26	NA	NA	NA	424.46		
4Q11	443.72	10/5/2011	NE	NE	NA	NA	NA	NA		
1Q12	443.72	1/3/2012	NE	19.81	NA	NA	NA	423.91		
2Q12	443.72	4/2/2012	NE	NE	NA	NA	NA	NA		
3Q12	443.72	7/2/2012	NE	19.34	NA	NA	NA	424.38		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
S-1										
4Q09	443.79	10/1/2009	42.73	48.01	395.78	401.06	5.28	400.00		
1Q10	443.79	1/1/2010	40.88	46.14	397.65	402.91	5.26	401.86		Product confirmed on interface probe.
2Q10	443.79	4/1/2010	39 38	44.32	399.47	404.41	4.94	403.42		Product confirmed on interface probe.
3Q10	443.79	7/1/2010	38.27	43.29	400 50	405 52	5.02	404.52		Product confirmed on interface probe.
4Q10	443.79	11/11/2010	36.96	41.91	401.88	406.83	4.95	405.84		
1Q11	443.79	1/13/2011	36.41	41.33	402.46	407 38	4.92	406.40		
2Q11	443.79	4/25/2011	38.70	38.73	405.06	405.09	0.03	405.08	Unknown	
3Q11	443.79	7/5/2011	36 50	36.54	407.25	407.29	0.04	407.28		
	443.79	9/19/2011	NE	36.42	NA	NA	NA	407.37		
4Q11	443.79	10/6/2011	NE	36.68	NA	NA	NA	407.11		
1Q12	443.79	1/3/2012	NE	38.36	NA	NA	NA	405.43		
2Q12	443.79	4/3/2012	NE	39.83	NA	NA	NA	403.96		
3Q12	443.79	7/3/2012	NE	40.38	NA	NA	NA	403.41		
T-1										
4Q09	444.55	10/1/2009	NE	47.30	NA	NA	NA	397.25		
1Q10	444.55	1/1/2010	NE	46.55	NA	NA	NA	398.00		
2Q10	444.55	4/1/2010	NE	45.51	NA	NA	NA	399.04		*
3Q10	444.55	7/1/2010	NE	NM	NA	NA	NA	NA		Area flooded, unable to access.
4Q10	444.55	11/11/2010	NE	39.08	NA	NA	NA	405.47		*
1Q11	444.55	1/13/2011	NE	41.02	NA	NA	NA	403.53		*
2Q11	444.55	4/25/2011	NE	46.65	NA	NA	NA	397.90	398.40 - 388.40	
3Q11	444.55	7/5/2011	NE	35.99	NA	NA	NA	408.56		*
	444.55	9/19/2011	NE	51.50	NA	NA	NA	393.05		
4Q11	444.55	10/6/2011	NE	50.83	NA	NA	NA	393.72		
1Q12	445.40	1/3/2012	NE	NM	NA	NA	NA	NA		Well Could Not Be Opened
2Q12	445.40	4/2/2012	NE	40.09	NA	NA	NA	405.31		*
3Q12	445.40	7/2/2012	NE	41.19	NA	NA	NA	404.21		*
T-2										
4Q09	443.13	10/1/2009	NE	43.75	NA	NA	NA	399.38		*
1Q10	443.13	1/1/2010	NE	41.81	NA	NA	NA	401.32		*
2Q10	443.13	4/1/2010	NE	40.35	NA	NA	NA	402.78		*
3Q10	443.13	7/1/2010	NE	39.16	NA	NA	NA	403.97		*
4Q10	443.13	11/11/2010	NE	37.51	NA	NA	NA	405.62		*
1Q11	443.13	1/13/2011	NE	36.97	NA	NA	NA	406.16		*
2Q11	443.13	4/25/2011	NE	38.03	NA	NA	NA	405.10	392.63 - 372.48	*
3Q11	443.13	7/5/2011	NE	35.89	NA	NA	NA	407.24		*
	443.13	9/19/2011	NE	35.80	NA	NA	NA	407.33		*
4Q11	443.13	10/6/2011	NE	35.97	NA	NA	NA	407.16		*
1Q12	443.13	1/3/2012	NE	34.44	NA	NA	NA	408.69		*
2Q12	443.13	4/2/2012	NE	38.68	NA	NA	NA	404.45		*
3Q12	443.13	7/2/2012	NE	39.15	NA	NA	NA	403.98		*
T-3										
4Q09	450.91	10/1/2009	NE	53.24	NA	NA	NA	397.67		
1Q10	450.91	1/1/2010	NE	50.99	NA	NA	NA	399.92		
2Q10	450.91	4/1/2010	NE	48.84	NA	NA	NA	402.07		
3Q10	450.91	7/1/2010	NE	48.07	NA	NA	NA	402.84		
4Q10	450.91	10/1/2010	NE	45.66	NA	NA	NA	405.25		*
1Q11	450.91	1/13/2011	NE	44.64	NA	NA	NA	406.27		*
2Q11	450.91	4/1/2011	NE	46.50	NA	NA	NA	404.41	403.65 - 388.65	*
3Q11	450.91	7/5/2011	NE	43.85	NA	NA	NA	407.06		*
	450.91	9/19/2011	NE	44.60	NA	NA	NA	406.31		*
4Q11	450.91	10/6/2011	NE	45.68	NA	NA	NA	405.23		*
1Q12	450.91	1/4/2012	NE	45.83	NA	NA	NA	405.08		*
2Q12	450.91	4/2/2012	NE	47.09	NA	NA	NA	403.82		*
3Q12	450.91	7/2/2012	NE	48.00	NA	NA	NA	402.91		
T-4										
4Q09	447.95	10/1/2009	NE	50.78	NA	NA	NA	397.17		
1Q10	447.95	1/1/2010	NE	48.38	NA	NA	NA	399.57		*
2Q10	447.95	4/1/2010	NE	46.44	NA	NA	NA	401.51		*
3Q10	447.95	7/1/2010	NE	45.22	NA	NA	NA	402.73		*
4Q10	447.95	10/1/2010	NE	42.99	NA	NA	NA	404.96		*
1Q11	447.95	1/13/2011	NE	41.38	NA	NA	NA	406.57		*
2Q11	447.95	4/1/2011	NE	42.23	NA	NA	NA	405.72	398.24 - 383.24	*
3Q11	447.95	7/5/2011	NE	39.83	NA	NA	NA	408.12		*
	447.95	9/19/2011	NE	41.97	NA	NA	NA	405.98		*
4Q11	447.95	10/6/2011	NE	42.04	NA	NA	NA	405.91		*
1Q12	447.95	1/3/2012	NE	43.35	NA	NA	NA	404.60		*
2Q12	447.95	4/3/2012	NE	45.47	NA	NA	NA	402.48		*
3Q12	447.95	7/3/2012	NE	46.57	NA	NA	NA	401.38		*
T-5										
4Q09	443.46	10/1/2009	NE	NM	NA	NA	NA	NA		Tank yard flooded, unable to access.
1Q10	443.46	1/1/2010	NE	40.79	NA	NA	NA	402.67		*
2Q10	443.46	4/1/2010	NE	39.28	NA	NA	NA	404.18		*
3Q10	443.46	7/1/2010	NE	NM	NA	NA	NA	NA		Tank yard flooded, unable to access.
4Q10	443.46	10/1/2010	NE	36.59	NA	NA	NA	406.87		*
1Q11	443.46	1/1/2011	NE	36.09	NA	NA	NA	407.37		*
2Q11	443.46	4/1/2011	NE	37.30	NA	NA	NA	406.16	395.13 - 378 58	*
3Q11	443.46	7/5/2011	NE	35.28	NA	NA	NA	408.18		*
4Q11	443.46	10/6/2011	NE	35.84	NA	NA	NA	407.62		*
1Q12	443.46	1/3/2012	NE	37.31	NA	NA	NA	406.15		*
2Q12	443.46	4/3/2012	NE	38.87	NA	NA	NA	404.59		*
3Q12	443.46	7/6/2012	NE	39.81	NA	NA	NA	403.65		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
T-6										
4Q09	446.55	10/1/2009	NE	46.04	NA	NA	NA	400.51		*
1Q10	446.55	1/1/2010	NE	44.09	NA	NA	NA	402.46		*
2Q10	446.55	4/1/2010	NE	42.83	NA	NA	NA	403.72		*
3Q10	446.55	7/1/2010	NE	41.74	NA	NA	NA	404.81		*
4Q10	446.55	11/12/2010	NE	40.77	NA	NA	NA	405.78		*
1Q11	446.55	1/13/2011	NE	41.07	NA	NA	NA	405.48		*
2Q11	446.55	4/25/2011	NE	42.01	NA	NA	NA	404.54	394.79 - 380 54	*
3Q11	446.55	7/5/2011	NE	39.58	NA	NA	NA	406.97		*
	446.55	9/19/2011	NE	38.95	NA	NA	NA	407.60		*
4Q11	446.55	10/6/2011	NE	39.26	NA	NA	NA	407.29		*
1Q12	446.55	1/4/2012	NE	41.46	NA	NA	NA	405.09		*
2Q12	446.55	4/3/2012	NE	42.88	NA	NA	NA	403.67		*
3Q12	446.55	7/5/2012	NE	43.06	NA	NA	NA	403.49		*
T-7										
4Q09	444.01	10/1/2009	42.11	42.26	401.75	401.90	0.15	401.87		*
1Q10	444.01	1/1/2010	39.87	40.02	403.99	404.14	0.15	404.11		*Product confirmed on interface probe.
2Q10	444.01	4/1/2010	38.74	38.89	405.12	405.27	0.15	405.24		*Product confirmed on interface probe.
3Q10	444.01	7/1/2010	37.21	37.37	406.64	406.80	0.16	406.77		*Product confirmed on interface probe.
4Q10	444.01	10/1/2010	36.24	36.40	407.61	407.77	0.16	407.74		*Product confirmed on interface probe.
1Q11	444.01	1/13/2011	36.74	36.87	407.14	407.27	0.13	407.24		*
2Q11	444.01	4/1/2011	37.20	37.25	406.76	406.81	0.05	406.80	395.29 - 380.29	*
3Q11	444.01	7/5/2011	35.08	35.16	408.85	408.93	0.08	408.91		*
	444.01	9/19/2011	35.14	35.19	408.82	408.87	0.05	408.86		*
4Q11	444.01	10/5/2011	35 36	35.43	408 58	408.65	0.07	408.64		*
1Q12	444.01	1/4/2012	37.05	37.08	406.93	406.96	0.03	406.95		*
2Q12	444.01	4/3/2012	NE	38.45	NA	NA	NA	405.56		*
3Q12	444.01	7/2/2012	38.90	38.96	405.05	405.11	0.06	405.10		*
T-12										
4Q09	444.69	10/1/2009	NE	44.73	NA	NA	NA	399.96		*
1Q10	444.69	1/1/2010	NE	42.94	NA	NA	NA	401.75		*
2Q10	444.69	4/1/2010	NE	41.59	NA	NA	NA	403.10		*
3Q10	444.69	7/1/2010	NE	41.21	NA	NA	NA	403.48		*
4Q10	444.69	11/12/2010	NE	40.35	NA	NA	NA	404.34		*
1Q11	444.69	1/13/2011	NE	40.30	NA	NA	NA	404.39		*
2Q11	444.69	4/25/2011	NE	41.40	NA	NA	NA	403.29	398.23 - 372.23	*
3Q11	444.69	7/5/2011	NE	39.07	NA	NA	NA	405.62		*
	444.69	9/19/2011	NE	38.06	NA	NA	NA	406.63		*
4Q11	444.69	10/6/2011	NE	38.23	NA	NA	NA	406.46		*
1Q12	444.69	1/4/2012	NE	40.64	NA	NA	NA	404.05		*
2Q12	444.69	4/3/2012	NE	42.06	NA	NA	NA	402.63		*
3Q12	444.69	7/5/2012	NE	42.05	NA	NA	NA	402.64		*
T-13										
4Q09	443.46	10/1/2009	NE	43.31	NA	NA	NA	400.15		*
1Q10	443.46	1/1/2010	NE	41.27	NA	NA	NA	402.19		*
2Q10	443.46	4/1/2010	NE	40.02	NA	NA	NA	403.44		*
3Q10	443.46	7/1/2010	NE	38.72	NA	NA	NA	404.74		*
4Q10	443.46	11/11/2010	NE	37.37	NA	NA	NA	406.09		*
1Q11	443.46	1/13/2011	NE	37.57	NA	NA	NA	405.89		*
2Q11	443.46	4/25/2011	NE	38.25	NA	NA	NA	405.21	396.46 - 370.46	*
3Q11	443.46	7/5/2011	NE	NM	NA	NA	NA	NA		
	443.46	9/19/2011	NE	37.54	NA	NA	NA	405.92		*
4Q11	443.46	10/5/2011	NE	35.78	NA	NA	NA	407.68		*
1Q12	443.46	1/3/2012	NE	37.42	NA	NA	NA	406.04		*
2Q12	443.46	4/2/2012	NE	38.69	NA	NA	NA	404.77		*
3Q12	443.46	7/2/2012	NE	39.09	NA	NA	NA	404.37		*
T-15										
4Q09	445.03	10/1/2009	NE	46.01	NA	NA	NA	399.02		*
1Q10	445.03	1/1/2010	NE	43.88	NA	NA	NA	401.15		*
2Q10	445.03	4/1/2010	NE	42.39	NA	NA	NA	402.64		*
3Q10	445.03	7/1/2010	NE	41.07	NA	NA	NA	403.96		*
4Q10	445.03	10/1/2010	NE	39.31	NA	NA	NA	405.72		*
1Q11	445.03	1/13/2011	NE	38.39	NA	NA	NA	406.64		*
2Q11	445.03	4/1/2011	NE	39.55	NA	NA	NA	405.48	396.99 - 370.99	*
3Q11	445.03	7/5/2011	NE	37.35	NA	NA	NA	407.68		*
	445.03	9/19/2011	NE	37.59	NA	NA	NA	407.44		*
4Q11	445.03	10/6/2011	NE	37.79	NA	NA	NA	407.24		*
1Q12	445.03	1/3/2012	NE	38.97	NA	NA	NA	406.06		*
2Q12	445.03	4/2/2012	NE	40.28	NA	NA	NA	404.75		*
3Q12	445.03	7/2/2012	NE	40.90	NA	NA	NA	404.13		*
T-17										
4Q09	445.90	10/1/2009	45 54	46.40	399 50	400 36	0.86	400.19		
1Q10	445.90	1/1/2010	NE	42.57	NA	NA	NA	403.33		*
2Q10	445.90	4/1/2010	NE	41.12	NA	NA	NA	404.78		*
3Q10	445.90	7/1/2010	NE	39.60	NA	NA	NA	406.30		*
4Q10	445.90	10/1/2010	NE	38.11	NA	NA	NA	407.79		*
1Q11	445.90	1/13/2011	NE	37.11	NA	NA	NA	408.79		*
2Q11	445.90	4/1/2011	NE	37.30	NA	NA	NA	408.60	401.80 - 375.80	*
3Q11	445.90	7/5/2011	NE	35.17	NA	NA	NA	410.73		*
	445.90	9/19/2011	NE	35.90	NA	NA	NA	410.00		*
4Q11	445.90	10/6/2011	NE	36.23	NA	NA	NA	409.67		*
1Q12	445.90	1/3/2012	NE	37.37	NA	NA	NA	408.53		*
2Q12	445.90	4/2/2012	NE	38.79	NA	NA	NA	407.11		*
3Q12	445.90	7/2/2012	NE	39.29	NA	NA	NA	406.61		*

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
T-19										
4Q09	446.71	10/1/2009	48.89	50.45	396.26	397.82	1.56	397.51		*
1Q10	446.71	1/1/2010	46 55	48.07	398.64	400.16	1.52	399.86		*Product confirmed on interface probe.
2Q10	446.71	4/1/2010	44.64	46.11	400.60	402.07	1.47	401.78		*Product confirmed on interface probe.
3Q10	446.71	7/1/2010	43.47	44.91	401.80	403.24	1.44	402.95		*Product confirmed on interface probe.
4Q10	446.71	10/1/2010	41 39	42.73	403.98	405 32	1.34	405.05		*Product confirmed on interface probe.
1Q11	446.71	1/13/2011	39.78	41.15	405 56	406.93	1.37	406.66		*
2Q11	446.71	4/1/2011	40.88	40.90	405.81	405.83	0.02	405.83	395.94 - 369.94	*
3Q11	446.71	7/5/2011	38.47	38.50	408.21	408.24	0.03	408.23		*
	446.71	9/19/2011	40.60	40.64	406.07	406.11	0.04	406.10		*
4Q11	446.71	10/6/2011	40.65	40.69	406.02	406.06	0.04	406.05		*
1Q12	446.71	1/3/2012	41.97	41.98	404.73	404.74	0.01	404.74		*
2Q12	446.71	4/3/2012	NE	44.09	NA	NA	NA	402.62		*
3Q12	446.71	7/3/2012	NE	45.36	NA	NA	NA	401.35		*
T-21										
4Q09	444.00	10/1/2009	NE	36.06	NA	NA	NA	407.94		
1Q10	444.00	1/1/2010	NE	33.39	NA	NA	NA	410.61		
2Q10	444.00	4/1/2010	NE	32.11	NA	NA	NA	411.89		
3Q10	444.00	7/1/2010	NE	30.79	NA	NA	NA	413.21		*
4Q10	444.00	10/1/2010	NE	29.65	NA	NA	NA	414.35		*
1Q11	444.00	1/13/2011	NE	29.96	NA	NA	NA	414.04		*
2Q11	444.00	4/1/2011	NE	29.83	NA	NA	NA	414.17	412.04 - 386.04	*
3Q11	444.00	7/5/2011	NE	28.17	NA	NA	NA	415.83		*
	444.00	9/19/2011	NE	28.24	NA	NA	NA	415.76		*
4Q11	444.00	10/5/2011	NE	28.41	NA	NA	NA	415.59		*
1Q12	444.00	1/4/2012	NE	29.56	NA	NA	NA	414.44		*
2Q12	444.00	4/3/2012	NE	30.65	NA	NA	NA	413.35		*
3Q12	444.00	7/2/2012	NE	31.14	NA	NA	NA	412.86		*
T-22										
4Q09	442.21	10/1/2009	NE	36.18	NA	NA	NA	406.03		
1Q10	442.21	1/1/2010	NE	34.13	NA	NA	NA	408.08		
2Q10	442.21	4/1/2010	NE	32.69	NA	NA	NA	409.52		
3Q10	442.21	7/1/2010	NE	31.11	NA	NA	NA	411.10		*
4Q10	442.21	10/1/2010	NE	30.12	NA	NA	NA	412.09		*
1Q11	442.21	1/13/2011	NE	31.04	NA	NA	NA	411.17		*
2Q11	442.21	4/1/2011	NE	30.96	NA	NA	NA	411.25	410.66 - 384.96	*
3Q11	442.21	7/5/2011	NE	29.00	NA	NA	NA	413.21		*
	442.21	9/19/2011	NE	29.26	NA	NA	NA	412.95		*
4Q11	442.21	10/5/2011	NE	29.51	NA	NA	NA	412.70		*
1Q12	442.21	1/4/2012	NE	30.91	NA	NA	NA	411.30		*
2Q12	442.21	4/3/2012	NE	32.34	NA	NA	NA	409.87		
3Q12	442.21	7/2/2012	NE	32.81	NA	NA	NA	409.40		
T-23										
4Q09	432.64	10/1/2009	NE	NM	NA	NA	NA	NA		Buried by landscaping; unable to locate
1Q10	432.64	1/1/2010	NE	26.27	NA	NA	NA	406.37		*
2Q10	432.64	4/1/2010	NE	25.00	NA	NA	NA	407.64		*
3Q10	432.64	7/1/2010	NE	23.35	NA	NA	NA	409.29		*
4Q10	432.64	10/1/2010	NE	22.41	NA	NA	NA	410.23		*
1Q11	432.64	1/13/2011	NE	23.83	NA	NA	NA	408.81		*
2Q11	432.64	4/1/2011	NE	23.40	NA	NA	NA	409.24	405.41 - 379.41	*
3Q11	432.64	7/5/2011	NE	21.22	NA	NA	NA	411.42		*
	432.64	9/19/2011	NE	27.83	NA	NA	NA	404.81		
4Q11	432.64	10/5/2011	NE	22.21	NA	NA	NA	410.43		*
1Q12	432.64	1/3/2012	NE	23.75	NA	NA	NA	408.89		*
2Q12	432.64	4/2/2012	NE	25.10	NA	NA	NA	407.54		*
3Q12	432.64	7/2/2012	NE	25.60	NA	NA	NA	407.04		*
T-24										
4Q09	443.72	10/1/2009	44 36	45.07	398.65	399 36	0.71	399.22		
1Q10	443.72	1/1/2010	42.68	43.03	400.69	401.04	0.35	400.97		Product confirmed on interface probe.
2Q10	443.72	4/1/2010	41.25	41.55	402.17	402.47	0.30	402.41		*Product confirmed on interface probe.
3Q10	443.72	7/1/2010	40 36	40.68	403.04	403 36	0.32	403.29		*Product confirmed on interface probe.
4Q10	443.72	11/11/2010	39.07	39.38	404 34	404.65	0.31	404.59		*
1Q11	443.72	1/13/2011	38.60	38.92	404.80	405.12	0.32	405.05		*
2Q11	443.72	4/25/2011	NE	39.98	NA	NA	NA	403.74	402.22 - 376 57	*
3Q11	443.72	7/5/2011	NE	37.53	NA	NA	NA	406.19		*
	443.72	9/19/2011	NE	35.08	NA	NA	NA	408.64		*
4Q11	443.72	10/6/2011	NE	37.29	NA	NA	NA	406.43		*
1Q12	443.72	1/3/2012	NE	38.36	NA	NA	NA	405.36		*
2Q12	443.72	4/3/2012	NE	40.56	NA	NA	NA	403.16		*
3Q12	443.72	7/3/2012	NE	40.45	NA	NA	NA	403.27		*
T-28										
4Q09	444.22	10/1/2009	NE	45.12	NA	NA	NA	399.10		
1Q10	444.22	1/1/2010	NE	42.49	NA	NA	NA	401.73		
2Q10	444.22	4/1/2010	NE	40.94	NA	NA	NA	403.28		
3Q10	444.22	7/1/2010	NE	NM	NA	NA	NA	NA		Area regraded; equipment staging yard; unable to locate.
4Q10	444.22	10/1/2010	NE	37.65	NA	NA	NA	406.57		
1Q11	444.22	1/13/2011	NE	36.53	NA	NA	NA	407.69		
2Q11	444.22	4/1/2011	NE	37.18	NA	NA	NA	407.04	Unknown	
3Q11	444.22	7/5/2011	NE	34.89	NA	NA	NA	409.33		
	444.22	9/19/2011	NE	35.75	NA	NA	NA	408.47		
4Q11	444.22	10/6/2011	NE	35.98	NA	NA	NA	408.24		
1Q12	444.22	1/3/2012	NE	36.98	NA	NA	NA	407.24		
2Q12	444.22	4/2/2012	NE	38.68	NA	NA	NA	405.54		
3Q12	444.22	7/2/2012	NE	39.28	NA	NA	NA	404.94		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING WELL GAUGING RESULTS

WELL ID	TOP OF CASING (elev.[1])	DATE GAUGED	DEPTH TO PRODUCT (ft btoc)	DEPTH TO WATER (ft btoc)	WATER-PRODUCT INTERFACE (elev.[1])	PRODUCT (elev.[1])	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL[2] (elev.[1])	SCREENED INTERVAL ELEVATION (elev.[1])	COMMENTS
T-38										
4Q09	445.62	10/1/2009	NE	43.09	NA	NA	NA	402.53	396.48 - 376.48	*
1Q10	445.62	1/1/2010	NE	39.77	NA	NA	NA	405.85		*
2Q10	445.62	4/1/2010	NE	38.35	NA	NA	NA	407.27		*
3Q10	445.62	7/1/2010	NE	37.00	NA	NA	NA	408.62		*
4Q10	445.62	10/1/2010	NE	35.45	NA	NA	NA	410.17		*
1Q11	445.62	1/1/2011	NE	35.38	NA	NA	NA	410.24		*
3Q11	445.62	7/5/2011	NE	NM	NA	NA	NA	NA		
4Q11	445.62	10/6/2011	NE	34.38	NA	NA	NA	411.24		*
1Q12	445.62	1/3/2012	NE	35.40	NA	NA	NA	410.22		*
2Q12	445.62	4/2/2012	NE	36.25	NA	NA	NA	409.37		*
3Q12	445.62	7/3/2012	NE	37.00	NA	NA	NA	408.62		*
T-62										
4Q09	431.73	10/1/2009	NE	29.56	NA	NA	NA	402.17	412.02 - 382.02	
1Q10	431.73	1/1/2010	NE	27.30	NA	NA	NA	404.43		
2Q10	431.73	4/1/2010	NE	25.98	NA	NA	NA	405.75		
3Q10	431.73	7/1/2010	NE	23.99	NA	NA	NA	407.74		
4Q10	431.73	11/11/2010	NE	23.49	NA	NA	NA	408.24		
1Q11	431.73	1/13/2011	NE	25.48	NA	NA	NA	406.25		
2Q11	431.73	4/25/2011	NE	25.33	NA	NA	NA	406.40		
3Q11	431.73	7/5/2011	NE	22.37	NA	NA	NA	409.36		
	431.73	9/19/2011	NE	23.12	NA	NA	NA	408.61		
4Q11	431.73	10/5/2011	NE	23.46	NA	NA	NA	408.27		
1Q12	431.73	1/3/2012	NE	25.62	NA	NA	NA	406.11		
2Q12	431.73	4/2/2012	NE	27.08	NA	NA	NA	404.65		
3Q12	431.73	7/3/2012	NE	27.20	NA	NA	NA	404.53		
T-63										
4Q09	431.24	10/1/2009	NE	29.11	NA	NA	NA	402.13	411.26 - 381.26	
1Q10	431.24	1/1/2010	NE	26.94	NA	NA	NA	404.30		
2Q10	431.24	4/1/2010	NE	25.42	NA	NA	NA	405.82		
3Q10	431.24	7/1/2010	NE	23.23	NA	NA	NA	408.01		
4Q10	431.24	11/11/2010	NE	23.03	NA	NA	NA	408.21		
1Q11	431.24	1/13/2011	NE	25.45	NA	NA	NA	405.79		
2Q11	431.24	4/25/2011	NE	NM	NA	NA	NA	NA		Unable to open.
3Q11	431.24	7/5/2011	NE	NM	NA	NA	NA	NA		
	431.24	9/19/2011	NE	22.88	NA	NA	NA	408.36		
4Q11	431.24	10/5/2011	NE	23.28	NA	NA	NA	407.96		
1Q12	431.24	1/3/2012	NE	25.60	NA	NA	NA	405.64		
2Q12	431.24	4/2/2012	NE	NM	NA	NA	NA	NA		
3Q12	431.24	7/3/2012	NE	27.08	NA	NA	NA	404.16		
T-64										
4Q09	428.80	10/1/2009	NE	26.87	NA	NA	NA	401.93	408.99 - 378.99	
1Q10	428.80	1/1/2010	NE	24.72	NA	NA	NA	404.08		
2Q10	428.80	4/1/2010	NE	22.91	NA	NA	NA	405.89		
3Q10	428.80	7/1/2010	NE	20.46	NA	NA	NA	408.34		
4Q10	428.80	11/11/2010	NE	20.76	NA	NA	NA	408.04		
1Q11	428.80	1/13/2011	NE	23.84	NA	NA	NA	404.96		
3Q11	428.80	7/5/2011	NE	19.06	NA	NA	NA	409.74		*
	428.80	9/19/2011	NE	21.86	NA	NA	NA	406.94		
4Q11	428.80	10/5/2011	NE	21.36	NA	NA	NA	407.44		
1Q12	428.80	1/3/2012	NE	23.86	NA	NA	NA	404.94		
2Q12	428.80	4/2/2012	NE	25.10	NA	NA	NA	403.70		
3Q12	428.80	7/3/2012	NE	25.24	NA	NA	NA	403.56		
PZ-1-101										
4Q11	445.52	10/5/2011	NE	37.83	NA	NA	NA	407.69	354.52 - 344 52	*
1Q12	445.52	1/3/2012	NE	39.73	NA	NA	NA	405.79		*
2Q12	445.52	4/4/2012	NE	41.14	NA	NA	NA	404.38		*
3Q12	445.52	7/2/2012	NE	41.28	NA	NA	NA	404.24		*
PZ-1-85										
4Q11	445.50	10/5/2011	NE	37.85	NA	NA	NA	407.65	369.70 - 359.70	*
1Q12	445.50	1/3/2012	NE	39.80	NA	NA	NA	405.70		*
2Q12	445.50	4/4/2012	NE	41.05	NA	NA	NA	404.45		*
3Q12	445.50	7/2/2012	NE	41.35	NA	NA	NA	404.15		*1
PZ-2-70.5										
4Q11	443.15	10/5/2011	NE	35.74	NA	NA	NA	407.41	382.65 - 372.65	*
1Q12	443.15	1/3/2012	NE	38.14	NA	NA	NA	405.01		*
2Q12	443.15	4/4/2012	NE	39.43	NA	NA	NA	403.72		*
3Q12	443.15	7/2/2012	NE	39.57	NA	NA	NA	403.58		*
PZ-2-84										
4Q11	443.12	10/5/2011	NE	35.71	NA	NA	NA	407.41	371.12 - 359.12	*
1Q12	443.12	1/3/2012	NE	38.05	NA	NA	NA	405.07		*
2Q12	443.12	4/4/2012	NE	39.37	NA	NA	NA	403.75		*
3Q12	443.12	7/2/2012	NE	39.48	NA	NA	NA	403.64		*

NOTES:
1) Elevations presented in this table are relative to the 1988 USGS datum.
2) The Corrected W.L. Elevations presented in this table were corrected by a specific gravity of 0.80 for the wells in which LNAPL was identified.
3) NA = Not Applicable; NE = Not Encountered; NM = Not Measured
4) * Indicates that the LNAPL and/or water level is above the top of the screened zone of the well.

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 2a

CUMMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (C°)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
MW-01							
4Q10	8.04	20.53	1449	3.90	8.99	93.0	
1Q11	6.76	5.93	1189	1.00	0.08	102.0	
2Q11	6.69	27.11	1459	138.10	1.03	157.0	
3Q11	6.68	30.81	*	*	0.08	0.03	
4Q11	6.62	16.52	1021	7.70	-0.03	0.02	
1Q12	6.64	18.37	1180	13.32	-0.02	0.02	
2Q12	6.61	19.00	2194	3.02	-0.04	41.0	
3Q12	6.65	20.03	996.6	2.01	0.09	29.0	
MW-02							
4Q10	7.24	18.38	1066	41.00	8.90	-113.0	
1Q11	6.72	15.19	2048	8.00	0.97	-69.0	
2Q11	6.75	20.82	1313	168.50	0.09	-69.0	
3Q11	6.76	25.10	*	2.10	-0.08	-0.28	
4Q11	6.67	17.71	1126	29.40	0.00	-0.08	
1Q12	6.55	18.13	1165	45.20	-0.03	-1.0	
2Q12	6.61	19.70	2462	41.55	-0.06	-60.0	
3Q12	6.66	20.80	1082	4.01	-0.01	-26.0	
MW-03							
4Q10	6.88	21.59	1157	6.50	0.32	-146.0	
1Q11	6.88	22.83	2349	2.00	0.26	-89.0	
2Q11	6.91	23.40	1268	54.00	0.00	-74.0	
3Q11	7.15	34.21	1280	0.00	0.00	195.0	
4Q11	6.75	17.94	1151	0.89	0.07	-0.11	
1Q12	6.83	18.95	1370	5.89	0.06	-0.09	
2Q12	6.72	19.61	2219	2.26	-0.01	-79.0	
3Q12	6.63	20.63	1255	1.18	0.03	-67.0	
MW-04							
4Q10	6.76	19.51	854.2	7.70	4.88	-59.0	
1Q11	6.83	10.24	2352	9.60	0.86	-51.0	
2Q11	6.73	24.20	1106	7.30	0.15	-57.0	
3Q11	6.60	38.84	*	6.10	0.00	-0.01	
4Q11	6.89	19.04	1111	13.20	-0.05	-0.07	
1Q12	6.81	18.62	954.8	3.40	-0.03	-0.08	
2Q12	6.74	20.35	2417	9.39	-0.06	-58.0	
3Q12	6.60	19.94	1137	9.69	-0.04	-82.0	
MW-05							
4Q10	6.77	19.39	801.2	2.90	0.17	-112.0	
1Q11	6.82	19.51	2051	2.80	0.95	-66.0	
2Q11	6.78	22.82	4743	41.00	0.18	-68.0	
3Q11	6.88	25.11	*	9.80	-0.08	0.29	
4Q11	6.70	17.87	955.9	10.03	0.02	-0.09	
1Q12	6.71	17.90	986.6	6.60	-0.04	-13.0	
2Q12	6.68	19.74	1956	4.57	-0.01	-50.0	
3Q12	6.78	22.92	855.5	8.64	-0.03	-120.0	
MW-06A							
4Q10	6.74	21.87	1535	5.40	0.01	-127.0	
1Q11	6.80	10.99	2274	7.40	0.34	-75.0	
2Q11	6.72	17.98	1049	8.20	0.07	-61.0	
3Q11	6.82	30.26	*	6.40	0.06	0.19	
4Q11	6.73	18.39	1319	7.97	0.01	-0.10	
1Q12	6.64	17.62	1295	6.30	-0.02	-0.07	
2Q12	6.52	20.09	2045	6.24	-0.03	-55.0	
3Q12	6.56	20.14	1098	1.46	-0.01	-37.0	
MW-06B							
4Q10	6.80	17.14	1113	17.50	0.14	-77.0	
1Q11	6.73	15.90	2138	1.40	0.22	-46.0	
2Q11	6.76	19.87	629.9	2.10	0.17	-54.0	
3Q11	6.85	25.55	*	20.50	-0.08	0.44	
4Q11	6.86	18.30	1059	1.35	0.11	-0.06	
1Q12	6.90	17.13	1080	10.59	-0.03	-0.06	
2Q12	6.80	19.60	2251	3.07	-0.02	-35.0	
3Q12	6.80	20.81	1437	5.88	-0.02	-42.0	

TABLE 2a
CUMMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (C°)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
MW-06C							
4Q10	6.86	17.87	1132	5.50	0.16	-104.0	
1Q11	6.87	13.90	981.0	4.20	0.13	-66.0	
2Q11	6.84	18.93	713.0	2.10	0.43	-72.0	
3Q11	*	26.07	*	0.80	-0.11	0.02	
4Q11	6.90	18.08	1095	7.00	0.07	-0.08	
1Q12	6.93	17.04	1127	4.02	-0.01	-0.08	
2Q12	6.87	19.09	1921	1.71	-0.05	-68.0	
3Q12	6.92	20.05	1036	2.16	0.00	-55.0	
MW-06D							
4Q10	6.94	17.42	1342	5.90	0.05	-112.0	
1Q11	7.05	13.66	1330	1.30	0.14	-74.0	
2Q11	6.86	18.82	613.5	13.20	0.09	-61.0	
3Q11	7.04	28.06	*	*	0.00	0.31	
4Q11	6.99	17.79	1240	1.25	-0.08	-107.0	
1Q12	6.94	16.69	1192	5.48	0.02	-0.08	
2Q12	6.96	19.50	2368	7.17	-0.03	-77.0	
3Q12	6.43	20.56	1030	1.05	0.04	-41.0	
MW-07							
4Q10	6.48	17.80	1097	59.90	0.05	-32.0	
1Q11	6.53	14.40	1869	3.20	0.74	-6.0	
2Q11	6.81	18.18	560.0	30.00	1.10	-53.0	
3Q11	6.83	18.79	*	19.00	*	0.01	
4Q11	6.65	19.79	1100	2.22	0.28	-49.0	
1Q12	6.58	15.54	1047	3.31	0.09	86.0	
2Q12	6.67	20.51	2325	3.58	-0.02	-31.0	
3Q12	6.69	21.88	1062	1.69	0.03	-69.0	
MW-08							
4Q10	6.41	17.17	1133	61.50	0.04	-54.0	
1Q11	6.37	16.21	2065	18.00	0.80	-14.0	
2Q11	6.55	19.98	791.0	20.40	0.06	-64.0	
3Q11	*	19.18	*	62.50	4.64	-0.15	
4Q11	6.56	19.16	1159	5.28	1.22	-0.03	
1Q12	6.46	16.89	1593	3.04	0.02	8.0	
2Q12	6.52	20.05	2262	3.16	0.08	-11.0	
3Q12	6.46	21.97	1299	7.27	0.00	17.0	
MW-09							
4Q10	6.72	16.98	919.4	48.30	1.72	-45.0	
1Q11	6.73	12.97	1524	17.20	0.03	-34.0	
2Q11	6.73	18.14	1138	15.00	0.05	-58.0	
3Q11	6.68	22.67	*	*	-0.06	-0.08	
4Q11	6.66	18.84	1012	366.20	0.20	-75.0	
1Q12	6.56	17.30	1160	7.35	-0.05	-27.0	
2Q12	6.62	20.12	2821	5.46	-0.05	-15.0	
3Q12	6.67	19.87	1127	8.71	0.01	-39.0	
MW-10							
4Q10	6.72	18.75	1284	35.00	0.64	-78.0	
1Q11	6.72	13.08	1344	4.30	0.35	-48.0	
2Q11	6.92	18.28	545.5	17.50	1.89	-48.0	
3Q11	6.93	21.44	*	*	-0.05	-0.11	
4Q11	6.81	18.15	823.4	3.25	-0.06	-0.10	
1Q12	6.76	18.29	972.5	28.75	-0.04	-41.0	
2Q12	6.73	18.57	1972	5.76	0.00	-63.0	
3Q12	6.87	21.46	622.8	2.57	0.02	-90.0	
MW-11							
4Q10	6.59	15.28	1023	25.50	0.01	-76.0	
1Q11	6.59	14.34	1276	8.80	0.05	-59.0	
2Q11	6.75	17.51	1284	21.90	0.05	-90.0	
3Q11	*	19.34	*	7.10	-0.07	0.06	
4Q11	6.78	17.01	1099	20.33	0.01	-0.06	
1Q12	6.74	16.18	1077	7.87	0.00	22.0	
2Q12	6.76	18.13	2204	5.40	-0.02	-68.0	
3Q12	6.67	21.27	1158	1.15	0.06	-69.0	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 2a

CUMMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (C°)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
MW-12							
4Q10	6.72	14.87	1328	62.40	0.45	212.0	
1Q11	6.66	14.98	1196	9.20	0.16	159.0	
2Q11	6.80	19.51	958.4	5.40	0.01	132.0	
3Q11	6.89	20.17	*	*	0.01	0.22	
4Q11	6.83	18.28	1127	0.03	-0.03	-0.10	
1Q12	6.78	17.26	1074	8.26	0.10	146.0	
2Q12	6.80	18.23	1736	4.57	-0.04	38.0	
3Q12	6.78	20.11	911.7	2.66	0.03	4.0	
MW-13							
1Q11	6.52	17.78	1379	19.20	0.10	-82.0	
2Q11	6.79	21.28	713.0	48.00	0.07	-71.0	
3Q11	6.89	20.78	1230	18.50	0.57	-130.0	
4Q11	6.65	20.01	1115	5.25	-0.08	-102.0	
1Q12	6.68	18.94	1202	5.78	-0.04	-0.06	
2Q12	6.66	20.78	2374	6.11	-0.03	-78.0	
3Q12	6.64	22.65	1435	7.16	-0.04	-96.0	
MW-14							
4Q11	6.71	18.41	966.0	1783.00	-0.07	-0.09	Added to Interim GW Monitoring Program in 4Q11
1Q12	NM	NM	NM	NM	NM	NM	
2Q12	6.64	20.65	2151	9.70	-0.01	5.0	
3Q12	6.61	22.82	1058	5.78	-0.01	-63	
P-114							
4Q11	7.16	20.29	1287	12.60	3.19	-118.0	Added to Interim GW Monitoring Program in 4Q11
1Q12	7.02	19.70	1155	7.81	4.25	-6.0	
2Q12	7.01	21.38	1212	8.60	1.33	-0.06	
3Q12	7.13	23.30	1153	9.01	0.53	-64.0	
P-54							
4Q10	6.71	14.70	869.8	68.60	1.74	140.0	
1Q11	6.69	14.47	969.6	25.40	1.29	56.0	
2Q11	6.74	17.70	885.0	48.00	1.62	-66.0	
3Q11	6.80	17.89	*	20.80	0.27	0.27	
4Q11	6.73	17.01	921.1	11.53	0.57	0.14	
1Q12	6.73	16.45	1010	5.10	0.31	61.0	
2Q12	6.66	18.78	2066	36.80	0.22	180.0	
3Q12	6.72	19.02	973.0	7.77	-0.01	9.0	
P-55							
4Q11	6.90	18.24	727.1	4.88	-0.06	-0.13	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.86	15.22	705.8	1.56	0.08	-0.07	
2Q12	6.78	19.69	2098	4.55	-0.04	-43.0	
3Q12	NM	NM	NM	NM	NM	NM	No results - well compromised/not sampled
P-56							
4Q11	6.68	18.98	1063	1286.00	-0.06	-0.12	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.53	16.08	1012	4.68	0.04	-5.0	
2Q12	6.57	21.78	2385	1.04	-0.03	0.00	
3Q12	6.58	22.08	1245	3.47	0.00	12.0	
P-57							
4Q11	6.60	18.87	1220	220.70	-0.03	-0.10	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.48	16.73	1502	2.30	0.02	-73.0	
2Q12	6.55	19.24	2718	2.28	-0.03	-54.0	
3Q12	6.59	20.98	1182	3.25	0.00	-5.0	
P-58							
4Q11	6.53	18.22	1144	10.71	-0.04	-0.06	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.54	16.97	1252	14.38	0.01	-0.03	
2Q12	6.50	19.08	2978	10.20	0.00	-5.0	
3Q12	6.56	19.51	1199	12.67	-0.01	19.0	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 2a

CUMMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (C°)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
P-59							
4Q11	6.71	20.15	1211	38.94	-0.05	-0.11	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.56	16.14	1152	8.31	0.00	-26.0	
2Q12	6.59	19.27	2582	3.30	-0.04	-23.0	
3Q12	6.63	21.74	1220	9.00	-0.01	-79.0	
P-66							
4Q11	6.38	18.49	1228	29.77	-0.07	-0.10	Added to Interim GW Monitoring Program in 4Q11
1Q12	NM	NM	NM	NM	NM	NM	
2Q12	6.42	20.82	2898	19.95	-0.05	-11.0	
3Q12	6.41	22.52	1372	20.89	-0.07	-53.0	
P-74							
4Q11	6.54	18.49	502.3	15.49	-0.11	-0.10	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.84	11.70	232.5	6.86	0.87	101.0	
2Q12	6.84	19.17	367.1	8.55	0.37	28.0	
3Q12	6.68	20.31	579.9	10.52	-0.05	1.0	
P-93A							
4Q10	6.81	17.70	1259	23.00	NM	NM	
1Q11	6.68	16.16	2517	12.80	NM	NM	
2Q11	6.63	17.90	670.0	9.55	NM	NM	
3Q11	*	18.72	1690	23.40	NM	NM	
4Q11	6.68	17.44	2517	12.80	2.96	-68.0	
1Q12	6.65	15.81	1195	9.38	6.14	5.0	
2Q12	7.34	18.04	1247	18.22	5.80	11.0	
3Q12	6.71	20.89	1144	43.60	5.20	-13.0	
P-93B							
4Q10	7.10	18.10	1150	0.00	NM	NM	
1Q11	6.69	16.44	1377	1.20	NM	NM	
2Q11	6.64	18.70	757.0	0.11	NM	NM	
3Q11	7.38	21.60	1330	14.60	NM	NM	
4Q11	6.87	17.38	1551	2.40	3.34	-104.0	
1Q12	6.87	13.39	1250	2.11	0.21	28.0	
2Q12	7.51	18.52	1555	4.99	1.84	-32.0	
3Q12	6.76	19.61	1973	3.28	0.12	-65.0	
P-93C							
4Q10	7.28	17.50	1057	0.00	NM	NM	
1Q11	7.14	16.51	1832	0.50	NM	NM	
2Q11	6.81	18.50	693.0	0.52	NM	NM	
3Q11	6.96	21.41	1320	5.10	NM	NM	
4Q11	6.92	17.34	1176	1.14	0.92	-77.0	
1Q12	6.84	15.44	1100	0.01	3.94	94.0	
2Q12	7.69	18.41	1139	4.39	1.11	-49.0	
3Q12	6.77	20.55	1416	8.66	0.16	-45.0	
P-93D							
4Q10	7.13	18.50	1211	0.00	NM	NM	
1Q11	NM	NM	NM	NM	NM	NM	
2Q11	6.89	16.70	710.0	0.16	NM	NM	
3Q11	6.68	20.90	1410	0.86	NM	NM	
4Q11	6.99	18.13	1224	-0.28	-0.16	-166.0	
1Q12	6.93	15.16	1222	1.77	0.08	-23.0	
2Q12	6.93	19.04	2254	3.31	-0.04	-0.03	
3Q12	6.93	21.54	1446	2.93	-0.01	-88.0	
ROST-3-PZ							
2Q12	6.94	19.34	1949	9.40	0.35	15.0	Added to Interim GW Monitoring Program in 2Q12
3Q12	6.83	24.31	813.1	6.90	0.29	-95.0	
ROST-4-PZ(C)							
2Q12	6.77	20.00	2128	0.40	-0.03	-1.0	Added to Interim GW Monitoring Program in 4Q12
3Q12	6.74	21.56	976.4	6.67	0.04	-94.0	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 2a
CUMMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (C°)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
T-12							
4Q11	6.87	16.98	918.6	6.28	-0.17	-111.0	Added to Interim GW Monitoring Program in 4Q11
1Q12	6.85	15.13	800.7	13.15	0.00	-0.09	
2Q12	6.66	17.63	2382	1.18	-0.05	-37.0	
3Q12	6.79	18.86	1259	4.54	-0.04	-125.0	

NOTES:
1) Field parameters were collected using theTroll 9500.
2) NM = Not Measured
3) * = Equipment malfunction. Results are suspect.

TABLE 2b

CUMMULATIVE SUMMARY OF PERCHED GROUNDWATER MONITORING WELL FIELD PARAMETERS

Well ID	pH	Temp (F)	Specific Cond (uS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	General Notes
P-60-12S							
2Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
3Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
P-60-13S							
2Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
3Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
ROST-5-PZ							
2Q12	NM	NM	NM	NM	NM	NM	Well is dry.
3Q12	NM	NM	NM	NM	NM	NM	Well is dry.
ROST-7-PZ							
2Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
3Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
ROST-10-PZ							
2Q12	NM	NM	NM	NM	NM	NM	Well is dry.
3Q12	NM	NM	NM	NM	NM	NM	Well is dry.
ROST-21-PZ							
2Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP
3Q12	NM	NM	NM	NM	NM	NM	Slow recharge prevented sampling per the SOP

NOTES:

1) NM = Not Measured

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
MW-01	MW-1-111110	11/11/2010	43.41 - 58.41	36.91	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW-1-111110-Dup	11/11/2010		36.91	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW1-ROX-011711	1/17/2011		37.58	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW1-ROX-042911	4/29/2011		38.37	NE	0.0363	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW1-ROX-072711	7/27/2011		35.15	NE	0.0053	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW1-ROX-120511	12/5/2011		37.10	NE	0.00097	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW1-ROX-011612	1/16/2012	49.98 - 59.98 [6]	37.75	NE	0.0142	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW1-ROX-050112	5/1/2012		39.09	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW1-ROX-073012	7/30/2012	49.98 - 59.98 [6]	39.39	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
MW-02	MW-2-111010	11/11/2010	47.19 - 62.19	38.12	NE	0.401	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.05	<0.025	<0.05	<0.025		0.641		<0.025
	MW2-ROX-011711	1/17/2011		38.67	NE	0.294	0.0078	0.0047 J	<0.005	<0.005	<0.001	<0.001	0.0077	<0.001	0.0019 J	0.0032 J		0.74		<0.005
	MW02-ROX-051011	5/10/2011		39.14	NE	1.18	<0.005	0.0029 J	0.0012 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0027 J	<0.025	1.24	<0.005	<0.005
	MW2-ROX-072711	7/27/2011		36.36	NE	1.98	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05	<0.25	1.76	<0.05	<0.05
	MW2-ROX-072711-DUP	7/27/2011		36.36	NE	1.79	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05	<0.25	1.57	<0.05	<0.05
	MW2-ROX-112811	11/28/2011		38.03	NE	0.0216	<0.005	0.0106	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0121	<0.025	0.503	<0.005	<0.005
	MW2-ROX-011612	1/16/2012	51.32 - 61.32 [6]	38.89	NE	0.0161	<0.025	<0.025	<0.025	<0.025	<0.005	<0.005	<0.01	<0.005	<0.01	<0.025	<0.13	0.777	<0.025	<0.025
	MW2-ROX-050112	5/1/2012		40.25	NE	0.0145	<0.025	0.0068 J	<0.025	<0.025	<0.005	<0.005	<0.01	<0.005	<0.01	0.008 J	<0.13	0.948	<0.025	<0.025
	MW2-ROX-073012	7/30/2012	51.32 - 61.32 [6]	40.60	NE	0.01	<0.005	0.0078	0.001 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.009	<0.025	0.952	<0.005	<0.005
MW-03	MW-3-111210	11/12/2010	30.98 - 45.98	24.05	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW3-ROX-011811	1/18/2011		24.92	NE	0.00056	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	0.00077 J	<0.001	0.00082 J	<0.005		0.00082 J		<0.005
	MW03-ROX-051011	5/10/2011		24.79	NE	0.013	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-080311	8/3/2011		22.40	NE	0.00056	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-112911	11/29/2011		24.06	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-112911-DUP	11/29/2011		24.06	NE	0.00052	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-011612	1/16/2012	34.67 - 44.67 [6]	24.93	NE	0.00091	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-043012	4/30/2012		26.19	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW3-ROX-072712	7/27/2012	34.67 - 44.67 [6]	26.60	NE	0.0089	<0.005	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.002 UJ	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
MW-04	MW-4-111210	11/12/2010	42.63 - 57.63	35.38	NE	0.0752	<0.005	0.001 J	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW4-ROX-011811	1/18/2011		36.04	NE	0.0567	0.0006 J	0.00063 J	0.00069 J	<0.005	<0.001	<0.001	0.00096 J	<0.001	<0.002	<0.005		<0.001		<0.005
	MW04-ROX-051111	5/11/2011		36.19	NE	0.0625	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW4-ROX-072611	7/26/2011		33.65	NE	0.114	<0.005	0.0058	0.0063	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0023	<0.005	<0.005
	MW4-ROX-072611-DUP	7/26/2011		33.65	NE	0.108	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0021	<0.005	<0.005
	MW4-ROX-121511	12/15/2011		33.99	NE	0.0381	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW4-ROX-011612	1/16/2012	46.06 - 56.06 [6]	36.00	NE	0.115	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	0.0017 J	<0.005
	MW4-ROX-050312	5/3/2012		37.45	NE	0.0941	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW4-ROX-050312-DUP	5/3/2012		37.45	NE	0.0933	<0.005	<0.005	0.0012 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW4-ROX-072512	7/25/2012	46.06 - 56.06 [6]	37.63	NE	0.191	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.00082 J	<0.005	<0.005 UJ
	MW4-ROX-072512-Dup	7/25/2012		37.63	NE	0.199	0.0014 J	0.0017 J	0.002 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.00083 J	<0.005	<0.005 UJ

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
MW-05	MW-5-111210	11/12/2010	31.13 - 46.13	23.32	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW5-ROX-011811	1/18/2011		24.15	NE	0.0048	<0.005	<0.005	0.0014 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW05-ROX-051211	5/12/2011		23.98	NE	0.0055	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW5-ROX-072611	7/26/2011		21.72	NE	0.0222	0.0054	0.0061	0.0078	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW5-ROX-072611-DUP	7/26/2011		21.72	NE	0.0221	0.0054	0.0061	0.0078	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW5-ROX-112111	11/21/2011		23.46	NE	0.0109	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
	MW5-ROX-011712	1/17/2012	33.97 - 43.97[6]	24.76	NE	0.0442	<0.005	<0.005	0.0057	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW5-ROX-050312	5/3/2012		25.89	NE	0.0532	<0.005	0.0029 J	0.0073	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0014 J	<0.025	<0.001	<0.005	<0.005
	MW5-ROX-072512	7/25/2012	33.97 - 43.97[6]	26.18	NE	0.0925	<0.005	0.0015 J	0.007	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.00099 J	<0.025	<0.001	<0.005	<0.005 UJ
MW-06A	MW-6A-110910	11/9/2010	31.98 - 46.98	25.62	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW6A-ROX-011911	1/19/2011		26.36	NE	0.0113	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002 UJ	<0.001	<0.002	<0.005		<0.001		<0.005
	MW6A-ROX-051611	5/16/2011		26.10	NE	0.0031	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6A-ROX-072611	7/26/2011		24.07	NE	0.0032	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6A-ROX-112111	11/21/2011		25.49	NE	0.0105 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
	MW6A-ROX-112111-DUP	11/21/2011		25.49	NE	0.0137 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
	MW6A-ROX-011712	1/17/2012	34.83 - 44.83[6]	26.74	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6A-ROX-050212	5/2/2012		27.77	NE	0.00077	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6A-ROX-080112	8/1/2012	34.83 - 44.83[6]	28.36	NE	0.0016	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
MW-06B	MW-6B-111610	11/16/2010	64.05 - 69.05	25.47	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW6B-ROX-011911	1/19/2011		26.21	NE	0.0082	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW6B-ROX-011911-DUP	1/19/2011		26.21	NE	0.0082	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		0.0014 J
	MW6B-ROX-051611	5/16/2011		25.95	NE	0.0033	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6B-ROX-051611-DUP	5/16/2011		25.95	NE	0.0033	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6B-ROX-072311	7/23/2011		23.60	NE	0.0022	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6B-ROX-110311	11/3/2011		24.67	NE	0.961	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02 UJ	<0.05	<0.25	<0.01	<0.05	<0.05
	MW6B-ROX-011712	1/17/2012		26.77	NE	0.0013	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6B-ROX-050212	5/2/2012		27.82	NE	0.00086	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6B-ROX-080112	8/1/2012	64.05 - 69.05	27.92	NE	0.00045 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
MW-06C	MW-6C-111610	11/16/2010	84.95 - 89.95	25.25	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW6C-ROX-012111	1/21/2011		25.97	NE	0.0085	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW6C-ROX-051611	5/16/2011		25.76	NE	0.0071	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6C-ROX-072411	7/24/2011		23.43	NE	0.0027	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6C-ROX-110311	11/3/2011		24.47	NE	0.0017	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6C-ROX-011712	1/17/2012		26.50	NE	0.0028	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6C-ROX-050212	5/2/2012		27.62	NE	0.0015	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6C-ROX-080112	8/1/2012	84.95 - 89.95	28.15	NE	0.00061	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	ert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
MW-06D	MW-6D-111610	11/16/2010	104.72 - 109.72	25.13	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW6D-ROX-012111	1/21/2011		25.87	NE	0.0104	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW6D-ROX-051611	5/16/2011		25.60	NE	0.002	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6D-ROX-072311	7/23/2011		23.29	NE	0.0027	<0.005	<0.005	<0.005	0.007	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6D-ROX-110311	11/3/2011		24.31	NE	0.013	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6D-ROX-011712	1/17/2012		26.33	NE	0.0022	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6D-ROX-050212	5/2/2012		27.45	NE	0.0015	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW6D-ROX-080212	8/2/2012	104.72 - 109.72	30.56	NE	0.00068	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
MW-07	MW-7-111710	11/17/2010	42.92 - 52.92	36.93	NE	928 D	<1.25	<1.25	<1.25	<12.5	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25		<1.25		<1.25
	MW-7-111710-Dup	11/17/2010		36.93	NE	876 D	<1.25	<1.25	<1.25	<12.5	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25		<1.25		<1.25
	MW7-ROX-012511	1/25/2011		37.52	NE	1150 J	0.0015 J J	0.0011 J J	0.0012 J J	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	<0.005 UJ		0.0325 J		<0.005 UJ
	MW07-ROX-051311	5/13/2011		37.50	NE	1030 J	<0.005 UJ	0.0011 J J	0.0016 J J	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	<0.005 UJ	<0.025 UJ	0.0494 J	<0.005 UJ	<0.005 UJ
	MW07-ROX-051311D	5/13/2011		37.50	NE	922 J	<0.005	0.0013 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0487	<0.005	<0.005
	MW7-ROX-072411	7/24/2011		35.22	NE	1840	<25	<25	<25	<25	<5	<5	<10	<5	<10	<25	<130	<5	<25	<25
	MW-7-ROX-110211	11/2/2011		35.95	NE	774	<5	<5	<5	<5	<1	<1	<2	<1	<2 UJ	<5	<25	<1	<5	<5
	MW7-ROX-011812	1/18/2012		38.10	NE	1330 J	0.0026 J	0.0021 J	0.003 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0727	<0.005	<0.005
	MW7-ROX-011812-DUP	1/18/2012		38.10	NE	1110	0.0027 J	0.0022 J	0.0029 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0015 J	<0.025	0.0718	<0.005	<0.005
	MW7-ROX-050412	5/4/2012		39.19	NE	738	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	<0.1	<0.5	<0.5
	MW7-ROX-080712	8/7/2012	42.92 - 52.92	39.50	NE	591	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05	<0.25	0.0619	<0.05	<0.05
MW-08	MW-8-111710	11/17/2010	33.60 - 43.60	27.84	NE	965 D	<1.25	<1.25	<1.25	<12.5	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25		<1.25		<1.25
	MW8-ROX-012511	1/25/2011		28.59	NE	986	0.0021 J J	0.0014 J J	<0.005 UJ	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.0012 J J		0.234 J		<0.005 UJ
	MW8-ROX-012511-DUP	1/25/2011		28.59	NE	1030	0.002 J J	0.0014 J J	0.0011 J J	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.001 J J		0.237 J		<0.005 UJ
	MW08-ROX-051311	5/13/2011		28.35	NE	1310	<50	<50	<50	<50	<10	<10	<20	<10	<20	<50	<250	<10	<50	<50
	MW08-ROX-051311D	5/13/2011		28.35	NE	952 J	<5	<5	<5	<5	<1	<1	<2	<1	<2	<5	<25	<1	<5	<5
	MW8-ROX-072411	7/24/2011		26.02	NE	1650	<25	<25	<25	<25	<5	<5	<10	<5	<10 UJ	<25	<130	<5	<25	<25
	MW8-ROX-072411-DUP	7/24/2011		26.02	NE	1860	<25	<25	<25	<25	<5	<5	<10	<5	<10	<25	<130	<5	<25	<25
	MW-8-ROX-110211	11/2/2011		27.02	NE	934	<5	<5	<5	<5	<1	<1	<2	<1	<2 UJ	<5	<25	<1	<5	<5
	MW8-ROX-011812	1/18/2012		29.15	NE	386	0.0043 J	0.003 J	0.002 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0022 J	<0.025	0.285	<0.005	<0.005
	MW8-ROX-050412	5/4/2012		30.21	NE	1070	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	0.393	<0.5	<0.5
	MW8-ROX-050412-DUP	5/4/2012		30.21	NE	1040	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	0.396	<0.5	<0.5
	MW8-ROX-080712	8/7/2012	33.60 - 43.60	30.97	NE	397 J	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.04	<0.02	<0.04	<0.1	<0.5	0.249	<0.1	<0.1
	MW8-ROX-080712-DUP	8/7/2012		30.97	NE	653 J	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05	<0.25	0.232	<0.05	<0.05
MW-09	MW-9-111510	11/15/2010	46.45 - 56.45	39.00	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW9-ROX-012111	1/21/2011		39.62	NE	0.0037	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW09-ROX-050611	5/6/2011		40.12	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW9-ROX-072311	7/23/2011		37.27	NE	0.0024	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW9-ROX-110111	11/1/2011		37.78	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW9-ROX-011612	1/16/2012		39.50	NE	0.0031	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW9-ROX-050312	5/3/2012		41.03	NE	0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW9-ROX-072712	7/27/2012	46.45 - 56.45	41.30	NE	0.00058	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005		<0.001	<0.005	<0.005
MW-10	MW-10-111010	11/10/2010	44.43 - 54.43	38.97	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW10-ROX-012411	1/24/2011		39.40	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW10-ROX-012411-DUP	1/24/2011		39.40	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW10-ROX-042811	4/28/2011		40.20	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW10-ROX-072311	7/23/2011		37.24	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW10-ROX-110111	11/1/2011		37.72	NE	0.0022	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW10-ROX-011612	1/16/2012		39.28	NE	0.0026	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW10-ROX-050112	5/1/2012		40.86	NE	0.00079	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW10-ROX-072712	7/27/2012	44.43 - 54.43	41.21	NE	0.00058	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005		<0.001	<0.005	<0.005

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
MW-11	MW-11-111710	11/17/2010	41.66 - 51.66	36.39	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	MW11-ROX-012411	1/24/2011		37.15	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW11-ROX-050611	5/6/2011		37.60	NE	0.00041 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW11-ROX-072411	7/24/2011		34.68	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW-11-ROX-110211	11/2/2011		35.44	NE	0.0019	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW11-ROX-011712	1/17/2012		37.44	NE	0.0024	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW11-ROX-043012	4/30/2012		38.66	NE	0.00087	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW11-ROX-072712	7/27/2012	41.66 - 51.66	38.90	NE	0.00073	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005		<0.001	<0.005	<0.005
MW-12	MW-12-111510	11/15/2010	41.92 - 51.92	36.63	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	0.00161 J	<0.01	<0.005		<0.005		<0.005
	MW12-ROX-012411	1/24/2011		37.42	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW12-ROX-051211	5/12/2011		37.58	NE	0.0016	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW12-ROX-072411	7/24/2011		34.88	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002 UJ	<0.001	<0.002	<0.005 UJ	<0.025	<0.001	<0.005	<0.005
	MW-12-ROX-110211	11/2/2011		35.70	NE	0.0012	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW-12-ROX-110211-DUP	11/2/2011		35.70	NE	0.0014	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW12-ROX-011712	1/17/2012		37.70	NE	0.0023	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW12-ROX-011712-DUP	1/17/2012		37.70	NE	0.0028	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW12-ROX-043012	4/30/2012		38.98	NE	0.00066	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW12-ROX-072712	7/27/2012	41.92 - 51.92	39.22	NE	0.0013	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005		<0.001	<0.005	<0.005
MW-13	MW13-ROX-012511	1/25/2011	25.57 - 35.57	24.28	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	MW13-ROX-051311	5/13/2011		23.65	NE	0.0005 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW13-ROX-080311	8/3/2011		21.88	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW13-ROX-110311	11/3/2011		22.85	NE	0.05	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	MW13-ROX-012012	1/20/2012		24.77	NE	0.0742 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW13-ROX-050712	5/7/2012		25.79	NE	0.009	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW13-ROX-080812	8/8/2012	25.57 - 35.57	26.67	NE	0.0069 J	<0.005 UJ	<0.005 UJ	<0.005 UJ	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	<0.005 UJ	<0.025 UJ	<0.001 UJ	<0.005 UJ	<0.005 UJ
MW-14	MW14-ROX-110911	11/9/2011	33.42 - 43.42		NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW14-ROX-051012	5/10/2012			NE	0.009	0.0014 J	0.0026 J	0.0012 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	MW14-ROX-080312	8/3/2012	33.42 - 43.42	29.87	NE	0.0131	0.0015 J	0.0027 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.00065 J	<0.005	<0.005
P-114	P114-ROX-102811	10/28/2011	32.67 - 52.67	24.73	NE	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P114-ROX-012012	1/20/2012		27.17	NE	0.0011 J	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P114-ROX-050912	5/9/2012		28.09	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P114-ROX-080912	8/9/2012	32.67 - 52.67	29.13	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
P-54	P-54-111710	11/17/2010	38.00 - 63.00	36.43	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	P54-ROX-012411	1/24/2011		37.24	NE	<0.00039 U	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001		<0.005
	P54-ROX-051111	5/11/2011		37.37	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P54-ROX-072411	7/24/2011		34.78	NE	0.0023	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002 UJ	<0.001	<0.002	<0.005 UJ	<0.025	<0.001	<0.005	<0.005
	P54-ROX-110311	11/3/2011		35.49	NE	0.013	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	P54-ROX-011712	1/17/2012		37.17	NE	0.0025	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P54-ROX-050412	5/4/2012		38.77	NE	0.00082	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P54-ROX-080212	8/2/2012	38.00 - 63.00	38.95	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		<0.001	<0.005	<0.005
P-55	P55-ROX-103111	10/31/2011	39.82 - 64.82	39.15	NE	0.152	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0143	<0.005	<0.005
	P55-ROX-011912	1/19/2012		41.09	NE	<0.197 U	<0.005	0.0036 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0656	<0.005	<0.005
	P55-ROX-011912-D	1/19/2012		41.09	NE	<0.202 U	<0.005	0.0038 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0683	<0.005	<0.005
	P55-ROX-050912	5/9/2012		42.44	NE	0.388	0.0099	0.0093	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0031 J	<0.025	0.41	<0.005	<0.005

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs															
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	ert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
P-56	P56-ROX-102711	10/27/2011	40.82 - 65.82	39.42	NE	0.144	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.457 J	<0.005	<0.005
	P56-ROX-011912	1/19/2012		41.81	NE	0.335	<0.005	0.0035 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.227	<0.005	<0.005
	P56-ROX-050812	5/8/2012		43.09	NE	0.144	0.0086	0.0051	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	0.0069	0.0044 J	<0.025	1.14	<0.005	<0.005
	P56-ROX-080612	8/6/2012	40.82 - 65.82	43.60	NE	0.164	<0.025	<0.025	<0.025	<0.025	<0.005	<0.005	<0.01	<0.005	<0.01	<0.025		0.101	<0.025	<0.025
P-57	P57-ROX-110811	11/8/2011	40.46 - 65.46	39.20	NE	123	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	1.1	<0.5	<0.5
	P57-ROX-021312	2/13/2012		42.13	NE	126	<2.5	<2.5	<2.5	<2.5	<0.5	<0.5	<1	<0.5	<1	<2.5	<13	0.719	<2.5	<2.5
	P57-ROX-050712	5/7/2012		42.92	NE	147	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	1.07	<0.5	<0.5
	P57-ROX-080612	8/6/2012	40.46 - 65.46	43.53	NE	99.4	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05	<0.1	<0.05	<0.1	<0.25		0.795	<0.25	<0.25
	P57-ROX-080612-DUP	8/6/2012		43.53	NE	106	<0.005	0.0107	0.0124	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0109	<0.025	0.759 E	<0.005	<0.005
P-58	P58-ROX-102811	10/28/2011	40.21 - 65.21	37.31	NE	430	<0.005	0.0148	0.0344	<0.005	<0.001	0.0014	<0.002	<0.001	<0.002	0.0113	<0.025	<5	<0.005	<0.005
	P58-ROX-011912	1/19/2012		39.73	NE	487	0.027	0.0215	0.056 J	<0.005	<0.001	0.0013	<0.002	<0.001	<0.002	0.0149	<0.025	0.97 J	<0.005	<0.005
	P58-ROX-011912-D	1/19/2012		39.73	NE	474	0.0235 J	0.0168 J	0.0387 J	<0.005	<0.001	0.0014 J	<0.002	<0.001	<0.002	0.0123 J	<0.025	1.03	<0.005	<0.005
	P58-ROX-050712	5/7/2012		40.90	NE	477	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	1.03	<0.5	<0.5
	P58-ROX-050712-DUP	5/7/2012		40.90	NE	440	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<2.5	1	<0.5	<0.5
	P58-ROX-080612	8/6/2012	40.21 - 65.21	41.63	NE	313	<0.1	<0.1	0.0317 J	<0.1	<0.02	<0.02	<0.04	<0.02	<0.04	<0.1		0.889	<0.1	<0.1
	P58-ROX-080612-DUP	8/6/2012		41.63	NE	308	<0.05	0.0176 J	0.0339 J	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	0.0118 J	<0.25	0.931	<0.05	<0.05
P-59	P59-ROX-102711	10/27/2011	47.91 - 72.91	41.06	NE	6.01	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05	<0.1	<0.05	<0.1	<0.25	<1.3	1.49	<0.25	<0.25
	P59-ROX-011912	1/19/2012		42.88	NE	6.61	<0.005 UJ	0.0054	0.0031 J J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0036 J	<0.025	1.28	<0.005	<0.005
	P59-ROX-011912-DUP	1/19/2012		42.88	NE	7.04	0.0264 J	0.0055	0.0372 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0038 J	<0.025	1.4	<0.005	<0.005
	P59-ROX-050912	5/9/2012		44.11	NE	7.86	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05	<0.1	<0.05	<0.1	<0.25	<1.3	1.93	<0.25	<0.25
	P59-ROX-080212	8/2/2012	47.91 - 72.91	44.07	NE	11	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.04	<0.02	<0.04	<0.1		1.74	<0.1	<0.1
P-66	P66-ROX-110111	11/1/2011	34.72 - 59.72	28.92	NE	0.0171	0.0153	0.0185	0.0063	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	0.0016	<0.005	<0.005
	P66-ROX-051012	5/10/2012		32.48	NE	0.0193	0.0139	0.019	0.0059	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0015	<0.005	<0.005
	P66-ROX-080312	8/3/2012	34.72 - 59.72	33.19	NE	0.0994	0.0118	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0013	<0.005	<0.005
P-74	P74-ROX-103111	10/31/2011	44.43 - 69.43	36.26	NE	5.02	0.0242	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.229	<0.005	<0.005
	P74-ROX-011912	1/19/2012		38.77	NE	<0.205 U	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0095	<0.005	<0.005
	P74-ROX-050712	5/7/2012		39.92	NE	0.336	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0081	<0.005	<0.005
	P74-ROX-080612	8/6/2012	44.43 - 69.43	40.71	NE	2.46	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05		0.0782	<0.05	<0.05
P-93A	P93A-102610	10/26/2010	48.17 - 63.17	40.75	NE	422 D	<1.25	<1.25	<1.25	<12.5	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25		0.32 J		<1.25
	P93A-ROX_012611	1/26/2011		40.97	NE	491	0.0059	0.0096	0.0213	<0.005	0.00081 J	0.00061 J	<0.002	<0.001	<0.002	0.0047 J		0.373		0.0016 J
	P93A-ROX-050511	5/5/2011		41.88	NE	551	<0.005	0.0054 J	0.0133 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0034 J J	<0.025	<5	<0.005	<0.005
	P93A-ROX-081811	8/18/2011		38.86	NE	467	<0.005	0.0071	0.0177	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0049 J	<0.025	<10	<0.005	<0.005
	P93A-ROX-102611	10/26/2011		39.43	NE	543	<0.005	0.006	0.015	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0081	<0.025	0.304	<0.005	<0.005
	P93A-ROX-012012	1/20/2012		41.66	NE	164 J	0.0037 J J	0.0045 J	0.0122	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0023 J	<0.025	0.185	<0.005	<0.005
	P93A-ROX-050812	5/8/2012		42.75	NE	200	0.005 J	0.0069 J	0.0179 J	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.0035 J J	<0.025 UJ	0.38 J	<0.005 UJ	<0.005 UJ
	P93A-ROX-080912	8/9/2012	48.17 - 63.17	43.66	NE	87	0.0027 J	0.0048 J	0.0128	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0022 J	<0.025	0.225	<0.005	<0.005
P-93B	P93B-102610	10/26/2010	74.60 - 76.60	40.73	NE	189 D	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<1	<0.5	<1	<0.5		<0.5		<0.5
	P93B-ROX_012611	1/26/2011		41.03	NE	105	<0.005	<0.005	0.00058 J	<0.005	<0.001	<0.001	0.00077 J	<0.001	0.0014 J	<0.005		0.0104		<0.005
	P93B-ROX-050511	5/5/2011		41.96	NE	134	<0.005	0.0045 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0169	<0.005	<0.005
	P93B-ROX-081811	8/18/2011		38.91	NE	304	<5	<5	<5	<5	<1	<1	<2	<1	<2	<5	<25	<1	<5	<5
	P93B-ROX-102611	10/26/2011		39.48	NE	590	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0533	<0.005	<0.005
	P93B-ROX-012012	1/20/2012		41.72	NE	337	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	0.0831 J	0.0274 J	<0.005	<0.005
	P93B-ROX-050812	5/8/2012		42.79	NE	304	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0379 J	<0.005	<0.005
	P93B-ROX-080912	8/9/2012	74.60 - 76.60	43.69	NE	317	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0741	<0.005	<0.005

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Benzene	n-Butylbenzene	sec-Butylbenzene	ert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene (p-Isopropyltoluene)	1,4-Dioxane	Ethylbenzene	Ethyl methacrylate	Hexachlorobutadiene
Screening Values (mg/L)						0.005 [1]	0.35 [3]			0.7 [2]	0.005 [1]	0.1 [2]		0.0002 [2]			0.005 [4]	0.7 [1]		0.007 [3]
P-93C	P93C-102610	10/26/2010	94.26 - 96.26	40.69	NE	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	P93C-ROX_012611	1/26/2011		40.91	NE	86.5	<0.005	<0.005	0.00056 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005		0.0175		<0.005
	P93C-ROX-050611	5/6/2011		41.84	NE	15.7	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0029	<0.005	<0.005
	P93C-ROX-081811	8/18/2011		38.79	NE	1.2	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93C-ROX-102611	10/26/2011		39.36	NE	0.0014	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93C-ROX-012012	1/20/2012		41.57	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93C-ROX-050812	5/8/2012		42.68	NE	0.0057	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93C-ROX-080912	8/9/2012	94.26 - 96.26	43.57	NE	0.00084	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
P-93D	P93D-102610	10/26/2010	125.75 - 127.75	40.59	NE	0.0429	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005		<0.005		<0.005
	P93D-ROX-050511	5/5/2011		41.96	NE	0.0287	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002 UJ	<0.005	<0.025	<0.001	<0.005	<0.005
	P93D-ROX-081811	8/18/2011		38.94	NE	0.0059	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93D-ROX-102711	10/27/2011		39.59	NE	0.00097	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93D-ROX-012012	1/20/2012		41.77	NE	0.0513	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93D-ROX-050812	5/8/2012		42.96	NE	0.0056	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	P93D-ROX-080812	8/8/2012	125.75 - 127.75	43.71	NE	0.0134	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
ROST-3-PZ	ROST3PZ-ROX-051412	5/14/2012	40.00 - 50.00	38.82	NE	0.0074	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0167	<0.005	<0.005
	ROST3PZ-ROX-080712	8/7/2012	40.00 - 50.00	39.00	NE	0.0041	<0.005	<0.005	0.00072 J	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.0047	<0.005	<0.005
ROST-4-PZ(C)	ROST4PZ-C-051412	5/14/2012	35.25 - 45.25	39.04	NE	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	<0.001	<0.005	<0.005
	ROST4PZ-C-ROX-072512	7/25/2012	35.25 - 45.25	39.10	NE	0.0849	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.025	0.177	<0.005	<0.005 UJ
T-12	T12-ROX-102711	10/27/2011	46.46 - 72.46	38.54	NE	1.09	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05	<0.25	0.648	<0.05	<0.05
	T12-ROX-011912	1/19/2012		41.0	NE	1.51	0.0062	0.0022 J	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	0.0024 J	<0.025	0.285	<0.005	<0.005
	T12-ROX-050912	5/9/2012		42.62	NE	1.48	<0.025	<0.025	<0.025	<0.025	<0.005	<0.005	<0.01	<0.005	<0.01	<0.025	<0.13	1.88	<0.025	<0.025
	T12-ROX-080212	8/2/2012	46.46 - 72.46	41.92	NE	1.64	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.02	<0.01	<0.02	<0.05		0.573	<0.05	<0.05

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	Isopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
MW-01	MW-1-111110	11/11/2010	43.41 - 58.41	36.91	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW-1-111110-Dup	11/11/2010		36.91	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW1-ROX-011711	1/17/2011		37.58	NE		<0.005	0.0032	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	0.0013	
	MW1-ROX-042911	4/29/2011		38.37	NE	<0.005	<0.005	0.0027	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0016	<0.001	0.0016
	MW1-ROX-072711	7/27/2011		35.15	NE	<0.005	<0.005	0.0055	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW1-ROX-120511	12/5/2011		37.10	NE	<0.005	<0.005	0.0027	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW1-ROX-011612	1/16/2012	49.98 - 59.98[6]	37.75	NE	<0.005	<0.005	0.0032	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW1-ROX-050112	5/1/2012		39.09	NE	<0.005	<0.005	0.0031	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW1-ROX-073012	7/30/2012	49.98 - 59.98[6]	39.39	NE	<0.005	<0.005	0.0022	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
MW-02	MW-2-111010	11/11/2010	47.19 - 62.19	38.12	NE		0.0236 J	<0.025	0.0354	1.22 D	<0.025	<0.025	<0.025	0.273	0.0618	<0.25	1.14	0.318	
	MW2-ROX-011711	1/17/2011		38.67	NE		0.0617	<0.001	0.0652	0.737	<0.005	<0.005	<0.001	0.279	0.0744	<0.005	0.892	0.191	
	MW02-ROX-051011	5/10/2011		39.14	NE	<0.005	0.0539	<0.001	0.0669	3.51	<0.005	<0.005	<0.001	0.339	0.103	<0.005	2.05	0.549	2.6
	MW2-ROX-072711	7/27/2011		36.36	NE	<0.05	0.0995	<0.01	0.111	4.69	<0.05	<0.05	<0.01	0.338	0.116	<0.05	2.91	0.823	3.74
	MW2-ROX-072711-DUP	7/27/2011		36.36	NE	<0.05	0.0967	<0.01	0.1	4.67	<0.05	<0.05	<0.01	0.298	0.108	<0.05	2.63	0.728	3.36
	MW2-ROX-112811	11/28/2011		38.03	NE	<0.005	0.128	<0.001	0.146	0.0328	<0.005	<0.005	<0.001	0.407	0.212	<0.005	0.747	0.0574	0.804
	MW2-ROX-011612	1/16/2012	51.32 - 61.32[6]	38.89	NE	<0.025	0.0832	<0.005	0.0993	0.0375	<0.025	<0.025	<0.005	0.388	0.162	<0.025	0.857	0.056	0.913
	MW2-ROX-050112	5/1/2012		40.25	NE	<0.025	0.0886	<0.005	0.119	0.0445	<0.025	<0.025	<0.005	0.413	0.154	<0.025	1.14	0.0797	1.22
	MW2-ROX-073012	7/30/2012	51.32 - 61.32[6]	40.60	NE	<0.005	0.0818	<0.001	0.116	0.0374	<0.005	<0.005	<0.001	0.338	0.135	<0.005	1.27	0.0906	1.34
MW-03	MW-3-111210	11/12/2010	30.98 - 45.98	24.05	NE		0.0016 J	<0.005	0.00622	0.00257 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	0.00653 J	<0.005	
	MW3-ROX-011811	1/18/2011		24.92	NE		<0.005	0.0021	<0.005	<0.001	<0.005	<0.005	<0.001	0.00085 J	<0.005	<0.005	0.0012	0.0014	
	MW03-ROX-051011	5/10/2011		24.79	NE	<0.005	<0.005	0.0026	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0022	<0.001	0.0022
	MW3-ROX-080311	8/3/2011		22.40	NE	<0.005	0.0012 J	<0.001	<0.005	0.0015	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW3-ROX-112911	11/29/2011		24.06	NE	<0.005	<0.005	0.0014	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW3-ROX-112911-DUP	11/29/2011		24.06	NE	<0.005	<0.005	0.0014	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW3-ROX-011612	1/16/2012	34.67 - 44.67[6]	24.93	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW3-ROX-043012	4/30/2012		26.19	NE	<0.005	<0.005	0.0039	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW3-ROX-072712	7/27/2012	34.67 - 44.67[6]	26.60	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
MW-04	MW-4-111210	11/12/2010	42.63 - 57.63	35.38	NE		0.00271 J	0.00508	0.00395 J	0.0157	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	0.00699 J	0.00139 J	
	MW4-ROX-011811	1/18/2011		36.04	NE		0.002 J	0.007	0.0022 J	0.0071	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0062	0.0021	
	MW04-ROX-051111	5/11/2011		36.19	NE	<0.005	0.0036 J	0.0096	0.0037 J	0.0125	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0096	0.0016	0.0111
	MW4-ROX-072611	7/26/2011		33.65	NE	<0.005	0.0088	0.0113	0.0085	0.017	<0.005	<0.005	<0.001	<0.005	0.0052	<0.005	0.0067	<0.001	0.0067
	MW4-ROX-072611-DUP	7/26/2011		33.65	NE	<0.005	0.0088	0.0103	0.0083	0.0162	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0063	<0.001	0.0063
	MW4-ROX-121511	12/15/2011		33.99	NE	<0.005	<0.005	0.0073 J	<0.005	0.0092	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0069	0.001	0.0079
	MW4-ROX-011612	1/16/2012	46.06 - 56.06[6]	36.00	NE	<0.005	0.0061	<0.001	0.0061	0.0283	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0148	0.0025	0.0173
	MW4-ROX-050312	5/3/2012		37.45	NE	<0.005	0.0038 J	0.0174	<0.005	0.0255	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.016	0.003	0.0189
	MW4-ROX-050312-DUP	5/3/2012		37.45	NE	<0.005	0.0036 J	0.0162	0.0043 J	0.0252	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0151	0.0031	0.0182
	MW4-ROX-072512	7/25/2012	46.06 - 56.06[6]	37.63	NE	<0.005	0.0061	0.015	0.0071	0.0418	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0221	0.0042	0.0262
	MW4-ROX-072512-Dup	7/25/2012		37.63	NE	<0.005	0.0063	0.0154	0.0072	0.0427	<0.005	<0.005	<0.001	0.00068 J	0.0057	<0.005	0.0214	0.0043	0.0257

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs													
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	Isopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
MW-05	MW-5-111210	11/12/2010	31.13 - 46.13	23.32	NE		<0.005	0.00556	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	0.00277 J	<0.005	
	MW5-ROX-011811	1/18/2011		24.15	NE		<0.005	0.0066	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.00087 J	0.0014	
	MW05-ROX-051211	5/12/2011		23.98	NE	<0.005	<0.005	0.0085	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	0.0035	<0.001	0.0035
	MW5-ROX-072611	7/26/2011		21.72	NE	<0.005	0.0161	0.0031	0.0105	0.0017	<0.005	<0.005	<0.001	<0.005	0.0055	<0.005	0.0074	<0.001	0.0074
	MW5-ROX-072611-DUP	7/26/2011		21.72	NE	<0.005	0.016	0.0031	0.0104	0.0016	<0.005	<0.005	<0.001	<0.005	0.0055	<0.005	0.0068	<0.001	0.0068
	MW5-ROX-112111	11/21/2011		23.46	NE	<0.005	<0.005	0.0069	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW5-ROX-011712	1/17/2012	33.97 - 43.97[6]	24.76	NE	<0.005	<0.005	0.0187	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.00081 U
	MW5-ROX-050312	5/3/2012		25.89	NE	<0.005	0.001 J	0.022	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW5-ROX-072512	7/25/2012	33.97 - 43.97[6]	26.18	NE	<0.005	0.0066	0.013	0.0018 J	0.0032	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.008	0.0017	0.0097
MW-06A	MW-6A-110910	11/9/2010	31.98 - 46.98	25.62	NE		<0.005	0.0203	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW6A-ROX-011911	1/19/2011		26.36	NE		<0.005	0.0181	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW6A-ROX-051611	5/16/2011		26.10	NE	<0.005 UJ	<0.005	0.0277	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-072611	7/26/2011		24.07	NE	<0.005	<0.005	0.0237	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-112111	11/21/2011		25.49	NE	<0.005	<0.005	0.0169	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-112111-DUP	11/21/2011		25.49	NE	<0.005	<0.005	0.0181	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-011712	1/17/2012	34.83 - 44.83[6]	26.74	NE	<0.005	<0.005	0.0185	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-050212	5/2/2012		27.77	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6A-ROX-080112	8/1/2012	34.83 - 44.83[6]	28.36	NE	<0.005	<0.005	0.0019	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
MW-06B	MW-6B-111610	11/16/2010	64.05 - 69.05	25.47	NE		<0.005	0.00204 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW6B-ROX-011911	1/19/2011		26.21	NE		<0.005	0.0016	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW6B-ROX-011911-DUP	1/19/2011		26.21	NE		<0.005	0.0016	<0.005	<0.001	0.0016 J	0.0011 J	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW6B-ROX-051611	5/16/2011		25.95	NE	<0.005 UJ	<0.005	0.0029	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6B-ROX-051611-DUP	5/16/2011		25.95	NE	<0.005 UJ	<0.005	0.0031	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6B-ROX-072311	7/23/2011		23.60	NE	<0.005	<0.005	0.0049	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW6B-ROX-110311	11/3/2011		24.67	NE	<0.05	<0.05	0.036 J	<0.05	<0.01	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
	MW6B-ROX-011712	1/17/2012		26.77	NE	<0.005	<0.005	0.0049	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6B-ROX-050212	5/2/2012		27.82	NE	<0.005	<0.005	0.0115	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6B-ROX-080112	8/1/2012	64.05 - 69.05	27.92	NE	<0.005	<0.005	0.0122	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
MW-06C	MW-6C-111610	11/16/2010	84.95 - 89.95	25.25	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW6C-ROX-012111	1/21/2011		25.97	NE		<0.005	0.0021	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW6C-ROX-051611	5/16/2011		25.76	NE	<0.005 UJ	<0.005	0.0034	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6C-ROX-072411	7/24/2011		23.43	NE	<0.005	<0.005	0.0027	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW6C-ROX-110311	11/3/2011		24.47	NE	<0.005	<0.005	0.0039 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6C-ROX-011712	1/17/2012		26.50	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6C-ROX-050212	5/2/2012		27.62	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6C-ROX-080112	8/1/2012	84.95 - 89.95	28.15	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs														
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	sopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
MW-06D	MW-6D-111610	11/16/2010	104.72 - 109.72	25.13	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW6D-ROX-012111	1/21/2011		25.87	NE		<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW6D-ROX-051611	5/16/2011		25.60	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6D-ROX-072311	7/23/2011		23.29	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW6D-ROX-110311	11/3/2011		24.31	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6D-ROX-011712	1/17/2012		26.33	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6D-ROX-050212	5/2/2012		27.45	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW6D-ROX-080212	8/2/2012	104.72 - 109.72	30.56	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
MW-07	MW-7-111710	11/17/2010	42.92 - 52.92	36.93	NE		<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<12.5	<2.5	<1.25	
	MW-7-111710-Dup	11/17/2010		36.93	NE		<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<12.5	<2.5	<1.25	
	MW7-ROX-012511	1/25/2011		37.52	NE	<0.005 UJ	0.004 J J	<0.0057 U	0.0058 J	0.0907 J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.0552 J	0.0133 J	<0.005 UJ	0.0694 J	0.0235 J	
	MW07-ROX-051311	5/13/2011		37.50	NE	<0.005 UJ	0.0061 J	0.0109 J	0.0078 J	0.128 J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.0822 J	0.0193 J	<0.005 UJ	0.101 J	0.0418 J	0.143 J
	MW07-ROX-051311D	5/13/2011		37.50	NE	<0.005	0.006	0.012	0.0078	0.126	<0.005	<0.005	<0.001	0.0825	0.0193	<0.005	0.0984	0.0405	0.139
	MW7-ROX-072411	7/24/2011		35.22	NE	<25	<25	<5	<25	<5	<25	<25	<5	<25	<25	<25 UJ	<5	<5	<5
	MW-7-ROX-110211	11/2/2011		35.95	NE	<5	<5	<1	<5	<1	<5	<5	<1	<5	<5	<5	<1	<1	<1
	MW7-ROX-011812	1/18/2012		38.10	NE	<0.005	0.0101	0.0022	0.0135	0.158	<0.005	<0.005	<0.001	0.148	0.0341	<0.005	0.137	0.0527	0.19
	MW7-ROX-011812-DUP	1/18/2012		38.10	NE	<0.005	0.01	0.0024	0.0138	0.156	<0.005	<0.005	<0.001	0.146	0.0332	<0.005	0.134	0.051	0.184
	MW7-ROX-050412	5/4/2012		39.19	NE	<0.5	<0.5	<0.1	<0.5	0.101	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1
	MW7-ROX-080712	8/7/2012	42.92 - 52.92	39.50	NE	<0.05	<0.05	<0.01	0.0102 J	0.0629	<0.05	<0.05	<0.01	0.1	0.021 J	<0.05	0.12	0.0486	0.169
MW-08	MW-8-111710	11/17/2010	33.60 - 43.60	27.84	NE		<1.25	<1.25	<1.25	0.328 J	<1.25	<1.25	<1.25	<1.25	<1.25	<12.5	<2.5	<1.25	
	MW8-ROX-012511	1/25/2011		28.59	NE	<0.005 UJ	0.0104 J	0.21 J	0.0173 J	1.2 E J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.109 J	0.0332 J	<0.005 UJ	0.499 J	0.188 J	
	MW8-ROX-012511-DUP	1/25/2011		28.59	NE	<0.005 UJ	0.0105 J	0.205 J	0.017 J	1.12 E J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.11 J	0.0336 J	<0.005 UJ	0.518 J	0.191 J	
	MW08-ROX-051311	5/13/2011		28.35	NE	<50	<50	<10	<50	<10	<50	<50	<10	<50	<50	<50	<10	<10	<10
	MW08-ROX-051311D	5/13/2011		28.35	NE	<5	<5	0.657 J	<5	<1	<5	<5	<1	<5	<5	<5	<1	<1	<1
	MW8-ROX-072411	7/24/2011		26.02	NE	<25	<25	<5	<25	<5	<25	<25	<5	<25	<25	<25 UJ	<5	<5	<5
	MW8-ROX-072411-DUP	7/24/2011		26.02	NE	<25	<25	<5	<25	<5	<25	<25	<5	<25	<25	<25 UJ	<5	<5	<5
	MW-8-ROX-110211	11/2/2011		27.02	NE	<5	<5	4.94 J	<5	<1	<5	<5	<1	<5	<5	<5	<1	<1	<1
	MW8-ROX-011812	1/18/2012		29.15	NE	<0.005	0.0162	1.41 J	0.0377	<2	<0.005	<0.005	<0.001	0.163	0.061	<0.005	0.574	0.219	0.794
	MW8-ROX-050412	5/4/2012		30.21	NE	<0.5	<0.5	4.15	<0.5	1.55	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	0.978	0.37	1.35
	MW8-ROX-050412-DUP	5/4/2012		30.21	NE	<0.5	<0.5	4.07	<0.5	1.52	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	0.939	0.381	1.32
	MW8-ROX-080712	8/7/2012	33.60 - 43.60	30.97	NE	<0.1	<0.1	0.878	0.0191 J	0.781	<0.1	<0.1	<0.02	0.104	0.0299 J	<0.1	0.623	0.246	0.868
	MW8-ROX-080712-DUP	8/7/2012		30.97	NE	<0.05	<0.05	0.885	0.0176 J	0.729	<0.05	<0.05	<0.01	0.0921	0.0265 J	<0.05	0.598	0.235	0.833
MW-09	MW-9-111510	11/15/2010	46.45 - 56.45	39.00	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW9-ROX-012111	1/21/2011		39.62	NE		<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	
	MW09-ROX-050611	5/6/2011		40.12	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW9-ROX-072311	7/23/2011		37.27	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW9-ROX-110111	11/1/2011		37.78	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW9-ROX-011612	1/16/2012		39.50	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW9-ROX-050312	5/3/2012		41.03	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW9-ROX-072712	7/27/2012	46.45 - 56.45	41.30	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
MW-10	MW-10-111010	11/10/2010	44.43 - 54.43	38.97	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW10-ROX-012411	1/24/2011		39.40	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	MW10-ROX-012411-DUP	1/24/2011		39.40	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	MW10-ROX-042811	4/28/2011		40.20	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW10-ROX-072311	7/23/2011		37.24	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW10-ROX-110111	11/1/2011		37.72	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW10-ROX-011612	1/16/2012		39.28	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW10-ROX-050112	5/1/2012		40.86	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW10-ROX-072712	7/27/2012	44.43 - 54.43	41.21	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs													
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	Isopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
MW-11	MW-11-111710	11/17/2010	41.66 - 51.66	36.39	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW11-ROX-012411	1/24/2011		37.15	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	MW11-ROX-050611	5/6/2011		37.60	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW11-ROX-072411	7/24/2011		34.68	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW-11-ROX-110211	11/2/2011		35.44	NE	<0.005	<0.005	0.003 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW11-ROX-011712	1/17/2012		37.44	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW11-ROX-043012	4/30/2012		38.66	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW11-ROX-072712	7/27/2012	41.66 - 51.66	38.90	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
MW-12	MW-12-111510	11/15/2010	41.92 - 51.92	36.63	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	MW12-ROX-012411	1/24/2011		37.42	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	MW12-ROX-051211	5/12/2011		37.58	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW12-ROX-072411	7/24/2011		34.88	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW-12-ROX-110211	11/2/2011		35.70	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW-12-ROX-110211-DUP	11/2/2011		35.70	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW12-ROX-011712	1/17/2012		37.70	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW12-ROX-011712-DUP	1/17/2012		37.70	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW12-ROX-043012	4/30/2012		38.98	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW12-ROX-072712	7/27/2012	41.92 - 51.92	39.22	NE	<0.005 UJ	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
MW-13	MW13-ROX-012511	1/25/2011	25.57 - 35.57	24.28	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	MW13-ROX-051311	5/13/2011		23.65	NE	<0.005	<0.005	0.0061 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	MW13-ROX-080311	8/3/2011		21.88	NE	<0.005	<0.005	0.004	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW13-ROX-110311	11/3/2011		22.85	NE	<0.005	<0.005	0.0156 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW13-ROX-012012	1/20/2012		24.77	NE	<0.005	<0.005	0.0066 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW13-ROX-050712	5/7/2012		25.79	NE	<0.005	<0.005	0.0083	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW13-ROX-080812	8/8/2012	25.57 - 35.57	26.67	NE	<0.005 UJ	<0.005 UJ	0.0133 J	<0.005 UJ	<0.001 UJ	<0.005 UJ	<0.005 UJ	<0.001 UJ	<0.005 UJ	<0.005 UJ	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.001 UJ
MW-14	MW14-ROX-110911	11/9/2011	33.42 - 43.42		NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	MW14-ROX-051012	5/10/2012			NE	<0.005	0.0104	<0.001	0.0078	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0016	0.00041 J	0.002
	MW14-ROX-080312	8/3/2012	33.42 - 43.42	29.87	NE	<0.005	0.0173	<0.001	0.0137	0.00093 J	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0033	0.00061 J	0.0039
P-114	P114-ROX-102811	10/28/2011	32.67 - 52.67	24.73	NE	<0.005	<0.005	0.0036 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P114-ROX-012012	1/20/2012		27.17	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P114-ROX-050912	5/9/2012		28.09	NE	<0.005	<0.005	0.0035 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P114-ROX-080912	8/9/2012	32.67 - 52.67	29.13	NE	<0.005	<0.005	0.00083 J	<0.005	<0.001	<0.005	<0.005	<0.001	0.00039 J	<0.005	<0.005	<0.001	<0.001	<0.001
P-54	P-54-111710	11/17/2010	38.00 - 63.00	36.43	NE		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	P54-ROX-012411	1/24/2011		37.24	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	
	P54-ROX-051111	5/11/2011		37.37	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P54-ROX-072411	7/24/2011		34.78	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P54-ROX-110311	11/3/2011		35.49	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P54-ROX-011712	1/17/2012		37.17	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P54-ROX-050412	5/4/2012		38.77	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P54-ROX-080212	8/2/2012	38.00 - 63.00	38.95	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
P-55	P55-ROX-103111	10/31/2011	39.82 - 64.82	39.15	NE	<0.005	<0.005	0.0012	<0.005	0.029	<0.005	<0.005	<0.001	0.0067	0.0056	<0.005	0.0466	0.0163	0.0629
	P55-ROX-011912	1/19/2012		41.09	NE	<0.005	0.0105 J	<0.001	0.0173	0.0337	<0.005	<0.005	<0.001	0.017	0.009	<0.005	0.205	0.0663	0.271
	P55-ROX-011912-D	1/19/2012		41.09	NE	<0.005	0.0105 J	<0.001	0.0176	0.0359	<0.005	<0.005	<0.001	0.0179	0.0097	<0.005	0.21	0.0649	0.275
	P55-ROX-050912	5/9/2012		42.44	NE	<0.005	0.0392	<0.001	0.0699	0.227	<0.005	<0.005	<0.001	0.158	0.0368	<0.005	0.885	0.112	0.97

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs													
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	sopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
P-56	P56-ROX-102711	10/27/2011	40.82 - 65.82	39.42	NE	<0.005	0.0512	<0.001	0.0463	0.0422	<0.005	<0.005	<0.001	0.0962	0.0226	<0.005	0.476	0.0332	0.509
	P56-ROX-011912	1/19/2012		41.81	NE	<0.005	0.0787 J	<0.001	0.0697	0.023	<0.005	<0.005	<0.001	0.0229	0.0077	<0.005	0.202	0.0161	0.218
	P56-ROX-050812	5/8/2012		43.09	NE	<0.005	0.0876	<0.001	0.111	0.197	<0.005	<0.005	<0.001	0.312	0.0708	<0.005	1.37	0.197	1.53
	P56-ROX-080612	8/6/2012	40.82 - 65.82	43.60	NE	<0.025 UJ	0.0442	<0.005	0.0439	0.0109	<0.025 UJ	<0.025 UJ	<0.005	0.0131 J	0.005 J	<0.025 UJ	0.11	0.0083	0.118
P-57	P57-ROX-110811	11/8/2011	40.46 - 65.46	39.20	NE	<0.5	<0.5	0.221	<0.5	<0.1	<0.5	<0.5	<0.1	0.615	<0.5	<0.5	1.02	<0.1	1.02
	P57-ROX-021312	2/13/2012		42.13	NE	<2.5	<2.5	<0.5	<2.5	<0.5	<2.5	<2.5	<0.5	<2.5	<2.5	<2.5	0.502	<0.5	0.502
	P57-ROX-050712	5/7/2012		42.92	NE	<0.5	<0.5	0.453	<0.5	<0.1	<0.5	<0.5	<0.1	0.632	0.159 J	<0.5	0.928	0.0563 J	0.984
	P57-ROX-080612	8/6/2012	40.46 - 65.46	43.53	NE	<0.25 UJ	<0.25	0.238	<0.25	0.0577	<0.25	<0.25	<0.05	0.506	0.123 J	<0.25 UJ	0.74	0.0328 J	0.773
	P57-ROX-080612-DUP	8/6/2012		43.53	NE	<0.005	0.0432	0.212	0.0519	0.0558	<0.005	<0.005	<0.001	0.505 E	0.137	<0.005	0.692	0.0348	0.727
P-58	P58-ROX-102811	10/28/2011	40.21 - 65.21	37.31	NE	<0.005	0.0734	<0.001	0.0862	0.13	<0.005	<0.005	<0.001	<25	0.104	<0.005	0.575	0.101	0.677
	P58-ROX-011912	1/19/2012		39.73	NE	0.0097	0.108 J	0.0082	0.129 J	0.155 J	<0.005	<0.005	<0.001		0.14 J	0.0408 J	0.679	0.108	0.787
	P58-ROX-011912-D	1/19/2012		39.73	NE	<0.005	0.0832 J	0.0101 J	0.0993 J	0.119 J	<0.005	<0.005	<0.001	<5	0.11	<0.005 UJ	<1	<1	<1
	P58-ROX-050712	5/7/2012		40.90	NE	<0.5	<0.5	<0.1	0.106 J	0.137	<0.5	<0.5	<0.1	0.776	0.108 J	<0.5	0.666	0.0982 J	0.764
	P58-ROX-050712-DUP	5/7/2012		40.90	NE	<0.5	<0.5	<0.1	0.108 J	0.145	<0.5	<0.5	<0.1	0.757	0.109 J	<0.5	0.636	0.0968 J	0.733
	P58-ROX-080612	8/6/2012	40.21 - 65.21	41.63	NE	<0.1 UJ	0.0649 J	<0.02	0.0909 J	0.117	<0.1	<0.1	<0.02	0.705	0.0955 J	<0.1 UJ	0.652	0.0976	0.749
	P58-ROX-080612-DUP	8/6/2012		41.63	NE	<0.05	0.0718	<0.01	0.0996	0.128	<0.05	<0.05	<0.01	0.737	0.102	<0.05	0.656	0.104	0.759
P-59	P59-ROX-102711	10/27/2011	47.91 - 72.91	41.06	NE	<0.25	<0.25	<0.05	<0.25	0.321	<0.25	<0.25	<0.05	0.477	<0.25	<0.25	3.11	0.312	3.42
	P59-ROX-011912	1/19/2012		42.88	NE	<0.005	0.0713	<0.001	0.128	0.896	<0.005	<0.005	<0.001	0.483 J	0.198	<0.005	3.03	0.587	3.62
	P59-ROX-011912-DUP	1/19/2012		42.88	NE	<0.005	0.0733	<0.001	0.133	0.931	<0.005	<0.005	<0.001	0.536	0.203	<0.005	3.21	0.587	3.8
	P59-ROX-050912	5/9/2012		44.11	NE	<0.25	0.0585 J	<0.05	0.123 J	2.35	<0.25	<0.25	<0.05	0.67	0.171 J	<0.25	4.56	1.08	5.64
	P59-ROX-080212	8/2/2012	47.91 - 72.91	44.07	NE	<0.1	0.0452 J	<0.02	0.0974 J	0.506	<0.1	<0.1	<0.02	0.563	0.158	<0.1	4.35	0.376	4.73
P-66	P66-ROX-110111	11/1/2011	34.72 - 59.72	28.92	NE	<0.005	0.158	0.0845 J	0.188	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P66-ROX-051012	5/10/2012		32.48	NE	<0.005	0.123	0.0771	0.152	0.0021	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0012	0.0012	0.0024
	P66-ROX-080312	8/3/2012	34.72 - 59.72	33.19	NE	<0.005	0.0874	0.103	0.112	0.0013	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	0.0011	0.0011	0.0022
P-74	P74-ROX-103111	10/31/2011	44.43 - 69.43	36.26	NE	<0.005	0.0123	0.0222	0.0222	0.669	<0.005	<0.005	<0.001	0.587	0.162	<0.005	0.177	<0.1	0.177
	P74-ROX-011912	1/19/2012		38.77	NE	<0.005	<0.005	<0.001	0.0012 J	0.0038	<0.005	<0.005	<0.001	0.0292	0.0126	<0.005	0.0526	0.0262	0.0788
	P74-ROX-050712	5/7/2012		39.92	NE	<0.005	<0.005	<0.001	0.001 J	0.0017	<0.005	<0.005	<0.001	0.0155	0.0063	<0.005	0.0273	0.0093	0.0366
	P74-ROX-080612	8/6/2012	44.43 - 69.43	40.71	NE	<0.05 UJ	<0.05	<0.01	<0.05	0.159	<0.05	<0.05	<0.01	0.187	0.0663	<0.05 UJ	0.388	0.125	0.512
P-93A	P93A-102610	10/26/2010	48.17 - 63.17	40.75	NE		<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<12.5	0.543 J	<1.25	
	P93A-ROX_012611	1/26/2011		40.97	NE		0.0225	0.124	0.0254	0.0654	0.0026 J	0.0015 J	0.0017	0.21	0.045	<0.005 UJ	0.622	0.0705	
	P93A-ROX-050511	5/5/2011		41.88	NE	<0.005 UJ	0.0206 J	0.0684 J	0.0228 J	0.0718 J	<0.005	<0.005	<0.001	0.169 J	0.0293 J	<0.005	0.628 J	0.0707 J	0.699 J
	P93A-ROX-081811	8/18/2011		38.86	NE	<0.005	0.0236 J	0.0356	0.0254	0.0678	<0.005	<0.005	<0.001	0.237	0.0495	<0.005 UJ	0.745	0.09	0.835
	P93A-ROX-102611	10/26/2011		39.43	NE	<0.005	0.0189	0.0405	0.0172	0.0438	<0.005 UJ	<0.005	<0.001	0.171	0.0399	<0.005	0.482	0.0614	0.543
	P93A-ROX-012012	1/20/2012		41.66	NE	0.0041 J	0.0134	0.0604	0.0134	0.0196	<0.005	<0.005	<0.001	0.101	0.025	<0.005 UJ	0.292	0.0416	0.333
	P93A-ROX-050812	5/8/2012		42.75	NE	<0.005 UJ	0.0218 J	0.0557 J	0.0239 J	0.0407 J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.194 J	0.0416 J	<0.005 UJ	0.647 J	0.0841 J	0.731 J
	P93A-ROX-080912	8/9/2012	48.17 - 63.17	43.66	NE	<0.005	0.0126	0.0485	0.0137	0.0091	<0.005	<0.005	<0.001	0.145	0.0273	<0.005	0.436	0.0642	0.5
P-93B	P93B-102610	10/26/2010	74.60 - 76.60	40.73	NE		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	<0.5	
	P93B-ROX_012611	1/26/2011		41.03	NE		0.0108	0.0088	0.011	0.0321	<0.005	<0.005	<0.001	0.0052	0.0016 J	<0.005 UJ	0.0555	0.0092	
	P93B-ROX-050511	5/5/2011		41.96	NE	<0.005 UJ	0.0142	0.0113	0.0151	0.0488	<0.005	<0.005	<0.001	0.0057	0.0014 J	<0.005	0.0502	0.0112	0.0614
	P93B-ROX-081811	8/18/2011		38.91	NE	<5	<5	<1	<5	<1	<5	<5	<1	<5	<5	<5	<1	<1	<1
	P93B-ROX-102611	10/26/2011		39.48	NE	<0.005	0.0292	<0.001	0.0359	0.0859	<0.005 UJ	<0.005	<0.001	0.0303	0.0082	<0.005	0.167	0.0352	0.202
	P93B-ROX-012012	1/20/2012		41.72	NE	<0.005	0.022 J	0.0063 J	0.0244 J	0.0678 J	<0.005	<0.005	<0.001	0.0114 J	0.0028 J J	<0.005 UJ	0.0598 J	0.0224 J	0.0822 J
	P93B-ROX-050812	5/8/2012		42.79	NE	<0.005	0.0188 J	<0.001	0.0272 J	0.0512 J	<0.005	<0.005	<0.001	0.0196 J	0.0054 J	<0.005	0.116 J	0.0251 J	0.141 J
	P93B-ROX-080912	8/9/2012	74.60 - 76.60	43.69	NE	<0.005	0.0266	<0.001	0.0406	0.0786	<0.005	<0.005	<0.001	0.0372	0.0107	<0.005	0.245	0.0468	0.292

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						VOCs													
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	2-Hexanone (Methyl N-Butyl Ketone)	sopropylbenzene (Cumene)	Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl acetate	m,p-Xylene	o-Xylenes	Xylenes (total)
Screening Values (mg/L)							0.7 [3]	0.070 [1]	0.7 [3]	1 [1]	0.0056 [3]	0.02 [2]	0.005 [2]		0.07 [3]	7.0 [2]	10		10 [1]
P-93C	P93C-102610	10/26/2010	94.26 - 96.26	40.69	NE		<0.005	0.00136 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	P93C-ROX_012611	1/26/2011		40.91	NE		0.0019 J	0.0014	0.0013 J	0.0067	<0.005	<0.005	<0.001	0.0025 J	<0.005	<0.005 UJ	0.0051	0.0035	
	P93C-ROX-050611	5/6/2011		41.84	NE	<0.005 UJ	<0.005	0.0052	<0.005	0.0018	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	0.00059 J
	P93C-ROX-081811	8/18/2011		38.79	NE	<0.005	<0.005	0.0067	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	P93C-ROX-102611	10/26/2011		39.36	NE	<0.005	<0.005	0.0096	<0.005	<0.001	<0.005 UJ	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93C-ROX-012012	1/20/2012		41.57	NE	<0.005	<0.005	0.006	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93C-ROX-050812	5/8/2012		42.68	NE	<0.005	<0.005	0.004	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93C-ROX-080912	8/9/2012	94.26 - 96.26	43.57	NE	<0.005	<0.005	0.0053	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
P-93D	P93D-102610	10/26/2010	125.75 - 127.75	40.59	NE		<0.005	0.0122	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	
	P93D-ROX-050511	5/5/2011		41.96	NE	<0.005 UJ	<0.005	0.0014	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93D-ROX-081811	8/18/2011		38.94	NE	<0.005	<0.005	0.00095 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005 UJ	<0.001	<0.001	<0.001
	P93D-ROX-102711	10/27/2011		39.59	NE	<0.005	<0.005	0.004 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93D-ROX-012012	1/20/2012		41.77	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93D-ROX-050812	5/8/2012		42.96	NE	<0.005	<0.005	0.00077 J	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	P93D-ROX-080812	8/8/2012	125.75 - 127.75	43.71	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
ROST-3-PZ	ROST3PZ-ROX-051412	5/14/2012	40.00 - 50.00	38.82	NE	<0.005	<0.005	<0.001	0.00096 J	0.0038	<0.005	<0.005	<0.001	0.0095	0.0023 J	<0.005	0.0607	0.0151	0.0758
	ROST3PZ-ROX-080712	8/7/2012	40.00 - 50.00	39.00	NE	<0.005	<0.005	<0.001	<0.005	0.0015	<0.005	<0.005	<0.001	0.0042 J	0.0012 J	<0.005	0.0289	0.0074	0.0363
ROST-4-PZ(C)	ROST4PZ-C-051412	5/14/2012	35.25 - 45.25	39.04	NE	<0.005	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001
	ROST4PZ-C-ROX-072512	7/25/2012	35.25 - 45.25	39.10	NE	<0.005	0.0036 J	<0.001	0.0059	0.0596	<0.005	<0.005	<0.001	0.0374	0.0076	<0.005	0.373	0.207	0.581
T-12	T12-ROX-102711	10/27/2011	46.46 - 72.46	38.54	NE	<0.05	<0.05	<0.01	<0.05	0.233	<0.05	<0.05	<0.01	0.358	0.0527	<0.05	1.13	0.108	1.24
	T12-ROX-011912	1/19/2012		41.0	NE	<0.005	0.022	0.0016	0.03	0.175	<0.005	<0.005	<0.001	0.34	0.0715	0.0952	0.684	0.0399	0.724
	T12-ROX-050912	5/9/2012		42.62	NE	<0.025	0.0572	<0.005	0.101	0.388	<0.025	<0.025	<0.005	0.476	0.0765	<0.025	2.87	0.251	3.12
	T12-ROX-080212	8/2/2012	46.46 - 72.46	41.92	NE	<0.05	0.0297 J	<0.01	0.0486 J	0.197	<0.05	<0.05	<0.01	0.403	0.0474 J	<0.05	1.32	0.0709	1.39

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
MW-01	MW-1-111110	11/11/2010	43.41 - 58.41	36.91	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW-1-111110-Dup	11/11/2010		36.91	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.049		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW1-ROX-011711	1/17/2011		37.58	NE	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.013		<0.0063	<0.0025	<0.0063	<0.0063	<0.0063	<0.0063	<0.013	<0.0063	<0.013
	MW1-ROX-042911	4/29/2011		38.37	NE	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.013 UJ	<0.013	<0.0063	<0.00077 U	<0.0063	<0.0063	<0.0063	<0.0063	<0.013	<0.0063	<0.013
	MW1-ROX-072711	7/27/2011		35.15	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW1-ROX-120511	12/5/2011		37.10	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000056 U	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW1-ROX-011612	1/16/2012	49.98 - 59.98 [5]	37.75	NE	0.000077 J	0.000035 J	0.000062 J	0.00011	0.0001	0.00011	<0.00011 U	0.00012	<0.01 UJ	<0.01	<0.0051	<0.002	<0.00039 U	0.00011	<0.00011 U	<0.0051	<0.01	<0.0051	<0.01
	MW1-ROX-050112	5/1/2012		39.09	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW1-ROX-073012	7/30/2012	49.98 - 59.98 [6]	39.39	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	0.00032 J	<0.011
MW-02	MW-2-111010	11/11/2010	47.19 - 62.19	38.12	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.003 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW2-ROX-011711	1/17/2011		38.67	NE	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.0082 J		<0.0048	0.25	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	0.0022 J
	MW02-ROX-051011	5/10/2011		39.14	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.000052 UJ	<0.0001 UJ	<0.000052 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	0.0019 J	<0.0052	<0.0029 U	<0.0052 UJ	<0.0001 UJ	<0.0001 UJ	<0.0052	<0.01	0.0016 J J	<0.01
	MW2-ROX-072711	7/27/2011		36.36	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW2-ROX-072711-DUP	7/27/2011		36.36	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW2-ROX-112811	11/28/2011		38.03	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW2-ROX-011612	1/16/2012	51.32 - 61.32 [6]	38.89	NE	0.000057 J	<0.00011	<0.00011	<0.000053	0.000033 J	0.00004 J	<0.000047 U	<0.00011	<0.011 UJ	<0.011	<0.0053	<0.00083 U	<0.00047 U	<0.00011	<0.000047 U	<0.0053	<0.011	<0.0053	0.0035 J
	MW2-ROX-050112	5/1/2012		40.25	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	0.0055 J
	MW2-ROX-073012	7/30/2012	51.32 - 61.32 [6]	40.60	NE	0.000051 J	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	0.00059 J	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	0.00036 J	0.0045 J
MW-03	MW-3-111210	11/12/2010	30.98 - 45.98	24.05	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW3-ROX-011811	1/18/2011		24.92	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011		<0.0053	0.00062 J	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.0053	<0.011
	MW03-ROX-051011	5/10/2011		24.79	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.0025 U	0.0064 J	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.005 UJ	<0.01
	MW3-ROX-080311	8/3/2011		22.40	NE	<0.000095	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095 UJ	<0.0095	<0.0048	0.0084	<0.0048	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095
	MW3-ROX-112911	11/29/2011		24.06	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	MW3-ROX-112911-DUP	11/29/2011		24.06	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW3-ROX-011612	1/16/2012	34.67 - 44.67 [6]	24.93	NE	<0.0001	<0.0001	0.000063 J	0.00011	0.00012	0.00013	<0.00013 U	0.00012	<0.01 UJ	<0.01	<0.0052	<0.0004 U	<0.00039 U	0.000098 J	<0.00013 U	<0.0052	<0.01	<0.0052	<0.01
	MW3-ROX-043012	4/30/2012		26.19	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	MW3-ROX-072712	7/27/2012	34.67 - 44.67 [6]	26.60	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011 UJ	<0.00011	<0.011	<0.011	<0.0053	<0.00067 U	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	<0.0053	<0.011
MW-04	MW-4-111210	11/12/2010	42.63 - 57.63	35.38	NE	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.047		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	MW4-ROX-011811	1/18/2011		36.04	NE	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.01		<0.0052	<0.0021	<0.0052	<0.0052	<0.0052	<0.0052	<0.01	<0.0052	<0.01
	MW04-ROX-051111	5/11/2011		36.19	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.0023 U	0.0063 J	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.005 UJ	<0.01
	MW4-ROX-072611	7/26/2011		33.65	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	0.0102	<0.01	<0.005	<0.0057 U	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW4-ROX-072611-DUP	7/26/2011		33.65	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	0.0103	<0.01	<0.005	<0.002 U	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW4-ROX-121511	12/15/2011		33.99	NE	<0.0001	0.00011	<0.0001	<0.000052	0.00012	<0.000087 U	<0.00063 U	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0028 U	<0.0052	<0.0001	<0.00035 U	<0.0052	<0.01	<0.0052	<0.01
	MW4-ROX-011612	1/16/2012	46.06 - 56.06 [6]	36.00	NE	<0.0001	<0.0001	0.00003 J	0.00012	0.00012	0.00013	<0.0002 U	0.00015	<0.01 UJ	<0.01	<0.0052	<0.0005 U	<0.00073 U	0.00014	<0.00019 U	<0.0052	<0.01	<0.0052	<0.01
	MW4-ROX-050312	5/3/2012		37.45	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW4-ROX-050312-DUP	5/3/2012		37.45	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW4-ROX-072512	7/25/2012	46.06 - 56.06 [6]	37.63	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	0.0056 J	<0.01	<0.0051	<0.00079 U	0.00039 J	<0.0001	<0.0001	<0.002	<0.01	0.0014 J	<0.01
	MW4-ROX-072512-Dup	7/25/2012		37.63	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000046 U	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.00069 U	<0.0051	<0.0001	<0.0001	<0.002	<0.01	0.0012 J	<0.01

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
MW-05	MW-5-111210	11/12/2010	31.13 - 46.13	23.32	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW5-ROX-011811	1/18/2011		24.15	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	0.0009 J	<0.011
	MW05-ROX-051211	5/12/2011		23.98	NE	<0.00011 UJ	<0.00011 UJ	<0.00011 UJ	<0.000053 UJ	<0.00011 UJ	<0.000053 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011 UJ	<0.00011 UJ	<0.0053	<0.011	<0.0053	<0.011
	MW5-ROX-072611	7/26/2011		21.72	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW5-ROX-072611-DUP	7/26/2011		21.72	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW5-ROX-112111	11/21/2011		23.46	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0053	0.00079 J	<0.0053	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW5-ROX-011712	1/17/2012	33.97 - 43.97[6]	24.76	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0053	<0.0015 U	<0.00049 U	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW5-ROX-050312	5/3/2012		25.89	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW5-ROX-072512	7/25/2012	33.97 - 43.97[6]	26.18	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.00064 U	<0.0052	<0.0001	<0.0001	<0.0021	<0.01	0.0011 J	<0.01
MW-06A	MW-6A-110910	11/9/2010	31.98 - 46.98	25.62	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6A-ROX-011911	1/19/2011		26.36	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0044 J J		<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	<0.0019 U	<0.01
	MW6A-ROX-051611	5/16/2011		26.10	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	0.0026	<0.005	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.00083 U	<0.01
	MW6A-ROX-072611	7/26/2011		24.07	NE	0.00024	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002 U	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW6A-ROX-112111	11/21/2011		25.49	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	0.0023	0.00077 J	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	MW6A-ROX-112111-DUP	11/21/2011		25.49	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	0.0011 J	0.00054 J	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW6A-ROX-011712	1/17/2012	34.83 - 44.83[6]	26.74	NE	<0.00011	<0.00011	<0.00011	<0.000064 U	<0.00008 U	<0.00009 U	<0.00015 U	0.000094 J	<0.011 UJ	<0.011	<0.0054	<0.0022	<0.0054	<0.00011	<0.00014 U	<0.0054	<0.011	<0.0054	<0.011
	MW6A-ROX-050212	5/2/2012		27.77	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.0029 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW6A-ROX-080112	8/1/2012	34.83 - 44.83[6]	28.36	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.005	<0.01
MW-06B	MW-6B-111610	11/16/2010	64.05 - 69.05	25.47	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6B-ROX-011911	1/19/2011		26.21	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01 UJ		<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	<0.00087 U	<0.01
	MW6B-ROX-011911-DUP	1/19/2011		26.21	NE	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01 UJ		<0.0051	<0.002	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.001 U	<0.01
	MW6B-ROX-051611	5/16/2011		25.95	NE	<0.000095 UJ	0.000098 J	<0.000095 UJ	<0.000048 UJ	<0.000095 UJ	<0.000048 UJ	<0.000095 UJ	<0.000095 UJ	<0.0095	<0.0095	<0.0048	0.0023	<0.0048	<0.000095 UJ	<0.000095 UJ	<0.0048	<0.0095	<0.00078 U	<0.0095
	MW6B-ROX-051611-DUP	5/16/2011		25.95	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	0.0024	<0.005	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.00096 U	<0.01
	MW6B-ROX-072311	7/23/2011		23.60	NE	<0.00011	<0.00011	<0.00011	<0.00075 U	<0.0002 U	<0.00019 U	<0.00007 U	<0.00023 U	<0.011 UJ	<0.011	<0.0053	0.00077 J	<0.0053	<0.0008 U	<0.000031 U	<0.0053	<0.011	<0.0053	<0.011
	MW6B-ROX-110311	11/3/2011		24.67	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01 UJ
	MW6B-ROX-011712	1/17/2012		26.77	NE	<0.00011	<0.00011	<0.00011	<0.000055	<0.00015 U	<0.00011 U	<0.00028 U	0.0001 J	<0.011 UJ	<0.011	<0.0055	<0.0011 U	<0.0055	<0.00011	<0.00027 U	<0.0055	<0.011	<0.0055	<0.011
	MW6B-ROX-050212	5/2/2012		27.82	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW6B-ROX-080112	8/1/2012	64.05 - 69.05	27.92	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	0.00049 J	<0.0051	<0.0001	<0.0001	<0.002	<0.01	<0.0051	<0.01
MW-06C	MW-6C-111610	11/16/2010	84.95 - 89.95	25.25	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6C-ROX-012111	1/21/2011		25.97	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011 UJ		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.00084 U	<0.011
	MW6C-ROX-051611	5/16/2011		25.76	NE	<0.0001 UJ	0.000046 J J	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	0.0025	0.0064	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.00063 U	<0.01
	MW6C-ROX-072411	7/24/2011		23.43	NE	<0.00011	<0.00011	<0.00011	0.00016 B	0.00013 B	0.00014 B	0.000041 J	0.00016 B	<0.011 UJ	<0.011	<0.0053	<0.0021	<0.0053	0.00015 B	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW6C-ROX-110311	11/3/2011		24.47	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01 UJ
	MW6C-ROX-011712	1/17/2012		26.50	NE	<0.00011	<0.00011	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0054	<0.0022	<0.00046 U	<0.00011	<0.00011	<0.0054	<0.011	<0.0054	<0.011
	MW6C-ROX-050212	5/2/2012		27.62	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW6C-ROX-080112	8/1/2012	84.95 - 89.95	28.15	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.005	<0.01

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(e)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
MW-06D	MW-6D-111610	11/16/2010		25.13	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.051		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6D-ROX-012111	1/21/2011		25.87	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011 UJ		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.001 U	<0.011
	MW6D-ROX-051611	5/16/2011		25.60	NE	<0.00011 UJ	<0.00011 UJ	<0.00011 UJ	<0.000055 UJ	<0.00011 UJ	<0.000055 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0055	0.0027	0.0069	<0.00011 UJ	<0.00011 UJ	<0.0055	<0.011	<0.00085 U	<0.011
	MW6D-ROX-072311	7/23/2011	104.72 - 109.72	23.29	NE	<0.00011	<0.00011	<0.00011	<0.00038 U	<0.00015 U	<0.00017 U	<0.000049 U	<0.00019 U	<0.011 UJ	<0.011	<0.0053	<0.0021	<0.0053	<0.00039 U	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW6D-ROX-110311	11/3/2011		24.31	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01 UJ
	MW6D-ROX-011712	1/17/2012		26.33	NE	<0.00011	<0.00011	<0.00011	<0.000055	<0.00011	<0.000055	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0055	<0.0022	<0.0055	<0.00011	<0.00011	<0.0055	<0.011	<0.0055	<0.011
	MW6D-ROX-050212	5/2/2012		27.45	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.0044 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW6D-ROX-080212	8/2/2012	104.72 - 109.72	30.56	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.002	<0.01	0.00022 J	<0.01
MW-07	MW-7-111710	11/17/2010		36.93	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.005 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW-7-111710-Dup	11/17/2010		36.93	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05		<0.01	<0.007 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW7-ROX-012511	1/25/2011		37.52	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.003 U	<0.011
	MW07-ROX-051311	5/13/2011		37.50	NE	0.00011 J	<0.00011 UJ	0.000031 J J	<0.00054 UJ	<0.00011 UJ	<0.00054 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0054	<0.0032 U	<0.0071 U	<0.00011 UJ	<0.00011 UJ	<0.0054	<0.011	<0.00097 U	<0.011
	MW07-ROX-051311D	5/13/2011		37.50	NE	0.00011 J	<0.00011 UJ	0.000034 J J	<0.000055 UJ	0.000018 J J	<0.000055 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0055	<0.0035 U	<0.007 U	<0.00011 UJ	<0.00011 UJ	<0.0055	<0.011	<0.0055	<0.011
	MW7-ROX-072411	7/24/2011	42.92 - 52.92	35.22	NE	0.0001 J	<0.00011	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0054	<0.0022	<0.0054	0.000018 J	<0.00011	<0.0054	<0.011	<0.0054	<0.011
	MW-7-ROX-110211	11/2/2011		35.95	NE	<0.00026 U	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01 UJ
	MW7-ROX-011812	1/18/2012		38.10	NE	0.00025	<0.0001	<0.0001	<0.00005	<0.000024 U	<0.00005	<0.0001	<0.0001		<0.01 UJ	<0.005	<0.002	0.00049 J	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW7-ROX-011812-DUP	1/18/2012		38.10	NE	0.00027	<0.00011	<0.00011	<0.000056	<0.00003 U	<0.000056	<0.00011	<0.00011		<0.011 UJ	<0.0056	0.00044 J	0.00048 J	<0.00011	<0.00011	<0.0056	<0.011	<0.0056	<0.011
	MW7-ROX-050412	5/4/2012		39.19	NE	0.00028	<0.0001	<0.0001	0.00011	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.00071 J	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW7-ROX-080712	8/7/2012	42.92 - 52.92	39.50	NE	0.00024	0.000037 J	0.000022 J	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	0.0006 J	<0.0051	<0.0001	<0.0001	<0.002	<0.01	<0.00058 U	<0.01
MW-08	MW-8-111710	11/17/2010		27.84	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.006 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.018
	MW8-ROX-012511	1/25/2011		28.59	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01		<0.005	0.00086 J	<0.005	<0.005	<0.005	<0.005	<0.01	<0.0025 U	0.0233
	MW8-ROX-012511-DUP	1/25/2011		28.59	NE	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.011		<0.0057	0.0012 J	<0.0057	<0.0057	<0.0057	<0.0057	<0.011	0.0125	0.0299
	MW08-ROX-051311	5/13/2011		28.35	NE	0.00035 J	<0.00011 UJ	0.000063 J J	<0.000055 UJ	<0.00011 UJ	<0.000055 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0055	<0.0031 U	<0.0055	<0.00011 UJ	<0.00011 UJ	<0.0055	<0.011	<0.0018 U	0.0225
	MW08-ROX-051311D	5/13/2011		28.35	NE	0.00029 J	<0.00011 UJ	0.000054 J J	<0.000056 UJ	<0.00011 UJ	<0.000056 UJ	<0.00011 UJ	<0.00011 UJ	<0.011	<0.011	<0.0056	<0.0034 U	<0.0056	<0.00011 UJ	<0.00011 UJ	<0.0056	<0.011	<0.0011 U	0.0232
	MW8-ROX-072411	7/24/2011	33.60 - 43.60	26.02	NE	0.00029	<0.00011	0.000067 J	0.00013 B	0.00016 B	0.00016 B	0.000048 J	0.00017 B	<0.011 UJ	<0.011	<0.0054	0.0019 J	<0.0054	0.000099 JB	<0.00011	<0.0054	<0.011	<0.0054	0.0228
	MW8-ROX-072411-DUP	7/24/2011		26.02	NE	0.00027	<0.00011	0.000062 J	0.00012 B	0.00019 B	0.00018 B	0.000058 J	0.00021 B	<0.011 UJ	<0.011	<0.0055	0.0013 J	<0.0055	0.000099 JB	<0.00011	<0.0055	<0.011	<0.0055	0.0213
	MW-8-ROX-110211	11/2/2011		27.02	NE	<0.00023 U	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095	<0.0095	<0.0048	<0.0019	<0.0048	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	0.0383 J
	MW8-ROX-011812	1/18/2012		29.15	NE	0.00038 J	<0.00053	<0.00053	<0.00026	<0.00053	<0.00026	<0.00053	<0.00053		<0.011 UJ	<0.0053	0.00052 J	0.00042 J	<0.00053	<0.00053	0.0006 J	<0.011	<0.0053	0.015
	MW8-ROX-050412	5/4/2012		30.21	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	0.0204	<0.011	<0.0053	0.00053 J	<0.0053	<0.00011	<0.00011	0.00044 J	<0.011	<0.0053	0.0595
	MW8-ROX-050412-DUP	5/4/2012		30.21	NE	<0.0001	<0.0001	<0.0001	0.00012	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.00047 J	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	0.0557
	MW8-ROX-080712	8/7/2012	33.60 - 43.60	30.97	NE	0.00023	0.00013	0.000055 J	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011	<0.011	<0.0054	0.00051 J	<0.0054	<0.00011	<0.00011	0.00035 J	<0.011	<0.0016 U	0.015
	MW8-ROX-080712-DUP	8/7/2012		30.97	NE	0.0002	0.00029	0.000071 J	<0.000056	<0.00011	<0.000056	<0.00011	<0.00011	<0.011	<0.011	<0.0056	0.00043 J	<0.0056	<0.00011	<0.00011	0.0004 J	<0.011	<0.0018 U	0.0158
MW-09	MW-9-111510	11/15/2010		39.00	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.001 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW9-ROX-012111	1/21/2011		39.62	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011 UJ		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.001 U	<0.011
	MW09-ROX-050611	5/6/2011		40.12	NE	<0.000097 UJ	<0.000097 UJ	<0.000097 UJ	<0.000049 UJ	<0.000097 UJ	<0.000049 UJ	<0.000097 UJ	<0.000097 UJ	<0.0097	<0.0097	<0.0049	<0.0019	<0.0049	<0.000097 UJ	<0.000097 UJ	<0.0049	<0.0097	<0.0018 U	<0.0097
	MW9-ROX-072311	7/23/2011	46.45 - 56.45	37.27	NE	<0.00011	<0.00011	<0.00011	<0.00021 U	<0.00013 U	<0.00015 U	<0.000046 U	<0.00018 U	<0.01 UJ	<0.011	<0.0054	<0.0022	<0.0054	<0.0002 U	<0.00011	<0.0054	<0.01 UJ	<0.0054	<0.01 UJ
	MW9-ROX-110111	11/1/2011		37.78	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW9-ROX-011612	1/16/2012		39.50	NE	<0.00011	<0.00011	<0.00011	<0.000057	0.000058 J	0.000051 J	<0.000096 U	<0.00011	<0.011 UJ	<0.011	<0.0057	<0.00085 U	<0.00037 U	<0.00011	<0.000078 U	<0.0057	<0.011	<0.0057	<0.011
	MW9-ROX-050312	5/3/2012		41.03	NE												0.0016 J J	0.00045 JB J						
	MW9-ROX-072712	7/27/2012	46.45 - 56.45	41.30	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001 UJ	<0.0001	<0.01	<0.01	<0.005	<0.00043 U	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.005	<0.01
MW-10	MW-10-111010	11/10/2010		38.97	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW10-ROX-012411	1/24/2011		39.40	NE	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01		<0.0051	0.00068 J	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.001 U	<0.01
	MW10-ROX-012411-DUP	1/24/2011		39.40	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01		<0.005	0.00071 J	<0.005	<0.005	<0.005	<0.005	<0.01	<0.0012 U	<0.01
	MW10-ROX-042811	4/28/2011	44.43 - 54.43	40.20	NE	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095 UJ	<0.0095	<0.0048	<0.00051 U	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.0095
	MW10-ROX-072311	7/23/2011		37.24	NE	<0.0001	<0.0001	<0.0001	<0.00025 U	<0.00013 U	<0.00014 U	<0.000039 U	<0.00017 U	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	<0.00027 U	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW10-ROX-110111	11/1/2011		37.72	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW10-ROX-011612	1/16/2012		39.28	NE	<0.00011	<0.00011	0.000027 J	0.000037 J	0.000031 J	0.000043 J	<0.000042 U	<0.00011	<0.011 UJ	<0.011	<0.0053	0.0255	<0.0013 U	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW10-ROX-050112	5/1/2012		40.86	NE	<0.0001	<0.0001	0.000018 J	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	MW10-ROX-072712	7/27/2012	44.43 - 54.43	41.21	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001 UJ	<0.0001	<0.01	<0.01	<0.005	<0.00067 U	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.005	<0.01

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
MW-11	MW-11-111710	11/17/2010	41.66 - 51.66	36.39	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.003 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW11-ROX-012411	1/24/2011		37.15	NE	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.01		<0.0052	0.00073 J	<0.0052	<0.0052	<0.0052	<0.0052	<0.01	<0.001 U	<0.01
	MW11-ROX-050611	5/6/2011		37.60	NE	<0.000095 UJ	<0.000095 UJ	<0.000095 UJ	<0.000042 UJ	<0.000095 UJ	0.000025 J J	0.000022 J J	0.000014 J J	<0.0095	<0.0095	<0.0048	<0.0028 U	<0.0048	0.000037 J J	<0.000095 UJ	<0.0048	<0.0095	<0.0009 U	<0.0095
	MW11-ROX-072411	7/24/2011		34.68	NE	<0.00011	<0.00011	<0.00011	0.00013 B	0.00012 B	0.00013 B	0.000035 J	0.00014 B	<0.011 UJ	<0.011	<0.0056	<0.0022	<0.0056	0.00013 B	<0.00011	<0.0056	<0.011	<0.0056	<0.011
	MW-11-ROX-110211	11/2/2011		35.44	NE	<0.00011	<0.00011	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011	<0.011	<0.0054	<0.0022	<0.0054	<0.00011	<0.00011	<0.0054	<0.011	<0.0054	<0.011 UJ
	MW11-ROX-011712	1/17/2012		37.44	NE			0.000022 J J					0.000065 J J											
	MW11-ROX-043012	4/30/2012		38.66	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW11-ROX-072712	7/27/2012	41.66 - 51.66	38.90	NE	<0.00012	<0.00012	<0.00012	<0.000058	<0.00012	<0.000058	<0.00012 UJ	<0.00012	<0.012	<0.012	<0.0058	<0.00056 U	<0.0058	<0.00012	<0.00012	<0.0023	<0.012	<0.0058	<0.012
MW-12	MW-12-111510	11/15/2010	41.92 - 51.92	36.63	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.003 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW12-ROX-012411	1/24/2011		37.42	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01		<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	<0.00077 U	<0.01
	MW12-ROX-051211	5/12/2011		37.58	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.002	<0.005	0.000019 J J	<0.0001 UJ	<0.005	<0.01	<0.005	<0.01
	MW12-ROX-072411	7/24/2011		34.88	NE	<0.0001	<0.0001	<0.0001	0.000072 B	0.00014 B	0.00014 B	0.000053 J	0.00019 B	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	0.000072 JB	0.000031 JB	<0.005	<0.01 UJ	<0.005	<0.01 UJ
	MW-12-ROX-110211	11/2/2011		35.70	NE	<0.000095	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095	<0.0095	<0.0048	<0.0019	<0.0048	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095 UJ
	MW-12-ROX-110211-DUP	11/2/2011		35.70	NE	<0.000095	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095	<0.0095	<0.0048	<0.0019	<0.0048	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095 UJ
	MW12-ROX-011712	1/17/2012		37.70	NE	<0.00011	<0.00011	<0.00011	<0.000054	<0.00016 U	<0.00013 U	<0.00021 U	0.00013	<0.011 UJ	<0.011	<0.0054	<0.0022	<0.00029 U	<0.00011	<0.00021 U	<0.0054	<0.011	<0.0054	<0.011
	MW12-ROX-011712-DUP	1/17/2012		37.70	NE	<0.00011	<0.00011	<0.00011	<0.000056	<0.000039 U	<0.00004 U	<0.000067 U	<0.00011	<0.011 UJ	<0.011	<0.0056	<0.0022	<0.00033 U	<0.00011	<0.000051 U	<0.0056	<0.011	<0.0056	<0.011
	MW12-ROX-043012	4/30/2012		38.98	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	MW12-ROX-072712	7/27/2012	41.92 - 51.92	39.22	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011 UJ	<0.00011	<0.011	<0.011	<0.0053	<0.0019 U	0.00029 J	<0.00011	<0.00011	<0.0021	<0.011	<0.0053	<0.011
MW-13	MW13-ROX-012511	1/25/2011	25.57 - 35.57	24.28	NE	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.01		<0.0052	<0.0021	<0.0052	<0.0052	<0.0052	<0.0052	<0.01	<0.0027 U	<0.01
	MW13-ROX-051311	5/13/2011		23.65	NE	<0.000099 UJ	0.000067 J J	0.000059 J J	0.000042 J J	0.000016 J J	<0.00005 UJ	<0.000099 UJ	<0.000099 UJ	<0.0099	<0.0099	<0.005	<0.0027 U	<0.005	0.000059 J J	<0.000099 UJ	<0.005	<0.0099	<0.00086 U	<0.0099
	MW13-ROX-080311	8/3/2011		21.88	NE	<0.0001	<0.0001	0.00011	0.000037 J	0.000039 J	0.000037 J	0.000053 J	0.000036 J	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	0.000036 J	<0.0001	<0.005	<0.01	<0.005	<0.01
	MW13-ROX-110311	11/3/2011		22.85	NE	<0.00011	<0.00011	<0.00011	<0.000056	<0.00011	<0.000056	<0.00011	<0.00011	<0.011	<0.011	<0.0056	<0.0022	<0.0056	<0.00011	<0.00011	<0.0056	<0.011	<0.0056	<0.011 UJ
	MW13-ROX-012012	1/20/2012		24.77	NE	<0.00011	0.00014	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	0.0087 J J	<0.011	<0.0053	<0.0007 U	<0.0007 U	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW13-ROX-050712	5/7/2012		25.79	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	MW13-ROX-080812	8/8/2012	25.57 - 35.57	26.67	NE	0.0001 J	0.00019	0.000063 J	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	<0.0053	<0.011
MW-14	MW14-ROX-110911	11/9/2011	33.42 - 43.42		NE	<0.00011	<0.00011 UJ	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	MW14-ROX-051012	5/10/2012			NE	0.00046	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.00042 U	<0.0052	<0.0001	<0.0001	<0.0052	0.00084 J	<0.0052	<0.01
	MW14-ROX-080312	8/3/2012	33.42 - 43.42	29.87	NE	0.00095	0.00015	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	0.00049 J	<0.0053	<0.00011	<0.00011	0.00076 J	0.00096 J	<0.0053	<0.011
P-114	P114-ROX-102811	10/28/2011	32.67 - 52.67	24.73	NE	<0.000095	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095	<0.0095	<0.0048	0.0053	<0.0048	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095
	P114-ROX-012012	1/20/2012		27.17	NE	<0.0001	<0.0001	<0.0001	<0.000051	0.000055 J	0.00005 J	0.000058 J	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.0013 U	<0.00044 U	<0.0001	0.000053 J	<0.0051	<0.01	<0.0051	<0.01
	P114-ROX-050912	5/9/2012		28.09	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.0015 J	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P114-ROX-080912	8/9/2012	32.67 - 52.67	29.13	NE	<0.0001	0.000029 J	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.0039	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.005	<0.01
P-54	P-54-111710	11/17/2010	38.00 - 63.00	36.43	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.003 U	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	P54-ROX-012411	1/24/2011		37.24	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01		<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.01	<0.002 U	<0.01
	P54-ROX-051111	5/11/2011		37.37	NE	<0.00011 UJ	<0.00011 UJ	<0.00011 UJ	<0.000054 UJ	0.0001 J J	<0.000054 UJ	<0.00011 UJ	<0.00011 UJ	<0.01	<0.01	<0.005	<0.0024 U	<0.005 UJ	0.000019 J J	<0.00011 UJ	<0.005	<0.01	<0.005 UJ	<0.01
	P54-ROX-072411	7/24/2011		34.78	NE	<0.0001	<0.0001	<0.0001	0.000079 B	0.00014 B	0.00015 B	0.000053 J	0.00017 B	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	0.000081 JB	0.00002 JB	<0.005	<0.01	<0.005	<0.01
	P54-ROX-110311	11/3/2011		35.49	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	P54-ROX-011712	1/17/2012		37.17	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.000024 U	<0.000052	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P54-ROX-050412	5/4/2012		38.77	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	0.0045 J	<0.01	<0.0051	0.0133	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	P54-ROX-080212	8/2/2012	38.00 - 63.00	38.95	NE	<0.00011	<0.00011	<0.00011	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	<0.0053	<0.011
P-55	P55-ROX-103111	10/31/2011	39.82 - 64.82	39.15	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.0022	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	P55-ROX-011912	1/19/2012		41.09	NE	0.00017	<0.0001	<0.0001	<0.000052	0.000022 J	<0.000052	<0.0001	<0.0001		<0.01 UJ	<0.0052	<0.0021	<0.00048 U	<0.0001	<0.0001	0.00035 J	<0.01	<0.0052	<0.01
	P55-ROX-011912-D	1/19/2012		41.09	NE	0.00015	<0.00011	<0.00011	<0.000054	0.000067 J	0.000061	0.00011	0.000071 J		<0.011 UJ	<0.0054	<0.0022	<0.00035 U	<0.00011	0.000086 J	0.00033 J	<0.011	<0.0054	<0.011
	P55-ROX-050912	5/9/2012		42.44	NE	0.00036	0.000095 J	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
P-56	P56-ROX-102711	10/27/2011	40.82 - 65.82	39.42	NE	0.0007	0.00013	0.00013	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.0026	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P56-ROX-011912	1/19/2012		41.81	NE	0.00064	<0.0001	0.00011	<0.000051	0.000021 J	<0.000051	<0.0001	<0.0001		<0.01 UJ	<0.0051	<0.00066 U	<0.00053 U	<0.0001	<0.0001	0.00064 J	<0.01	<0.0051	<0.01
	P56-ROX-050812	5/8/2012		43.09	NE	0.00057	0.0001	<0.0001	<0.00011 U	<0.00012 U	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P56-ROX-080612	8/6/2012	40.82 - 65.82	43.60	NE	0.00058	0.000087 J	0.00013	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	0.00051 J	<0.01	<0.0014 U	<0.01
P-57	P57-ROX-110811	11/8/2011	40.46 - 65.46	39.20	NE	0.00055	<0.00054	<0.00054	<0.00027	<0.00054	<0.00027	<0.00054	<0.00054	<0.011	<0.011	<0.0054	<0.0022	<0.0054	<0.00054	<0.00054	<0.0054	<0.011	<0.0054	<0.011
	P57-ROX-021312	2/13/2012		42.13	NE	0.00056	<0.0001	<0.0001	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	0.00043 J	<0.00043 U	<0.0001	<0.0001	0.00087 J	<0.01	<0.0051	0.0045 J
	P57-ROX-050712	5/7/2012		42.92	NE	0.00033	<0.0001	<0.0001	0.00011	0.00012	<0.000052	<0.0001	<0.0001	<0.01	<0.01	0.0008 J	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P57-ROX-080612	8/6/2012	40.46 - 65.46	43.53	NE	0.00056	0.0001	0.000073 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	0.00079 J	<0.01	<0.00096 U	0.0029 J
	P57-ROX-080612-DUP	8/6/2012		43.53	NE	0.00051	0.0001	0.000064 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	0.00073 J	<0.01	<0.001 U	0.0029 J
P-58	P58-ROX-102811	10/28/2011	40.21 - 65.21	37.31	NE	0.0011	<0.000097	<0.000097	<0.000049	<0.000097	<0.000049	<0.000097	<0.000097	<0.0097	<0.0097	<0.0049	0.003	<0.0049	<0.000097	<0.000097	<0.0049	<0.0097	<0.0049	<0.0097
	P58-ROX-011912	1/19/2012		39.73	NE	0.001	<0.00011	<0.00011	0.000039 J	0.000051 J	0.000032 J	0.000047 J	<0.00011		<0.011 UJ	<0.0053	0.0361 J	<0.00059 U	<0.00011	<0.00011	0.0026 J	<0.011	<0.0053	<0.011
	P58-ROX-011912-D	1/19/2012		39.73	NE	0.00092	<0.00011	<0.00011	0.000036 J	0.000036 J	<0.000053	<0.00011	<0.00011		<0.011 UJ	<0.0053	0.024 J	<0.0053	<0.00011	<0.00011	0.0023 J	<0.011	<0.0053	<0.011
	P58-ROX-050712	5/7/2012		40.90	NE	0.00059	0.00019	0.00057 J	0.00017	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	0.0017 J	<0.01	<0.0051	<0.01
	P58-ROX-050712-DUP	5/7/2012		40.90	NE	0.00044	0.00015	<0.0001 UJ	0.00015	0.000032 J	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P58-ROX-080612	8/6/2012	40.21 - 65.21	41.63	NE	0.00086	0.00029	0.000094 J	0.00024	0.00011	0.000064	0.000043 J	<0.0001	<0.01	<0.01	<0.005	0.00043 J	<0.005	0.0001	<0.0001	0.0022	<0.01	<0.005	<0.01
	P58-ROX-080612-DUP	8/6/2012		41.63	NE	0.00098	0.0003	0.00011	0.00021	0.000098 J	0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.00042 J	<0.005	0.000099 J	<0.0001	0.0025	<0.01	<0.005	<0.01
P-59	P59-ROX-102711	10/27/2011	47.91 - 72.91	41.06	NE	0.00077	0.00012	0.00046	0.00019	<0.00011	0.000073	<0.00011	<0.00011	<0.011	<0.011	<0.0053	0.0028	<0.0053	0.00034	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	P59-ROX-011912	1/19/2012		42.88	NE	0.00036	<0.00011	0.00025	0.000055 J	0.000038 J	0.000037 J	0.000052 J	<0.00011		0.0011 J	<0.0057	<0.00079 U	<0.0011 U	0.000085 J	<0.00011	<0.0057	<0.011	<0.0057	0.0133
	P59-ROX-011912-DUP	1/19/2012		42.88	NE	0.00037	<0.0001	0.00015	0.00005 J	0.000029 J	0.000027 J	<0.0001	<0.0001		0.00091 J	<0.0051	<0.002	<0.00061 U	0.000074 J	<0.0001	0.00042 J	<0.01	<0.0051	0.0108
	P59-ROX-050912	5/9/2012		44.11	NE	0.00022	<0.0001	0.000095 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	0.0161	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	0.0085 J
	P59-ROX-080212	8/2/2012	47.91 - 72.91	44.07	NE	0.00042	0.0001 J	0.00014	0.00021	0.000036 J	0.000047 J	<0.00011	<0.00011	<0.011	<0.011	<0.0053	<0.0021	<0.0053	<0.00011	<0.00011	0.00036 J	<0.011	<0.0053	0.0088 J
P-66	P66-ROX-110111	11/1/2011	34.72 - 59.72	28.92	NE	0.0018	<0.0001	<0.0001	<0.000095 U	<0.0001	<0.000088 U	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.00011 U	<0.0001	<0.005	<0.01	<0.005	<0.01
	P66-ROX-051012	5/10/2012		32.48	NE	0.00078	<0.0001	<0.0001	<0.00005	<0.0001	0.000024 J	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.00053 U	<0.005	<0.0001	<0.0001	0.0018 J	<0.01	<0.005	<0.01
	P66-ROX-080312	8/3/2012	34.72 - 59.72	33.19	NE	0.00073	0.00025	<0.00011	0.00018	0.000066 J	0.00008	0.000066 J	<0.00011	<0.011	<0.011	<0.0053	0.00075 J	<0.0053	<0.00011	<0.00011	<0.0021	<0.011	<0.0053	<0.011
P-74	P74-ROX-103111	10/31/2011	44.43 - 69.43	36.26	NE	0.00033	0.00012	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	P74-ROX-011912	1/19/2012		38.77	NE	<0.000095	<0.000095	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095		<0.0095 UJ	<0.0048	<0.0019	<0.00043 U	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095
	P74-ROX-050712	5/7/2012		39.92	NE	<0.0001	<0.0001	<0.0001	0.00012	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P74-ROX-080612	8/6/2012	44.43 - 69.43	40.71	NE	0.00016	0.000056 J	0.000041 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.002	<0.01	<0.0012 U	0.0039 J
P-93A	P93A-102610	10/26/2010	48.17 - 63.17	40.75	NE	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.047		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	P93A-ROX_012611	1/26/2011		40.97	NE	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098 UJ		<0.0049	<0.002	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0014 U	<0.0098
	P93A-ROX-050511	5/5/2011		41.88	NE	0.00026 J	<0.0001 UJ	0.000035 J J	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001 UJ	<0.0001 UJ	0.00035 J	<0.01	<0.00073 U	<0.01
	P93A-ROX-081811	8/18/2011		38.86	NE	0.00036	<0.0001	0.000058 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.003	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.0029 U	<0.01
	P93A-ROX-102611	10/26/2011		39.43	NE	0.00024	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.0075	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	P93A-ROX-012012	1/20/2012		41.66	NE	0.00014	<0.000095	0.000032 J	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095 UJ	<0.0095	<0.0048	<0.006 U	<0.00053 U	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095
	P93A-ROX-050812	5/8/2012		42.75	NE	<0.0001	<0.0001	<0.0001	<0.0001 U	<0.00012 U	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	0.0029	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	P93A-ROX-080912	8/9/2012	48.17 - 63.17	43.66	NE	0.00015	<0.00011	0.000048 J	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	0.0032 J	<0.011	<0.0054	0.0153	<0.0054	<0.00011	<0.00011	<0.0022	<0.011	<0.0054	<0.011
P-93B	P93B-102610	10/26/2010	74.60 - 76.60	40.73	NE	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.047		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	P93B-ROX_012611	1/26/2011		41.03	NE	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.011 UJ		<0.0053	<0.0021	<0.0053	<0.0053	<0.0053	<0.0053	<0.011	<0.00086 U	<0.011
	P93B-ROX-050511	5/5/2011		41.96	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.005	<0.01
	P93B-ROX-081811	8/18/2011		38.91	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.001 J	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0021 U	<0.01
	P93B-ROX-102611	10/26/2011		39.48	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.0103	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P93B-ROX-012012	1/20/2012		41.72	NE	<0.000095	0.000028 J	<0.000095	<0.000048	<0.000095	<0.000048	<0.000095	<0.000095	<0.0095 UJ	<0.0095	<0.0048	<0.0033 U	<0.00033 U	<0.000095	<0.000095	<0.0048	<0.0095	<0.0048	<0.0095
	P93B-ROX-050812	5/8/2012		42.79	NE	<0.0001	<0.0001	<0.0001	<0.000051	<0.00012 U	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	P93B-ROX-080912	8/9/2012	74.60 - 76.60	43.69	NE	<0.00011	0.000087 J	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011	<0.011	<0.0054	0.0036	<0.0054	<0.00011	<0.00011	<0.0022	<0.011	<0.00051 U	<0.011

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Chrysene (1,2-Benzphenanthracene)	Dibenzo(a,h)anthracene	Dibenzofuran	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol
Screening Values (mg/L)						0.42 [2]	0.21 [3]	2.1 [2]	0.00013 [2]	0.0002 [1]	0.00018 [2]	0.21 [3]	0.00017 [2]	28 [4]	0.7 [3]	0.01 [2]	0.006 [2]	1.4 [2]	0.0015 [2]	0.0003 [2]	0.007 [3]	0.021 [2]	5.6 [2]	0.14 [2]
P-93C	P93C-102610	10/26/2010	94.26 - 96.26	40.69	NE	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.047		<0.009	<0.001 U	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	P93C-ROX_012611	1/26/2011		40.91	NE	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01 UJ		<0.0051	<0.002	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.00097 U	<0.01
	P93C-ROX-050611	5/6/2011		41.84	NE	<0.0001 UJ	0.000041 J J	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.0022 U	<0.005	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.005	<0.01
	P93C-ROX-081811	8/18/2011		38.79	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	0.0092	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.0015 U	<0.01
	P93C-ROX-102611	10/26/2011		39.36	NE	<0.0001	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	P93C-ROX-012012	1/20/2012		41.57	NE	<0.0001	<0.0001	<0.0001	<0.000051	0.000019 J	0.000027 J	<0.0001	<0.0001	<0.01 UJ	<0.01	<0.0051	<0.0096 U	<0.00037 U	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	P93C-ROX-050812	5/8/2012		42.68	NE	<0.00011	<0.00011	<0.00011	<0.00012 U	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	<0.011	<0.0053	0.008	<0.0053	<0.00011	<0.00011	<0.0053	<0.011	<0.0053	<0.011
	P93C-ROX-080912	8/9/2012	94.26 - 96.26	43.57	NE	0.000089 J	0.000022 J	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.0043	<0.0052	<0.0001	<0.0001	<0.0021	<0.01	<0.00046 U	<0.01
P-93D	P93D-102610	10/26/2010	125.75 - 127.75	40.59	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.048		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	P93D-ROX-050511	5/5/2011		41.96	NE	<0.0001 UJ	<0.0001 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.00005 UJ	<0.0001 UJ	<0.0001 UJ	<0.01	<0.01	<0.005	<0.0027 U	<0.005	<0.0001 UJ	<0.0001 UJ	<0.005	<0.01	<0.005	<0.01
	P93D-ROX-081811	8/18/2011		38.94	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.000015 U	<0.0001	<0.005	<0.01	<0.0018 U	<0.01
	P93D-ROX-102711	10/27/2011		39.59	NE	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	P93D-ROX-012012	1/20/2012		41.77	NE	<0.00011	<0.00011	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011 UJ	<0.011	<0.0054	<0.0022	<0.0054	<0.00011	<0.00011	<0.0054	<0.011	<0.0054	<0.011
	P93D-ROX-050812	5/8/2012		42.96	NE	<0.0001	<0.0001	<0.0001	<0.0001 U	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	<0.002	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	<0.01
	P93D-ROX-080812	8/8/2012	125.75 - 127.75	43.71	NE	0.00017	0.000051 J	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.0021 U	<0.0052	<0.0021	<0.0052	<0.0001	<0.0001	<0.0021	<0.01	<0.0052	<0.01
ROST-3-PZ	ROST3PZ-ROX-051412	5/14/2012	40.00 - 50.00	38.82	NE	0.000023 J	<0.0001	<0.0001	<0.000052	<0.0001	<0.000052	<0.0001	<0.0001	<0.01	<0.01	<0.0052	0.00065 J	<0.0052	<0.0001	<0.0001	<0.0052	<0.01	<0.0052	<0.01
	ROST3PZ-ROX-080712	8/7/2012	40.00 - 50.00	39.00	NE	<0.00011	<0.00011	<0.00011	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011	<0.011	<0.0054	<0.0022	0.0016 J	<0.00011	<0.00011	<0.0022	<0.011	0.0033 J	<0.011
ROST-4-PZ(C)	ROST4PZ-C-051412	5/14/2012	35.25 - 45.25	39.04	NE	0.00027	0.000072 J	0.00011	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	0.00027 J	<0.01	<0.005	<0.01
	ROST4PZ-C-ROX-072512	7/25/2012	35.25 - 45.25	39.10	NE	0.00039 B	<0.00011	<0.00018 U	<0.000053	<0.00011	<0.000053	<0.00011	<0.00011	<0.011	0.00042 J	<0.0053	<0.00051 U	<0.0053	<0.00011	<0.00011	0.00036 J	<0.011	0.0012 J	0.003 J
T-12	T12-ROX-102711	10/27/2011	46.46 - 72.46	38.54	NE	0.00079	0.00012	0.00017	<0.000051	<0.0001	<0.000051	<0.0001	<0.0001	<0.01	<0.01	<0.0051	0.0025	<0.0051	<0.0001	<0.0001	<0.0051	<0.01	<0.0051	0.0109
	T12-ROX-011912	1/19/2012		41.0	NE	0.00047	<0.00011	0.00014	<0.000056	0.000032 J	0.000035 J	0.000069 J	<0.00011		<0.011 UJ	<0.0056	<0.0017 U	<0.00062 U	<0.00011	0.00005 J	0.00029 J	<0.011	<0.0056	0.0095 J
	T12-ROX-050912	5/9/2012		42.62	NE	0.00032	<0.0001	0.000081 J	<0.00005	<0.0001	<0.00005	<0.0001	<0.0001	<0.01	<0.01	<0.005	<0.002	<0.005	<0.0001	<0.0001	<0.005	<0.01	<0.005	<0.01
	T12-ROX-080212	8/2/2012	46.46 - 72.46	41.92	NE	0.00044	0.000082 J	0.0001 J	<0.000054	<0.00011	<0.000054	<0.00011	<0.00011	<0.011	<0.011	<0.0054	<0.0022	<0.0054	<0.00011	<0.00011	0.0003 J	<0.011	<0.0054	0.0153

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																		
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	Indene	Indeno(1,2,3-cd)pyrene	Isophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniline	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						0.7 [2]	0.14 [2]	0.28 [2]	0.28 [2]		0.00043 [2]	1.4 [2]	0.49 [3]	0.028 [4]	0.35 [2]	0.35 [3]	0.14 [2]		0.0035 [2]	0.0006 [3]	0.0032 [2]	0.21 [3]	0.1 [1]	0.21 [2]
MW-01	MW-1-111110	11/11/2010	43.41 - 58.41	36.91	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW-1-111110-Dup	11/11/2010		36.91	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW1-ROX-011711	1/17/2011		37.58	NE	<0.0063	<0.0063	<0.0063	<0.0063		<0.0063	<0.0063		<0.0063	<0.013	<0.013	<0.0063	<0.013	<0.0063		<0.0063	<0.0063	<0.0063	<0.0063
	MW1-ROX-042911	4/29/2011		38.37	NE	<0.00085 U	<0.0063	<0.0063	<0.0063		<0.0063	<0.0063		<0.0063	<0.013	<0.013	<0.005	<0.013	<0.0063	<0.0063 UJ	<0.0063	<0.0063	<0.0063 UJ	<0.0063
	MW1-ROX-072711	7/27/2011		35.15	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW1-ROX-120511	12/5/2011		37.10	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW1-ROX-011612	1/16/2012	49.98 - 59.98[6]	37.75	NE	<0.0051	<0.0051	0.00011	0.000059 J		<0.00012 U	<0.0051	<0.0002	0.000098 J	<0.01	<0.01	0.000079 J	<0.01	<0.0051	<0.0051	<0.0051	0.000098	<0.0051	0.00009 J
	MW1-ROX-050112	5/1/2012		39.09	NE	<0.00054 U	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051 UJ	<0.0051	<0.000051	<0.0051 UJ	<0.0001
	MW1-ROX-073012	7/30/2012	49.98 - 59.98[6]	39.39	NE	<0.00043 U	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011	0.0001 J	<0.011	<0.0053	<0.0053	<0.0053	0.000025 J	<0.0053	<0.00011
MW-02	MW-2-111010	11/11/2010	47.19 - 62.19	38.12	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		0.014	<0.01	0.007 J	0.077	<0.019	<0.01		<0.01	<0.01	0.006 J	<0.01
	MW2-ROX-011711	1/17/2011		38.67	NE	<0.0048	<0.0048	<0.0048	<0.0048		<0.0048	<0.0048		0.0065	0.0028 J	0.0035 J	0.0312	<0.0095	<0.0048		<0.0048	<0.0048	<0.0048	<0.0048
	MW02-ROX-051011	5/10/2011		39.14	NE	<0.001 U	<0.0052	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.0052	0.0049 J J	0.0118 J	0.0062 J	0.0119	0.0545 J	<0.01	<0.0052 UJ	<0.0052	<0.0052	<0.000052 UJ	0.0057	<0.0001
	MW2-ROX-072711	7/27/2011		36.36	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.0098	0.0167	<0.01	0.0193 J	0.0671	<0.01	<0.005	<0.005	<0.005	<0.00005	0.0086	<0.0001
	MW2-ROX-072711-DUP	7/27/2011		36.36	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.0096	0.0169	<0.01	0.0144 J	0.0659	<0.01	<0.005	<0.005	<0.005	<0.00005	0.0075	<0.0001
	MW2-ROX-112811	11/28/2011		38.03	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.0141	0.0299	<0.01	<0.01	0.0777	<0.01	<0.005	<0.005 UJ	<0.005	<0.00005	<0.005 UJ	<0.0001
	MW2-ROX-011612	1/16/2012	51.32 - 61.32[6]	38.89	NE	0.00056 J	<0.0053	<0.00011	0.000052 J		<0.000054 U	<0.0053	0.0107	0.0229	<0.011	<0.011	0.0859	<0.011	<0.0053	<0.0053	<0.0053	0.000066	<0.0053	<0.00011
	MW2-ROX-050112	5/1/2012		40.25	NE	<0.0005 U	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	0.0105	0.021	<0.01	<0.01	0.0497	<0.01	<0.0052	<0.0052 UJ	<0.0052	<0.000052	<0.0052 UJ	<0.0001
	MW2-ROX-073012	7/30/2012	51.32 - 61.32[6]	40.60	NE	<0.00047 U	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	0.0097	0.0229	<0.011	<0.011	0.0554	<0.011	<0.0053	<0.0053	<0.0053	0.00004 J	<0.0053	0.000039 J
MW-03	MW-3-111210	11/12/2010	30.98 - 45.98	24.05	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW3-ROX-011811	1/18/2011		24.92	NE	<0.0053	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053		<0.0053	<0.0053	<0.0053	<0.0053
	MW03-ROX-051011	5/10/2011		24.79	NE	<0.0014 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	0.00019 J J	<0.01	<0.01	0.00011 J	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	MW3-ROX-080311	8/3/2011		22.40	NE	<0.00061 U	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	0.00029	0.00017 J	<0.0095	<0.0095	<0.000083 U	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	<0.0048 UJ	<0.000095
	MW3-ROX-112911	11/29/2011		24.06	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052 UJ	<0.0052	<0.000052	<0.0052 UJ	<0.0001
	MW3-ROX-112911-DUP	11/29/2011		24.06	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051 UJ	<0.0051	<0.000051	<0.0051 UJ	<0.0001
	MW3-ROX-011612	1/16/2012	34.67 - 44.67[6]	24.93	NE	<0.0052	<0.0052	0.000098 J	<0.0001		<0.00015 U	<0.0052	<0.00021	0.00015 J	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	0.000095	<0.0052	0.000078 J
	MW3-ROX-043012	4/30/2012		26.19	NE	<0.00047 U	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW3-ROX-072712	7/27/2012	34.67 - 44.67[6]	26.60	NE	<0.00066 U	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011 UJ	<0.00011	<0.011	<0.0053	<0.0053	<0.0053	0.000025 J J	<0.0053	<0.00011
MW-04	MW-4-111210	11/12/2010	42.63 - 57.63	35.38	NE	<0.009	<0.009	<0.009	<0.009		<0.009	<0.009		<0.009	<0.009	<0.009	<0.009	<0.019	<0.009		<0.009	<0.009	<0.009	<0.009
	MW4-ROX-011811	1/18/2011		36.04	NE	<0.0052	<0.0052	<0.0052	<0.0052		<0.0052	<0.0052		<0.0052	<0.01	<0.01	<0.0052	<0.01	<0.0052		<0.0052	<0.0052	<0.0052	<0.0052
	MW04-ROX-051111	5/11/2011		36.19	NE	<0.0012 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	0.00033 J	<0.01	<0.01	<0.0001 UJ	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	MW4-ROX-072611	7/26/2011		33.65	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00044	0.00029	<0.01	<0.01	0.00025	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW4-ROX-072611-DUP	7/26/2011		33.65	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00031	0.0002	<0.01	<0.01	0.00021	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW4-ROX-121511	12/15/2011		33.99	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.00043 U	<0.0052	0.00028	0.00026	<0.01	<0.01	0.00023	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW4-ROX-011612	1/16/2012	46.06 - 56.06[6]	36.00	NE	0.00077 J	<0.0052	0.000047 J	<0.0001		<0.00018 U	<0.0052	0.0006	0.00059	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	0.000057	<0.0052	0.000065 J
	MW4-ROX-050312	5/3/2012		37.45	NE	<0.00062 U	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00032	0.00025	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW4-ROX-050312-DUP	5/3/2012		37.45	NE	<0.00061 U	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW4-ROX-072512	7/25/2012	46.06 - 56.06[6]	37.63	NE	0.00075 J	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	0.00054	0.00045 B	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	0.0018 J	<0.0001
	MW4-ROX-072512-Dup	7/25/2012		37.63	NE	0.00057 J	<0.0051	<0.000047 U	<0.0001		<0.0001	<0.0051	0.00049	0.0004 B	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000031 U	0.0023 J	<0.0001

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																		
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	Indene	Indeno(1,2,3-cd)pyrene	Isophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniline	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						0.7 [2]	0.14 [2]	0.28 [2]	0.28 [2]		0.00043 [2]	1.4 [2]	0.49 [3]	0.028 [4]	0.35 [2]	0.35 [3]	0.14 [2]		0.0035 [2]	0.0006 [3]	0.0032 [2]	0.21 [3]	0.1 [1]	0.21 [2]
MW-05	MW-5-111210	11/12/2010	31.13 - 46.13	23.32	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW5-ROX-011811	1/18/2011		24.15	NE	<0.0053	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053		<0.0053	<0.0053	<0.0053	<0.0053
	MW05-ROX-051211	5/12/2011		23.98	NE	<0.0009 U	<0.0053	<0.00011 UJ	<0.00011 UJ		<0.00011 UJ	<0.0053	<0.0053 UJ	0.00004 J J	<0.011	<0.011	<0.00011 UJ	<0.011	<0.0053 UJ	<0.0053	<0.0053	<0.000053 UJ	<0.0053 UJ	<0.00011
	MW5-ROX-072611	7/26/2011		21.72	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00056	<0.0002	<0.01	<0.01	<0.0001 U	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW5-ROX-072611-DUP	7/26/2011		21.72	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00075	<0.0002	<0.01	<0.01	<0.00015 U	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW5-ROX-112111	11/21/2011		23.46	NE	0.00052 J	<0.0053	0.00041	<0.00011		<0.00011	<0.0053	0.00051 J	<0.00021	<0.011	<0.011	<0.00014 U	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
	MW5-ROX-011712	1/17/2012	33.97 - 43.97[6]	24.76	NE	<0.0053	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	0.0016	<0.00021	<0.011	<0.011	<0.00011	<0.011	<0.0053	0.00078 J	<0.0053	<0.000053	<0.0053	<0.00011
	MW5-ROX-050312	5/3/2012		25.89	NE	<0.0005 U	<0.0051	<0.0001	<0.0001		<0.0001	0.00072 J	0.0117	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW5-ROX-072512	7/25/2012	33.97 - 43.97[6]	26.18	NE	0.00057 J	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	0.003	<0.00021	<0.01	<0.01	0.00032	<0.01	<0.0052	<0.0052	<0.0052	<0.000025 U	0.0015 J	<0.0001
MW-06A	MW-6A-110910	11/9/2010	31.98 - 46.98	25.62	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW6A-ROX-011911	1/19/2011		26.36	NE	0.00081 J	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.01	<0.01	<0.005	<0.01	<0.005		<0.005	<0.005	<0.005	<0.005
	MW6A-ROX-051611	5/16/2011		26.10	NE	<0.0016 U	<0.005	<0.0001 UJ	0.00025 J		<0.0001 UJ	<0.005	<0.005 UJ	<0.0002 UJ	<0.01	<0.01	<0.0001 UJ	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	MW6A-ROX-072611	7/26/2011		24.07	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW6A-ROX-112111	11/21/2011		25.49	NE	0.00053 J	0.00093 J	<0.0001	<0.0001		0.0015 J	<0.0052	<0.00021 UJ	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW6A-ROX-112111-DUP	11/21/2011		25.49	NE	0.00069 J	<0.0051	<0.0001	<0.0001		<0.0001 UJ	<0.0051	<0.0002 UJ	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW6A-ROX-011712	1/17/2012	34.83 - 44.83[6]	26.74	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00015 U	<0.0054	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
	MW6A-ROX-050212	5/2/2012		27.77	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW6A-ROX-080112	8/1/2012	34.83 - 44.83[6]	28.36	NE	0.00049 J	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
MW-06B	MW-6B-111610	11/16/2010	64.05 - 69.05	25.47	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01		<0.01	<0.01	<0.01	<0.01
	MW6B-ROX-011911	1/19/2011		26.21	NE	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.01	<0.01	<0.005	<0.01	<0.005		<0.005	<0.005	<0.005	<0.005
	MW6B-ROX-011911-DUP	1/19/2011		26.21	NE	<0.0051	<0.0051	<0.0051	<0.0051		<0.0051	<0.0051		<0.0051	<0.01	<0.01	<0.0051	<0.01	<0.0051		<0.0051	<0.0051	<0.0051	<0.0051
	MW6B-ROX-051611	5/16/2011		25.95	NE	<0.0012 U	<0.0048	<0.000095 UJ	<0.000095 UJ		<0.000095 UJ	<0.0048	<0.0048 UJ	<0.00019 UJ	<0.0095	<0.0095	UJ	<0.0095	<0.0048 UJ	<0.0048	<0.0048	<0.000048 UJ	<0.0048	<0.000095
	MW6B-ROX-051611-DUP	5/16/2011		25.95	NE	<0.0014 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	<0.0002 UJ	<0.01	<0.01	0.000044 J J	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	MW6B-ROX-072311	7/23/2011		23.60	NE	<0.00047 U	<0.0053	<0.00021 U	<0.00011		<0.000057 U	<0.0053	<0.00021	<0.000022 U	<0.011	<0.011	0.0012 B	<0.011	<0.0053	<0.0053	<0.0053	<0.000044 U	<0.0053 UJ	<0.00023 U
	MW6B-ROX-110311	11/3/2011		24.67	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW6B-ROX-011712	1/17/2012		26.77	NE	0.00055 J	<0.0055	<0.00011	<0.00011		<0.00028 U	<0.0055	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0055	<0.0055	<0.0055	<0.000055	<0.0055	<0.00011
	MW6B-ROX-050212	5/2/2012		27.82	NE	0.00039 J	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW6B-ROX-080112	8/1/2012	64.05 - 69.05	27.92	NE	0.0007 J	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
MW-06C	MW-6C-111610	11/16/2010	84.95 - 89.95	25.25	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01		<0.01	<0.01	<0.01	<0.01
	MW6C-ROX-012111	1/21/2011		25.97	NE	<0.0053	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053		<0.0053	<0.0053	<0.0053	<0.0053
	MW6C-ROX-051611	5/16/2011		25.76	NE	<0.0013 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	<0.0002 UJ	<0.01	<0.01	<0.0001 UJ	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	MW6C-ROX-072411	7/24/2011		23.43	NE	<0.0004 U	<0.0053	0.000024 JB	<0.00011		0.000025 J	<0.0053	<0.00021	0.000017 JB	<0.011	<0.011	0.00075 B	<0.011	<0.0053	<0.0053	<0.0053	0.00002 JB	<0.0053 UJ	0.000023 JB
	MW6C-ROX-110311	11/3/2011		24.47	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00011 U	<0.005	<0.0001
	MW6C-ROX-011712	1/17/2012		26.50	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00011	<0.0054	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
	MW6C-ROX-050212	5/2/2012		27.62	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW6C-ROX-080112	8/1/2012	84.95 - 89.95	28.15	NE	0.001 J	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																		
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	ndene	ndeno(1,2,3-cd)pyrene	sophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniliine	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						0.7 [2]	0.14 [2]	0.28 [2]	0.28 [2]		0.00043 [2]	1.4 [2]	0.49 [3]	0.028 [4]	0.35 [2]	0.35 [3]	0.14 [2]		0.0035 [2]	0.0006 [3]	0.0032 [2]	0.21 [3]	0.1 [1]	0.21 [2]
MW-06D	MW-6D-111610	11/16/2010	104.72 - 109.72	25.13	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01		<0.01	<0.01	<0.01	<0.01
	MW6D-ROX-012111	1/21/2011		25.87	NE	0.00071 J	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053		<0.0053	<0.0053	<0.0053	<0.0053
	MW6D-ROX-051611	5/16/2011		25.60	NE	<0.0015 U	<0.0055	<0.00011 UJ	<0.00011 UJ		<0.00011 UJ	<0.0055	<0.0055 UJ	<0.00022 UJ	<0.011	<0.011	<0.00011 UJ	<0.011	<0.0055 UJ	<0.0055	<0.0055	<0.000055 UJ	<0.0055	<0.00011
	MW6D-ROX-072311	7/23/2011		23.29	NE	<0.00046 U	<0.0053	<0.000067 U	<0.00011		<0.000033 U	<0.0053	<0.00021	<0.000018 U	<0.011	<0.011	0.00074 B	<0.011	<0.0053	<0.0053	<0.0053	<0.00004 U	<0.0053 UJ	<0.000063 U
	MW6D-ROX-110311	11/3/2011		24.31	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW6D-ROX-011712	1/17/2012		26.33	NE	0.00047 J	<0.0055	<0.00011	<0.00011		<0.00011	<0.0055	<0.00022	<0.000085 U	<0.011	<0.011	<0.00016 U	<0.011	<0.0055	<0.0055	<0.0055	<0.000055	<0.0055	<0.00011
	MW6D-ROX-050212	5/2/2012		27.45	NE	0.00047 J	<0.005	<0.0001	<0.0001		<0.0001	<0.0005 U	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.000052	<0.005	<0.0001
	MW6D-ROX-080212	8/2/2012	104.72 - 109.72	30.56	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
MW-07	MW-7-111710	11/17/2010	42.92 - 52.92	36.93	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	0.004 J	<0.019	<0.01		<0.01	<0.01	0.034	<0.01
	MW-7-111710-Dup	11/17/2010		36.93	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	0.005 J	<0.02	<0.01		<0.01	<0.01	0.032	<0.01
	MW7-ROX-012511	1/25/2011		37.52	NE	<0.0053	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		0.0023 J	<0.011	0.00099 J	0.0058	<0.011	<0.0053		<0.0053	<0.0053	0.0737	<0.0053
	MW07-ROX-051311	5/13/2011		37.50	NE	<0.0017 U	<0.0054	<0.00011 UJ	0.0001 J J		<0.00011 UJ	<0.0054	0.0026 J J	0.0049 J	<0.011	0.00082 J	0.0114 J	<0.011	<0.0054 UJ	<0.0054	<0.0054	0.00017 J	0.0774	0.000044 J
	MW07-ROX-051311D	5/13/2011		37.50	NE	<0.0018 U	<0.0055	<0.00011 UJ	0.000097 J J		<0.00011 UJ	<0.0055	0.0026 J J	0.0047 J	<0.011	0.00078 J	0.011 J	<0.011	<0.0055 UJ	<0.0055	<0.0055	0.00017 J	0.0793	0.000051 J
	MW7-ROX-072411	7/24/2011		35.22	NE	<0.00044 U	<0.0054	0.00003 J	0.000066 J		<0.00011	<0.0054	0.0024	0.003	<0.011	<0.011	0.0081	<0.011	<0.0054	<0.0054	<0.0054	0.000082 B	<0.0513 UJ	0.00003 J
	MW-7-ROX-110211	11/2/2011		35.95	NE	<0.005	<0.005	<0.0001	<0.00028 U		<0.0001	<0.005	<0.0043 U	<0.0059 U	<0.01	<0.01	0.0113	<0.01	<0.005	<0.005	<0.005	<0.00033 U	0.0702	<0.0001
	MW7-ROX-011812	1/18/2012		38.10	NE	0.00045 J	<0.005	<0.0001	0.00018		<0.0001	<0.005	0.0055	0.0069	<0.01	<0.01	0.0134	<0.01 UJ	<0.005	<0.005	<0.005	0.00029	0.15	<0.000042 U
	MW7-ROX-011812-DUP	1/18/2012		38.10	NE	<0.0056	<0.0056	<0.00011	0.0002		<0.00011	<0.0056	0.0057	0.0071	<0.011	<0.011	0.0138	<0.011 UJ	<0.0056	<0.0056	<0.0056	0.00028	0.165	<0.000043 U
	MW7-ROX-050412	5/4/2012		39.19	NE	<0.00095 U	<0.005	0.000039 J	0.00019		<0.0001	<0.005	0.0075	0.0087	<0.01	<0.01	0.0158	<0.01	<0.005	<0.005	<0.005	0.00028	0.0944	<0.0001
	MW7-ROX-080712	8/7/2012	42.92 - 52.92	39.50	NE	<0.0051	<0.0051	<0.0001	0.00016		<0.0001	<0.0051	0.0055	0.0065	<0.01	<0.01	0.0089	<0.01	<0.0051	<0.0051	<0.0051	0.00019	0.0576	<0.0001
MW-08	MW-8-111710	11/17/2010	33.60 - 43.60	27.84	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		0.005 J	<0.01	0.023	0.023	<0.019	<0.01		<0.01	<0.01	0.053	<0.01
	MW8-ROX-012511	1/25/2011		28.59	NE	<0.005	0.0004 J	<0.005	<0.005		<0.005	<0.005		0.0069	0.0195	0.0502	0.026	<0.01	<0.005		<0.005	<0.005	0.119 J	<0.005
	MW8-ROX-012511-DUP	1/25/2011		28.59	NE	<0.0057	<0.0057	<0.0057	<0.0057		<0.0057	<0.0057		0.0075	0.0228	0.0587	0.0288	<0.011	<0.0057		<0.0057	<0.0057	0.171 J	<0.0057
	MW08-ROX-051311	5/13/2011		28.35	NE	<0.0014 U	<0.0055	0.00003 J J	0.00023 J		<0.00011 UJ	<0.0055	0.0053 J J	0.0075 J	0.0108 J	0.0243	0.0241 J	<0.011	0.0041 J J	<0.0055	<0.0055	0.000086 J	0.209	0.000028 J
	MW08-ROX-051311D	5/13/2011		28.35	NE	<0.0021 U	<0.0056	<0.00011 UJ	0.00021 J		<0.00011 UJ	<0.0056	0.0055 J J	0.0089 J	0.0105 J	0.0249	0.0288 J	<0.011	<0.0056 UJ	<0.0056	<0.0056	0.00012 J	0.208	<0.00011
	MW8-ROX-072411	7/24/2011		26.02	NE	<0.0054	0.00077 J	0.000031 JB	0.00034		0.000032 J	<0.0054	0.0055	0.0068	0.0205	0.0486	0.0237	<0.011	<0.0054	<0.0054	<0.0054	0.00014 B	0.0972 J	0.000031 JB
	MW8-ROX-072411-DUP	7/24/2011		26.02	NE	<0.00038 U	0.00054 J	0.000022 JB	0.0003		0.000042 J	<0.0055	0.0052	0.0064	0.0177	0.0423	0.023	<0.011	<0.0055	<0.0055	<0.0055	0.00011 B	0.0906 J	0.000023 JB
	MW-8-ROX-110211	11/2/2011		27.02	NE	<0.0048	<0.0048	<0.000095	<0.00032 U		<0.000095	<0.0048	<0.0094 U	<0.0119 U	0.0152	0.0242	0.0282	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	0.134	<0.000095
	MW8-ROX-011812	1/18/2012		29.15	NE	<0.0053	<0.0053	<0.00053	0.00074		<0.00053	<0.0053	0.0165	0.0204	0.0044 J	0.0121	0.0239	<0.011 UJ	<0.0053	<0.0053	<0.0053	0.00041	0.375	<0.00053
	MW8-ROX-050412	5/4/2012		30.21	NE	<0.00063 U	<0.0053	<0.00011	0.00024		<0.00011	<0.0053	0.0085	0.0099	0.0302	0.0657	0.0186	<0.011	<0.0053	<0.0053	<0.0053	0.00014	0.258 J	<0.00011
	MW8-ROX-050412-DUP	5/4/2012		30.21	NE	<0.005	<0.005	<0.0001	0.00031		<0.0001	<0.005	0.0086	0.0102	0.0275	0.0569	0.0188	<0.01	<0.005	<0.005	<0.005	0.00014	0.12 J	<0.0001
	MW8-ROX-080712	8/7/2012	33.60 - 43.60	30.97	NE	<0.0054	<0.0054	<0.00011	0.00027		<0.00011	<0.0054	0.0091	0.0109	0.0075 J	0.0231	0.0164	<0.011	<0.0054	<0.0054	<0.0054	0.00015	0.136	<0.00011
	MW8-ROX-080712-DUP	8/7/2012		30.97	NE	<0.0056	<0.0056	<0.00011	0.00026		<0.00011	<0.0056	0.0092	0.0111	0.0081 J	0.024	0.0164	<0.011	<0.0056	<0.0056	<0.0056	0.00014	0.134	<0.00011
MW-09	MW-9-111510	11/15/2010	46.45 - 56.45	39.00	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW9-ROX-012111	1/21/2011		39.62	NE	0.00064 J	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053		<0.0053	<0.0053	<0.0053	<0.0053
	MW09-ROX-050611	5/6/2011		40.12	NE	<0.00046 U	<0.0049	0.00002 J J	<0.000097 UJ		<0.000097 UJ	<0.0049	<0.0049 UJ	<0.00019 UJ	<0.0097	<0.0097	UJ	<0.0097	<0.0049 UJ	<0.0049	<0.0049	<0.000049 UJ	<0.0049	<0.000097
	MW9-ROX-072311	7/23/2011		37.27	NE	<0.0054	<0.0054	<0.000044 U	<0.00011		<0.000031 U	<0.0054	<0.00022	<0.00022	<0.01 UJ	<0.01 UJ	0.001 B	<0.011	<0.0054	<0.0054	<0.0054	<0.00003 U	<0.005 UJ	<0.000046 U
	MW9-ROX-110111	11/1/2011		37.78	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW9-ROX-011612	1/16/2012		39.50	NE	0.00048 J	<0.0057	<0.00011	<0.00011		<0.000098 U	<0.0057	<0.00023	<0.00023	<0.011	<0.011	0.000062 J	<0.011	<0.0057	<0.0057	<0.0057	<0.000057	<0.0057	<0.00011
	MW9-ROX-050312	5/3/2012		41.03	NE																			
	MW9-ROX-072712	7/27/2012	46.45 - 56.45	41.30	NE	<0.00054 U	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01 UJ	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
MW-10	MW-10-111010	11/10/2010	44.43 - 54.43	38.97	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW10-ROX-012411	1/24/2011		39.40	NE	<0.0051	<0.0051	<0.0051	<0.0051		<0.0051	<0.0051		<0.0051	<0.01	<0.01	<0.0051	<0.01	<0.0051		<0.0051	<0.0051	<0.0051	<0.0051
	MW10-ROX-012411-DUP	1/24/2011		39.40	NE	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.01	<0.01	<0.005	<0.01	<0.005		<0.005	<0.005	<0.005	<0.005
	MW10-ROX-042811	4/28/2011		40.20	NE	<0.00061 U	<0.0048	<0.0048	<0.0048		<0.0048	<0.0048		<0.0048	<0.0095	<0.0095	<0.0048	<0.0095	<0.0048	<0.0048 UJ	<0.0048	<0.0048	<0.0048 UJ	<0.0048
	MW10-ROX-072311	7/23/2011		37.24	NE	<0.005	<0.005	<0.000047 U	<0.0001		<0.000031 U	<0.005	<0.0002	<0.00002 U	<0.01	<0.01	0.00062 B	<0.01	<0.005	<0.005	<0.005	<0.000027 U	<0.005 UJ	<0.000044 U
	MW10-ROX-110111	11/1/2011		37.72	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	MW10-ROX-011612	1/16/2012		39.28	NE	0.00081 J	<0.0053	0.000052 J	<0.00011		<0.00011	<0.0053	<0.00021	0.000055 J	<0.011	<0.011	0.000047 J	<0.011	<0.0053	<0.0053	<0.0053	0.000072	<0.0053	0.00005 J
	MW10-ROX-050112	5/1/2012		40.86	NE	<0.00041 U	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	0.000052 J	<0.01	<0.0052	<0.0052 UJ	<0.0052	0.000033 J	<0.0052 UJ	<0.0001
	MW10-ROX-072712	7/27/2012	44.43 - 54.43	41.21	NE	<0.00043 U	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01 UJ	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																		
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	Indene	Indeno(1,2,3-cd)pyrene	Isophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniline	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						0.7 [2]	0.14 [2]	0.28 [2]	0.28 [2]		0.00043 [2]	1.4 [2]	0.49 [3]	0.028 [4]	0.35 [2]	0.35 [3]	0.14 [2]		0.0035 [2]	0.0006 [3]	0.0032 [2]	0.21 [3]	0.1 [1]	0.21 [2]
MW-11	MW-11-111710	11/17/2010	41.66 - 51.66	36.39	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW11-ROX-012411	1/24/2011		37.15	NE	<0.0052	<0.0052	<0.0052	<0.0052		<0.0052	<0.0052		<0.0052	<0.01	<0.01	<0.0052	<0.01	<0.0052		<0.0052	<0.0052	<0.0052	<0.0052
	MW11-ROX-050611	5/6/2011		37.60	NE	<0.001 U	<0.0048	0.000026 J J	<0.000095 UJ		0.000015 J J	<0.0048	<0.0048 UJ	<0.00019 UJ	<0.0095	<0.0095	UJ	<0.0095	<0.0048 UJ	<0.0048	<0.0048	0.000025 J J	<0.0048	0.000026 J
	MW11-ROX-072411	7/24/2011		34.68	NE	<0.0056	<0.0056	0.000025 JB	<0.00011		0.000026 J	<0.0056	<0.00022	0.000023 JB	<0.011	<0.011	0.00027 B	<0.011	<0.0056	<0.0056	<0.0056	0.000021 JB	<0.0056 UJ	0.000024 JB
	MW-11-ROX-110211	11/2/2011		35.44	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00011	<0.0054	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
	MW11-ROX-011712	1/17/2012		37.44	NE																			
	MW11-ROX-043012	4/30/2012		38.66	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW11-ROX-072712	7/27/2012	41.66 - 51.66	38.90	NE	<0.00057 U	<0.0058	<0.00012	<0.00012		<0.00012	<0.0058	<0.00023	<0.00023	<0.012	<0.012 UJ	<0.00012	<0.012	<0.0058	<0.0058	<0.0058	<0.000058	<0.0058	<0.00012
MW-12	MW-12-111510	11/15/2010	41.92 - 51.92	36.63	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	MW12-ROX-012411	1/24/2011		37.42	NE	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.01	<0.01	<0.005	<0.01	<0.005		<0.005	<0.005	<0.005	<0.005
	MW12-ROX-051211	5/12/2011		37.58	NE	<0.0011 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	<0.0002 UJ	<0.01	<0.01	<0.0001 UJ	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005 UJ	<0.0001
	MW12-ROX-072411	7/24/2011		34.88	NE	<0.00039 U	<0.005	0.000035 JB	<0.0001		0.000047 J	<0.005	<0.0002	<0.0002	<0.01 UJ	<0.01 UJ	0.00098 B	<0.01	<0.005	<0.005	<0.005	0.000024 JB	<0.005 UJ	0.00004 JB
	MW-12-ROX-110211	11/2/2011		35.70	NE	<0.0048	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	<0.00019	<0.00019	<0.0095	<0.0095	<0.000095	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	<0.0048	<0.000095
	MW-12-ROX-110211-DUP	11/2/2011		35.70	NE	<0.0048	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	<0.00019	<0.00019	<0.0095	<0.0095	<0.000095	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	<0.0048	<0.000095
	MW12-ROX-011712	1/17/2012		37.70	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00023 U	<0.0054	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
	MW12-ROX-011712-DUP	1/17/2012		37.70	NE	<0.0056	<0.0056	<0.00011	<0.00011		<0.00007 U	<0.0056	<0.00022	<0.00022	<0.011	<0.011	<0.00011	<0.011	<0.0056	<0.0056	<0.0056	<0.000056	<0.0056	<0.00011
	MW12-ROX-043012	4/30/2012		38.98	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	MW12-ROX-072712	7/27/2012	41.92 - 51.92	39.22	NE	<0.00063 U	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011 UJ	<0.00011	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
MW-13	MW13-ROX-012511	1/25/2011	25.57 - 35.57	24.28	NE	<0.0052	<0.0052	<0.0052	0.00044 J		<0.0052	<0.0052		0.0021 J	<0.01	<0.01	<0.0052	<0.01	<0.0052		<0.0052	0.0012 J	<0.0052	0.00032 J
	MW13-ROX-051311	5/13/2011		23.65	NE	<0.0013 U	<0.005	0.000032 J J	0.00023 J		<0.000099 UJ	<0.005	<0.005 UJ	0.00015 J J	<0.0099	<0.0099	<0.000095 U	<0.0099	<0.005 UJ	<0.005	<0.005	0.000095 J	<0.005 UJ	0.000089 J
	MW13-ROX-080311	8/3/2011		21.88	NE	<0.00074 U	<0.005	<0.0001	<0.0001		0.00004 J	<0.005	<0.0002	0.00011 J	<0.01	<0.01	<0.000045 U	<0.01	<0.005	<0.005	<0.005	<0.000054 U	<0.005 UJ	0.000041 J
	MW13-ROX-110311	11/3/2011		22.85	NE	<0.0056	<0.0056	<0.00011	<0.00033 U		<0.00011	<0.0056	<0.00081 U	<0.0003 U	<0.011	<0.011	0.00017	<0.011	<0.0056	<0.0056	<0.0056	<0.000056	<0.0056	<0.00018 U
	MW13-ROX-012012	1/20/2012		24.77	NE	<0.00058 U	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	0.00022	<0.00027 U	<0.011	<0.011	0.00021	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	0.0015 J	0.000065 J
	MW13-ROX-050712	5/7/2012		25.79	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW13-ROX-080812	8/8/2012	25.57 - 35.57	26.67	NE	<0.0053	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	0.00021	<0.00014 UJ	<0.011	<0.011	<0.0013 U	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
MW-14	MW14-ROX-110911	11/9/2011	33.42 - 43.42		NE	<0.0053	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011	<0.00011	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
	MW14-ROX-051012	5/10/2012			NE	0.00043 J	<0.0052	<0.0001	0.00022		<0.0001	<0.0052	0.0101	0.0015	<0.01	<0.01	0.00099	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	MW14-ROX-080312	8/3/2012	33.42 - 43.42	29.87	NE	<0.0053	<0.0053	<0.00011	0.00071		<0.00011	<0.0053	0.019	0.0038	<0.011	<0.011	0.0013	<0.011	0.00032 J	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
P-114	P114-ROX-102811	10/28/2011	32.67 - 52.67	24.73	NE	<0.0048	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	<0.00019	<0.00019	<0.0095	<0.0095	<0.000095	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	<0.0048	<0.000095
	P114-ROX-012012	1/20/2012		27.17	NE	<0.0051	<0.0051	<0.0001	<0.0001		0.000066 J	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	P114-ROX-050912	5/9/2012		28.09	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.00005	<0.0052	<0.0001
	P114-ROX-080912	8/9/2012	32.67 - 52.67	29.13	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
P-54	P-54-111710	11/17/2010	38.00 - 63.00	36.43	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	P54-ROX-012411	1/24/2011		37.24	NE	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.01	<0.01	<0.005	<0.01	<0.005		<0.005	<0.005	<0.005	<0.005
	P54-ROX-051111	5/11/2011		37.37	NE	<0.0011 U	<0.005	0.000031 J J	<0.00011 UJ		<0.00011 UJ	<0.005	<0.005 UJ	<0.00022 UJ	<0.01	<0.01	0.00013 J	<0.01	<0.005 UJ	<0.005	<0.005	<0.000054 UJ	<0.005	0.000028 J
	P54-ROX-072411	7/24/2011		34.78	NE	<0.00049 U	<0.005	0.000035 JB	<0.0001		0.00004 J	<0.005	<0.0002	0.000026 JB	<0.01	<0.01	0.000066 JB	<0.01	<0.005	<0.005	<0.005	0.000025 JB	<0.005 UJ	0.000031 JB
	P54-ROX-110311	11/3/2011		35.49	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	P54-ROX-011712	1/17/2012		37.17	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.000081 U	<0.01	<0.01	<0.000089 U	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	P54-ROX-050412	5/4/2012		38.77	NE	<0.00085 U	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	0.0026 J	<0.0001
	P54-ROX-080212	8/2/2012	38.00 - 63.00	38.95	NE	<0.0053	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011	<0.00011	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
P-55	P55-ROX-103111	10/31/2011	39.82 - 64.82	39.15	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	0.00065	0.00096	<0.01	<0.01	0.0015	<0.01	<0.005	<0.005	<0.005	0.00016	<0.005	<0.0001
	P55-ROX-011912	1/19/2012		41.09	NE	<0.0052	<0.0052	<0.0001	0.00038		<0.0001	<0.0052	0.0048	0.0076	<0.01	<0.01	0.0197	<0.01 UJ	<0.0052	<0.0052	<0.0052	0.00039	<0.0052	<0.0001
	P55-ROX-011912-D	1/19/2012		41.09	NE	<0.0054	<0.0054	<0.00011	0.00032		0.00011	<0.0054	0.0046	0.0076	<0.011	<0.011	0.0169	<0.011 UJ	<0.0054	<0.0054	<0.0054	0.00036	0.0029 J	<0.00011
	P55-ROX-050912	5/9/2012		42.44	NE	<0.0051	<0.0051	<0.0001	0.00069		<0.0001	<0.0051	0.0118	0.0179	<0.01	<0.01	0.0271	<0.01	<0.0051	<0.0051	<0.0051	0.00066	<0.0051	<0.0001

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																	
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	ndene	ndeno(1,2,3-cd)pyrene	sophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniline	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						**0.7** [2]	**0.14** [2]	**0.28** [2]	**0.28** [2]		**0.00043** [2]	**1.4** [2]	**0.49** [3]	**0.028** [4]	**0.35** [2]	**0.35** [3]	**0.14** [2]		**0.0035** [2]	**0.0006** [3]	**0.0032** [2]	**0.21** [3]	**0.1** [1]	**0.21** [2]
P-56	P56-ROX-102711	10/27/2011	40.82 - 65.82	39.42	NE	<0.0052	<0.0052	<0.0001	0.00039		<0.0001	<0.0052	0.016	0.0224	<0.01	<0.01	0.067	<0.01	<0.0052	<0.0052	<0.0052	0.0011	<0.0052	<0.0001
	P56-ROX-011912	1/19/2012		41.81	NE	<0.00044 U	<0.0051	<0.0001	0.00046		<0.0001	<0.0051	0.0186	0.024	<0.01	<0.01	0.0596	<0.01 UJ	<0.0051	<0.0051	<0.0051	0.0012	<0.0051	0.000036 J
	P56-ROX-050812	5/8/2012		43.09	NE	<0.0052	<0.0052	<0.0001	0.00033		<0.0001	<0.0052	0.0186	0.0236	<0.01	<0.01	0.0667	<0.01	<0.0052	<0.0052	<0.0052	0.0011	<0.0052	<0.0001
	P56-ROX-080612	8/6/2012	40.82 - 65.82	43.60	NE	<0.00075 U	<0.0051	<0.0001	0.0003		<0.0001	<0.0051	0.0143	0.0178	<0.01	<0.01	0.0197	<0.01	<0.0051	<0.0051	<0.0051	0.0013	<0.0051	<0.0001
P-57	P57-ROX-110811	11/8/2011	40.46 - 65.46	39.20	NE	<0.0054	<0.0054	<0.00054	0.00076		<0.00054	<0.0054	0.0288	0.0388	<0.011	<0.011	0.152	<0.011	<0.0054	<0.0054	<0.0054	0.0006	0.286	<0.00054
	P57-ROX-021312	2/13/2012		42.13	NE	<0.00046 U	<0.0051	<0.0001	0.00087		<0.0001	<0.0051		0.0403	<0.01	<0.01	0.271 J	<0.01	<0.0051	<0.0051	<0.0051	0.00051	0.297	<0.0001
	P57-ROX-050712	5/7/2012		42.92	NE	<0.0052	<0.0052	<0.0001	0.00045		<0.0001	<0.0052	0.0169	0.0212	<0.01	0.0023 J	0.0894	<0.01	<0.0052	<0.0052	<0.0052	0.00035	0.141	<0.0001
	P57-ROX-080612	8/6/2012	40.46 - 65.46	43.53	NE	<0.00087 U	<0.005	<0.0001	0.0006		<0.0001	<0.005	0.0244	0.0326	<0.01	0.0013 J	0.119	<0.01	<0.005	<0.005	<0.005	0.00053	0.0697 J	<0.0001
	P57-ROX-080612-DUP	8/6/2012		43.53	NE	<0.00089 U	<0.005	<0.0001	0.00063		<0.0001	<0.005	0.0242	0.0321	<0.01	0.0013 J	0.115	<0.01	<0.005	<0.005	<0.005	0.00054	0.0921 J	<0.0001
P-58	P58-ROX-102811	10/28/2011	40.21 - 65.21	37.31	NE	<0.0049	<0.0049	<0.000097	0.0016		<0.000097	<0.0049	0.049	0.0717	<0.0097	0.0347	0.204	<0.0097	<0.0049	<0.0049	<0.0049	0.00085	0.137	0.00012
	P58-ROX-011912	1/19/2012		39.73	NE	<0.00057 U	<0.0053	0.000047 J	0.0017		<0.00011	<0.0053	0.0639	0.0904	<0.011	0.0171	0.212	<0.011 UJ	<0.0053	<0.0053	<0.0053	0.00084	0.259	0.00012
	P58-ROX-011912-D	1/19/2012		39.73	NE	<0.00059 U	<0.0053	0.000052 J	0.0018		<0.00011	<0.0053	0.0588	0.0821	<0.011	0.0156	0.191 J	<0.011 UJ	<0.0053	<0.0053	<0.0053	0.0008	0.225	0.00012
	P58-ROX-050712	5/7/2012		40.90	NE	<0.0051	<0.0051	<0.0001	0.0009 J		<0.0001	<0.0051	0.0351 J	0.0435 J	<0.01	0.0181	0.112 J	<0.01	<0.0051	<0.0051	<0.0051	0.00056 J	0.161	0.0001
	P58-ROX-050712-DUP	5/7/2012		40.90	NE	<0.0052	<0.0052	<0.0001	0.00067 J		<0.0001	<0.0052	0.0267 J	0.0338 J	<0.01	0.0122	0.0697 J	<0.01	<0.0052	<0.0052	<0.0052	0.00041 J	0.147	0.000076 J
	P58-ROX-080612	8/6/2012	40.21 - 65.21	41.63	NE	<0.00053 U	<0.005	0.000068 J	0.0014		<0.0001	<0.005	0.0524	0.0691	<0.01	0.0146	0.142	<0.01	<0.005	<0.005	<0.005	0.001	0.15	<0.0001 UJ
	P58-ROX-080612-DUP	8/6/2012		41.63	NE	<0.00063 U	<0.005	0.000066 J	0.0015		<0.0001	<0.005	0.0596	0.079	<0.01	0.0195	0.15	<0.01	<0.005	<0.005	<0.005	0.0011	0.19	0.00021 J
P-59	P59-ROX-102711	10/27/2011	47.91 - 72.91	41.06	NE	<0.0053	<0.0053	0.00035	0.0012		<0.00011	<0.0053	0.0121	0.0184	<0.011	<0.011	0.0793	<0.011	<0.0053	<0.0053	<0.0053	0.002	0.0383	0.00057
	P59-ROX-011912	1/19/2012		42.88	NE	<0.0005 U	<0.0057	0.000073 J	0.0008		<0.00011	<0.0057	0.0175	0.0279	0.0045 J	0.0092 J	0.18	<0.011 UJ	<0.0057	<0.0057	0.00079 J	0.00081	0.0906 J	0.00013
	P59-ROX-011912-DUP	1/19/2012		42.88	NE	<0.00041 U	<0.0051	0.000073 J	0.00063		<0.0001	<0.0051	0.0178	0.029	<0.01	0.0076 J	0.183	<0.01 UJ	<0.0051	<0.0051	0.00087 J	0.00081	0.0646 J	0.00013
	P59-ROX-050912	5/9/2012		44.11	NE	<0.005	<0.005	0.000062 J	0.00034	0.0056 JN	<0.0001	<0.005	0.0117	0.018	<0.01	0.0062 J	0.0925	<0.01	<0.005	<0.005	<0.005	0.00053	0.0241	0.000092 J
	P59-ROX-080212	8/2/2012	47.91 - 72.91	44.07	NE	<0.0053	<0.0053	0.00015	0.00048		<0.00011	<0.0053	0.0136	0.0207	0.0018 J	0.0032 J	0.0886	<0.011	<0.0053	<0.0053	<0.0053	0.001	0.0419	0.00021
P-66	P66-ROX-110111	11/1/2011	34.72 - 59.72	28.92	NE	<0.005	<0.005	0.00017	0.003		<0.0001	<0.005	0.093	0.0295	<0.01	<0.01	0.0091	<0.01	<0.005	<0.005	<0.005	0.0013	<0.005	0.00029
	P66-ROX-051012	5/10/2012		32.48	NE	0.00054 J	<0.005	0.000056 J	0.0015		<0.0001	<0.005	0.0647	0.025	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	0.00057	<0.005	0.000082 J
	P66-ROX-080312	8/3/2012	34.72 - 59.72	33.19	NE	<0.0053	<0.0053	0.000082 J	0.0011		<0.00011	<0.0053	0.0541	0.028	<0.011	<0.011	0.0013	<0.011	<0.0053	<0.0053	<0.0053	0.00057	<0.0053	0.00013
P-74	P74-ROX-103111	10/31/2011	44.43 - 69.43	36.26	NE	<0.005	<0.005	<0.0001	0.00044		<0.0001	<0.005	0.0177	0.0265	<0.01	<0.01	0.0673	<0.01	<0.005	<0.005	<0.005	0.00025	0.0127	<0.0001
	P74-ROX-011912	1/19/2012		38.77	NE	<0.0048	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	<0.00019	<0.00019	<0.0095	<0.0095	0.0158	<0.0095 UJ	<0.0048	<0.0048	<0.0048	<0.000048	0.002 J	<0.000095
	P74-ROX-050712	5/7/2012		39.92	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	0.00016 J	<0.00021	<0.01	<0.01	0.00024	<0.01	<0.0052	<0.0052	<0.0052	0.000047 J	0.0089	<0.0001
	P74-ROX-080612	8/6/2012	44.43 - 69.43	40.71	NE	<0.00082 U	<0.005	<0.0001	0.00021		<0.0001	<0.005	0.009	0.0103	0.0014 J	0.001 J	0.0177	<0.01	<0.005	<0.005	<0.005	<0.00012 U	0.0158	<0.0001
P-93A	P93A-102610	10/26/2010	48.17 - 63.17	40.75	NE	<0.009	<0.009	<0.009	<0.009		<0.009	<0.009		0.023	<0.009	<0.009	0.095 D	<0.019	<0.009		<0.009	<0.009	0.31 D J	<0.009
	P93A-ROX_012611	1/26/2011		40.97	NE	<0.0049	<0.0049	<0.0049	0.00032 J		<0.0049	<0.0049		0.0254	<0.0098	0.064	0.0803	<0.0098 UJ	<0.0049		<0.0049	0.0004 J	0.172	<0.0049
	P93A-ROX-050511	5/5/2011		41.88	NE	<0.001 U	<0.005	0.000019 J J	0.00044 J		<0.0001 UJ	<0.005	0.0172 J	0.0309 J	<0.01	0.0075 J	0.0795 J	<0.01	<0.005 UJ	<0.005	<0.005	0.0004 J	0.21	0.000026 J
	P93A-ROX-081811	8/18/2011		38.86	NE	<0.001 U	<0.005	<0.000033 U	0.00047		<0.0001	<0.005	0.0224	0.0302	<0.01	0.0093 J	0.0868	<0.01	<0.005	<0.005	<0.005	0.00043	0.183	0.000037 J
	P93A-ROX-102611	10/26/2011		39.43	NE	<0.005	<0.005	<0.0001	0.00033		<0.0001	<0.005	0.0162	0.0258	<0.01	<0.01	0.108	<0.01	<0.005	<0.005	<0.005	0.00032	0.193	<0.0001
	P93A-ROX-012012	1/20/2012		41.66	NE	<0.00038 U	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	0.0133	0.0188	<0.0095	0.0029 J	0.059 J	<0.0095	<0.0048	<0.0048	<0.0048	<0.00022 U	0.234	<0.000095
	P93A-ROX-050812	5/8/2012		42.75	NE	<0.0051	<0.0051	<0.0001	0.00021		<0.0001	<0.0051	0.0121	0.0151	<0.01	0.0014 J	0.0472	<0.01	<0.0051	<0.0051	<0.0051	0.00021	<0.0051	<0.0001
	P93A-ROX-080912	8/9/2012	48.17 - 63.17	43.66	NE	<0.0054	<0.0054	<0.00011	0.00021		<0.00011	<0.0054	0.0097	0.013	<0.011	0.00096 J	0.0496	<0.011	<0.0054	<0.0054	<0.0054	0.00025	0.208	<0.00011
P-93B	P93B-102610	10/26/2010	74.60 - 76.60	40.73	NE	<0.009	<0.009	<0.009	<0.009		<0.009	<0.009		<0.009	<0.009	<0.009	<0.009	<0.019	<0.009		<0.009	<0.009	0.094	<0.009
	P93B-ROX_012611	1/26/2011		41.03	NE	<0.0053	<0.0053	<0.0053	<0.0053		<0.0053	<0.0053		<0.0053	<0.011	<0.011	0.0011 J	0.00069 J J	<0.0053		<0.0053	<0.0053	0.106	<0.0053
	P93B-ROX-050511	5/5/2011		41.96	NE	<0.001 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	<0.0002 UJ	<0.01	<0.01	0.0013 J	<0.01	<0.005 UJ	<0.005	<0.005	0.000017 J J	0.0933	<0.0001
	P93B-ROX-081811	8/18/2011		38.91	NE	<0.00077 U	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	0.0037	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	0.116	<0.0001
	P93B-ROX-102611	10/26/2011		39.48	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	0.012	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	0.122	<0.0001
	P93B-ROX-012012	1/20/2012		41.72	NE	<0.0048	<0.0048	<0.000095	<0.000095		<0.000095	<0.0048	<0.00019	<0.00019	<0.0095	<0.0095	0.0041 J J	<0.0095	<0.0048	<0.0048	<0.0048	<0.000048	0.107	<0.000095
	P93B-ROX-050812	5/8/2012		42.79	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	0.002	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	P93B-ROX-080912	8/9/2012	74.60 - 76.60	43.69	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00011	<0.0054	<0.00022	<0.00022	<0.011	<0.011	0.0049	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	0.178	<0.00011

TABLE 3
CUMULATIVE SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS AND EXCEEDANCES

						SVOCs																	
Location	Sample ID	Sample Date	Screened Interval (ft btoc)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	ndene	ndeno(1,2,3-cd)pyrene	sophorone (3,5,5-trimethyl-2-cyclohexene-1-one)	1-Methylnaphthalene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene[5]	3-Nitroaniline	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Phenanthrene	Phenol	Pyrene
Screening Values (mg/L)						0.7 [2]	0.14 [2]	0.28 [2]	0.28 [2]		0.00043 [2]	1.4 [2]	0.49 [3]	0.028 [4]	0.35 [2]	0.35 [3]	0.14 [2]		0.0035 [2]	0.0006 [3]	0.0032 [2]	0.21 [3]	0.1 [1]	0.21 [2]
P-93C	P93C-102610	10/26/2010	94.26 - 96.26	40.69	NE	<0.009	<0.009	<0.009	<0.009		<0.009	<0.009		<0.009	<0.009	<0.009	<0.009	<0.019	<0.009		<0.009	<0.009	<0.009	<0.009
	P93C-ROX_012611	1/26/2011		40.91	NE	<0.0051	<0.0051	<0.0051	<0.0051		<0.0051	<0.0051		<0.0051	<0.01	<0.01	<0.0051	<0.01 UJ	<0.0051		<0.0051	<0.0051	0.0166	<0.0051
	P93C-ROX-050611	5/6/2011		41.84	NE	<0.0011 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	0.00009 J J	<0.01	<0.01	0.00003 J J	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	0.0144	<0.0001
	P93C-ROX-081811	8/18/2011		38.79	NE	<0.00064 U	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.000033 U	<0.01	<0.01	<0.000054 U	<0.01	<0.005	<0.005	<0.005	<0.00005	0.0046 J	<0.0001
	P93C-ROX-102611	10/26/2011		39.36	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	<0.0001	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
	P93C-ROX-012012	1/20/2012		41.57	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	P93C-ROX-050812	5/8/2012		42.68	NE	<0.0053	<0.0053	<0.00011	<0.00011		<0.00011	<0.0053	<0.00021	<0.00021	<0.011	<0.011	<0.00011	<0.011	<0.0053	<0.0053	<0.0053	<0.000053	<0.0053	<0.00011
	P93C-ROX-080912	8/9/2012	94.26 - 96.26	43.57	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	<0.00021	<0.00021	<0.01	<0.01	0.000065 J	<0.01	<0.0052	<0.0052	<0.0052	<0.000052	<0.0052	<0.0001
P-93D	P93D-102610	10/26/2010	125.75 - 127.75	40.59	NE	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.019	<0.01		<0.01	<0.01	<0.01	<0.01
	P93D-ROX-050511	5/5/2011		41.96	NE	<0.0011 U	<0.005	<0.0001 UJ	<0.0001 UJ		<0.0001 UJ	<0.005	<0.005 UJ	0.000045 J J	<0.01	<0.01	0.000036 J J	<0.01	<0.005 UJ	<0.005	<0.005	<0.00005 UJ	<0.005	<0.0001
	P93D-ROX-081811	8/18/2011		38.94	NE	<0.0011 U	<0.005	<0.000023 U	<0.0001		<0.0001	<0.005	<0.0002	<0.000042 U	<0.01	<0.01	<0.000087 U	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	0.000021 J
	P93D-ROX-102711	10/27/2011		39.59	NE	<0.005	<0.005	<0.0001	<0.0001		<0.0001	<0.005	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.005	<0.005	<0.005	<0.00005	<0.005	<0.0001
	P93D-ROX-012012	1/20/2012		41.77	NE	<0.0054	<0.0054	<0.00011	<0.00011		<0.00011	<0.0054	<0.00022	<0.00006 U	<0.011	<0.011	0.00016	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
	P93D-ROX-050812	5/8/2012		42.96	NE	<0.0051	<0.0051	<0.0001	<0.0001		<0.0001	<0.0051	<0.0002	<0.0002	<0.01	<0.01	<0.0001	<0.01	<0.0051	<0.0051	<0.0051	<0.000051	<0.0051	<0.0001
	P93D-ROX-080812	8/8/2012	125.75 - 127.75	43.71	NE	<0.0052	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	0.0004	<0.00042 U	0.00076 J	0.0011 J	<0.0092 U	<0.01	<0.0052	<0.0052	<0.0052	0.000054	<0.0052	<0.0001
ROST-3-PZ	ROST3PZ-ROX-051412	5/14/2012	40.00 - 50.00	38.82	NE	<0.00043 U	<0.0052	<0.0001	<0.0001		<0.0001	<0.0052	0.0002 J	0.00017 J	<0.01	0.0087 J	0.00048	<0.01	<0.0052	<0.0052	<0.0052	0.000043 J	<0.0052	<0.0001
	ROST3PZ-ROX-080712	8/7/2012	40.00 - 50.00	39.00	NE	0.0049 J	<0.0054	<0.00011	<0.00011		<0.00011	<0.0054	0.00031	0.00038 J	<0.011	0.0056 J	0.00038	<0.011	<0.0054	<0.0054	<0.0054	<0.000054	<0.0054	<0.00011
ROST-4-PZ(C)	ROST4PZ-C-051412	5/14/2012	35.25 - 45.25	39.04	NE	<0.00058 U	<0.005	<0.0001	0.00022		<0.0001	<0.005	0.0044	0.0049	<0.01	<0.01	0.0018	<0.01	<0.005	<0.005	<0.005	0.00082	<0.005	0.000041 J
	ROST4PZ-C-ROX-072512	7/25/2012	35.25 - 45.25	39.10	NE	0.0015 J	<0.0053	<0.000041 U	0.00032 B		<0.00011	<0.0053	0.0102	0.0136	<0.011	0.00098 J	0.0331	<0.011	<0.0053	<0.0053	<0.0053	0.0014	0.0023 J	<0.000081 U
T-12	T12-ROX-102711	10/27/2011	46.46 - 72.46	38.54	NE	<0.0051	<0.0051	<0.0001	0.0006		<0.0001	<0.0051	0.0264	0.0415	<0.01	<0.01	0.105	<0.01	<0.0051	<0.0051	<0.0051	0.0015	0.0167	0.0001
	T12-ROX-011912	1/19/2012		41.0	NE	<0.00048 U	<0.0056	0.000044 J	0.00043		0.000061 J	<0.0056	0.0158	0.0186	0.00091 J	<0.011	0.132	<0.011 UJ	<0.0056	<0.0056	<0.0056	0.00054	0.0188	0.000067 J
	T12-ROX-050912	5/9/2012		42.62	NE	<0.005	<0.005	<0.0001	0.00024		<0.0001	<0.005	0.0164	0.0254	<0.01	0.0026 J	0.0924	<0.01	<0.005	<0.005	<0.005	0.00062	0.0094	0.000039 J
	T12-ROX-080212	8/2/2012	46.46 - 72.46	41.92	NE	<0.0054	<0.0054	0.000046 J	0.00029		<0.00011	<0.0054	0.0199	0.0294	0.0021 J	0.0027 J	0.0625	<0.011	<0.0054	<0.0054	<0.0054	0.00089	0.042	0.000062 J

Notes:

[1] Denotes screening critieria source from 35 I.A.C. 620, Subpart D.

[2] Denotes screening critieria source from 35 I.A.C. 742 (TACO), Appendix B, Table E.

[3] Denotes screening criteria source from IL EPA Toxicity Assessment Unit (Chemicals not in TACO, Tier I Tables).

[4] Denotes screening criteria source R2008-018, Proposed Revisions to Groundwater Quality Standards, 35 I.A.C. 620.

[5] Prior to January 2011 naphthalene was reported as a VOC.

[6] 1 inch piezometer replaced with a 2 inch groundwater monitoring well

Indicates a historical exceedance or screening criteria.

Indicates a current exceedance or screening criteria.

Empty cell without a value indicates current quarter analyte result was rejected.

Empty cell without a value indicates previous quarter analyte result was rejected or the analyte was not part of method list when sampled.

LABORATORY QUALIFIERS:

B = Target analyte or common lab contaminant was identified in the method blank indicating possible field or lab contamination.

D = The result is from a diluted sample.

J = The analyte was detected below the reporting limit. Result is estimated.

E=The value exceeds calibration range.

JN = Estimated value for tentatively identified compound (library search).

URS QUALIFIERS:

J = The result is estimated.

UJ = Estimated nondetect.

U = Result is non-detect.

R = Rejected Data

The following EVS Descriptions and Assumptions apply to **Figure 6.** C Tech Development Corporation's Environmental Visualization System PRO, Version 9.52 (EVS-PRO) was used to model the estimated distribution of benzene in the groundwater.

EVS Descriptions and Assumptions:

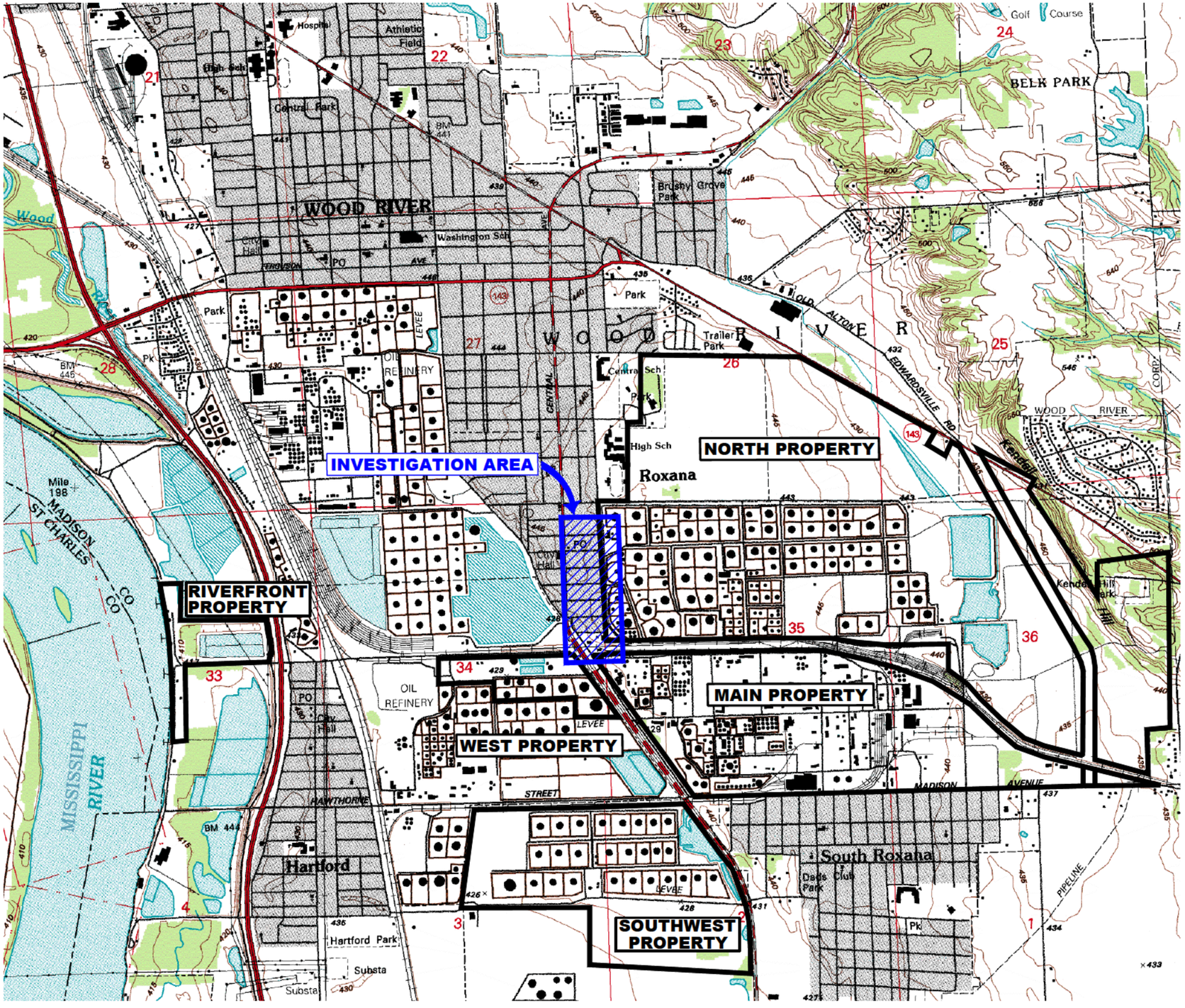
Plan View Model Output – The data input for the plan view model was not limited by depth and was modeled in two dimensions (2D). Regardless of sample depth, benzene concentrations were modeled on a flat horizontal plane.

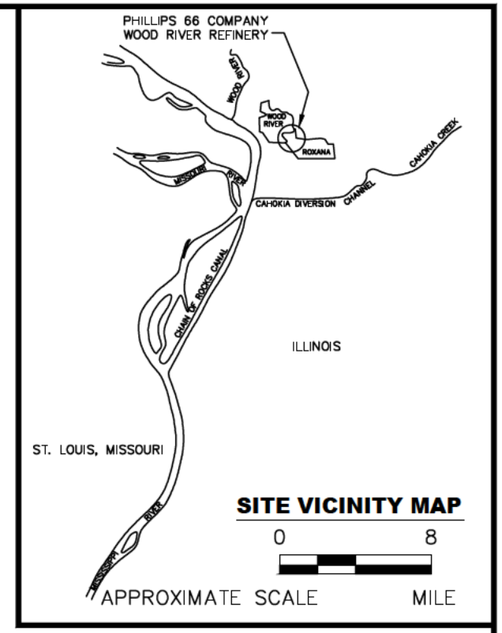
Inward Kriging / Boundary Cut-off – This method of Kriging limits the horizontal extent of data modeling to the extent of the data on the x/y plane in a convex hull.

More simply, if each soil boring location were represented by a tack pushed into the model's surface and a rubber band stretched around them, the model would be represented by the space inside the rubber band.

Duplicate Samples – Analytical concentrations from duplicate samples collected at the same location and depth were averaged.

Detection Limits – In cases where the lab reported a non-detect, half the value of the lab detection limit was used in the model. This conservative method is based on the assumption that the soil is likely not free of benzene but the quantity contained is lower than detectable at the analyzed dilution.





LEGEND

- WOOD RIVER REFINERY PROPERTY BOUNDARY
- INVESTIGATION AREA

SOURCE: ELECTRONIC USGS DIGITAL RASTER GRAPHIC 7.5 MINUTE TOPOGRAPHIC MAP OF WOOD RIVER, IL–MO REVISED 1994.

CONTOUR INTERVAL = 5 FT

0 2000

APPROXIMATE SCALE MILE

N

SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS	PROJECT NO. 21562735
URS	
DRN. BY: djd October 2012 DSGN. BY: djd CHKD. BY: kh	Investigation Area Location Map
	FIG. NO. 1

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\21560XXX-ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 1 INVESTIGATION AREA LOCATION MAP.DWG Last edited: 09/24/12 @ 2:03 p.m. ● WCC-ST.LOUIS

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\2156XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 2 GROUNDWATER MONITORING WELL SAMPLING LOCATIONS.DWG Last edited: OCT. 02, 12 @ 4:17 p.m. by: curt_smith

LEGEND

- INTERIM GROUNDWATER MONITORING WELL SAMPLING LOCATION
- GROUNDWATER MONITORING WELL LOCATION NOT SAMPLED
- INTERIM GROUNDWATER PIEZOMETER SAMPLING LOCATION
- GROUNDWATER PIEZOMETER LOCATION NOT SAMPLED

NOTES:

1. ROST-3-PZ AND ROST-4-PZ (C) WERE ADDED TO THE INTERIM GROUNDWATER MONITORING PROGRAM IN 2Q12.
2. * INDICATES PERCHED GROUNDWATER MONITORING WELLS.
3. GROUNDWATER MONITORING WELL P-55 WAS FOUND TO BE COMPROMISED DURING 3Q12 AND WAS NOT SAMPLED.

FIRST ST
PZ-1(101)
PZ-1(85)
MW-9
MW-10
T-1
NORTH PROPERTY
SECOND ST
P-55
ROST-4-PZ(A)
ROST-4-PZ(B)
ROST-4-PZ(C)
ROST-4-PZ
THIRD ST
ROST-3PZ
ROST-4-PZ(D)
ROST-4-PZ(E)
ROST-4-PZ(F)
ROST-4-PZ(G)
P-60-S
P-60-12
*P-60-12S
A-28
T-24
P-68
MW-11
P-54
* ROST-5-PZ
P-60-13
*P-60-13S
A-33
T-12
FOURTH ST
* ROST-7-PZ
P-69
A-27
P-70
VILLAGE OF ROXANA
P-74
P-61
FIFTH ST
* ROST-21-PZ
P-59
GP-9-PZ
PZ-2(84)
PZ-2(70.5)
MW-12
* ROST-10-PZ
P-56
HIGHWAY 111 (S. CENTRAL AVE)
SIXTH ST
CHAFEER ST
WOOD RIVER REFINERY
MW-2
MW-1
BP
SEVENTH ST
T-6
P-57
MW-4
MW-3
P-93A
P-93B
P-93C
P-93D
P-73
EIGHTH ST
MW-7
MW-5
MW-8
1986 APPROXIMATE BENZENE RELEASE SITE
P-58
RAND AVENUE
P-66
P-75
MW-13
MW-6A
MW-6B
MW-6C
MW-6D
WEST PROPERTY
MAIN PROPERTY
MW-14
P-114

0 200
SCALE FEET
N

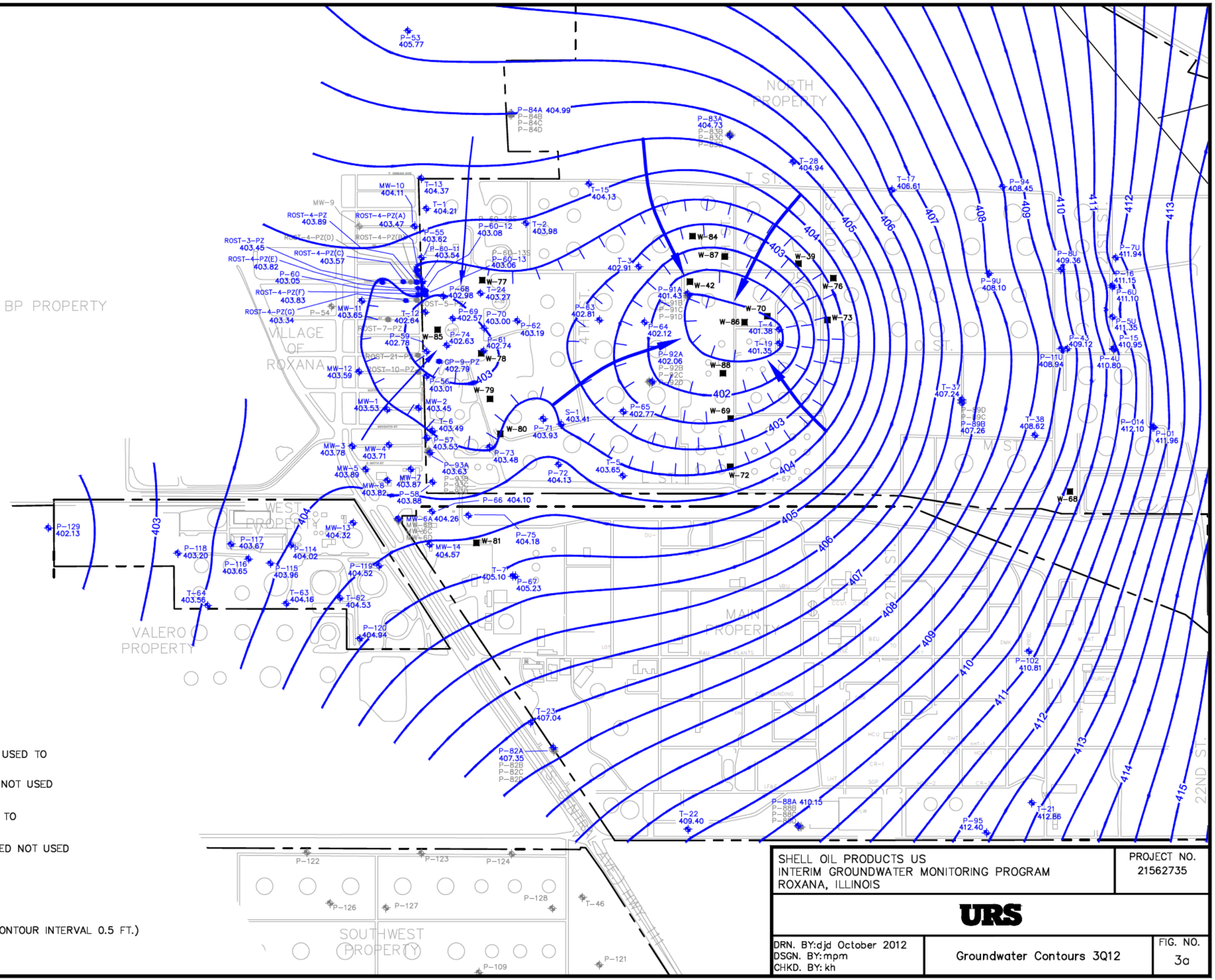
SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS	PROJECT NO. 21562735
URS	
DRN. BY:djd October 2012 DSGN. BY:jm CHKD. BY:kh	Groundwater Monitoring Well Sampling Locations FIG. NO. 2

NOTES:

1) CONTOUR LINES PRIMARILY GENERATED BY SURFER VERSION 8 MODELING OF GROUNDWATER ELEVATIONS. SOME INTERPRETATION WAS DONE UTILIZING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND.

2) ELEVATIONS ARE RELATIVE TO 1988 USGS DATUM.

3) COMPREHENSIVE GROUNDWATER ELEVATIONS WERE MEASURED JULY 2–3, 5–6, AND 9, 2012.



LEGEND

- GROUNDWATER MONITORING WELL LOCATION USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER MONITORING WELL LOCATION NOT USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER PIEZOMETER LOCATION USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER PIEZOMETER LOCATION GAUGED NOT USED TO GENERATE GROUNDWATER CONTOURS
- WRR GROUNDWATER DEPRESSION WELLS
- GROUNDWATER GRADIENT
- 407 GROUNDWATER SURFACE CONTOUR NGVD (CONTOUR INTERVAL 0.5 FT.)

SHELL OIL PRODUCTS US
INTERIM GROUNDWATER MONITORING PROGRAM
ROXANA, ILLINOIS

PROJECT NO. 21562735

URS

DRN. BY:djd October 2012
DSGN. BY:mpm
CHKD. BY:kh

Groundwater Contours 3Q12

FIG. NO. 3a

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\2156XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 3B ROXANNA 3Q12 CONTOUR MAP.DWG Last edited: OCT. 12, 12 @ 09:37 a.m. by: curt_smith

LEGEND

- GROUNDWATER MONITORING WELL LOCATION USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER MONITORING WELL LOCATION NOT USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER PIEZOMETER SAMPLING LOCATION USED TO GENERATE GROUNDWATER CONTOURS
- GROUNDWATER PIEZOMETER LOCATION NOT USED TO GENERATE GROUNDWATER CONTOURS
- WRR GROUNDWATER PRODUCTION WELL
- 404 GROUNDWATER SURFACE CONTOUR NGVD (CONTOUR INTERVAL 0.5 FT)
- GROUNDWATER GRADIENT

NOTES:

1) CONTOUR LINES PRIMARILY GENERATED BY SURFER VERSION 8 MODELING OF GROUNDWATER ELEVATIONS. SOME INTERPRETATION WAS DONE UTILIZING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND.

2) ELEVATIONS ARE RELATIVE TO 1988 USGS DATUM.

3) COMPREHENSIVE GROUNDWATER ELEVATIONS WERE MEASURED JULY 2-3, 5-6, AND 9, 2012.

FIRST ST
SECOND ST
THIRD ST
FOURTH ST
FIFTH ST
SIXTH ST
SEVENTH ST
EIGHTH ST
HIGHWAY 111 (S. CENTRAL AVE)
CHAFFER ST
RAND AVENUE
VILLAGE OF ROXANA
NORTH PROPERTY
WOOD RIVER REFINERY
MAIN PROPERTY
WEST PROPERTY
PUBLIC WORKS YARD
BP
1986 APPROXIMATE BENZENE RELEASE SITE

404
403

T-1
PZ-1(101)
PZ-1(85)
MW-9
MW-10 404.11
P-55 403.62
ROST-4-PZ(A) 403.47
ROST-4-PZ(B)
ROST-4-PZ 403.89
ROST-4-PZ(C) 403.57
ROST-4-PZ(D)
W-77
P-60-12 403.08
P-60-12S
ROST-3PZ 403.45
ROST-4-PZ(E) 403.82
P-60-S
P-60-13 403.06
P-60-13S
A-28
ROST-4-PZ(F) 403.83
T-24 403.27
MW-11 403.65
P-54
ROST-5-PZ
P-68 402.98
ROST-4-PZ(G) 403.34
T-12 402.64
P-69 402.57
ROST-7-PZ
A-27
W-85
P-70 403.00
P-74 402.63
P-59 402.78
W-78
P-61 402.74
GP-9-PZ 402.79
PZ-2(84)
PZ-2(70.5)
ROST-10-PZ
MW-12 403.59
P-56 403.01
MW-1 403.53
MW-2 403.45
W-79
T-6 403.49
P-57 403.53
MW-3 403.78
MW-4 403.71
P-93A 403.63
P-93B
P-93C
P-93D
P-73 403.48
MW-5 403.89
MW-7 403.87
MW-8 403.82
P-58 403.88
MW-13 404.32
404.26 MW-6A
MW-6B
MW-6C
MW-6D
P-66 404.10
P-75 404.18
MW-14 404.57
W-81
P-114 404.02

0 200
SCALE FEET
N

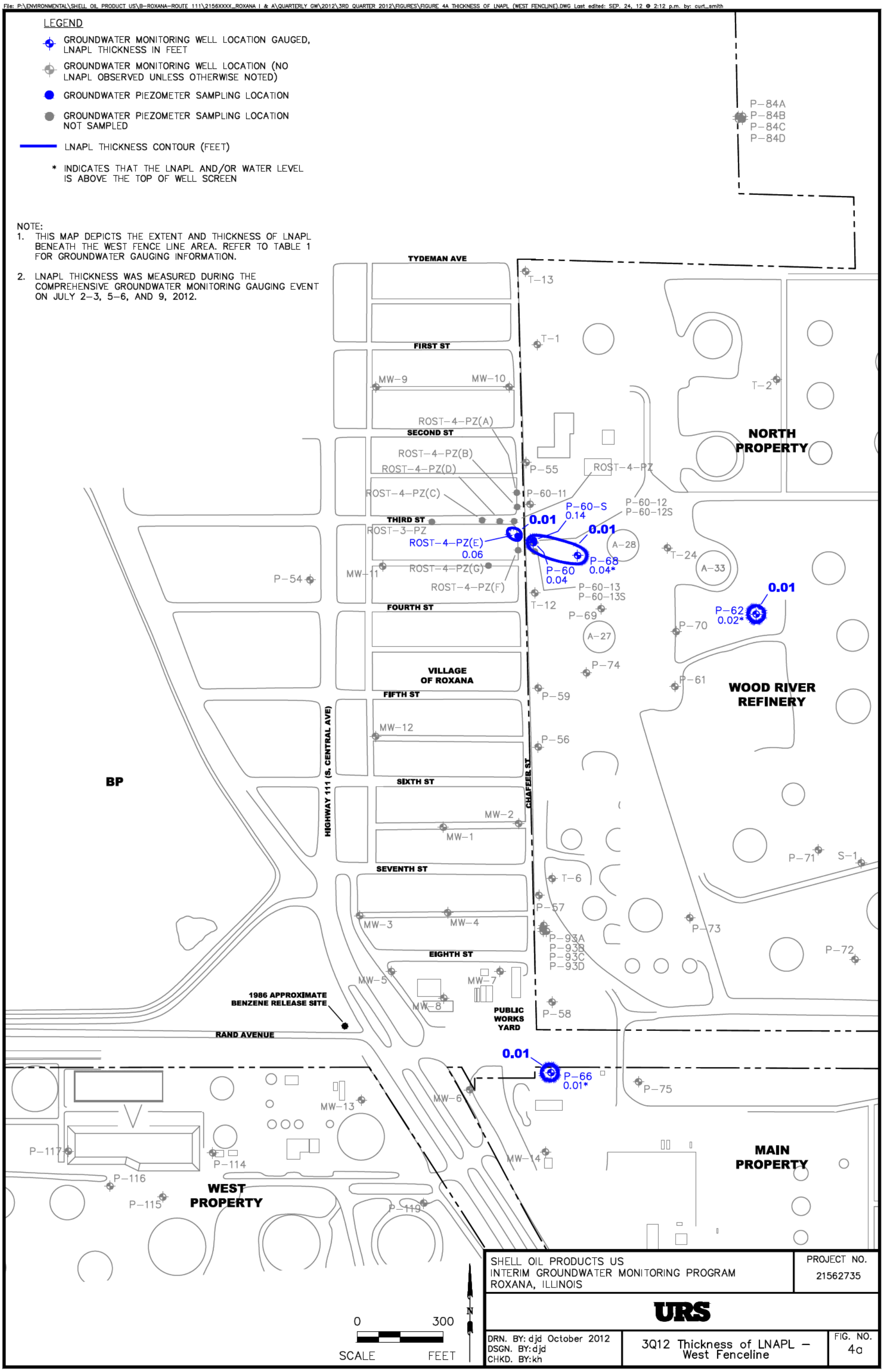
SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS	PROJECT NO. 21562735
URS	
DRN. BY:djd October 2012 DSGN. BY:jm CHKD. BY:kh	Groundwater Contours 3Q12– West Fenceline
	FIG. NO. 3b

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\2156XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 4A THICKNESS OF LNAPL (WEST FENCLINE).DWG Last edited: SEP. 24, 12 @ 2:12 p.m. by: curt_smith

LEGEND

- GROUNDWATER MONITORING WELL LOCATION GAUGED, LNAPL THICKNESS IN FEET
- GROUNDWATER MONITORING WELL LOCATION (NO LNAPL OBSERVED UNLESS OTHERWISE NOTED)
- GROUNDWATER PIEZOMETER SAMPLING LOCATION
- GROUNDWATER PIEZOMETER SAMPLING LOCATION NOT SAMPLED
- LNAPL THICKNESS CONTOUR (FEET)
- * INDICATES THAT THE LNAPL AND/OR WATER LEVEL IS ABOVE THE TOP OF WELL SCREEN

NOTE:
1. THIS MAP DEPICTS THE EXTENT AND THICKNESS OF LNAPL BENEATH THE WEST FENCE LINE AREA. REFER TO TABLE 1 FOR GROUNDWATER GAUGING INFORMATION.
2. LNAPL THICKNESS WAS MEASURED DURING THE COMPREHENSIVE GROUNDWATER MONITORING GAUGING EVENT ON JULY 2-3, 5-6, AND 9, 2012.



SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS		PROJECT NO. 21562735
URS		
DRN. BY: djd October 2012 DSGN. BY: djd CHKD. BY: kh	3Q12 Thickness of LNAPL – West Fenceline	FIG. NO. 4a

LEGEND

- GROUNDWATER MONITORING WELL LOCATION GAUGED, LNAPL THICKNESS IN FEET
- GROUNDWATER MONITORING WELL LOCATION (NO LNAPL OBSERVED UNLESS OTHERWISE NOTED)
- GROUNDWATER PIEZOMETER SAMPLING LOCATION
- GROUNDWATER PIEZOMETER SAMPLING LOCATION NOT SAMPLED
- OIL RECOVERY WELLS
- LNAPL THICKNESS CONTOUR (FEET)

* INDICATES THAT THE LNAPL AND/OR WATER LEVEL IS ABOVE THE TOP OF WELL SCREEN

NOTE:
1. THIS MAP DEPICTS THE EXTENT AND THICKNESS OF LNAPL BENEATH THE WEST FENCE LINE AREA. REFER TO TABLE 1 FOR GROUNDWATER GAUGING INFORMATION.
2. LNAPL THICKNESS WAS MEASURED DURING A COMPREHENSIVE GROUNDWATER MONITORING GAUGING EVENT ON JULY 2–3, 5–6, AND 9, 2012.

NORTH PROPERTY

BP PROPERTY

SHELL OIL COMPANY PROPERTY

WEST PROPERTY

MAIN PROPERTY

VALERO PROPERTY

VILLAGE OF HARTFORD

ILLINOIS TERMINAL RAILROAD

RAND AVE.

T ST. · R ST. · O ST. · M ST. · L ST.

4TH ST. · 7TH ST. · 10TH ST. · 12TH ST. · 21ST ST. · 22ND ST.

ROUTE 1

ROST-4-PZ(D) · ROST-4-PZ(C) · ROST-4-PZ(B) · ROST-4-PZ(A) · ROST-4-PZ(E) 0.06 · ROST-4-PZ(F) · ROST-4-PZ(G)

P-60-S 0.01 0.14 · P-68 0.01* · P-62 0.02* · P-64 0.01* · P-66 0.01* · T-7 0.06* 0.01 · P-92A 0.02* · P-60 0.04 · 0.01

R-39 · R-40 · R-62 · R-64 · R-65 · R-67 · R-69 · R-71 · R-72 · R-73 · R-74 · R-75 · R-76 · R-77 · R-78 · R-79 · R-80 · R-81

N

Ø 1ØØØ

SCALE FEET

REFERENCE: SHELL DRAWING E-36137-12

SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS		PROJECT NO. 21562735
URS		
DRN. BY: djd October 2012 DSGN. BY: jm CHKD. BY: bs	3Q12 Thickness of LNAPL	FIG. NO. 4b

FILE: A:\BW\ROXANA\SHELL OIL PRODUCT LOSS\BP-ROXANA-ROUTE 111\V21562000_ROXANA 1 & 4\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 4B THICKNESS OF LNAPL (RENNER).DWG Last edited: SEP. 25, 12 @ 1:56 p.m. by: dshiloyanis

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\2156XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 5 3Q12 GROUNDWATER ANALYTICAL RESULTS SUMMARY.DWG Last edited: OCT. 01, 12 @ 4:01 p.m. by: david_deguire

LEGEND

- GROUNDWATER MONITORING WELL SAMPLING LOCATION
- GROUNDWATER MONITORING WELL LOCATION (NOT SAMPLED)
- GROUNDWATER PIEZOMETER SAMPLING LOCATION
- GROUNDWATER PIEZOMETER LOCATION (NOT SAMPLED)

NOTES:

1. PER DIRECTION FROM IEPA, ANALYTICAL RESULTS ARE SCREENED AGAINST CRITERIA OUTLINED IN THE WRR RCRA PART B PERMIT.
2. EXCEEDANCE OF THE GROUNDWATER CLASS I SCREENING CRITERIA.

Analyte	Screening Criteria (mg/L)
Benzene	0.005
Ethylbenzene	0.7
MTBE	0.07
Naphthalene	0.14
1,3,5-Trimethylbenzene	0.07
Benzo(a)anthracene	0.00013
bis(2-Ethylhexyl)phthalate	0.006
2-Methylnapthalene	0.028
Phenol	0.1

3. J = THE TARGET ANALYTE WAS DETECTED BELOW THE REPORTING LIMIT AND THE RESULT IS ESTIMATED.
4. MULTIPLE RESULTS (e.g., 313/308) INDICATE DUPLICATE SAMPLES.
5. WELLS IDENTIFIED IN BLUE WITH NO DATA BOX INDICATE THE RESULTS DID NOT EXCEED SCREENING CRITERIA.

MW-9 MW-10 SECOND ST NORTH PROPERTY P-55

Sample Location	ROST-4-PZ (C)
Sampled 7/25/12	Result (mg/L)
Benzene	0.0849

ROST-4-PZ-(A) ROST-4-PZ-(B) ROST-4-PZ-(C) ROST-4-PZ THIRD ST ROST-3-PZ ROST-4-PZ-(D) ROST-4-PZ-(E) ROST-4-PZ-(F) ROST-4-PZ-(G) P-60 P-68 T-24

Sample Location	T-12
Sampled 8/2/12	Result (mg/L)
Benzene	1.64
2-Methylnaphthalene	0.0294

HIGHWAY 111 (S. CENTRAL AVE) MW-11 P-54 T-12 FOURTH ST P-69 WOOD RIVER REFINERY P-70

Sample Location	P-74
Sampled 8/6/12	Result (mg/L)
Benzene	2.46

P-74 P-61

Sample Location	P-59
Sampled 8/2/12	Result (mg/L)
Benzene	11
Ethylbenzene	1.74
1,3,5-Trimethylbenzene	0.158
Benzo(a)anthracene	0.00021

P-59 FIFTH ST

Sample Location	P-56
Sampled 8/6/12	Result (mg/L)
Benzene	0.164

MW-12 VILLAGE OF ROXANA P-56

Sample Location	MW-2
Sampled 7/30/12	Result (mg/L)
Benzene	0.01
Ethylbenzene	0.952
1,3,5-Trimethylbenzene	0.135

SIXTH ST CHAEFER ST MW-1 MW-2

Sample Location	P-57
Sampled 8/6/12	Result (mg/L)
Benzene	99.4/106
Ethylbenzene	0.795/0.759
MTBE	0.238/0.212
1,3,5-Trimethylbenzene	0.123 J/0.137
2-Methylnaphthalene	0.0326/0.0321

Sample Location	MW-4
Sampled 7/25/12	Result (mg/L)
Benzene	0.191/0.199

BP SEVENTH ST T-6

Sample Location	P93A	P93B	P93D
Sampled 8/8/12 - 8/9/12	Result (mg/L)	Result (mg/L)	Result (mg/L)
Benzene	87	317	0.0134
bis(2-Ethylhexyl)phthalate	0.0153		
Phenol	0.208	0.178	

P-57 P-73

Sample Location	MW-3
Sampled 7/27/12	Result (mg/L)
Benzene	0.0089

MW-3 MW-4 P-93A P-93B P-93C P-93D

Sample Location	MW-5
Sampled 7/25/12	Result (mg/L)
Benzene	0.0925

EIGHTH ST MW-5 MW-7

Sample Location	MW-7
Sampled 8/7/12	Result (mg/L)
Benzene	591

MW-8 P-58

Sample Location	P-58
Sampled 8/6/12	Result (mg/L)
Benzene	313/308
Ethylbenzene	0.889/0.931
Naphthalene	0.142/0.15
1,3,5-Trimethylbenzene	0.0955 J/0.102
Benzo(a)anthracene	0.00024/0.00021
2-Methylnaphthalene	0.0691/0.079
Phenol	0.15/0.19

Sample Location	MW-8
Sampled 8/7/12	Result (mg/L)
Benzene	397 J/653 J
MTBE	0.878/0.885
Phenol	0.136/0.134

RAND AVENUE

Sample Location	MW-13
Sampled 8/8/12	Result (mg/L)
Benzene	0.0069 J

MW-13 WEST PROPERTY MW-6A MW-6B MW-6C MW-6D P-66 P-75

Sample Location	P-66
Sampled 8/3/12	Result (mg/L)
Benzene	0.0994
MTBE	0.103
Benzo(a)anthracene	0.00018

MAIN PROPERTY MW-14

Sample Location	MW-14
Sampled 8/3/12	Result (mg/L)
Benzene	0.0131

P-114

0 200 SCALE FEET

SHELL OIL PRODUCTS US
INTERIM GROUNDWATER MONITORING PROGRAM
ROXANA, ILLINOIS

PROJECT NO. 21562735

URS

DRN. BY: djd October 2012
DSGN. BY: djd
CHKD. BY: kh

3Q12 Groundwater Monitoring Well Analytical Exceedances

FIG. NO. 5

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\2156XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 6 DISSOLVED PHASE BENZENE CONCENTRATIONS IN GROUNDWATER.DWG Last edited: OCT. 02, 12 @ 4:00 p.m. by: curt_smith

LEGEND

- GROUNDWATER MONITORING WELL SAMPLING LOCATION
- GROUNDWATER MONITORING WELL LOCATION NOT SAMPLED
- GROUNDWATER PIEZOMETER SAMPLING LOCATION
- GROUNDWATER PIEZOMETER LOCATION NOT SAMPLED
- EXTENT OF EVS MODEL DATA SET
- 50.0 GROUNDWATER CONCENTRATION BENZENE (mg/L)

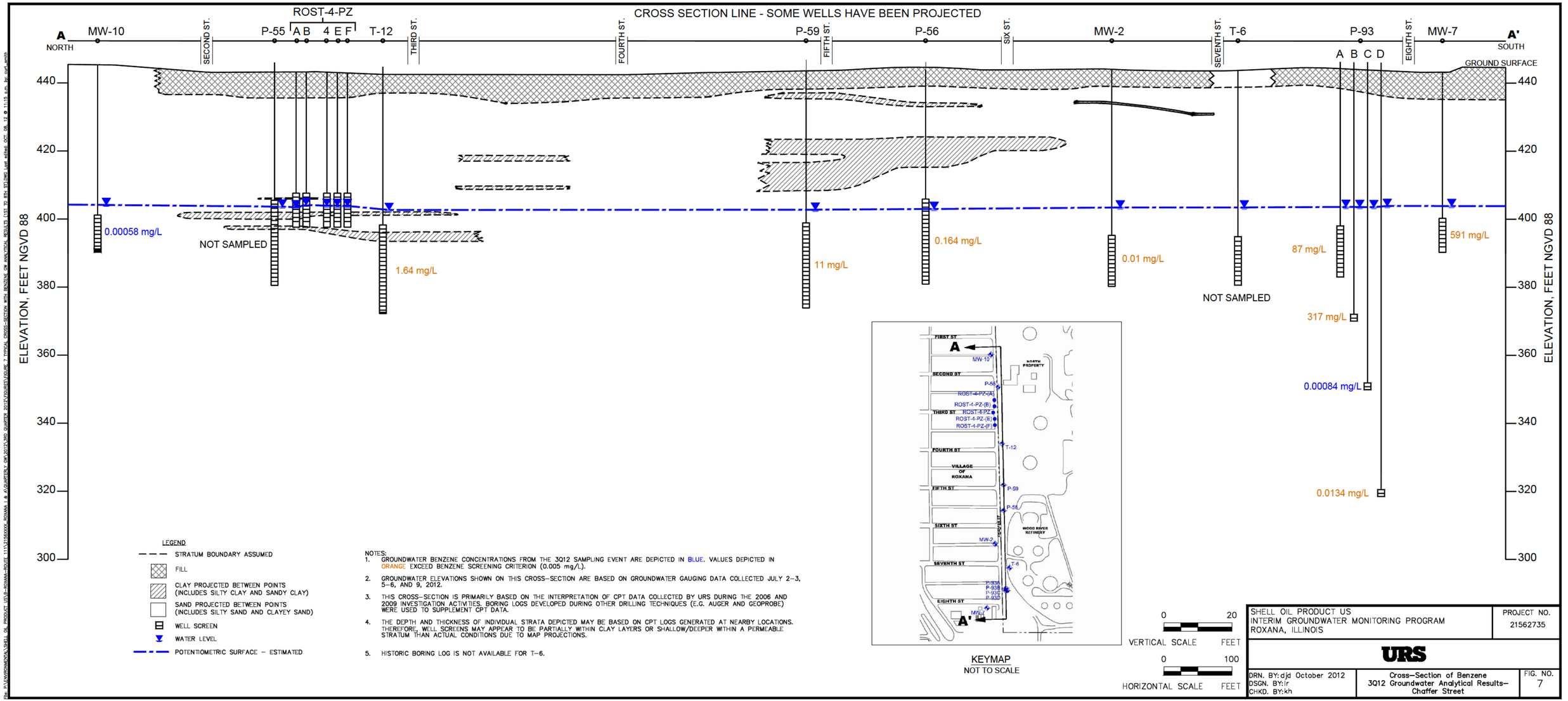
NOTES:

1. IMAGES GENERATED UTILIZING CTECH ENVIRONMENTAL VISUALIZATION SYSTEM MODELING SOFTWARE. CONCENTRATIONS BETWEEN KNOWN DATA POINTS (E.G. GROUNDWATER MONITORING WELLS) ARE INTERPOLATIONS AND EXTRAPOLATIONS OF THE MEASURED DATA. SOME INTERPRETATION WAS COMPLETED UTILIZING PROFESSIONAL JUDGEMENT AND CONTOUR LINES WERE MODIFIED BY HAND.
2. ALL RESULTS SHOWN IN mg/L.
3. ANALYTICAL REPORTING LIMITS ARE SHOWN FOR SAMPLES WITH NON-DETECT RESULTS (e.g., <0.197 mg/L).
4. NON-DETECT VALUES ARE MODELED AT HALF THE REPORTING LIMIT.
5. ROST-3-PZ AND ROST-PZ-4 (C) WERE ADDED TO THE INTERIM GROUNDWATER MONITORING PROGRAM IN 2Q12.
6. MULTIPLE RESULTS (e.g. 1070/1040) INDICATE DUPLICATE SAMPLES.
7. GROUNDWATER MONITORING WELL P-55 WAS FOUND TO BE COMPROMISED DURING 3Q12 AND WAS NOT SAMPLED.

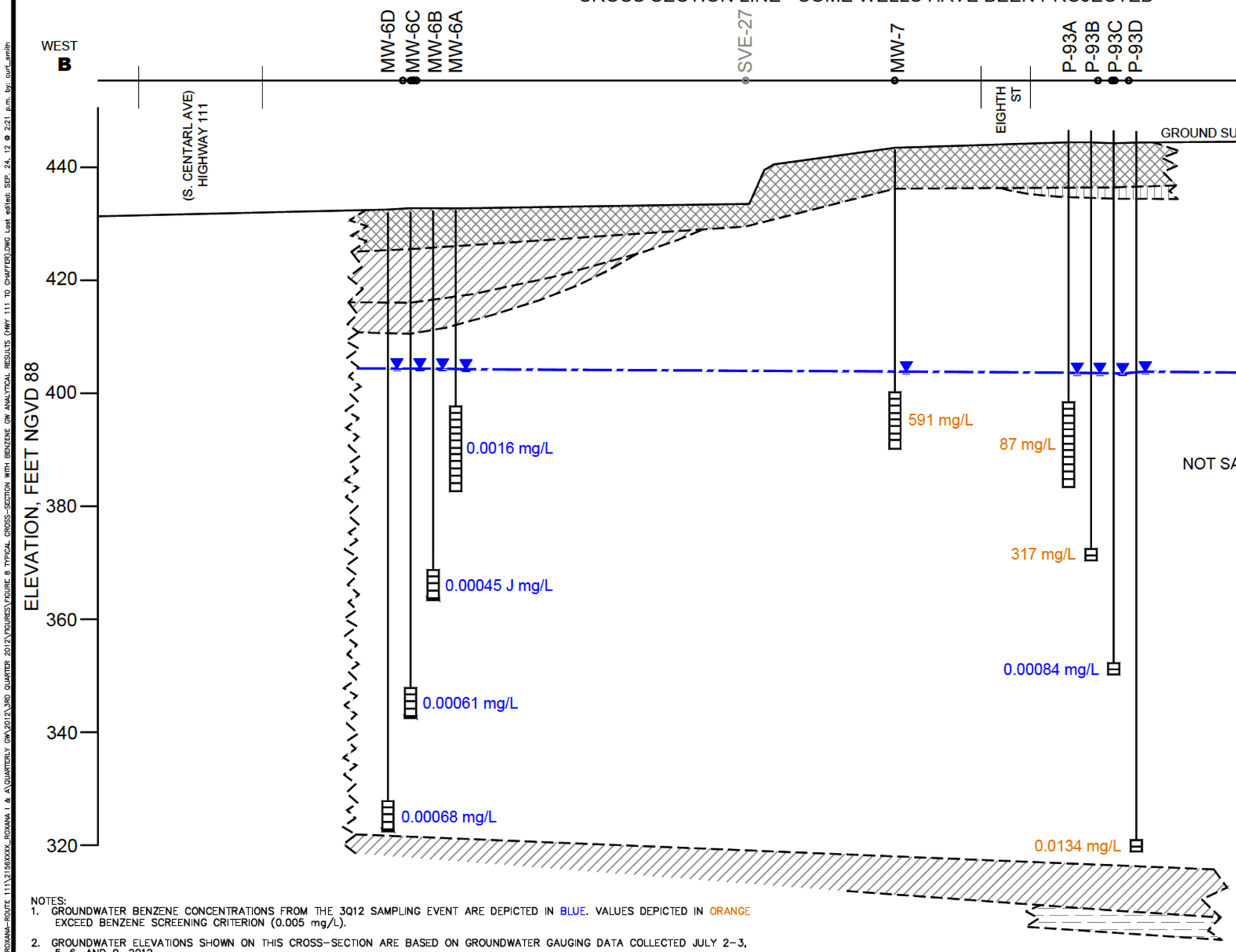
MW-9 0.00058
MW-10 0.00058
SECOND ST
ROST-4-PZ-(C) 0.0849
THIRD ST
ROST-3-PZ 0.0041
ROST-4-PZ
MW-11 0.00073
P-54 <0.0005
FOURTH ST
HIGHWAY 111 (S. CENTRAL AVE)
VILLAGE OF ROXANA
FIFTH ST
MW-12 0.0013
SIXTH ST
CHAFFER ST
MW-1 <0.0005
MW-2 0.01
BP
SEVENTH ST
MW-4 0.191/0.199
MW-3 0.0089
EIGHTH ST
MW-5 0.0925
MW-7 591
MW-8 397/653
PUBLIC WORKS YARD
1986 APPROXIMATE BENZENE RELEASE SITE
RAND AVENUE
MW-13 0.0069
MW-6A 0.0016
MW-6B 0.00045
MW-6C 0.00061
MW-6D 0.00068
P-114 <0.0005
WEST PROPERTY
P-116
P-115
P-55
NORTH PROPERTY
P-60
P-68
A-28
T-24
T-12 1.64
P-69
P-70
A-27
P-59 11
P-74 2.46
WOOD RIVER REFINERY
P-61
P-56 0.164
T-6
P-57 99.4/106
P-93A 87
P-93B 317
P-93C 0.00084
P-93D 0.0134
P-58 313/308
P-66 0.0994
P-75
MAIN PROPERTY
MW-14 0.0131
0.005
0.05
0.5
5.0
50.0
500.0

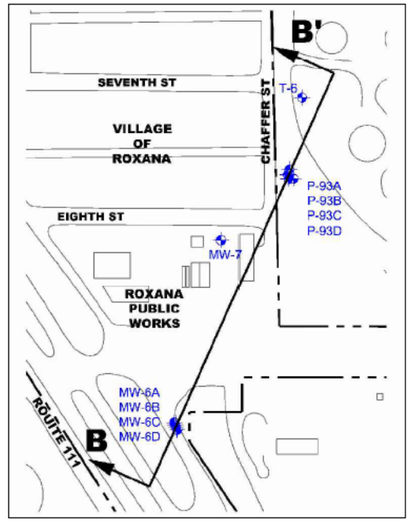
0 200
SCALE FEET
N

SHELL OIL PRODUCTS US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS	PROJECT NO. 21562735
URS	
DRN. BY: djd October 2012 DSGN. BY: nm CHKD. BY: kh	3Q12 Dissolved Phase Benzene Concentrations in Groundwater
	FIG. NO. 6


CROSS SECTION LINE - SOME WELLS HAVE BEEN PROJECTED
A
NORTH
A'
SOUTH
MW-10
SECOND ST.
P-55
ROST-4-PZ
A B 4 E F
T-12
THIRD ST.
FOURTH ST.
P-59
FIFTH ST.
P-56
SIX ST.
MW-2
SEVENTH ST.
T-6
P-93
A B C D
EIGHTH ST.
MW-7
GROUND SURFACE
ELEVATION, FEET NGVD 88
440
420
400
380
360
340
320
300
0.00058 mg/L
NOT SAMPLED
1.64 mg/L
11 mg/L
0.164 mg/L
0.01 mg/L
NOT SAMPLED
87 mg/L
591 mg/L
317 mg/L
0.00084 mg/L
0.0134 mg/L
LEGEND
STRATUM BOUNDARY ASSUMED
FILL
CLAY PROJECTED BETWEEN POINTS (INCLUDES SILTY CLAY AND SANDY CLAY)
SAND PROJECTED BETWEEN POINTS (INCLUDES SILTY SAND AND CLAYEY SAND)
WELL SCREEN
WATER LEVEL
POTENTIOMETRIC SURFACE – ESTIMATED
NOTES:
1. GROUNDWATER BENZENE CONCENTRATIONS FROM THE 3Q12 SAMPLING EVENT ARE DEPICTED IN BLUE. VALUES DEPICTED IN ORANGE EXCEED BENZENE SCREENING CRITERION (0.005 mg/L).
2. GROUNDWATER ELEVATIONS SHOWN ON THIS CROSS-SECTION ARE BASED ON GROUNDWATER GAUGING DATA COLLECTED JULY 2-3, 5-6, AND 9, 2012.
3. THIS CROSS-SECTION IS PRIMARILY BASED ON THE INTERPRETATION OF CPT DATA COLLECTED BY URS DURING THE 2006 AND 2009 INVESTIGATION ACTIVITIES. BORING LOGS DEVELOPED DURING OTHER DRILLING TECHNIQUES (E.G. AUGER AND GEOPROBE) WERE USED TO SUPPLEMENT CPT DATA.
4. THE DEPTH AND THICKNESS OF INDIVIDUAL STRATA DEPICTED MAY BE BASED ON CPT LOGS GENERATED AT NEARBY LOCATIONS. THEREFORE, WELL SCREENS MAY APPEAR TO BE PARTIALLY WITHIN CLAY LAYERS OR SHALLOW/DEEPER WITHIN A PERMEABLE STRATUM THAN ACTUAL CONDITIONS DUE TO MAP PROJECTIONS.
5. HISTORIC BORING LOG IS NOT AVAILABLE FOR T-6.
FIRST ST.
SECOND ST
THIRD ST
FOURTH ST
FIFTH ST
SIXTH ST
SEVENTH ST
EIGHTH ST
VILLAGE OF ROXANA
NORTH PROPERTY
WOOD RIVER REFINERY
MW-10
P-55
ROST-4-PZ-(A)
ROST-4-PZ-(B)
ROST-4-PZ
ROST-4-PZ-(E)
ROST-4-PZ-(F)
T-12
P-59
P-56
MW-2
T-6
P-93A
P-93B
P-93C
P-93D
MW-7
KEYMAP
NOT TO SCALE
0 20
VERTICAL SCALE FEET
0 100
HORIZONTAL SCALE FEET
SHELL OIL PRODUCT US
INTERIM GROUNDWATER MONITORING PROGRAM
ROXANA, ILLINOIS
PROJECT NO. 21562735
URS
DRN. BY: djd October 2012
DSGN. BY: lr
CHKD. BY: kh
Cross-Section of Benzene 3Q12 Groundwater Analytical Results- Chaffer Street
FIG. NO. 7

CROSS SECTION LINE - SOME WELLS HAVE BEEN PROJECTED





KEYMAP
NOT TO SCALE

LEGEND

- STRATUM BOUNDARY ASSUMED
- FILL
- CLAY PROJECTED BETWEEN POINTS (INCLUDES SILTY CLAY AND SANDY CLAY)
- SAND PROJECTED BETWEEN POINTS (INCLUDES SILTY SAND AND CLAYEY SAND)
- SILT
- SHALE
- WELL SCREEN
- WATER LEVEL
- POTENTIOMETRIC SURFACE – ESTIMATED

VERTICAL SCALE 0 20 FEET

HORIZONTAL SCALE 0 100 FEET

NOTES:
1. GROUNDWATER BENZENE CONCENTRATIONS FROM THE 3Q12 SAMPLING EVENT ARE DEPICTED IN BLUE. VALUES DEPICTED IN ORANGE EXCEED BENZENE SCREENING CRITERION (0.005 mg/L).
2. GROUNDWATER ELEVATIONS SHOWN ON THIS CROSS-SECTION ARE BASED ON GROUNDWATER GAUGING DATA COLLECTED JULY 2–3, 5–6, AND 9, 2012.
3. THIS CROSS-SECTION IS PRIMARILY BASED ON THE INTERPRETATION OF CPT DATA COLLECTED BY URS DURING THE 2006 AND 2009 INVESTIGATION ACTIVITIES. BORING LOGS DEVELOPED DURING OTHER DRILLING TECHNIQUES (E.G. AUGER AND GEOPROBE) WERE USED TO SUPPLEMENT CPT DATA.
4. THE DEPTH AND THICKNESS OF INDIVIDUAL STRATA DEPICTED MAY BE BASED ON CPT LOGS GENERATED AT NEARBY LOCATIONS. THEREFORE, WELL SCREENS MAY APPEAR TO BE PARTIALLY WITHIN CLAY LAYERS OR SHALLOW/DEEPER WITHIN A PERMEABLE STRATUM THAN ACTUAL CONDITIONS DUE TO MAP PROJECTIONS.
5. LITHOLOGICAL INFORMATION FROM SVE-27 WAS OBTAINED FROM BORING LOG TO SUPPLEMENT SITE GEOLOGY ONLY.
6. HISTORIC BORING LOG IS NOT AVAILABLE FOR T-6.

SHELL OIL PRODUCT US INTERIM GROUNDWATER MONITORING PROGRAM ROXANA, ILLINOIS	PROJECT NO. 21562735
URS	
DRN. BY: djd October 2012 DSGN. BY: jm CHKD. BY: tja	Cross-Section of Benzene 3Q12 Groundwater Analytical Results– Route 111 to Chaffer Street
	FIG. NO. 8

File: P:\ENVIRONMENTAL\SHELL OIL PRODUCT US\B-ROXANA-ROUTE 111\21562XXXX_ROXANA I & A\QUARTERLY GW\2012\3RD QUARTER 2012\FIGURES\FIGURE 8 TYPICAL CROSS-SECTION WITH BENZENE GW ANALYTICAL RESULTS (HWY 111 TO CHAFFER).DWG Last edited: SEP. 24, 12 @ 2:21 p.m. by: curt_smith

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNulty, K. Kody

DATE: 7/30/12 WEATHER: Overcast, 95°F

MONITORING WELL ID: MW-1 SAMPLE ID: MW1-ROX-073012

INITIAL DATA

Well Diameter): ~~#2~~ in 60.31
Total Well Depth (btoc): ~~50.41~~ ft
Depth to Water (btoc): 39.39 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~43.41~~ ft
Screen Length): ~~15~~ 10 ft 49.98

Water Column Height (do not include LNAPL or DNAPL): ~~10.33~~ NM 20.92 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ~~54.78~~ NM 50.31 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS ~~Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1222	39.39	Cloudy	None	6.54	20.73	971.4	86.05	0.64	73
1800	1229	39.39	Clr	None	6.62	20.16	995.2	16.58	0.23	45
3600	1235	39.39	"	"	6.63	20.23	1001	4.588	0.13	34
5400	1241	39.39	"	"	6.65	20.03	996.6	2.007	0.09	21

Start Time: 1222 Elapsed Time (min): 19 Water Quality Meter ID: TROLL 9500

Stop Time: 1241 Average Purge Rate (mL/min): 300 Date Calibrated: 7/30/12

SAMPLING DATA

Sample Date: 7/30/12 Sample Time: 1245 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 5400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNiven, K. Hurst

DATE: 7/30/12 WEATHER: Overcast, 95°F

MONITORING WELL ID: MW-2 SAMPLE ID: MW2 - Rox - 073012

INITIAL DATA

Well Diameter: ~~2~~ in
Total Well Depth (btoc): ~~62.19~~ ~~61.69~~ DM ft
Depth to Water (btoc): 40.60 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~47.19~~ ft
Screen Length): ~~15~~ 10 ft 51.32

Water Column Height (do not include LNAPL or DNAPL): ~~21.05~~ DM 21.59 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ~~56.32~~ DM 57.19 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 182 ppm

PURGE DATA

Pump Type: ~~SS Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1327	40.60	Reading	Missed Due to equipment issue						
2000	1332	40.60	Clr	None	6.64	21.07	1077	10.31	0.07	-13
4000	1337	40.60	"	"	6.65	20.83	1078	5.440	0.03	-19
6000	1342	40.60	"	"	6.66	20.85	1080	12.10	0.01	-23
8000	1347	40.60	"	"	6.66	20.80	1082	4.012	-0.01	-26

Start Time: 1327 Elapsed Time (min): 20 Water Quality Meter ID: TROLL 9500

Stop Time: 1347 Average Purge Rate (mL/min): 400 Date Calibrated: 7/30/12

SAMPLING DATA

Sample Date: 7/30/12 Sample Time: 1355 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow / SS Monsoon Sample Flow Rate (mL/min): 400 QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 8000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNutten, K. Hust

DATE: 7/27/12 WEATHER: Clear, 95°F

MONITORING WELL ID: MW-3 SAMPLE ID: MW3-ROX-072712

INITIAL DATA

Well Diameter): 2 in 45.98 DTW
Total Well Depth (btoc): ~~45.98~~ 45.98 ft
Depth to Water (btoc): ~~26.60~~ 26.60 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~30.98~~ ft
Screen Length): ~~15~~ 10 ft 34.67 DTW

Water Column Height (do not include LNAPL or DNAPL): 8.4 19.38 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — 40.98 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ~~40.8~~ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: ~~SS Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	0826	26.59	Clr	None	6.49	20.08	1223	10.43	0.39	30
1500	0832	26.59	"	"	6.57	20.12	1236	2.793	0.15	-18
3000	0837	26.59	"	"	6.60	20.22	1241	1.708	0.09	-40
4500	0842	26.59	"	"	6.61	20.33	1246	1.494	0.06	-53
6000	0847	26.59	"	"	6.62	20.41	1250	1.094	0.04	-61
7500	0852	26.59	"	"	6.63	20.63	1255	1.183	0.03	-67

Start Time: 0826 Elapsed Time (min): 26 Water Quality Meter ID: TROLL 9500

Stop Time: 0852 Average Purge Rate (mL/min): 300 Date Calibrated: 7/27/12

SAMPLING DATA

Sample Date: 7/27/12 Sample Time: 0900 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow / Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: MW3-ROX-072712-MS
MW3-ROX-072712-MSD

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 7500 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: Kelly Hurst / Nathan McNutt

DATE: 7/25/12 WEATHER: 107°F, Sunny

MONITORING WELL ID: MW-4 SAMPLE ID: MW4-ROX-072512

INITIAL DATA

Well Diameter: ~~2~~ in ~~56.39~~ PM

Total Well Depth (btoc): ~~57.63~~ ft

Depth to Water (btoc): ~~38.63~~ ft

Depth to LNAPL/DNAPL (btoc): — ft

Depth to Top of Screen (btoc): ~~42.03~~ ft

Screen Length): ~~15.10~~ PM ft ~~46.06~~ PM

Water Column Height (do not include LNAPL or DNAPL): ~~20.08~~ PM 18.76 ft btoc

If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,

Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ~~57.06~~ PM 51.39 ft btoc

If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,

Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc

If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL

Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL

Ambient PID/FID Reading: 0.0 ppm

Wellbore PID/FID Reading: 24.0 ppm

PURGE DATA

Pump Type: SS ~~Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
~~1800~~ 0	0920	37.65	Gray	Hydrocarbon	6.60	25.20	1155	321.4	0.16	-43
1800	0925	37.66	Gray	"	6.59	20.43	1144	59.02	0.04	-55
3600	0931	37.66	Gray	"	6.59	20.12	1141	30.47	0.00	-62
5400	0937	37.66	"	"	6.59	20.48	1143	27.67	-0.02	-68
7200	0943	37.66	"	"	6.60	15.98	1144	17.55	-0.03	-72
9000	0949	37.66	Very slt gray	"	6.59	20.75	1161	10.99	-0.02	-75
10,800	0955	37.66	"	"	6.60	20.19	1143	13.05	-0.03	-78
12600	1001	37.66	"	"	6.60	20.01	1137	12.32	-0.04	-80
14400	1007	37.66	"	"	6.60	19.54	1137	9.687	-0.04	-82

Start Time: 0920 Elapsed Time (min): 47 Water Quality Meter ID: TROLL 9500

Stop Time: 1007 Average Purge Rate (mL/min): 300 Date Calibrated: 7/25/12

SAMPLING DATA

Sample Date: 7/25/12 Sample Time: 1015 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow / SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: MW4-ROX-072512-DUP

VOA Vials, No Headspace [X] Initials: NM

COMMENTS:

No bolts on MW-4

Total Purge Volume: 14400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNurlen, K. Host

DATE: 7/25/12 WEATHER: Clear, 107°F

MONITORING WELL ID: MW-5 SAMPLE ID: MW5-ROX-072512

INITIAL DATA

Well Diameter): 2" in 46.13DM
Total Well Depth (btoc): ~~46.13~~ ~~44.30~~ ft
Depth to Water (btoc): 26.18 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~31.13~~ ft
Screen Length): ~~15.10~~ ft ~~33.97~~ 33.97DM

Water Column Height (do not include LNAPL or DNAPL): ~~18.12~~ DM 19.95 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is < 4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ~~38.47~~ NM 41.13 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.00 ppm
Wellbore PID/FID Reading: 0.00 ppm

PURGE DATA

Pump Type: Monsoon SS ~~Bladder~~ Pump

Purge Volume (mL)	Time	Depth to Water (ft) NM	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1105	26.18	Grey	Hydrocarbon	6.69	23.81	866.7	1327	0.09	-54
1500	1110	26.18	"	"	6.70	23.39	857.4	462.3	-0.00	-84
3000	1115	26.30	"	"	6.71	23.17	855.6	223.4	-0.01	-96
Rugged	Reader	Locked	up -	Restart						
6000	1127	26.18	Clr	None	6.74	22.40	844.0	61.25	-0.03	-108
7500	1132	26.18	"	"	6.75	22.61	849.2	38.75	-0.03	-112
9000	1138	26.18	"	"	6.76	22.81	851.8	19.51	-0.03	-115
10500	1143	26.18	"	"	6.77	22.83	852.6	14.28	-0.03	-118
12000	1148	26.18	"	"	6.78	23.92	855.5	8.638	-0.03	-120

Start Time: 1105 Elapsed Time (min): 43 Water Quality Meter ID: TROLL 9500

Stop Time: 1148 Average Purge Rate (mL/min): 3000 Date Calibrated: 7/25/12

SAMPLING DATA

Sample Date: 7/25/12 Sample Time: 1155 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ NM Low Flow / SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace [X] Initials: NM

COMMENTS:

Total Purge Volume: 12000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/1/12 WEATHER: sunny, hot, 90°F

MONITORING WELL ID: MW-6A SAMPLE ID: MW6A-ROX-080112

INITIAL DATA

Well Diameter): ~~4~~ 2" in
Total Well Depth (btoc): 46.98 ft
Depth to Water (btoc): 28.36 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 34.83 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 18.62 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is < 4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 41.98 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1041	28.36	Cloudy	none	6.51	20.49	1097	78.67	0.21	-1
1440	1047	28.36	Cloudy	none	6.53	20.40	1094	21.22	0.06	-17
2880	1052	28.36	Cloudy	none	6.54	20.32	1092	5.198	0.02	-27
4320	1057	28.36	Cloudy	none	6.55	20.21	1093	2.973	-0.00	-33
5760	1101	28.36	Cloudy	none	6.56	20.14	1098	1.460	-0.01	-37

Start Time: 1041 Elapsed Time (min): 22 min Water Quality Meter ID: TROLL 9500

Stop Time: 1103 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 8/1/12

SAMPLING DATA

Sample Date: 8/1/12 Sample Time: 1105 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QCSamples: none

VOA Vials, No Headspace [X] Initials: DM

COMMENTS: Purge approximately 400 mL before and ~500 mL during sampling

Total Purge Volume: 5760 mL

LOW FLOW GROUNDWA..R SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/1/12 WEATHER: sunny, hot, 90°F,

MONITORING WELL ID: MW-6B SAMPLE ID: MW6B-ROX-080112

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 69.38 ft
Depth to Water (btoc): 28.39 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 64.05 ft
Screen Length): 5 ft

Water Column Height (do not include LNAPL or DNAPL): 40.99 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 66.88 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1140	28.39	Cloudy	None	6.79	21.58	1501	339.4	0.17	43
2040	1147	28.39	Cloudy	None	6.81	20.70	1464	94.22	0.09	13
4080	1155	28.39	Cloudy	None	6.82	20.50	1445	67.32	0.05	-2
6120	1202	28.39	Cloudy	None	6.82	20.43	1436	52.93	0.03	-11
8160	1209	28.39	Cloudy	None	6.82	20.49	1432	42.75	0.01	-17
10200	1216	28.39	Clear	None	6.82	20.48	1431	34.37	0.00	-22
12240	1223	28.39	Clear	None	6.81	20.98	1450	32.32	0.00	-25
14280	1230	28.39	Clear	None	6.81	21.41	1456	23.79	0.03	-28
16320	1237	28.39	Clear	None	6.81	21.18	1457	16.19	0.02	-30
18360	1244	28.40	Clear	None	6.80	21.33	1460	12.54	0.02	-32
20400	1251	28.40	Clear	None	6.80	22.07	1483	10.59	0.04	-34
22440	1258	28.40	Clear	None	6.80	22.50	1498	10.36	0.05	-35
24480	1305	28.40	Clear	None	6.81	20.93	1432	12.76	0.04	-36
26520	1313	28.40	Clear	None	6.80	20.86	1433	8.456	-0.00	-38
28560	1320	28.40	Clear	None	6.81	20.71	1431	5.889	-0.01	-39
30600	1327	28.40	Clear	None	6.80	20.98	1441	7.460	-0.02	-40

Start Time: 1140 Elapsed Time (min): 121 min Water Quality Meter ID: TROLL 9500

Stop Time: 1341 Average Purge Rate (mL/min): 300mL/min Date Calibrated: 8/1/12

SAMPLING DATA

Sample Date: 8/1/12 Sample Time: 1345 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged approximately 4000mL prior to sampling and ~500 mL during sampling.

Total Purge Volume: 346080 mL

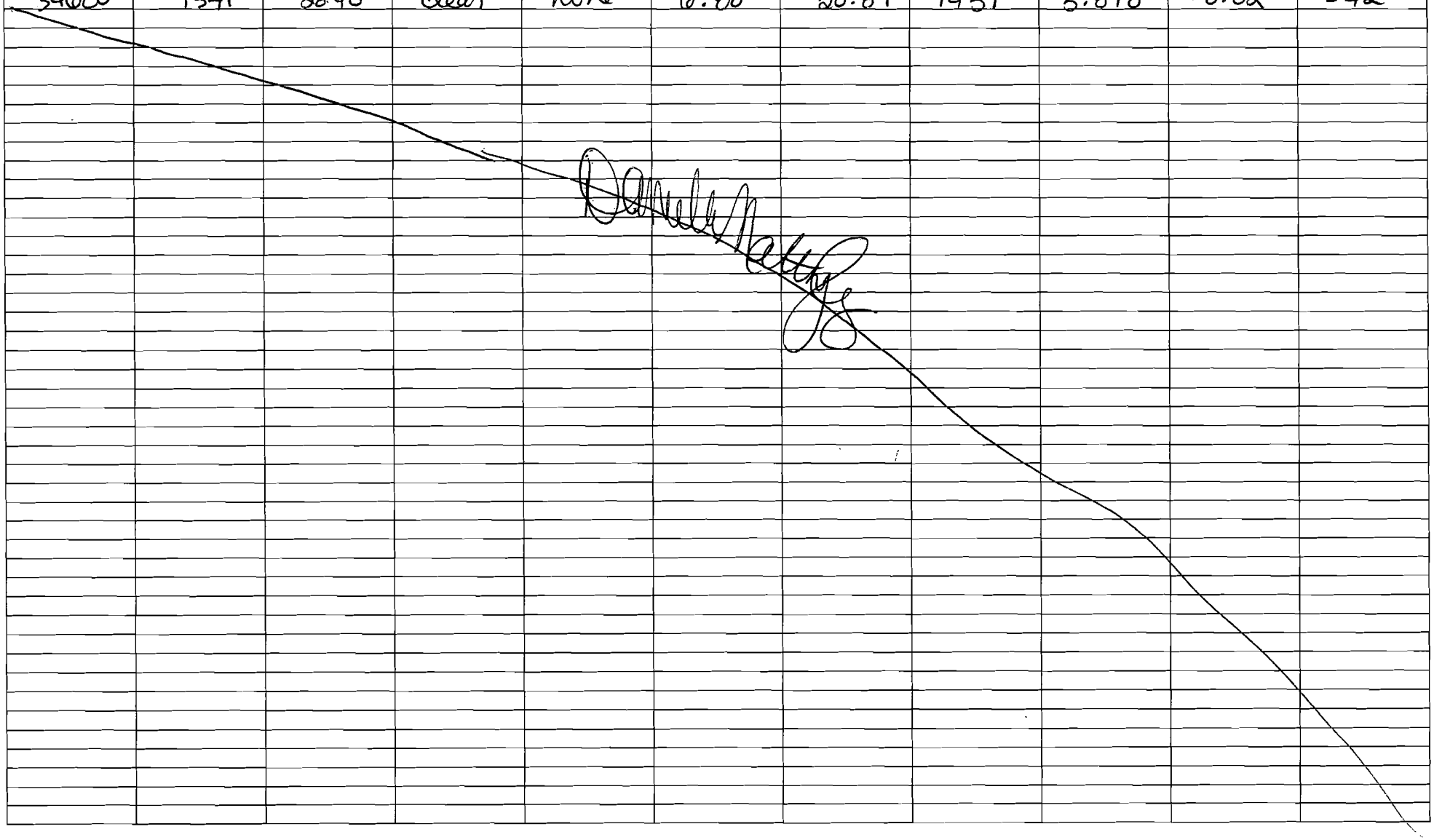
* Temperature was within 0.3 - called Kelly Hurst and told him that we were purging on the well for 2 hours + temp was still not within 0.2. He said to sample anyway.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana Groundwater Sampling PROJECT NUMBER: 215627735.00008 FIELD PERSONNEL: D. Nattingly, C. Williams

DATE: 8/1/12 MONITORING WELL ID: MWeB-ROX-080112

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
32640 ~~34000~~	1334	28.40	Clear	None	6.80	21.14	1444	7.031	-0.01	-41
34680	1341	28.40	Clear	None	6.80	20.81	1437	5.878	-0.02	-42



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 08/01/2012 WEATHER: Sunny 100°

MONITORING WELL ID: MW-6C SAMPLE ID: MW6C-ROX-080112

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 90.28 ft
Depth to Water (btoc): 28.15 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 84.95 ft
Screen Length): 5 ft

Water Column Height (do not include LNAPL or DNAPL): 62.13 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 87.78 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = / ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = / ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	14:54	28.15	Clear	None	6.89	21.03	1046	37.93	0.17	19
2490		"	"	"	6.93	20.59	1045	8.88	0.10	-23
4980		"	"	"	6.93	20.06	1035	3.40	0.05	-38
*	RUGGED	READER	FROZE							
0		28.15	Clear	none	6.93	19.87	1031	2.63	0.01	-49
2490		28.15	clear	none	6.92	19.89	1032	1.97	0.00	-52
4980		28.15	Clear	none	6.92	20.05	1036	2.16	0.00	-55

Start Time: 14:54 Elapsed Time (min): 49 min Water Quality Meter ID: TROLL 9500

Stop Time: 15:43 Average Purge Rate (mL/min): 300 Date Calibrated: 8/1/12

SAMPLING DATA

Sample Date: 8/1/12 Sample Time: 15:45 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 QA/QCSamples: EB

VOA Vials, No Headspace [X] Initials: DM

COMMENTS: Purged ~450mL prior to sampling and ~500mL during sampling.

Total Purge Volume: 4980 mL

LOW FLOW GROUNDW..R SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/2/12 WEATHER: Cloudy 89°

MONITORING WELL ID: MW-6D SAMPLE ID: MW6D-ROX-080212

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 110.05 ft
Depth to Water (btoc): 28.08 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 104.72 ft
Screen Length): 5 ft

Water Column Height (do not include LNAPL or DNAPL): 81.97 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 107.55 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = / ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = / ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	10:22	28.08	~~Cloudy~~	None	6.91	19.91	1343	351.5	0.04	-24
2940	~~10:32~~	"	"	"	6.94	20.25	1350	69.54	(rise) 0.05	-52
5880	10:42	"	"	"	6.94	20.36	1353	21.74	0.03	-64
8820	10:52	"	"	"	6.94	20.46	1353	25.42	0.02	-71
11760	11:02	"	"	"	6.94	20.20	1348	70.98	0.00	-75
14700	11:12	"	"	"	6.93	21.15	1376	221.3	-0.01	-79
17640	11:22	"	"	"	6.93	20.94	1364	105.5	-0.01	-83
20580	11:32	"	"	"	6.94	20.84	1356	57.62	-0.03	-85
23520	11:42	"	"	"	6.94	20.73	1364	37.19	-0.05	-88
26460	11:52	"	"	"	6.94	20.46	1348	36.17	-0.03	-89
29400	12:02	"	"	"	6.94	20.52	1358	23.00	-0.03	-90
* 32340	12:12	"	"	"	6.94	20.45	1350	19.41	-0.03	-91
35280	12:22	"	"	"	6.94	20.71	1357	15.23	-0.03	-92
38220	12:32	"	"	"	6.94	20.67	1354	20.20	-0.04	-93

Danielle Mattingly

Start Time: 10:22 Elapsed Time (min): 131 min Water Quality Meter ID: TROLL 9500

Stop Time: 12:33 Average Purge Rate (mL/min): 300 Date Calibrated: 8/2/12

SAMPLING DATA

Sample Date: 8/2/12 Sample Time: 1235 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QCSamples: None

VOA Vials, No Headspace: X Initials: DM

COMMENTS:

*Called K. Hurst and explained we were purging on the well for 2 hours and temperature + turbidity were not stabilizing, he said to take a couple more readings and then sample it after 2 hours the samples taken should be representative of the well. Total Purge Volume: 38220 mL

Purged ~ 500 mL prior to sampling and ~ 450 during sampling.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: R. Mattingly, D. McWhirter

DATE: 8/7/12 WEATHER: sunny, 90F

MONITORING WELL ID: MW-7 SAMPLE ID: MW7-ROX-080712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 52.92 ft
Depth to Water (btoc): 39.88 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 42.92 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 13.04 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet)
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 47.92 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1402	39.88	Brn	Nom	6.61	22.60	1088	190.1	0.17	65
Nm ~~1600~~ 2100	1409	39.89	"	"	6.65	22.08	1106	212.8	0.03	—
Nm ~~3600~~ 4200	1415	39.90	"	"	6.66	21.86	1129	116.4	0.00	25
Nm ~~4800~~ 6300	1422	39.90	"	"	6.67	21.33	1136	49.57	-0.01	16
8400	1429	39.90	Clear	"	6.68	21.07	1144	27.48	-0.02	11
10500	1436	39.90	"	"	6.67	21.33	1165	15.08	-0.01	7
12600	1442	39.90	"	"	6.68	21.14	1169	10.83	-0.01	4
14700	1449	39.90	"	"	6.68	21.33	1181	8.311	-0.01	3
										1

Start Time: 1402 Elapsed Time (min): 47 Water Quality Meter ID: TROLL 9500

Stop Time: 1449 Average Purge Rate (mL/min): 300 Date Calibrated: 8/7/12

SAMPLING DATA

Sample Date: 8/7/12 Sample Time: 1455 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow / SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS: Resample

Total Purge Volume: 14700 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, N. McMurlen

DATE: 8/7/12 WEATHER: clear, 95°F

MONITORING WELL ID: MW-8 SAMPLE ID: MW8-ROX-080712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 43.60 ft
Depth to Water (btoc): 30.97 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 33.60 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 12.63 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 38.60 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1223	30.98	Cloudy	None	6.45	21.72	1319	35.23	0.10	67
1500	1227	30.98	"	"	6.46	21.89	1316	25.33	0.03	48
3000	1232	30.98	Clear	"	6.46	21.95	1311	14.85	0.01	37
4500	1237	30.98	"	"	6.46	22.17	1311	10.76	0.01	29
6000	1242	30.98	"	"	6.46	22.07	1300	7.760	0.00	24
7500	1247	30.98	"	"	6.46	22.01	1299	8.91	0.00	20
					6.46	21.97	1289	7.872	-0.00	17

Start Time: 1227 Elapsed Time (min): 25 Water Quality Meter ID: TROLL 9500

Stop Time: 1253 Average Purge Rate (mL/min): 300 Date Calibrated: 8/7/12

SAMPLING DATA

Sample Date: 8/7/12 Sample Time: 1255 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: MW-8-ROX-080712-DUP

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS: Resample

Total Purge Volume: 7500 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW | PROJECT NUMBER: 21562735.00008 | FIELD PERSONNEL: N. McWhorter / K. Thrift

DATE: 7/27/12 | WEATHER: Clear, 95°F

MONITORING WELL ID: MW-9 | SAMPLE ID: MW9-ROX-072712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 56.78 ft
Depth to Water (btoc): 41.30 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 46.45 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 15.48 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 51.45 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS ~~Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
2000	1359	41.35	Clr	None	6.67	20.68	1122	21.82	0.17	-1
4000	1403	41.36	"	"	6.68	20.18	1121	4,090	0.08	-20
6000	1408	41.35	"	"	6.67	19.99	1123	5,047	0.04	-33
8000	1413	41.35	"	"	6.67	19.87	1127	8,709	0.01	-39

Start Time: 1359 | Elapsed Time (min): 14 | Water Quality Meter ID: TROLL 9500
Stop Time: 1413 | Average Purge Rate (mL/min): 400 | Date Calibrated: 7/27/12

SAMPLING DATA

Sample Date: 7/27/12 | Sample Time: 1420 | Lab Analysis: VOC, SVOC
Sample Method: ~~Bladder Pump~~ / Low Flow / SS Monsoon | Sample Flow Rate (mL/min): 400 | QA/QCSamples: None
VOA Vials, No Headspace [X] Initials: NM

COMMENTS:

Total Purge Volume: 800 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNurlen, K. Hurst

DATE: 7/27/12 WEATHER: Clear, 95°F

MONITORING WELL ID: MW-10 SAMPLE ID: MW10-ROX-072712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 54.76 ✓ ft
Depth to Water (btoc): 41.21 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 44.43 ✓ ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 13.55 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 49.43 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: ~~SS Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1256	41.20	cloudy	None	6.82	21.73	691.0	141.0	0.24	-18
1800	1302	41.21	clr	"	6.85	21.52	649.1	25.44	0.13	-59
3600	1309	41.21	"	"	6.86	21.52	632.6	7.033	0.08	-76
5400	1314	41.21	"	"	6.87	21.42	625.6	5.583	0.04	-85
7200	1320	41.21	"	"	6.87	21.46	623.8	3.569	0.02	-90

Start Time: 1256 Elapsed Time (min): 24 Water Quality Meter ID: TROLL 9500

Stop Time: 1320 Average Purge Rate (mL/min): 300 Date Calibrated: 7/27/12

SAMPLING DATA

Sample Date: 7/27/12 Sample Time: 1325 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow SS / Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: ~~NA~~ MW10-ROX-072712

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 7200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNulty, K. Thrift

DATE: 7/27/12 WEATHER: Clear, 95°F

MONITORING WELL ID: MW-11 SAMPLE ID: MW11-ROX-072712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 51.99 ✓ ft
Depth to Water (btoc): 38.90 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 41.66 ✓ ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 12.09 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 46.66 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS ~~Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1042	38.92	clr	None	6.67	21.22	1158	15.26	0.48	-30
1800	1048	38.92	"	"	6.67	21.09	1168	3.123	0.18	-53
3600	~~1053~~ 1054	38.92	"	"	6.67	21.09	1161	1.523	0.10	-63
5400	1059	38.92	"	"	6.67	21.27	1158	1.149	0.06	-69

Start Time: 1042 Elapsed Time (min): 17 Water Quality Meter ID: TROLL 9500

Stop Time: 1059 Average Purge Rate (mL/min): 300 Date Calibrated: 7/27/12

SAMPLING DATA

Sample Date: 7/27/12 Sample Time: 1105 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 5400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNutten, K. Hurst

DATE: 7/27/12 WEATHER: Clear, 95°F

MONITORING WELL ID: MW-12 SAMPLE ID: MW12-ROX-072712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 52.25 ft
Depth to Water (btoc): 39.22 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 41.92 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 13.03 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 46.92 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: ~~SS Bladder Pump~~ Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	0947	39.24	Cloudy	None	6.88	20.88	915.1	92.64	0.39	22
1500	0952	39.24	"	"	6.82	20.36	910.5	18.29	0.15	14
3000	0957	39.24	"	"	6.80	20.21	911.3	4.627	0.07	8
4500	1003	39.24	"	"	6.78	20.11	911.7	2.661	0.03	4

Start Time: 0947 Elapsed Time (min): 16 Water Quality Meter ID: TROLL 9500

Stop Time: 1003 Average Purge Rate (mL/min): 300 Date Calibrated: 7/27/12

SAMPLING DATA

Sample Date: 7/27/12 Sample Time: 1010 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ / Low Flow / SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: NM

COMMENTS:

Total Purge Volume: 4500 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/8/12 WEATHER: Cloudy 100 °F

MONITORING WELL ID: MW-13 SAMPLE ID: MW13-ROX-080812

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 35.82 ft
Depth to Water (btoc): 26.67 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 25.57 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 9.15 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = 31.24 ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1450	26.67	Clear	None	6.60	23.07	1366	89.27	0.05	-42
1290	1455	"	"	"	6.62	22.41	1336	208.8	-0.00	-62
2580	1500	"	"	"	6.63	22.59	1359	104.9	-0.01	-72
3870	1504	"	"	"	6.64	22.46	1368	40.49	-0.02	-79
5160	1508	"	"	"	6.64	22.86	1396	26.99	-0.02	-83
6450	1513	"	"	"	6.64	22.98	1416	13.43	-0.02	-86
7740	1517	"	"	"	6.64	23.19	1426	10.36	-0.02	-88
9030	1522	"	"	"	6.64	23.35	1437	8.36	-0.03	-90
10320	1526	"	"	"	6.63	23.66	1453	6.55	-0.03	-92
11610	1531	"	"	"	6.63	23.23	1441	5.82	-0.03	-93
12900	1535	"	"	"	6.64	23.07	1439	5.66	-0.04	-93
14190	1540	"	"	"	6.64	23.00	1438	11.12	-0.04	-94
15480	1544	"	"	"	6.64	22.76	1434	14.43	-0.04	-95
16770	1549				6.64	22.59	1435	16.61	-0.04	-95
18060	1553				6.64	22.65	1435	7.16	-0.04	-96
				DM						

Start Time: 1450 Elapsed Time (min): 64 min Water Quality Meter ID: TROLL 9500

Stop Time: 1554 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 8/8/12

SAMPLING DATA

Sample Date: 8/8/12 Sample Time: 1555 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QC Samples: MS/MSD

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~450mL prior to sampling and ~500mL during sampling.

Total Purge Volume: 18000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: S. Jansen, L. Rathnow

DATE: 8.3.12 WEATHER: 97° partly cloudy

MONITORING WELL ID: MW-14 SAMPLE ID: MW-14-ROX-080312

Rugged Reader says 33.5 here

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 44.00 ft
Depth to Water (btoc): 30.51 ft
Depth to LNAPL/DNAPL (btoc): N/A ft
Depth to Top of Screen (btoc): 33.42 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 13.49 DM ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 39.00 DM ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
300	1152	30.51	Clear	none	6.65	22.25 ~~1044~~ sg	~~1044~~ sg	145.8	0.06	0
2400	1158	30.55	cloudy	none	6.62	21.49	1024	91.67	-0.01	-12
NO FLOW 4500	1204	↓	cloudy	↓	6.75	22.81	1.195	-0.0692	1.98	-25
6600	1211		clear		6.63	22.03	1037	60.73	0.07	-23
8700	1217		↓		6.62	21.84	1031	47.94	-0.02	-30
10800	1224				6.62	22.06	1036	41.97	-0.04	-36
12900	1231				6.62	21.84	1030	33.98	-0.05	-41
15000	1237				6.62	21.83	1025	25.20	-0.05	-45
17100	1243				6.62	21.99	1033	23.06	-0.06	-48
19200	1248				6.61	22.80	1056	17.83	-0.05	-51
sg 22300	1253				6.61	23.19	1069	16.60	-0.05	-53
24400	1258				6.61	22.98 ~~18.76~~ sg	1064	18.76	-0.05	-56
26500	1304				6.61	23.42	1088	15.55	-0.06	-58
28600	1309				6.64	20.96	1030	8.996	-0.08	-58
30700	1315				6.62	22.36	1040	7.280	-0.07	-60
32800	1321	↓	↓	↓	6.61	22.79	1054	6.624	-0.06	-62

Start Time: 1152 Elapsed Time (min): 96 min DM Water Quality Meter ID: TROLL 9500

Stop Time: 1328 DM Average Purge Rate (mL/min): 300 Date Calibrated: 08.03.12

SAMPLING DATA

Sample Date: 8/3/12 Sample Time: 1330 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 QA/QC Samples: N/A

VOA Vials, No Headspace ☒ Initials: Sg

COMMENTS: Called Kelly Hurst at 1321 reading, he said to take one more reading and sample.

☆ NOT IN TOUGHBOOK ☆

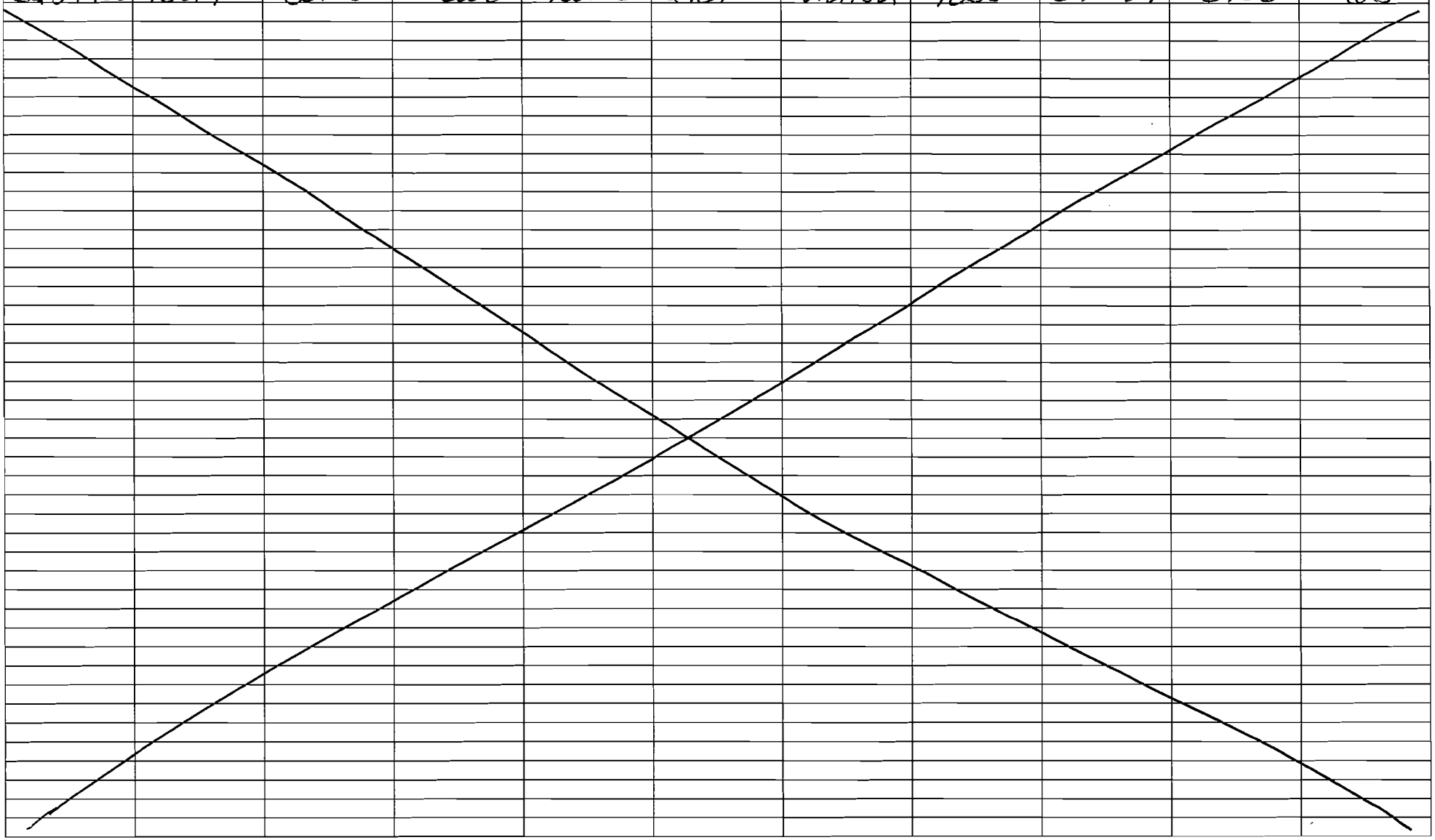
Total Purge Volume: 34900 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW **PROJECT NUMBER:** 21562735.00008 **FIELD PERSONNEL:** SGansen, L. Rathnow

DATE: 8.3.12 **MONITORING WELL ID:** MW14-ROX-080312

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
5 [illegible]34900	1327	30.55	clear	none	6.61	22.82	1058	5.779	-0.06	-63



LOW FLOW GROUNDW. .R SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mathrafy, C. Williams

DATE: 8/2/12 WEATHER: Cloudy, light rain

MONITORING WELL ID: P-54 SAMPLE ID: P-54-ROX-080212

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 63.00 ft
Depth to Water (btoc): 38.95 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 38.00 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 24.05 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = 50.97 ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

See 2nd pg. for well sampling

Start Time: 1356 Elapsed Time (min): 30 min Water Quality Meter ID: TROLL 9500

Stop Time: 1426 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 8/2/12

SAMPLING DATA

Sample Date: 8/2/12 Sample Time: 1430 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QCSamples: EB

VOA Vials, No Headspace ☑ Initials: DM

COMMENTS: Purged ~ 400 mL prior to sampling + 500 mL during sampling

Total Purge Volume: 900 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: 3rd Quarter Groundwater Sampling **PROJECT NUMBER:** 215627 35.00008 **FIELD PERSONNEL:** D. Mattingly, C. Williams

DATE: 8/2/12 **MONITORING WELL ID:** P-54

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1356	38.95	clear	None	6.75	19.49	1088	3.45	0.18	30
1725	1403	"	"	"	6.74	19.44	1040	2.44	0.08	~~30~~
3450	1409	"	"	"	6.73	19.43	1010	4.08	0.04	17
5175	1414	"	"	"	6.72	19.17	992	3.20	0.01	14
6900	1420	"	"	"	6.72	19.03	979	2.30	-0.00	11
8625	1426	"	"	"	6.72	19.02	973	7.77	-0.01	9

Sample time - 14:30

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/3/12 WEATHER: sunny

MONITORING WELL ID: P-55 SAMPLE ID: ~~P-55~~

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 64.82 ft
Depth to Water (btoc): ~~ft~~
Depth to LNAPL/DNAPL (btoc): ~~ft~~
Depth to Top of Screen (btoc): 39.82 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): ~~ft btoc~~
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ~~ft btoc~~
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ~~ft btoc~~
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = ~~ft btoc~~

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type:

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

Well compromised

Start Time: Elapsed Time (min): Water Quality Meter ID: TROLL 9500

Stop Time: Average Purge Rate (mL/min): Date Calibrated: 8/3/12

SAMPLING DATA

Sample Date: Sample Time: Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): QA/QC Samples:

VOA Vials, No Headspace ☐ Initials:

COMMENTS: Tried to sample, however, Pump clogged w/ sand & couldn't get flow.

Total Purge Volume: mL

LOW FLOW GROUNDW..R SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/2/12 8/6/12 WEATHER: cloudy 93°F sunny, 80°F

MONITORING WELL ID: P-56 SAMPLE ID: P56-ROX-080612

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 65.82 ft
Depth to Water (btoc): ~~43.17~~ 43.60 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 40.82 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 22.22 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = 54.71 ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1558	43.17	clear	No	6.54	23.75	1250	7.75	0.12	-5
1890	1605		"	"	6.52	23.66	1251	14.69	0.05	-24
3780	1612		"	"	6.51	23.54	1256	2.31	0.01	-33
5670	1618		"	"	6.51	23.36	1252	10.31	-0.09	-38
7560	1625		"	"	6.50	23.58	1260	1.61	-0.01	-42
9450	1631		"	"	6.50	24.19	1278	1.76	-0.01	-45
11340	1639		"	"	6.50	24.12	1274	2.28	-0.01	-47
13230	1645		"	"	6.50	23.38	1258	2.91	-0.03	-49
15120	1651		"	"	6.50	23.28	1256	1.64	-0.04	-50
17010	~~1704~~		"	"	6.50	23.92	1275	1.80	-0.03	-52
	1704		"	"	6.50	24.52	1285	3.38	0.01	-53

Start Time: ~~1558~~ 0951 Elapsed Time (min): 19 min Water Quality Meter ID: TROLL 9500

Stop Time: 1010 Average Purge Rate (mL/min): 500 mL/min Date Calibrated: 8/2/12

SAMPLING DATA

Sample Date: 8/6/12 Sample Time: 1015 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 500 mL/min QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: DM

COMMENTS: Purged ~ 500 mL prior to sampling + 950 mL during sampling.

Total Purge Volume: 1500 mL

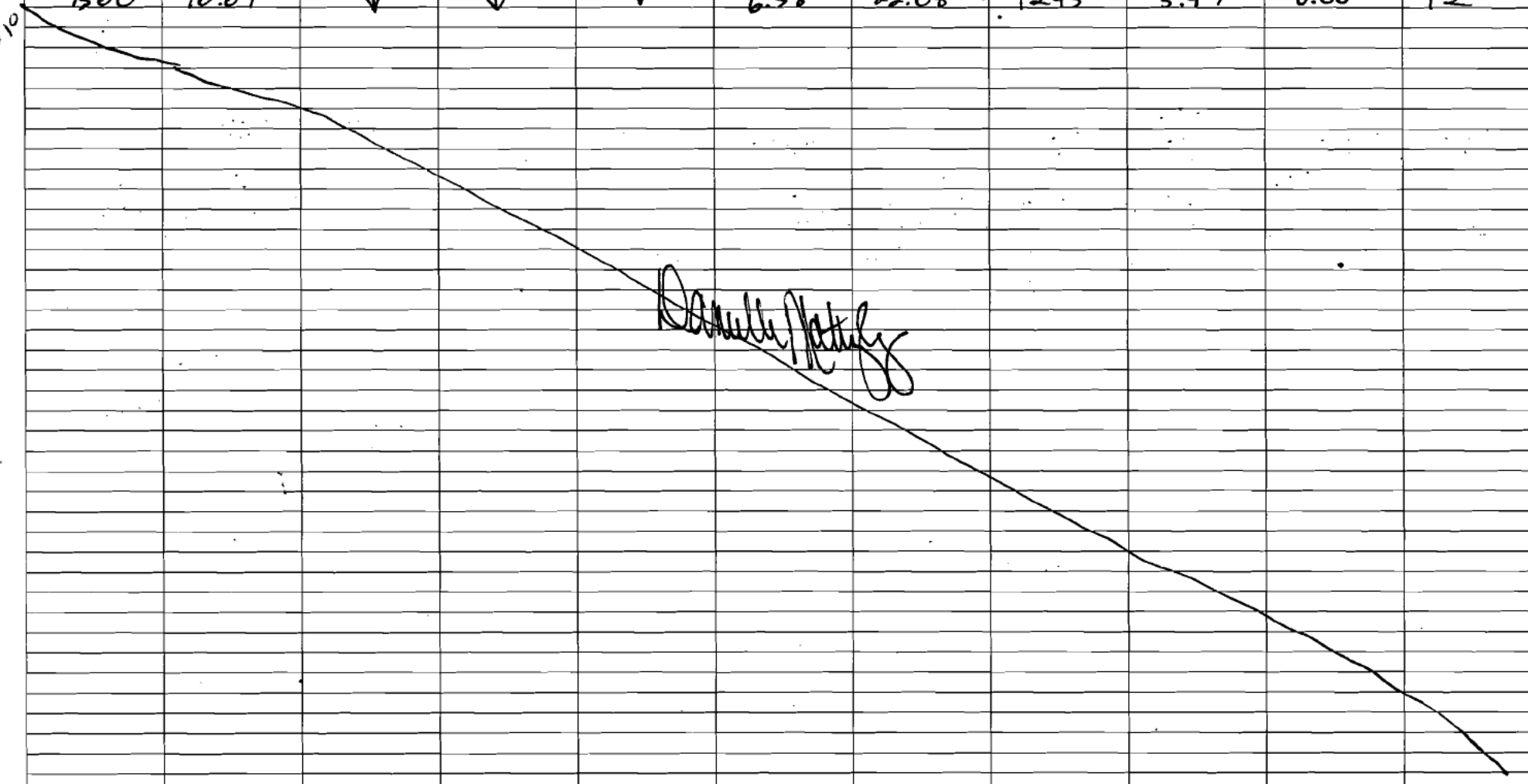
LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: 3rd Quarter Groundwater Sampling **PROJECT NUMBER:** 215027735.00008 **FIELD PERSONNEL:** D. Mattingly, C. Williams

DATE: 8/6/12 **MONITORING WELL ID:** P-56-BOX-080612

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	09:[illegible]51	43.60	clear	yes	6.51	22.74	1277	9.13	0.15	44
1875	09:55	↓	↓	↓	6.55	22.79	1271	13.97	0.08	30
3750	09:59				6.57	22.10	1250	7.3	0.03	21
5625	10:03				6.58	22.11	1253	2.99	0.02	16
7500	10:07				6.58	22.08	1245	3.47	0.00	12

3.96
1010



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/6/12 WEATHER: Sunny 90°F

MONITORING WELL ID: P-57 SAMPLE ID: P57-ROX-080612

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 65.46 ft
Depth to Water (btoc): 43.53 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 40.46 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 21.93 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = 54.50 ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1343	43.53	clear	yes	6.57	21.18	1196	5.36	0.07	24
1750	1347	43.58	"	"	6.58	20.97	1184	5.55	0.04	9
3500	1351	43.58	"	"	6.58	21.12	1185	5.6	0.02	0
5250	1355	43.58	"	"	6.59	20.98	1182	3.25	0.00	-5
~~7000~~										

3.30

Start Time: 1343 Elapsed Time (min): 13 min Water Quality Meter ID: TROLL 9500

Stop Time: 1356 Average Purge Rate (mL/min): 500mL/min Date Calibrated: 8/6/12

SAMPLING DATA

Sample Date: 8/6/12 Sample Time: 1400 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 500mL/min QA/QC Samples: Dup

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~500mL prior to sampling and ~400 during sampling.

Total Purge Volume: 5250 mL

LOW FLOW GROUNDW[illegible]R SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/6/12 WEATHER: Sunny 90°F

MONITORING WELL ID: P-58 SAMPLE ID: P58-ROX-080612

INITIAL DATA

Well Diameter: 2 in
Total Well Depth (btoc): 65.21 ft
Depth to Water (btoc): 41.63 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 40.21 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 23.58 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = 53.42 ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1447	41.63	clear	No	6.55	19.74	1202	19.68	0.07	57
1650	1451	41.82			6.56	19.77	1205	13.61	0.03	43
3300	1455	"			6.57	19.54	1197	13.01	0.01	34
4950	1458	"			6.56	19.78	1201	11.71	0.00	28
6600	1502	"			6.56	19.71	1201	13.61	-0.00	24
8250	1506	"			6.56	19.57	1197	13.13	-0.01	21
9900	1509	"			6.56	19.51	1199	12.67	-0.01	19

3.21

Start Time: 1447 Elapsed Time (min): 24min Water Quality Meter ID: TROLL 9500

Stop Time: 1511 Average Purge Rate (mL/min): 500mL/min Date Calibrated: 8/6/12

SAMPLING DATA

Sample Date: 8/6/12 Sample Time: 1515 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 500mL/min QA/QCSamples: Dup

VOA Vials, No Headspace [X] Initials: DM

COMMENTS: Purged ~ 550 mL prior to sampling and ~ 450 mL during sampling

Total Purge Volume: 9900 mL

* When probe was removed there was an oily substance, however, probe did not indicate product.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW | PROJECT NUMBER: 21562735.00008 | FIELD PERSONNEL: L. Rathnow, S. Jansen

DATE: 8-2-12 | WEATHER: 97° overcast 10-15 mph winds

MONITORING WELL ID: P-59 | SAMPLE ID: P-59-ROX-080212

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 72.91 ft
Depth to Water (btoc): 44.07 ft
Depth to LNAPL/DNAPL (btoc): N/A ft
Depth to Top of Screen (btoc): 47.91 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 3.84 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 60.41 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
300	1507	44.07	clear	none	6.63	23.09	1335	19.62	0.13	-31
2400	1514	↓			6.64	22.38	1303	16.87	0.06	-52
4500	1521				6.61	24.10	1350	16.73	0.04	-62
6600	1528				7.11	28.41	1196	-1.003	7.03	-60
8800	1535	44.14			6.64	21.91	1260	15.48	0.04	-49
10900	1542				6.63	21.93	1248	13.61	0.02	-61
13000	1549				6.63	21.98	1244	14.31	0.00	-68
15100	1556 SG				6.64	21.72	1234	15.99	-0.01	-72
17200	1603				6.63	21.92	1235	10.72	-0.01	-75
19300	1610				6.62	22.01	1234	10.43	-0.01	-77
21400	1617				6.63	21.74	1220	9.002	-0.01	-79

Start Time: 1507 | Elapsed Time (min): 70min | Water Quality Meter ID: TROLL 9500

Stop Time: 1617 | Average Purge Rate (mL/min): 300 | Date Calibrated: 8-2-12

SAMPLING DATA

Sample Date: 8-2-12 | Sample Time: 1620 | Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow | Sample Flow Rate (mL/min): 300 | QA/QC Samples: N/A

VOA Vials, No Headspace [X] Initials: SG

COMMENTS:

Total Purge Volume: 21400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/8/12 WEATHER: sunny

MONITORING WELL ID: P-60-12S SAMPLE ID: —

INITIAL DATA

Well Diameter): 0.75 in
Total Well Depth (btoc): 23.84 ft
Depth to Water (btoc): 19.79 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 13.84 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 4.05 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type:

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
				Not sampled. Not enough water						

Start Time: — Elapsed Time (min): — Water Quality Meter ID: TROLL 9500

Stop Time: — Average Purge Rate (mL/min): — Date Calibrated: 8/8

SAMPLING DATA

Sample Date: — Sample Time: — Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): — QA/QC Samples: —

VOA Vials, No Headspace ☐ Initials: —

COMMENTS:

Total Purge Volume: — mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/8/12 WEATHER: sunny

MONITORING WELL ID: P-60-13S SAMPLE ID: —

INITIAL DATA

Well Diameter): 0.75 in
Total Well Depth (btoc): 20.00 ft
Depth to Water (btoc): 18.34 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 10.00 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 1.66 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type:

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

Not sampled. Not enough water.

Start Time: Elapsed Time (min): Water Quality Meter ID: TROLL 9500

Stop Time: Average Purge Rate (mL/min): Date Calibrated:

SAMPLING DATA

Sample Date: Sample Time: Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): QA/QC Samples:

VOA Vials, No Headspace ☐ Initials:

COMMENTS:

Total Purge Volume: mL

LOW FLOW GROUNDW[illegible] SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW **PROJECT NUMBER:** 21562735.00008 **FIELD PERSONNEL:** S. Jansen, L. Rathnow

DATE: 8/3/12 **WEATHER:** @10am Sunny 94° winds calm

MONITORING WELL ID: P-66 **SAMPLE ID:** P66-ROX-080312

INITIAL DATA

tubing = 60 FT

Well Diameter): 2 in
Total Well Depth (btoc): 59.72 ft
Depth to Water (btoc): 33.19 ft
Depth to LNAPL/DNAPL (btoc): N/A ft
Depth to Top of Screen (btoc): 34.72 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 26.53 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 47.22 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = _____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = _____ ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 3.3 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	+- .2 pH	3 at Temp +- .2 (°C)	Cond. 3% (mS/cm)	3<50% ~10% 65 Turbidity (NTUs)	DO +- .2 (mg/L)	ORP +- 20.0 (mV)
300 sg	0954	33.19	clear	none	6.35	21.88	1356	35.57	0.05	18
2400	1003				6.37	21.90	1352	26.87	0.01	-3
4500	1010				6.38	21.68	1352	21.36	0.00	-15
6600	1017				6.40	21.55	1343	21.43	-0.02	-23
8700	1023				6.42	20.93	1327	23.09	-0.04	-29
10800	1030				6.42	20.92	1324	35.19	-0.05	-33
12900	1037				6.39	20.88	1323	22.04	-0.06	-37
14000	1044				6.40	21.62	1344	17.59	-0.05	-40
16100	1053				6.42	21.67	1346	19.03	-0.06	-42
18200	1100				6.41	22.18	1365	17.95	-0.06	-45
20300	1107				6.40	22.61	1373	21.47	-0.06	-47
22400	1114				6.40	22.96	1385	19.85	-0.07	-49
24500	1121				6.41	22.74	1378	19.35	-0.07	-51
26600	1128				6.41	22.52	1372	20.89	-0.07	-53

Start Time: 0954 Elapsed Time (min): 94 min Water Quality Meter ID: TROLL 9500

Stop Time: 1128 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 08/3/12

SAMPLING DATA

Sample Date: 8/3/12 Sample Time: 1130 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QC Samples: N/A

VOA Vials, No Headspace ☒ Initials: SEJ

COMMENTS:

Total Purge Volume: 26600 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/6/12 WEATHER: Sunny 90°F

MONITORING WELL ID: P-74 SAMPLE ID: P74-ROX-080612

INITIAL DATA

Well Diameter): 4 in
Total Well Depth (btoc): 69.43 ft
Depth to Water (btoc): 40.71 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 44.43 ft
Screen Length): 25 ft

Water Column Height (do not include LNAPL or DNAPL): 28.72 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 56.93 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1225	40.91	Dark grey	yes	6.66	19.60	529.9	12.03	0.06	44
2100	1229	40.91	"	"	6.68	19.46	533.5	15.68	0.01	33
4200	1234	"	"	"	6.68	19.55	537.2	13.08	-0.01	26
6300	1238	"	"	"	6.69	19.57	542.3	12.84	-0.02	20
8400	1242	"	"	"	6.68	20.21	553.8	11.84	-0.03	15
10500	1247	"	"	"	6.68	20.46	561.5	10.75	-0.04	12
12600	1251	"	"	"	6.68	20.51	567.3	47.67	-0.03	9
14700	1255	"	"	"	6.68	20.45	569.3	11.24	-0.04	6
16800	1300	"	"	"	6.67	20.38	574	11.79	-0.04	3
18900	1305	"	"	"	6.68	20.31	579.9	10.52	-0.05	1

4.00

Start Time: 1225 Elapsed Time (min): 40 min Water Quality Meter ID: TROLL 9500

Stop Time: 1305 Average Purge Rate (mL/min): 500 mL/min Date Calibrated: 8/6/12

SAMPLING DATA

Sample Date: 8/6/12 Sample Time: 1310 Lab Analysis: VOC, SVOC

Sample Method: Lowflow Sample Flow Rate (mL/min): 500mL/min QA/QC Samples: ~~Dup~~ DM

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~500mL prior to sampling and ~400mL during sampling.

Total Purge Volume: 18,900 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/9/12 WEATHER: Sunny humid

MONITORING WELL ID: P-93A SAMPLE ID: P93A-ROX-080912

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 63.17 ft
Depth to Water (btoc): 43.66 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 48.17 ft
Screen Length): 15 ft

Water Column Height (do not include LNAPL or DNAPL): 19.51 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 55.67 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ——— ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = ——— ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: ———

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	~~0937~~		Clear	none	~~6.70~~	~~20.56~~	~~1154~~	~~40.65~~	~~4.86~~	-9
0	0945	43.66			~~6.72~~	~~20.57~~	1122	~~38.16~~	~~4.85~~	-11
0	0948	"			6.71	20.77	1133	43.71	4.92	-14
★	0951	"			~~6.71~~	20.76	1124	43.66	5.02	-14
	0953	"			~~6.71~~	~~20.69~~	1130	~~44.98~~	5.04	-14
	0955	"			6.71	20.73	1131	~~42.39~~	5.09	-14
0	~~0957~~ 1002	"	Clear	none	6.71	20.78	1131	43.75	5.10	-14
1740	1002	"	"	"	6.71	20.83	1138	42.08	5.13	-14
3480	1008	"	"	"	6.71	20.89	1144	43.60	5.20	-13

Start Time: 0945 Elapsed Time (min): 24 min Water Quality Meter ID: TROLL 9500

Stop Time: 1009 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 8/9/12

SAMPLING DATA

Sample Date: 8/9/12 Sample Time: 1010 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QC Samples: none

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS:

★ Had to change the tubing diameter, which caused for greater time between readings.

Total Purge Volume: 3480 mL

Purged ~2000 mL prior to sampling & ~1000 mL during sampling

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW | PROJECT NUMBER: 21562735.00008 | FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/9/12 | WEATHER: Sunny

MONITORING WELL ID: P-93B | SAMPLE ID: P93B-ROX080912

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 76.60 ft
Depth to Water (btoc): 43.69 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 74.6 ft
Screen Length): 2 ft

Water Column Height (do not include LNAPL or DNAPL): 32.91 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is < 4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 75.60 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type:

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1047	43.69	clear	slight	6.77	19.70	1951	4.64	0.18	-46
2170	1054	"	"	"	6.77	19.64	1956	6.41	0.15	-55
4350	1102	"	"	"	6.76	19.63	1963	11.87	0.13	-61
6525	1109	"	"	"	6.76	19.61	1973	3.28	0.12	-65

7.18

Start Time: 1047 | Elapsed Time (min): 24 min | Water Quality Meter ID: TROLL 9500

Stop Time: 1111 | Average Purge Rate (mL/min): 300 mL/min | Date Calibrated: 8/9/12

SAMPLING DATA

Sample Date: 8/9/12 | Sample Time: 1115 | Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow | Sample Flow Rate (mL/min): 300 mL/min | QA/QC Samples: none

VOA Vials, No Headspace [X] | Initials:

COMMENTS: Purged ~3000 mL prior to sampling & ~900 mL during sampling.

Total Purge Volume: 6525 mL

LOW FLOW GROUNDWA... SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW | PROJECT NUMBER: 21562735.00008 | FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/9/12 | WEATHER: Sunny

MONITORING WELL ID: P-93C | SAMPLE ID: P93C-ROX-080912

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 96.26 ft
Depth to Water (btoc): 43.57 ft
Depth to LNAPL/DNAPL (btoc): / ft
Depth to Top of Screen (btoc): 94.26 ft
Screen Length): 2 ft

Water Column Height (do not include LNAPL or DNAPL): 52.69 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is < 4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 95.26 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: _____

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1137	43.57	clear	slight	6.94	21.92	1248	1.102	0.65	-15
2625	1147	"	"	"	6.81	20.69	1393	1.813	0.30	-26
5250	1156	"	"	"	6.79	20.49	1433	2.82	0.23	-33
7875	1205	"	"	"	6.78	20.42	1423	1.52	0.21	-37
10500	1218	"	"	"	6.78	20.50	1419	6.46	0.16	-41
13125	1227	"	"	"	6.78	20.46	1413	9.22	0.16	-43
15840	1236	"	"	"	6.77	20.55	1416	8.66	0.16	-45

8:45 ★

Start Time: 1137 | Elapsed Time (min): 60 min | Water Quality Meter ID: TROLL 9500

Stop Time: 1237 | Average Purge Rate (mL/min): 300mL/min | Date Calibrated: 8/9/12

SAMPLING DATA

Sample Date: 8/9/12 | Sample Time: 1240 | Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow | Sample Flow Rate (mL/min): 300mL/min | QA/QC Samples: MS | MSD

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~ 3000mL prior to sampling and ~ 800mL during sampling

★ Rugged Reader froze - had to restart.

Total Purge Volume: 15840 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/8/12 WEATHER: 85° F Sunny

MONITORING WELL ID: P-93D SAMPLE ID: P93D-ROX-080812

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 128.0 ft
Depth to Water (btoc): 43.71 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 125.75 ft
Screen Length): 2 ft

Water Column Height (do not include LNAPL or DNAPL): 84.29 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 127.0 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1010	43.75	clear	yes	6.81	20.56	1415	0.96	0.10	-39
3450	1022	"	"	"	6.87	21.81	1456	1.30	0.05	-57
6900	1033	"	"	"	6.90	20.89	1425	10.27	0.04	-65
10350	1045	"	"	"	6.92	20.01	1395	75.44	0.01	-65
13800	1057	43.72	"	"	6.92	21.27	1435	1.03	0.01	-76
17250	1109	"	"	"	6.92	20.97	1428	1.073	-0.00	-79
20700	1121	"	"	"	6.90	23.56	1500	0.845	0.04	-81
24150	1132	"	"	"	6.92	21.86	1456	143.8	0.01	-83
27600	1144	"	"	"	6.91	22.50	1473	2728.0	0.00	-85
31050	1156	"	"	"	6.92	22.26	1470	3.26	0.01	-87
34560	1208	"	"	"	6.93	21.54	1446	2.93	-0.01	-88

11:35

DM

Start Time: 1010 Elapsed Time (min): 120 min Water Quality Meter ID: TROLL 9500

Stop Time: 1210 Average Purge Rate (mL/min): 300mL/min Date Calibrated: 8/8/12

SAMPLING DATA

Sample Date: 8/8/12 Sample Time: 1215 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300mL/min QA/QCSamples: EB

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~ 400mL prior to sampling and ~ 450mL during sampling

Temperature was 0.96 - not stabilized. Called K. Hurst and said that we should sample because it had been 2 hours.

Total Purge Volume: 34500 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: D. Mattingly, C. Williams

DATE: 8/9/12 WEATHER: Sunny

MONITORING WELL ID: P-114 SAMPLE ID: P114-ROX-080912

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 52.67 ft
Depth to Water (btoc): 29.13 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 32.67 ft
Screen Length): 20 ft

Water Column Height (do not include LNAPL or DNAPL): 23.54 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 42.67 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type:

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1456	29.13	clear	yes	7.49	23.50	1017	21.87	0.35	24
1440	1501	"	"	"	7.38	23.46	1060	21.07	0.39	3
2880	1506	"	"	"	7.33	23.45	1087	16.00	0.45	-18
4320	1511	"	"	"	7.28	23.44	1107	12.90	0.47	-34
5760	1516	"	"	"	7.24	23.40	1122	13.70	0.48	-45
7200	1521	"	"	"	7.21	23.38	1133	15.56	0.50	-52
8640	1526	"	"	"	7.18	23.40	1140	15.61	0.50	-57
10080	1531	"	"	"	7.16	23.39	1146	12.62	0.50	-60
11520	1536				7.14	23.40	1151	15.98	0.52	-62
12960	1541				7.13	23.30	1153	9.01	0.53	-64

DM

Start Time: 1456 Elapsed Time (min): 47 min Water Quality Meter ID: TROLL 9500

Stop Time: 1543 Average Purge Rate (mL/min): 300 mL/min Date Calibrated: 8/9/12

SAMPLING DATA

Sample Date: 8/9/12 Sample Time: 1545 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 mL/min QA/QCSamples: None

VOA Vials, No Headspace ☒ Initials: DM

COMMENTS: Purged ~ 2500mL prior to sampling & ~ 100mL during sampling

Total Purge Volume: 12960 mL

LOW FLOW GROUNDW... SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: L. Rathnow, S. Jansen

DATE: 8-2-12 WEATHER: 97° partly sunny 15-20 mph winds

MONITORING WELL ID: T-12 SAMPLE ID: T-12-ROX-080212

INITIAL DATA

Well Diameter): 6 in
Total Well Depth (btoc): 72.46 ft
Depth to Water (btoc): 41.92 ft
Depth to LNAPL/DNAPL (btoc): NE ft
Depth to Top of Screen (btoc): 46.46 ft
Screen Length): 26 ft

Water Column Height (do not include LNAPL or DNAPL): 30.54 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 59.46 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 0 ppm

PURGE DATA Pump Type: Monsoon

3 readings ✓ ✓

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH +/- .2	Temp +/- (°C) .2	Cond. 3% (mS/cm)	Turbidity ≤50 (NTUs) 6/10% below	DO +/- .2 (mg/L)	ORP +/- 20.0 (mV)
300	1150	41.92	clear	None	6.62	19.49	1315	14.83	0.02	-49
2250	1157	↓	↓	↓	6.70	20.16	1339	11.57	-0.02	-69
4200	1203				6.72	20.66	1345	13.96	-0.01	-82
6150	1209				6.74	21.39	1370	18.17	-0.02	-92
8100	1216				6.74	22.36	1406	12.76	-0.01	-99
10050	1223				6.75	23.55	1446	6.879	-0.01	-106
12000	1230				6.76	23.93	1462	8.620	-0.02	-111
13950	1237				6.77	25.69	1506	10.38	-0.03	-115
15900	1244				6.83	20.36	1328	13.75	-0.02	-120
17850	1253				6.84	19.90	1317	6.951	-0.04	-122
19800	1259				6.86	19.58	1308	6.063	-0.04	-124
21750	1306				6.85	19.31	1298	10.03	-0.04	-125
23700	1313				6.86	18.69	1276	18.45	-0.04	-126
25650	1319				6.85	19.30	1296	7.665	-0.04	-126
27600	1326				6.83	19.84	1300	11.27	-0.04	-127
29550	1333				6.83	19.83	1301	16.17	-0.04	-127

Start Time: 1150am Elapsed Time (min): 142 min Water Quality Meter ID: TROLL 9500

Stop Time: 1412 pm Average Purge Rate (mL/min): 300 Date Calibrated: 8-2-12

SAMPLING DATA

Sample Date: 8-2-12 Sample Time: 1415 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 300 QA/QC Samples: N/A

VOA Vials, No Headspace ☒ Initials: SJ

COMMENTS:

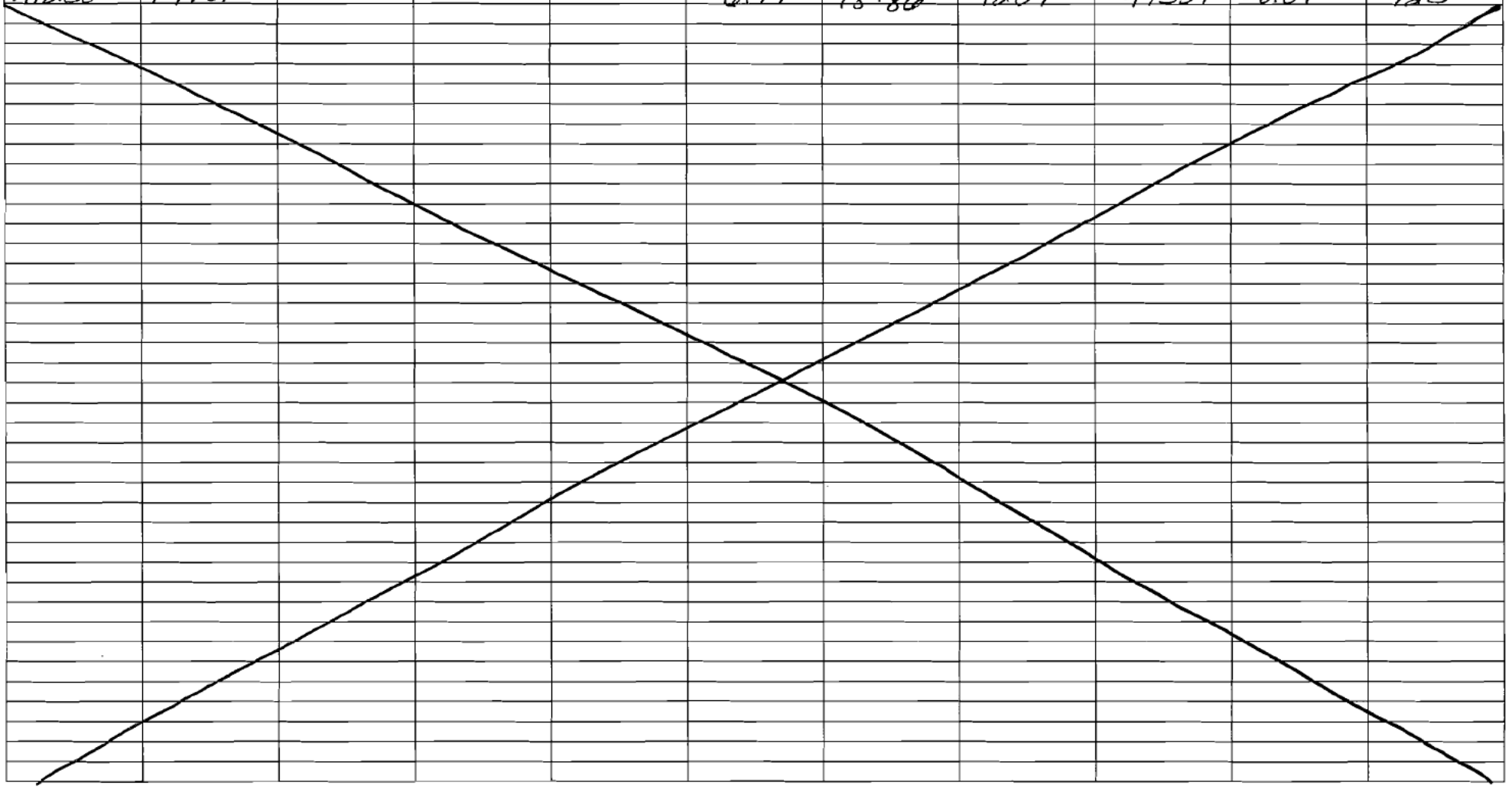
Total Purge Volume: 41250 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW **PROJECT NUMBER:** 215627350.00008 **FIELD PERSONNEL:** S. Jansen, L. Rathnow

DATE: 8-2-12 **MONITORING WELL ID:** T-12

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
31500	1340	41.92	clear	none	6.82	19.70	1295	29.38	-0.04	-127
33450	1347	↓	↓	↓	6.83	19.03	1275	9.956	-0.04	-127
35400	1353				6.83	18.45	1257	32.95	-0.04	-127
37350	1359				6.81	19.01	1269	15.32	-0.04	-126
39300	1406				6.80	19.06	1264	25.78	-0.04	-126
41250	1412				6.79	18.86	1259	4.537	-0.04	-125



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW | PROJECT NUMBER: 21562735.00008 | FIELD PERSONNEL: N. McNellen, D. Mahoney

DATE: 8/7/12 | WEATHER: Clear, 95°F

MONITORING WELL ID: ROST-3-PZ | SAMPLE ID: ROST3PZ-ROX-080712

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): 50.00 ft
Depth to Water (btoc): 39.37 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 40.00 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): 10.63 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 45.00 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: SS Bladder Pump

	Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
	0	0945	39.37	Cloudy	none	6.73	25.12	918.4	69.17	1.04	30
	375	0950	39.37	Cloudy	none	6.78	24.17	911.5	49.13	0.61	11
	750	0955	39.37	Cloudy	none	6.80	24.01	916.0	32.29	0.42	0
	1125	1000	39.37	Clear	none	6.81	24.01	919.6	18.67	0.32	-7
*	1500	1005	39.37	clear	none						
	1875	1011	39.37	clear	none	6.81	24.34	926.8	8.555	0.22	-17
	2250	1016	39.37	clear	none	6.81	24.52	933.1	6.229	0.19	-20
	2625	1021	39.37	clear	none	6.81	24.63	935.9	5.044	0.17	-23
	3000	1026	39.37	clear	none	6.81	24.53	931.5	4.012	0.15	-25

Start Time: 0945 | Elapsed Time (min): 71 min | Water Quality Meter ID: TROLL 9500

Stop Time: 1026 | Average Purge Rate (mL/min): 75 mL/min | Date Calibrated: 8/7/12

SAMPLING DATA

Sample Date: 8/7/12 | Sample Time: 1030 | Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow | Sample Flow Rate (mL/min): 75mL/min | QA/QC Samples: none

VOA Vials, No Headspace [X] | Initials: DM

COMMENTS: Rugged Reader froze up. Had to restart. (Resample)

Purged ~1000 mL prior to sampling @ ~ 75 mL during sampling. Total Purge Volume: 3000 mL

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: N. McNulty, K. Horst

DATE: 7/25/12 WEATHER: Clear, 107°F

MONITORING WELL ID: Rost-4-PZ (C) SAMPLE ID: ROST4PZC-ROX-072512

INITIAL DATA

Well Diameter): 2 in
Total Well Depth (btoc): ~~45.20~~ 45.50 ft
Depth to Water (btoc): 39.10 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~84.95~~ ft
Screen Length): 10 ft 35.25

Water Column Height (do not include LNAPL or DNAPL): 6.40 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = — ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ~~42.45~~ ft btoc 42.30
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: 0.3 ppm
Wellbore PID/FID Reading: 90.9 ppm

PURGE DATA

Pump Type: ~~SS Bladder Pump~~ SS Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1352	39.16	Clr	None	6.70	23.24	1011	94.48	0.31	-31
1500	1357	39.16	"	"	6.73	21.71	980.8	18.18	0.12	-69
3000	~~NM 13~~ 1403	39.17	"	"	6.74	~~NM 24.8~~ 21.68	974.8	8.335	0.09	-82
4500	1408	39.16	"	"	6.74	21.51	974.1	7.294	0.05	-88
6000	1414	39.16	"	"	6.74	21.56	976.4	6.671	0.04	-94

Start Time: 1352 Elapsed Time (min): 22 Water Quality Meter ID: TROLL 9500

Stop Time: 1414 Average Purge Rate (mL/min): 300 Date Calibrated: 7/25/12

SAMPLING DATA

Sample Date: 7/25/12 Sample Time: 1420 Lab Analysis: VOC, SVOC

Sample Method: ~~Bladder Pump~~ Low Flow SS Monsoon Sample Flow Rate (mL/min): 300 QA/QCSamples: None

VOA Vials, No Headspace [X] Initials: NM

COMMENTS:

Total Purge Volume: 6000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: _____

DATE: _____ WEATHER: _____

MONITORING WELL ID: ROST-5-PZ SAMPLE ID: _____

INITIAL DATA

Well Diameter): 1 in
Total Well Depth (btoc): 23.20 ft
Depth to Water (btoc): _____ ft
Depth to LNAPL/DNAPL (btoc): _____ ft
Depth to Top of Screen (btoc): 13.20 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): _____ ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = _____ ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = _____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = _____ ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: _____ ppm
Wellbore PID/FID Reading: _____ ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

Not sampled well Dry

Start Time: _____ Elapsed Time (min): _____ Water Quality Meter ID: TROLL 9500

Stop Time: _____ Average Purge Rate (mL/min): _____ Date Calibrated: _____

SAMPLING DATA

Sample Date: _____ Sample Time: _____ Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): _____ QA/QCSamples: _____

VOA Vials, No Headspace ☐ Initials: _____

COMMENTS:

_____

_____

Total Purge Volume: _____ mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: _____

DATE: _____ WEATHER: _____

MONITORING WELL ID: ROST-10-PZ SAMPLE ID: _____

INITIAL DATA

Well Diameter): 1 in
Total Well Depth (btoc): 20.00 ft
Depth to Water (btoc): _____ ft
Depth to LNAPL/DNAPL (btoc): _____ ft
Depth to Top of Screen (btoc): 10.00 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): _____ ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = _____ ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = _____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = _____ ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: _____ ppm
Wellbore PID/FID Reading: _____ ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

Not sampled. Well dry

Start Time: _____ Elapsed Time (min): _____ Water Quality Meter ID: TROLL 9500

Stop Time: _____ Average Purge Rate (mL/min): _____ Date Calibrated: _____

SAMPLING DATA

Sample Date: _____ Sample Time: _____ Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): _____ QA/QCSamples: _____

VOA Vials, No Headspace ☐ Initials: _____

COMMENTS:

_____

_____

Total Purge Volume: _____ mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 3Q12 GW PROJECT NUMBER: 21562735.00008 FIELD PERSONNEL: _____

DATE: _____ WEATHER: _____

MONITORING WELL ID: ROST-21-PZ SAMPLE ID: _____

INITIAL DATA

Well Diameter): 1 in
Total Well Depth (btoc): 20.00 ft
Depth to Water (btoc): _____ ft
Depth to LNAPL/DNAPL (btoc): _____ ft
Depth to Top of Screen (btoc): 10.00 ft
Screen Length): 10 ft

Water Column Height (do not include LNAPL or DNAPL): _____ ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = _____ ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = _____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = _____ ft btoc

Volume of Flow Through Cell): 973 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2919 mL
Ambient PID/FID Reading: _____ ppm
Wellbore PID/FID Reading: _____ ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)

Not sampled - Well Dry

Start Time: _____ Elapsed Time (min): _____ Water Quality Meter ID: TROLL 9500

Stop Time: _____ Average Purge Rate (mL/min): _____ Date Calibrated: _____

SAMPLING DATA

Sample Date: _____ Sample Time: _____ Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): _____ QA/QCSamples: _____

VOA Vials, No Headspace ☐ Initials: _____

COMMENTS:

Total Purge Volume: _____ mL

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12567

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 8/29/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW4-ROX-072512	MW4-ROX-072512-Dup
MW5-ROX-072512	ROST4PZ-C-ROX-072512
TB-072512-HCL	TB-072512-ST

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries were outside evaluation criteria. PAH method blank and LCS internal standard area recoveries were outside evaluation criteria for samples MW4-ROX-072512, MW4-ROX-072512-Dup, MW5-ROX-072512, and ROST4PZ-C-ROX-072512. Although not indicated in the laboratory case narrative, SVOCs and PAHs were detected in the method blank. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, the initial calibration verification for acetone associated with trip blank, TB-072512 exceeded 50 percent difference (%D). The continuing calibration for acrolein and dichlorodifluoromethane exceeded 50% D.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 0.5ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required. Additionally, the laboratory report was revised to correct laboratory transcription errors in sample IDs for samples MW4-ROX072512, MW4-ROX-072512-Dup, and MW5-ROX-072512.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29817-MB	SVOCs	bis(2-Ethylhexyl)phthalate	0.68 ug/L
OP29818-MB	PAHs	Acenaphthene	0.061 ug/L
OP29818-MB	PAHs	Acenaphthylene	0.058 ug/L
OP29818-MB	PAHs	Anthracene	0.064 ug/L
OP29818-MB	PAHs	Benzo(b)fluoranthene	0.047 ug/L
OP29818-MB	PAHs	Benzo(g,h,i)perylene	0.059 ug/L
OP29818-MB	PAHs	Flouranthene	0.072 ug/L
OP29818-MB	PAHs	Flourene	0.063 ug/L
OP29818-MB	PAHs	Indeno(1,2,3-cd)pyrene	0.056 ug/L
OP29818-MB	PAHs	2-Methylnaphthalene	0.065 ug/L
OP29818-MB	PAHs	Phenanthrene	0.082 ug/L
OP29818-MB	PAHs	Pyrene	0.069 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW4-ROX-072512	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW4-ROX-072512-Dup	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW4-ROX-072512-Dup	PAHs	Benzo(b)fluoranthene	-	**U**
MW4-ROX-072512-Dup	PAHs	Fluoranthene	-	**U**
MW4-ROX-072512-Dup	PAHs	Phenanthrene	-	**U**
MW5-ROX-072512	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW5-ROX-072512	PAHs	Phenanthrene	-	**U**
ROST4PZ-C-ROX-072512	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
ROST4PZ-C-ROX-072512	PAHs	Anthracene	0.18 ug/L	**U**
ROST4PZ-C-ROX-072512	PAHs	Fluoranthene	-	**U**
ROST4PZ-C-ROX-072512	PAHs	Pyrene	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2495-BS/BSD	VOCs	Acrolein	**144/134**	7	70-130/25
MSN2495-BS/BSD	VOCs	Acrylonitrile	**442/460**	4	70-130/25
MSN2495-BS/BSD	VOCs	Dichlorodifluoromethane	**135**/121	11	70-130/25
MSN2497-BS/BSD	VOCs	Acrolein	**134/138**	3	70-130/25
MSN2497-BS/BSD	VOCs	Acrylonitrile	**492/498**	1	70-130/25
OP29817-BS	SVOCs	Hexachlorocyclopentadiene	**38**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW4-ROX-072512	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW4-ROX-072512-Dup	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW5-ROX-072512	SVOCs	Hexachlorocyclopentadiene	**UJ**
ROST4PZ-C-ROX-072512	SVOCs	Hexachlorocyclopentadiene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, PAH method blank and LCS internal standard area recoveries were outside evaluation criteria for samples MW4-ROX-072512, MW4-ROX-072512-Dup, MW5-ROX-072512, and ROST4PZ-C-ROX-072512.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
OP29818-MB	PAHs	1,4-Dichlorobenzene-d_4	**1046889**	200592-802368
OP29818-MB	PAHs	Naphthalene-d_8	**3993997**	753346-1506692
OP29818-MB	PAHs	Acenaphthene-d_{10}	**2295712**	467082-1868326
OP29818-MB	PAHs	Penanthrene-d_{10}	**3867388**	892205-3568820
OP29818-MB	PAHs	Chrysene-d_{12}	**4111992**	1058826-4235304
OP29818-MB	PAHs	Perylene-d_{12}	**6257469**	933779-3735114
OP29818-BS	PAHs	1,4-Dichlorobenzene-d_4	**1128738**	200592-802368
OP29818-BS	PAHs	Naphthalene-d_8	**4166921**	753346-1506692

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
OP29818-BS	PAHs	Acenaphthene-d_{10}	**2352005**	467082-1868326
OP29818-BS	PAHs	Penanthrene-d_{10}	**3805264**	892205-3568820
OP29818-BS	PAHs	Chrysene-d_{12}	**3811046**	1058826-4235304
OP29818-BS	PAHs	Perylene-d_{12}	**5546991**	933779-3735114

Method blanks and LCS/LCSDs are quality control samples and are not qualified. No qualification of data was required.

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
MW4-ROX-072512	MW4-ROX-072512-Dup

Were field duplicates within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

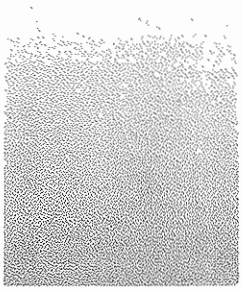
12.0 Additional Qualifications

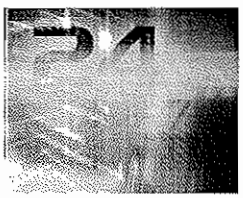
Were additional qualifications applied?

No

New England ACCUTEST LABORATORIES

08/31/12





Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12567

Sampling Date: 07/25/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **95**

Reviewed on 8/29/12

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited

Sections: 1 2 3 4 5 6 7 8

Table of Contents

Section 1: Sample Summary 3
Section 2: Case Narrative/Conformance Summary 4
Section 3: Summary of Hits 6
Section 4: Sample Results 9
4.1: MC12567-1: MW4-ROX-072512 10
4.2: MC12567-2: MW4-ROX-072512-DUP 17
4.3: MC12567-3: MW5-ROX-072512 24
4.4: MC12567-4: ROST4PZ-C-ROX-072512 31
4.5: MC12567-5: TB-072512-HCL 38
4.6: MC12567-6: TB-072512-ST 41
Section 5: Misc. Forms 42
5.1: Chain of Custody 43
5.2: Sample Tracking Chronicle 45
5.3: Internal Chain of Custody 47
Section 6: GC/MS Volatiles - QC Data Summaries 49
6.1: Method Blank Summary 50
6.2: Blank Spike/Blank Spike Duplicate Summary 56
6.3: Matrix Spike/Matrix Spike Duplicate Summary 62
6.4: Internal Standard Area Summaries 68
6.5: Surrogate Recovery Summaries 70
Section 7: GC/MS Semi-volatiles - QC Data Summaries 71
7.1: Method Blank Summary 72
7.2: Blank Spike Summary 75
7.3: Matrix Spike/Matrix Spike Duplicate Summary 78
7.4: Internal Standard Area Summaries 81
7.5: Surrogate Recovery Summaries 87
Section 8: GC Volatiles - QC Data Summaries 89
8.1: Method Blank Summary 90
8.2: Blank Spike Summary 91
8.3: Matrix Spike/Matrix Spike Duplicate Summary 92
8.4: Surrogate Recovery Summaries 93
8.5: GC Surrogate Retention Time Summaries 94

Sample Summary

Shell Oil

Job No: MC12567

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12567-1	07/25/12	10:15	KHNM	07/26/12	AQ	Ground Water	MW4-ROX-072512
MC12567-2	07/25/12	10:15	KHNM	07/26/12	AQ	Ground Water	MW4-ROX-072512-DUP
MC12567-3	07/25/12	11:55	KHNM	07/26/12	AQ	Ground Water	MW5-ROX-072512
MC12567-4	07/25/12	14:20	KHNM	07/26/12	AQ	Ground Water	ROST4PZ-C-ROX-072512
MC12567-5	07/25/12	00:00	KHNM	07/26/12	AQ	Trip Blank Water	TB-072512-HCL
MC12567-6	07/25/12	00:00	KHNM	07/26/12	AQ	Trip Blank Water	TB-072512-ST

ACCUTEST
LABORATORIES

Elizabeth Kunkel
1001 Highlands Plaza Drive West
Suite 300
St. Louis, MO 63110

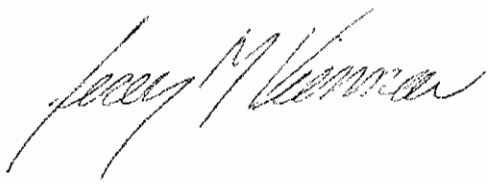
August 31, 2012

Accutest Job MC12567

Ms. Kunkel,

The report of Accutest job number MC12567 has been revised to change the IDs to match the IDs that were written on the COC.

Sincerely,



Jeremy M. Vienneau
Accutest Laboratories of New England, Inc.

ACCUTEST. laboratories

N

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12567
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/17/2012 3:01:52 PM

4 Sample(s), 2 Trip Blank(s) and 0 Field Blank(s) were collected on 07/25/2012 and were received at Accutest on 07/26/2012 properly preserved, at 0.5 Deg. C and intact. These Samples received an Accutest job number of MC12567. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** MSN2495

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12815-1MS, MC12815-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSN2495-BS/BSD for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- MC12815-1MS for Dichlorodifluoromethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12815-1MS/MSD for Acrolein are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12815-1MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MSN2495-BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Initial calibration verification standard MSN2468-ICV2468 for acetone exceed 50% Difference. (Results biased high). Associated samples are non-detect for these compounds.
- Continuing calibration check standard MSN2495-CC2468 for acrolein, dichlorodifluoromethane exceed 50% Difference (results biased high). Associated samples are non-detect for these compounds.
- MSN2495-BS for Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.

Matrix: AQ **Batch ID:** MSN2497

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12783-7MS, MC12783-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSN2497-BS/BSD for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- MC12783-7MS for Bromomethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12783-7MS/MSD for Carbon disulfide, Dichlorodifluoromethane, Trichlorofluoromethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MC12783-7MSD for Bromomethane are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MSN2497-BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC12783-7MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Continuing calibration check standard MSN2497-CC2468 for acrolein, dichlorodifluoromethane exceed 50% Difference (results biased high). Associated samples are non-detect for these compounds.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29817

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12600-3MS, MC12600-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP29817-BS for Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- OP29817-MS for Hexachlorocyclopentadiene are outside control limits due to possible matrix interference. Refer to Blank Spike.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29818

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12600-4MS, MC12600-4MSD were used as the QC samples indicated.
- Sample(s) MC12567-1, MC12567-2, MC12567-3, MC12567-4 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- OP29818-MB/BS/MS/MSD: Internal standard spiked at SIM concentration.
- MSW154-CC129 utilizes the same file as MSW155-CC72.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29882

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12567).

Summary of Hits

Job Number: MC12567
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/25/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12567-1	MW4-ROX-072512					
Benzene		191	0.50	0.24	ug/l	SW846 8260B
Ethylbenzene		0.82 J	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene		6.1	5.0	0.50	ug/l	SW846 8260B
Methyl Tert Butyl Ether		15.0	1.0	0.41	ug/l	SW846 8260B
n-Propylbenzene		7.1	5.0	0.58	ug/l	SW846 8260B
Toluene		41.8	1.0	0.51	ug/l	SW846 8260B
m,p-Xylene		22.1	1.0	0.73	ug/l	SW846 8260B
o-Xylene		4.2	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		26.2	1.0	0.58	ug/l	SW846 8260B
Benzoic Acid		5.6 J	10	1.2	ug/l	SW846 8270C
Phenol		1.8 J	5.1	0.95	ug/l	SW846 8270C
Butyl benzyl phthalate		0.39 J	5.1	0.27	ug/l	SW846 8270C
Di-n-butyl phthalate		0.75 J	5.1	0.37	ug/l	SW846 8270C
Diethyl phthalate		1.4 J	5.1	0.19	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.79 J	2.0	0.38	ug/l	SW846 8270C
1-Methylnaphthalene		0.54	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		0.45 B	0.20	0.053	ug/l	SW846 8270C BY SIM
MC12567-2	MW4-ROX-072512-DUP					
Benzene		199	0.50	0.24	ug/l	SW846 8260B
n-Butylbenzene		1.4 J	5.0	0.68	ug/l	SW846 8260B
sec-Butylbenzene		1.7 J	5.0	0.55	ug/l	SW846 8260B
tert-Butylbenzene		2.0 J	5.0	0.64	ug/l	SW846 8260B
Ethylbenzene		0.83 J	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene		6.3	5.0	0.50	ug/l	SW846 8260B
Methyl Tert Butyl Ether		15.4	1.0	0.41	ug/l	SW846 8260B
n-Propylbenzene		7.2	5.0	0.58	ug/l	SW846 8260B
Toluene		42.7	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		0.68 J	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		5.7	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene		21.4	1.0	0.73	ug/l	SW846 8260B
o-Xylene		4.3	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		25.7	1.0	0.58	ug/l	SW846 8260B
Phenol		2.3 J	5.1	0.95	ug/l	SW846 8270C
Di-n-butyl phthalate		0.57 J	5.1	0.37	ug/l	SW846 8270C
Diethyl phthalate		1.2 J	5.1	0.19	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.69 J	2.0	0.38	ug/l	SW846 8270C
Benzo(b)fluoranthene		0.046 JB	0.051	0.024	ug/l	SW846 8270C BY SIM
Fluoranthene		0.047 JB	0.10	0.033	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		0.49	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		0.40 B	0.20	0.053	ug/l	SW846 8270C BY SIM
Phenanthrene		0.031 JB	0.051	0.013	ug/l	SW846 8270C BY SIM

Summary of Hits

Job Number: MC12567
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/25/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12567-3	MW5-ROX-072512					
Benzene		92.5	0.50	0.24	ug/l	SW846 8260B
sec-Butylbenzene		1.5 J	5.0	0.55	ug/l	SW846 8260B
tert-Butylbenzene		7.0	5.0	0.64	ug/l	SW846 8260B
Isopropylbenzene		6.6	5.0	0.50	ug/l	SW846 8260B
p-Isopropyltoluene		0.99 J	5.0	0.57	ug/l	SW846 8260B
Methyl Tert Butyl Ether		13.0	1.0	0.41	ug/l	SW846 8260B
n-Propylbenzene		1.8 J	5.0	0.58	ug/l	SW846 8260B
Toluene		3.2	1.0	0.51	ug/l	SW846 8260B
m,p-Xylene		8.0	1.0	0.73	ug/l	SW846 8260B
o-Xylene		1.7	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		9.7	1.0	0.58	ug/l	SW846 8260B
Phenol		1.5 J	5.2	0.96	ug/l	SW846 8270C
Di-n-butyl phthalate		0.57 J	5.2	0.37	ug/l	SW846 8270C
Diethyl phthalate		1.1 J	5.2	0.19	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.64 J	2.1	0.39	ug/l	SW846 8270C
1-Methylnaphthalene		3.0	0.21	0.14	ug/l	SW846 8270C BY SIM
Naphthalene		0.32	0.10	0.037	ug/l	SW846 8270C BY SIM
Phenanthrene		0.025 JB	0.052	0.013	ug/l	SW846 8270C BY SIM
MC12567-4	ROST4PZ-C-ROX-072512					
Benzene		84.9	0.50	0.24	ug/l	SW846 8260B
Ethylbenzene		177	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene		3.6 J	5.0	0.50	ug/l	SW846 8260B
n-Propylbenzene		5.9	5.0	0.58	ug/l	SW846 8260B
Toluene		59.6	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		37.4	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		7.6	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene		373	1.0	0.73	ug/l	SW846 8260B
o-Xylene		207	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		581	1.0	0.58	ug/l	SW846 8260B
2,4-Dimethylphenol		3.0 J	11	2.9	ug/l	SW846 8270C
3&4-Methylphenol		0.98 J	11	0.80	ug/l	SW846 8270C
Phenol		2.3 J	5.3	0.99	ug/l	SW846 8270C
Benzyl Alcohol		0.42 J	11	0.28	ug/l	SW846 8270C
Dibenzofuran		0.36 J	2.1	0.23	ug/l	SW846 8270C
Di-n-butyl phthalate		1.5 J	5.3	0.38	ug/l	SW846 8270C
Diethyl phthalate		1.2 J	5.3	0.20	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.51 J	2.1	0.40	ug/l	SW846 8270C
Acenaphthene		0.39 B	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.18 B	0.11	0.019	ug/l	SW846 8270C BY SIM
Fluoranthene		0.041 JB	0.11	0.035	ug/l	SW846 8270C BY SIM

Summary of Hits

Job Number: MC12567
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/25/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluorene		0.32 B	0.11	0.049	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		10.2	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		13.6	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene		33.1	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene		1.4	0.053	0.013	ug/l	SW846 8270C BY SIM
Pyrene		0.081 JB	0.11	0.038	ug/l	SW846 8270C BY SIM

MC12567-5 TB-072512-HCL

No hits reported in this sample.

MC12567-6 TB-072512-ST

No hits reported in this sample.

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66420.D	1	08/07/12	JP	n/a	n/a	MSN2497
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	191	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	0.82	1.0	0.51	ug/l	J
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	6.1	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	15.0	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	7.1	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	41.8	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	22.1	1.0	0.73	ug/l	
95-47-6	o-Xylene	4.2	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	26.2	1.0	0.58	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:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

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

Report of Analysis

Client Sample ID:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56371.D	1	07/31/12	KR	07/27/12	OP29817	MSF2683
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	5.6	10	1.2	ug/l	J
95-57-8	2-Chlorophenol	ND	5.1	0.41	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.62	ug/l	
	3&4-Methylphenol	ND	10	0.77	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.65	ug/l	
108-95-2	Phenol	1.8	5.1	0.95	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	0.39	5.1	0.27	ug/l	J
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.91	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	0.75	5.1	0.37	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.4	5.1	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.79~~ UJ	2.0	0.38	ug/l	J UJ
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.1	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		15-110%
4165-62-2	Phenol-d5	31%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrobenzene-d5	71%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	86%		30-130%

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

Report of Analysis

Client Sample ID:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3532.D	1	08/02/12	KR	07/27/12	OP29818	MSW164
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.014	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.060	ug/l	
218-01-9	Chrysene	ND	0.10	0.074	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.047	ug/l	
90-12-0	1-Methylnaphthalene	0.54	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	0.45	0.20	0.053	ug/l	B
91-20-3	Naphthalene	ND	0.10	0.037	ug/l	
85-01-8	Phenanthrene	ND	0.051	0.013	ng/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	111%		30-130%

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:	MW4-ROX-072512		
Lab Sample ID:	MC12567-1	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43085.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.1 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	133%		36-173%
460-00-4	Bromofluorobenzene (S)	135%		36-173%

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:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66421.D	1	08/07/12	JP	n/a	n/a	MSN2497
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	199	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	1.4	5.0	0.68	ug/l	J
135-98-8	sec-Butylbenzene	1.7	5.0	0.55	ug/l	J
98-06-6	tert-Butylbenzene	2.0	5.0	0.64	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	0.83	1.0	0.51	ug/l	J
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	6.3	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	15.4	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	7.2	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	42.7	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.68	5.0	0.35	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	5.7	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	21.1	1.0	0.73	ug/l	
95-47-6	o-Xylene	4.3	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	25.7	1.0	0.58	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:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

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

Report of Analysis

Client Sample ID:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56372.D	1	07/31/12	KR	07/27/12	OP29817	MSF2683
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.62	ug/l	
	3&4-Methylphenol	ND	10	0.77	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.65	ug/l	
108-95-2	Phenol	2.3	5.1	0.95	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.91	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	0.57	5.1	0.37	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.2	5.1	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.69~~ U	2.0	0.38	ug/l	J U
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.1	ug/l	U J
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		15-110%
4165-62-2	Phenol-d5	38%		15-110%
118-79-6	2,4,6-Tribromophenol	77%		15-110%
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	65%		30-130%
1718-51-0	Terphenyl-d14	86%		30-130%

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

Report of Analysis

Client Sample ID:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3533.D	1	08/02/12	KR	07/27/12	OP29818	MSW164
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.014	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	~~0.046~~ J	0.051	0.024	ug/l	JB
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.060	ug/l	
218-01-9	Chrysene	ND	0.10	0.074	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	~~0.047~~ J	0.10	0.033	ug/l	JB
86-73-7	Fluorene	ND	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.047	ug/l	
90-12-0	1-Methylnaphthalene	0.49	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	0.40	0.20	0.053	ug/l	B
91-20-3	Naphthalene	ND	0.10	0.037	ug/l	
85-01-8	Phenanthrene	~~0.031~~ J	0.051	0.013	ug/l	JB
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	111%		30-130%

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:	MW4-ROX-072512-DUP		
Lab Sample ID:	MC12567-2	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43086.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.8 ml	2.0 ml
Run #2		

VOA Speeial List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	129%		36-173%
460-00-4	Bromofluorobenzene (S)	131%		36-173%

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:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66422.D	1	08/07/12	JP	n/a	n/a	MSN2497
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	92.5	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	1.5	5.0	0.55	ug/l	J
98-06-6	tert-Butylbenzene	7.0	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	6.6	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	0.99	5.0	0.57	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	13.0	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	1.8	5.0	0.58	ug/l	J
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	3.2	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	8.0	1.0	0.73	ug/l	
95-47-6	o-Xylene	1.7	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	9.7	1.0	0.58	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:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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

Report of Analysis

Client Sample ID:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56373.D	1	07/31/12	KR	07/27/12	OP29817	MSF2683
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.62	ug/l	
	3&4-Methylphenol	ND	10	0.78	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.49	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.66	ug/l	
108-95-2	Phenol	1.5	5.2	0.96	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	10	0.51	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ng/l	
62-53-3	Aniline	ND	10	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.65	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.39	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	0.92	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	0.57	5.2	0.37	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.2	0.24	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:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.1	5.2	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.2	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.64~~ U	2.1	0.39	ug/l	J U
118-74-1	Hexachlorobenzene	ND	5.2	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.2	ug/l	U J
67-72-1	Hexachloroethane	ND	5.2	2.1	ug/l	
78-59-1	Isophorone	ND	5.2	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.45	ug/l	
110-86-1	Pyridine	ND	10	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	73%		15-110%
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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

Report of Analysis

Client Sample ID:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3534.D	1	08/02/12	KR	07/27/12	OP29818	MSW164
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.014	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.039	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.060	ug/l	
218-01-9	Chrysene	ND	0.10	0.075	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.034	ug/l	
86-73-7	Fluorene	ND	0.10	0.048	ng/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.047	ug/l	
90-12-0	1-Methylnaphthalene	3.0	0.21	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.054	ug/l	
91-20-3	Naphthalene	0.32	0.10	0.037	ug/l	
85-01-8	Phenanthrene	~~0.025~~	0.052	0.013	ug/l	JB
129-00-0	Pyrene	ND	0.10	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		30-130%
321-60-8	2-Fluorobiphenyl	64%		30-130%
1718-51-0	Terphenyl-d14	111%		30-130%

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:	MW5-ROX-072512		
Lab Sample ID:	MC12567-3	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43087.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	36.1 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	142%		36-173%
460-00-4	Bromofluorobenzene (S)	153%		36-173%

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:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	**Date Sampled:**	07/25/12
Matrix:	AQ - Ground Water	**Date Received:**	07/26/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66423.D	1	08/07/12	JP	n/a	n/a	MSN2497
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	84.9	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	177	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	3.6	5.0	0.50	ug/l	J
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	5.9	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	59.6	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorohenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorohenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	37.4	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	7.6	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	373	1.0	0.73	ug/l	
95-47-6	o-Xylene	207	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	581	1.0	0.58	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:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

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

Report of Analysis

Client Sample ID:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56374.D	1	07/31/12	KR	07/27/12	OP29817	MSF2683
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	3.0	11	2.9	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	0.98	11	0.80	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	2.3	5.3	0.99	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND	11	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	0.42	11	0.28	ug/l	J
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	0.36	2.1	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	1.5	5.3	0.38	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.2	5.3	0.20	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.51~~	2.1	0.40	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		15-110%
4165-62-2	Phenol-d5	38%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	68%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	89%		30-130%

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

Report of Analysis

Client Sample ID:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Projeet:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3535.D	1	08/02/12	KR	07/27/12	OP29818	MSW164
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.39	0.11	0.014	ug/l	B
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	~~0.18~~ U	~~0.11~~ 0.18	0.019	ug/l	B U
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	~~0.041~~ U	0.11	0.035	ug/l	JB U
86-73-7	Fluorene	0.32	0.11	0.049	ug/l	B
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	10.2	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	13.6	0.21	0.055	ug/l	
91-20-3	Naphthalene	33.1	0.11	0.038	ug/l	
85-01-8	Phenanthrene	1.4	0.053	0.013	ug/l	
129-00-0	Pyrene	~~0.081~~ U	0.11	0.038	ug/l	JB U

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		30-130%
321-60-8	2-Fluorobiphenyl	65%		30-130%
1718-51-0	Terphenyl-d14	115%		30-130%

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:	ROST4PZ-C-ROX-072512		
Lab Sample ID:	MC12567-4	Date Sampled:	07/25/12
Matrix:	AQ - Ground Water	Date Received:	07/26/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43088.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	34.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	102%		36-173%
460-00-4	Bromofluorobenzene (S)	113%		36-173%

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:	TB-072512-HCL		
Lab Sample ID:	MC12567-5	Date Sampled:	07/25/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66380.D	1	08/06/12	JP	n/a	n/a	MSN2495
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-072512-HCL		
Lab Sample ID:	MC12567-5	Date Sampled:	07/25/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-072512-HCL		
Lab Sample ID:	MC12567-5	Date Sampled:	07/25/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/26/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

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

Report of Analysis

Client Sample ID:	TB-072512-ST		
Lab Sample ID:	MC12567-6	Date Sampled:	07/25/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/26/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43089.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	36.1 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	91%		36-173%
460-00-4	Bromofluorobenzene (S)	99%		36-173%

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

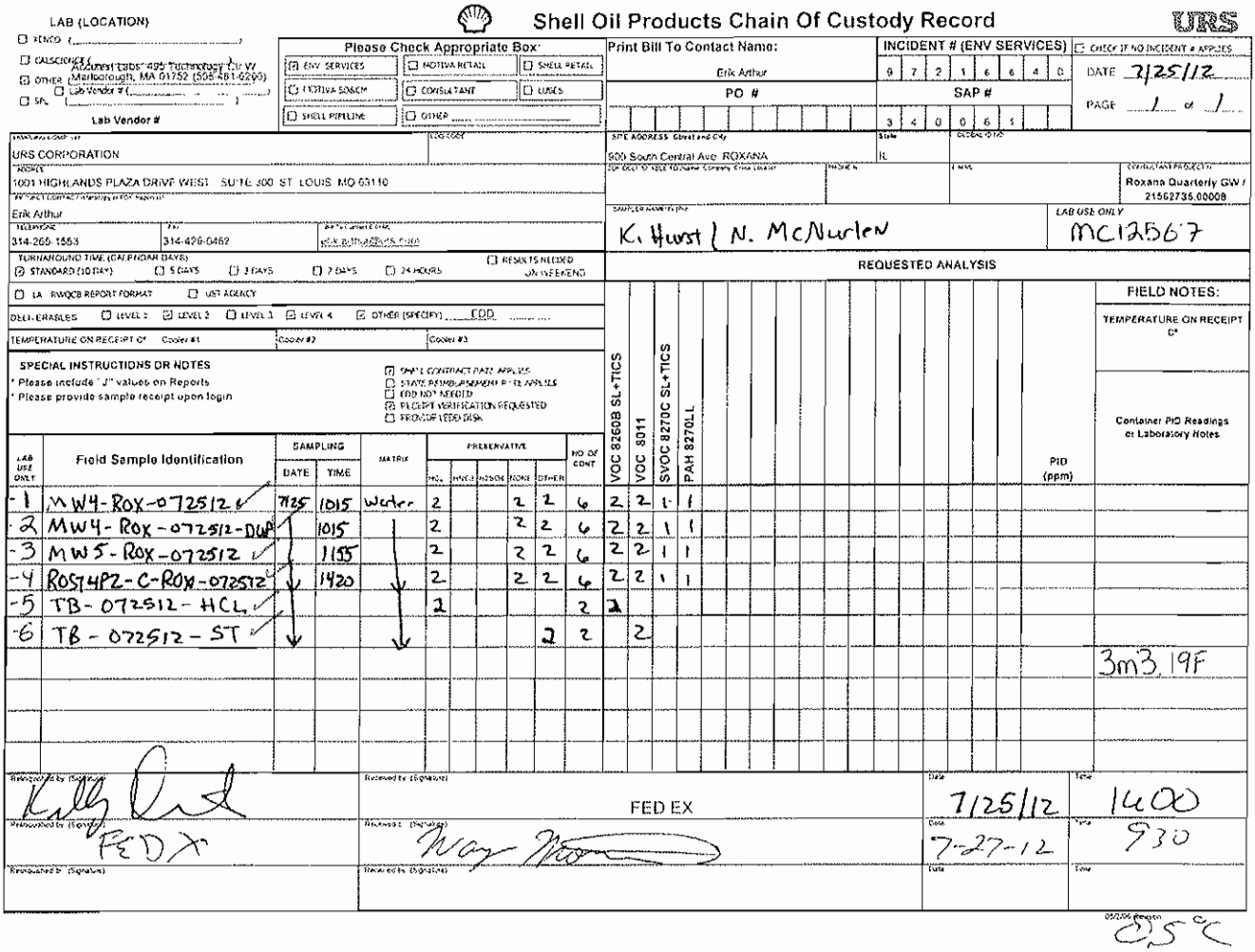
New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☒ OTHER (Accutest Labs 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200)
☐ Lab Vendor # (_____)
☐ SPL (_____)

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☒ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SO&CM ☐ CONSULTANT ☐ USES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 7/25/12

PAGE 1 of 1

SAMPLING COMPANY	URS CORPORATION
LOG CODE	
ADDRESS	1001 HIGHLANDS PLAZA DRIVE WEST SUITE 300 ST LOUIS MO 63110
PROJECT CONTACT (Hardcopy or PDF Report)	Erik Arthur
TELEPHONE	314-265-1553
FAX	314-429-0462
ALT PROJECT CONTACT	[illegible]
SITE ADDRESS (Street and City)	900 South Central Ave ROXANA
State	IL
GLOBAL ID #	
ZIP CODE TO VIEW TO (Name, Company, Office Location)	
PHONE #	
E-MAIL	
CONSULTANT PROJECT #	Roxana Quarterly GW / 21562735.00008
SAMPLER NAME(S) (PRINT)	K. Hurst / N. McNurlen
LAB USE ONLY	MC12567

TURNAROUND TIME (CALENDAR DAYS): ☒ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES ☐ LEVEL 1 ☒ LEVEL 2 ☐ LEVEL 3 ☒ LEVEL 4 ☒ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES
* Please include "J" values on Reports
* Please provide sample receipt upon login

☒ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☒ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	MW4-ROX-072512	7/25	1015	Water	2			2	2	6	2	2	1	1		
-2	MW4-ROX-072512-DUP	↓	1015	↓	2			2	2	6	2	2	1	1		
-3	MW5-ROX-072512	↓	1155	↓	2			2	2	6	2	2	1	1		
-4	ROST4P2-C-ROX-072512	↓	1420	↓	2			2	2	6	2	2	1	1		
-5	TB-072512-HCL	↓		↓	2					2	2					
-6	TB-072512-ST	↓		↓					2	2		2				
																3m3, 19F

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	7/25/12	1400
FED X	[signature]	7-27-12	930

05/2006 Revision 0.5°C

5.1

5

MC12567: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12567 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 7/26/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL AVE No. Coolers: 1 Airbill #'s:

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

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

Quality Control Preservatio	Y or 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 or N
1 Sample labels present on bottles.	☑ ☐
2 Container labeling complete:	☑ ☐
3 Sample container label / COC agree.	☑ ☐

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

Sample Integrity - Instructions	Y or 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 508 481 6200
495 Technology Center West Bldg One
F 508 481 7753
Marlborough MA
www.accutest.com

MC12567: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12567

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12567-1 Collected: 25-JUL-12 10:15 By: KHNM Received: 26-JUL-12 By: MW4-ROX-072512						
MC12567-1	SW846 8270C	31-JUL-12 17:16	KR	27-JUL-12	AJ	AB8270SL+
MC12567-1	SW846 8270C BY SIM	02-AUG-12 12:58	KR	27-JUL-12	AJ	B8270SIMPAH
MC12567-1	SW846 8011	04-AUG-12 08:16	CZ	01-AUG-12	BJ	V8011SL
MC12567-1	SW846 8260B	07-AUG-12 10:03	JP			V8260SL+
MC12567-2 Collected: 25-JUL-12 10:15 By: KHNM Received: 26-JUL-12 By: MW4-ROX-072512-DUP						
MC12567-2	SW846 8270C	31-JUL-12 17:39	KR	27-JUL-12	AJ	AB8270SL+
MC12567-2	SW846 8270C BY SIM	02-AUG-12 13:20	KR	27-JUL-12	AJ	B8270SIMPAH
MC12567-2	SW846 8011	04-AUG-12 08:42	CZ	01-AUG-12	BJ	V8011SL
MC12567-2	SW846 8260B	07-AUG-12 10:31	JP			V8260SL+
MC12567-3 Collected: 25-JUL-12 11:55 By: KHNM Received: 26-JUL-12 By: MW5-ROX-072512						
MC12567-3	SW846 8270C	31-JUL-12 18:01	KR	27-JUL-12	AJ	AB8270SL+
MC12567-3	SW846 8270C BY SIM	02-AUG-12 13:43	KR	27-JUL-12	AJ	B8270SIMPAH
MC12567-3	SW846 8011	04-AUG-12 09:09	CZ	01-AUG-12	BJ	V8011SL
MC12567-3	SW846 8260B	07-AUG-12 10:59	JP			V8260SL+
MC12567-4 Collected: 25-JUL-12 14:20 By: KHNM Received: 26-JUL-12 By: ROST4PZ-C-ROX-072512						
MC12567-4	SW846 8270C	31-JUL-12 18:23	KR	27-JUL-12	AJ	AB8270SL+
MC12567-4	SW846 8270C BY SIM	02-AUG-12 14:05	KR	27-JUL-12	AJ	B8270SIMPAH
MC12567-4	SW846 8011	04-AUG-12 09:35	CZ	01-AUG-12	BJ	V8011SL
MC12567-4	SW846 8260B	07-AUG-12 11:27	JP			V8260SL+
MC12567-5 Collected: 25-JUL-12 00:00 By: KHNM Received: 26-JUL-12 By: TB-072512-HCL						
MC12567-5	SW846 8260B	06-AUG-12 15:15	JP			V8260SL+
MC12567-6 Collected: 25-JUL-12 00:00 By: KHNM Received: 26-JUL-12 By: TB-072512-ST						

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12567

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

5.2

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12567-6	SW846 8011	04-AUG-12 10:02	CZ	01-AUG-12	BJ	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/26/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12567-1.1	Walk In Ref #22	Mahmoud Afzali	07/27/12 08:04	Retrieve from Storage
MC12567-1.1	Mahmoud Afzali		07/30/12 08:39	Depleted
MC12567-1.4	VOC Ref #3	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12567-1.4	Bijan Jafari		08/24/12 10:20	Depleted
MC12567-1.5	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-1.5	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-1.5	GCMSN	Jugal Patel	08/07/12 11:56	Unload from Instrument
MC12567-1.5	Jugal Patel	VOC Ref #3	08/07/12 11:56	Return to Storage
MC12567-2.1	Walk In Ref #22	Mahmoud Afzali	07/27/12 08:04	Retrieve from Storage
MC12567-2.1	Mahmoud Afzali		07/30/12 08:39	Depleted
MC12567-2.4	VOC Ref #3	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12567-2.4	Bijan Jafari		08/24/12 10:20	Depleted
MC12567-2.5	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-2.5	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-2.5	GCMSN	Jugal Patel	08/07/12 11:56	Unload from Instrument
MC12567-2.5	Jugal Patel	VOC Ref #3	08/07/12 11:56	Return to Storage
MC12567-3.2	Walk In Ref #22	Mahmoud Afzali	07/27/12 08:04	Retrieve from Storage
MC12567-3.2	Mahmoud Afzali		07/30/12 08:39	Depleted
MC12567-3.3	VOC Ref #3	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12567-3.3	Bijan Jafari		08/24/12 10:20	Depleted
MC12567-3.5	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-3.5	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-3.5	GCMSN	Jugal Patel	08/07/12 11:56	Unload from Instrument
MC12567-3.5	Jugal Patel	VOC Ref #3	08/07/12 11:56	Return to Storage
MC12567-4.1	Walk In Ref #22	Mahmoud Afzali	07/27/12 08:04	Retrieve from Storage
MC12567-4.1	Mahmoud Afzali		07/30/12 08:39	Depleted
MC12567-4.3	VOC Ref #3	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12567-4.3	Bijan Jafari		08/24/12 10:20	Depleted
MC12567-4.5	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-4.5	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-4.5	GCMSN	Jugal Patel	08/07/12 11:56	Unload from Instrument
MC12567-4.5	Jugal Patel	VOC Ref #3	08/07/12 11:56	Return to Storage

5.3
5

Accutest Internal Chain of Custody

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/26/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12567-5.1	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-5.1	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-5.1	GCMSN	Jugal Patel	08/06/12 12:07	Unload from Instrument
MC12567-5.1	Jugal Patel	VOC Ref #3	08/06/12 12:07	Return to Storage
MC12567-5.2	VOC Ref #3	Jugal Patel	08/06/12 11:31	Retrieve from Storage
MC12567-5.2	Jugal Patel	GCMSN	08/06/12 11:31	Load on Instrument
MC12567-5.2	GCMSN	Jugal Patel	08/07/12 09:21	Unload from Instrument
MC12567-5.2	Jugal Patel	VOC Ref #3	08/07/12 09:21	Return to Storage
MC12567-6.2	VOC Ref #3	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12567-6.2	Bijan Jafari		08/24/12 10:20	Depleted

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

9

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-MB	N66371.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-MB	N66371.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-MB	N66371.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	107%	70-130%

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

6.1.1

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-MB	N66419.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-MB	N66419.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-MB	N66419.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%

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

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-BS	N66368.D	1	08/06/12	JP	n/a	n/a	MSN2495
MSN2495-BSD	N66369.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	48.7	97	45.4	91	7	70-130/25
107-02-8	Acrolein	250	360	144* a	335	134* a	7	70-130/25
107-13-1	Acrylonitrile	50	221	442* b	230	460* b	4	70-130/25
71-43-2	Benzene	50	48.6	97	46.2	92	5	70-130/25
108-86-1	Bromobenzene	50	51.0	102	48.6	97	5	70-130/25
74-97-5	Bromochloromethane	50	48.7	97	47.7	95	2	70-130/25
75-27-4	Bromodichloromethane	50	56.4	113	51.8	104	9	70-130/25
75-25-2	Bromoform	50	52.2	104	54.4	109	4	70-130/25
74-83-9	Bromomethane	50	42.9	86	43.3	87	1	70-130/25
78-93-3	2-Butanone (MEK)	50	51.7	103	47.4	95	9	70-130/25
104-51-8	n-Butylbenzene	50	57.2	114	51.7	103	10	70-130/25
135-98-8	sec-Butylbenzene	50	57.9	116	54.1	108	7	70-130/25
98-06-6	tert-Butylbenzene	50	59.5	119	55.2	110	7	70-130/25
75-15-0	Carbon disulfide	50	40.8	82	38.3	77	6	70-130/25
56-23-5	Carbon tetrachloride	50	60.1	120	54.9	110	9	70-130/25
108-90-7	Chlorobenzene	50	50.6	101	51.0	102	1	70-130/25
75-00-3	Chloroethane	50	46.2	92	45.9	92	1	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	47.5	95	46.7	93	2	70-130/25
67-66-3	Chloroform	50	53.1	106	49.9	100	6	70-130/25
74-87-3	Chloromethane	50	49.9	100	52.1	104	4	70-130/25
95-49-8	o-Chlorotoluene	50	55.2	110	51.8	104	6	70-130/25
106-43-4	p-Chlorotoluene	50	57.4	115	54.0	108	6	70-130/25
124-48-1	Dibromochloromethane	50	55.9	112	55.7	111	0	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.7	109	51.9	104	5	70-130/25
541-73-1	1,3-Dichlorobenzene	50	54.5	109	51.5	103	6	70-130/25
106-46-7	1,4-Dichlorobenzene	50	52.5	105	48.9	98	7	70-130/25
75-71-8	Dichlorodifluoromethane	50	67.4	135* a	60.5	121	11	70-130/25
75-34-3	1,1-Dichloroethane	50	50.0	100	47.4	95	5	70-130/25
107-06-2	1,2-Dichloroethane	50	53.6	107	51.3	103	4	70-130/25
75-35-4	1,1-Dichloroethene	50	49.3	99	47.3	95	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	47.5	95	47.8	96	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	49.1	98	44.7	89	9	70-130/25
78-87-5	1,2-Dichloropropane	50	47.2	94	46.4	93	2	70-130/25
142-28-9	1,3-Dichloropropane	50	47.6	95	47.7	95	0	70-130/25
594-20-7	2,2-Dichloropropane	50	55.7	111	52.6	105	6	70-130/25
563-58-6	1,1-Dichloropropene	50	51.2	102	48.2	96	6	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-BS	N66368.D	1	08/06/12	JP	n/a	n/a	MSN2495
MSN2495-BSD	N66369.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	55.2	110	53.3	107	4	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	55.1	110	52.3	105	5	70-130/25
123-91-1	1,4-Dioxane	250	236	94	237	95	0	70-130/25
97-63-2	Ethyl methacrylate	50	57.2	114	55.7	111	3	77-137/25
100-41-4	Ethylbenzene	50	47.5	95	47.5	95	0	70-130/25
87-68-3	Hexachlorobutadiene	50	57.0	114	53.2	106	7	70-130/25
591-78-6	2-Hexanone	50	47.2	94	49.0	98	4	70-130/25
98-82-8	Isopropylbenzene	50	56.2	112	53.4	107	5	70-130/25
99-87-6	p-Isopropyltoluene	50	57.7	115	52.9	106	9	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	51.9	104	49.7	99	4	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	51.8	104	51.1	102	1	70-130/25
74-95-3	Methylene bromide	50	56.0	112	53.3	107	5	70-130/25
75-09-2	Methylene chloride	50	46.8	94	44.2	88	6	70-130/25
103-65-1	n-Propylbenzene	50	57.5	115	54.9	110	5	70-130/25
100-42-5	Styrene	50	49.7	99	50.9	102	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	50.5	101	52.2	104	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	53.8	108	51.4	103	5	70-130/25
127-18-4	Tetrachloroethene	50	46.6	93	46.8	94	0	70-130/25
108-88-3	Toluene	50	50.4	101	48.9	98	3	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	53.7	107	49.7	99	8	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	53.9	108	49.6	99	8	70-130/25
71-55-6	1,1,1-Trichloroethane	50	55.8	112	50.9	102	9	70-130/25
79-00-5	1,1,2-Trichloroethane	50	48.5	97	45.9	92	6	70-130/25
79-01-6	Trichloroethene	50	49.8	100	47.6	95	5	70-130/25
75-69-4	Trichlorofluoromethane	50	48.2	96	44.8	90	7	70-130/25
96-18-4	1,2,3-Trichloropropane	50	52.3	105	50.6	101	3	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	55.0	110	50.7	101	8	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	51.7	103	49.3	99	5	70-130/25
108-05-4	Vinyl Acetate	50	53.4	107	53.9	108	1	70-130/25
75-01-4	Vinyl chloride	50	47.5	95	45.5	91	4	70-130/25
	m,p-Xylene	100	98.0	98	98.0	98	0	70-130/25
95-47-6	o-Xylene	50	51.1	102	52.0	104	2	70-130/25
1330-20-7	Xylene (total)	150	149	99	150	100	1	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Aecount: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2495-BS	N66368.D	1	08/06/12	JP	n/a	n/a	MSN2495
MSN2495-BSD	N66369.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	98%	70-130%
2037-26-5	Toluene-D8	99%	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	98%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-BS	N66416.D	1	08/07/12	JP	n/a	n/a	MSN2497
MSN2497-BSD	N66417.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	54.2	108	55.3	111	2	70-130/25
107-02-8	Acrolein	250	335	134* a	346	138* a	3	70-130/25
107-13-1	Acrylonitrile	50	246	492* b	249	498* b	1	70-130/25
71-43-2	Benzene	50	49.1	98	47.8	96	3	70-130/25
108-86-1	Bromobenzene	50	50.1	100	50.5	101	1	70-130/25
74-97-5	Bromochloromethane	50	51.5	103	50.5	101	2	70-130/25
75-27-4	Bromodichloromethane	50	56.8	114	54.4	109	4	70-130/25
75-25-2	Bromoform	50	52.9	106	55.1	110	4	70-130/25
74-83-9	Bromomethane	50	52.8	106	53.4	107	1	70-130/25
78-93-3	2-Butanone (MEK)	50	53.0	106	55.5	111	5	70-130/25
104-51-8	n-Butylbenzene	50	52.1	104	50.3	101	4	70-130/25
135-98-8	sec-Butylbenzene	50	56.6	113	55.5	111	2	70-130/25
98-06-6	tert-Butylbenzene	50	56.8	114	56.2	112	1	70-130/25
75-15-0	Carbon disulfide	50	39.6	79	39.7	79	0	70-130/25
56-23-5	Carbon tetrachloride	50	55.9	112	54.2	108	3	70-130/25
108-90-7	Chlorobenzene	50	52.8	106	52.9	106	0	70-130/25
75-00-3	Chloroethane	50	47.6	95	46.9	94	1	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	50.6	101	48.7	97	4	70-130/25
67-66-3	Chloroform	50	51.8	104	51.2	102	1	70-130/25
74-87-3	Chloromethane	50	53.3	107	54.7	109	3	70-130/25
95-49-8	o-Chlorotoluene	50	53.3	107	52.4	105	2	70-130/25
106-43-4	p-Chlorotoluene	50	55.4	111	54.6	109	1	70-130/25
124-48-1	Dibromochloromethane	50	56.0	112	57.1	114	2	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.3	109	55.2	110	2	70-130/25
541-73-1	1,3-Dichlorobenzene	50	53.4	107	53.4	107	0	70-130/25
106-46-7	1,4-Dichlorobenzene	50	50.2	100	50.2	100	0	70-130/25
75-71-8	Dichlorodifluoromethane	50	54.3	109	51.4	103	5	70-130/25
75-34-3	1,1-Dichloroethane	50	49.7	99	51.3	103	3	70-130/25
107-06-2	1,2-Dichloroethane	50	52.3	105	51.5	103	2	70-130/25
75-35-4	1,1-Dichloroethene	50	50.4	101	51.0	102	1	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	49.9	100	50.4	101	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	49.1	98	49.5	99	1	70-130/25
78-87-5	1,2-Dichloropropane	50	50.3	101	48.4	97	4	70-130/25
142-28-9	1,3-Dichloropropane	50	49.3	99	51.4	103	4	70-130/25
594-20-7	2,2-Dichloropropane	50	39.5	79	38.5	77	3	70-130/25
563-58-6	1,1-Dichloropropene	50	50.2	100	47.9	96	5	70-130/25

* = Outside of Control Limits.

6.2.2

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-BS	N66416.D	1	08/07/12	JP	n/a	n/a	MSN2497
MSN2497-BSD	N66417.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	53.3	107	51.7	103	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	53.6	107	51.4	103	4	70-130/25
123-91-1	1,4-Dioxane	250	285	114	268	107	6	70-130/25
97-63-2	Ethyl methacrylate	50	58.1	116	56.4	113	3	77-137/25
100-41-4	Ethylbenzene	50	48.4	97	49.3	99	2	70-130/25
87-68-3	Hexachlorobutadiene	50	54.1	108	54.6	109	1	70-130/25
591-78-6	2-Hexanone	50	51.4	103	55.6	111	8	70-130/25
98-82-8	Isopropylbenzene	50	54.5	109	53.5	107	2	70-130/25
99-87-6	p-Isopropyltoluene	50	53.8	108	52.7	105	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	53.1	106	53.8	108	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	54.7	109	53.9	108	1	70-130/25
74-95-3	Methylene bromide	50	55.3	111	54.6	109	1	70-130/25
75-09-2	Methylene chloride	50	47.0	94	47.3	95	1	70-130/25
103-65-1	n-Propylbenzene	50	55.8	112	55.3	111	1	70-130/25
100-42-5	Styrene	50	51.6	103	53.5	107	4	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	52.2	104	53.7	107	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	54.8	110	56.4	113	3	70-130/25
127-18-4	Tetrachloroethene	50	47.9	96	48.2	96	1	70-130/25
108-88-3	Toluene	50	51.3	103	50.0	100	3	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	52.7	105	52.1	104	1	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	50.2	100	49.8	100	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	52.5	105	51.9	104	1	70-130/25
79-00-5	1,1,2-Trichloroethane	50	51.9	104	49.5	99	5	70-130/25
79-01-6	Trichloroethene	50	49.4	99	49.1	98	1	70-130/25
75-69-4	Trichlorofluoromethane	50	44.9	90	43.8	88	2	70-130/25
96-18-4	1,2,3-Trichloropropane	50	52.0	104	52.8	106	2	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.6	105	50.6	101	4	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	50.5	101	49.5	99	2	70-130/25
108-05-4	Vinyl Acetate	50	50.3	101	53.6	107	6	70-130/25
75-01-4	Vinyl chloride	50	46.1	92	45.7	91	1	70-130/25
	m,p-Xylene	100	101	101	103	103	2	70-130/25
95-47-6	o-Xylene	50	54.7	109	55.5	111	1	70-130/25
1330-20-7	Xylene (total)	150	155	103	158	105	2	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2497-BS	N66416.D	1	08/07/12	JP	n/a	n/a	MSN2497
MSN2497-BSD	N66417.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	98%	99%	70-130%
2037-26-5	Toluene-D8	101%	99%	70-130%
460-00-4	4-Bromofluorobenzene	98%	95%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

6.2.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12815-1MS	N66375.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1MSD	N66376.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1	N66374.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	MC12815-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	255	102	239	96	6	70-130/30
107-02-8	Acrolein	ND		1250	1790	143* [a]	1710	137* [a]	5	70-130/30
107-13-1	Acrylonitrile	ND		250	1200	480* [b]	1150	460* [b]	4	70-130/30
71-43-2	Benzene	2.8		250	245	97	238	94	3	70-130/30
108-86-1	Bromobenzene	ND		250	250	100	246	98	2	70-130/30
74-97-5	Bromochloromethane	ND		250	241	96	246	98	2	70-130/30
75-27-4	Bromodichloromethane	ND		250	276	110	265	106	4	70-130/30
75-25-2	Bromoform	ND		250	268	107	259	104	3	70-130/30
74-83-9	Bromomethane	ND		250	220	88	250	100	13	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	248	99	251	100	1	70-130/30
104-51-8	n-Butylbenzene	ND		250	271	108	275	110	1	70-130/30
135-98-8	sec-Butylbenzene	ND		250	291	116	284	114	2	70-130/30
98-06-6	tert-Butylbenzene	ND		250	289	116	281	112	3	70-130/30
75-15-0	Carbon disulfide	ND		250	206	82	202	81	2	70-130/30
56-23-5	Carbon tetrachloride	ND		250	294	118	281	112	5	70-130/30
108-90-7	Chlorobenzene	ND		250	265	106	256	102	3	70-130/30
75-00-3	Chloroethane	ND		250	237	95	239	96	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	244	98	244	98	0	70-130/30
67-66-3	Chloroform	ND		250	262	105	250	100	5	70-130/30
74-87-3	Chloromethane	ND		250	259	104	281	112	8	70-130/30
95-49-8	o-Chlorotoluene	ND		250	265	106	267	107	1	70-130/30
106-43-4	p-Chlorotoluene	ND		250	279	112	277	111	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	283	113	276	110	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	271	108	270	108	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	268	107	265	106	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	255	102	253	101	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	332	133* [a]	314	126	6	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	253	101	242	97	4	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	268	107	255	102	5	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	256	102	250	100	2	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	249	100	241	96	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	245	98	240	96	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	243	97	242	97	0	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	244	98	237	95	3	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	283	113	258	103	9	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	254	102	249	100	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12815-1MS	N66375.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1MSD	N66376.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1	N66374.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Compound	MC12815-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	273	109	267	107	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	271	108	267	107	1	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1210	97	1320	106	9	70-130/30
97-63-2	Ethyl methacrylate	ND		250	298	119	298	119	0	72-139/30
100-41-4	Ethylbenzene	ND		250	248	99	239	96	4	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	267	107	273	109	2	70-130/30
591-78-6	2-Hexanone	ND		250	266	106	272	109	2	70-130/30
98-82-8	Isopropylbenzene	ND		250	279	112	276	110	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	278	111	274	110	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	264	106	255	102	3	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	271	108	274	110	1	70-130/30
74-95-3	Methylene bromide	ND		250	274	110	264	106	4	70-130/30
75-09-2	Methylene chloride	ND		250	231	92	230	92	0	70-130/30
103-65-1	n-Propylbenzene	ND		250	285	114	282	113	1	70-130/30
100-42-5	Styrene	ND		250	256	102	256	102	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	269	108	255	102	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	267	107	264	106	1	70-130/30
127-18-4	Tetrachloroethene	ND		250	247	99	241	96	2	70-130/30
108-88-3	Toluene	ND		250	258	103	249	100	4	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	256	102	260	104	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	259	104	263	105	2	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	277	111	258	103	7	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	248	99	241	96	3	70-130/30
79-01-6	Trichloroethene	ND		250	253	101	243	97	4	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	237	95	222	89	7	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	262	105	266	106	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	264	106	261	104	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	255	102	254	102	0	70-130/30
108-05-4	Vinyl Acetate	ND		250	268	107	268	107	0	70-130/30
75-01-4	Vinyl chloride	ND		250	239	96	240	96	0	70-130/30
	m,p-Xylene	ND		500	505	101	489	98	3	70-130/30
95-47-6	o-Xylene	ND		250	273	109	263	105	4	70-130/30
1330-20-7	Xylene (total)	ND		750	777	104	752	100	3	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12815-1MS	N66375.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1MSD	N66376.D	5	08/06/12	JP	n/a	n/a	MSN2495
MC12815-1	N66374.D	1	08/06/12	JP	n/a	n/a	MSN2495

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

MC12567-5

CAS No.	Surrogate Recoveries	MS	MSD	MC12815-1	Limits
1868-53-7	Dibromofluoromethane	99%	96%	103%	70-130%
2037-26-5	Toluene-D8	102%	100%	103%	70-130%
460-00-4	4-Bromofluorobenzene	100%	96%	102%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12783-7MS	N66429.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7MSD	N66430.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7	N66441.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	MC12783-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	199	80	197	79	1	70-130/30
107-02-8	Acrolein	ND		1250	1530	122	1620	130	6	70-130/30
107-13-1	Acrylonitrile	ND		250	1070	428* [a]	1050	420* [a]	2	70-130/30
71-43-2	Benzene	4.3		250	229	90	227	89	1	70-130/30
108-86-1	Bromobenzene	ND		250	245	98	239	96	2	70-130/30
74-97-5	Bromochloromethane	ND		250	220	88	220	88	0	70-130/30
75-27-4	Bromodichloromethane	ND		250	215	86	217	87	1	70-130/30
75-25-2	Bromoform	ND		250	255	102	263	105	3	70-130/30
74-83-9	Bromomethane	ND		250	141	56* [b]	192	77	31* [c]	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	228	91	219	88	4	70-130/30
104-51-8	n-Butylbenzene	ND		250	252	101	243	97	4	70-130/30
135-98-8	sec-Butylbenzene	ND		250	267	107	257	103	4	70-130/30
98-06-6	tert-Butylbenzene	ND		250	250	100	237	95	5	70-130/30
75-15-0	Carbon disulfide	ND		250	167	67* [b]	161	64* [b]	4	70-130/30
56-23-5	Carbon tetrachloride	ND		250	212	85	211	84	0	70-130/30
108-90-7	Chlorobenzene	ND		250	266	106	270	108	1	70-130/30
75-00-3	Chloroethane	ND		250	203	81	196	78	4	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	223	89	224	90	0	70-130/30
67-66-3	Chloroform	ND		250	202	81	194	78	4	70-130/30
74-87-3	Chloromethane	ND		250	201	80	193	77	4	70-130/30
95-49-8	o-Chlorotoluene	ND		250	241	96	234	94	3	70-130/30
106-43-4	p-Chlorotoluene	ND		250	252	101	243	97	4	70-130/30
124-48-1	Dibromochloromethane	ND		250	259	104	261	104	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	254	102	252	101	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	258	103	252	101	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	243	97	238	95	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	143	57* [b]	132	53* [b]	8	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	204	82	200	80	2	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	187	75	187	75	0	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	222	89	213	85	4	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	225	90	216	86	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	224	90	207	83	8	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	222	89	223	89	0	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	229	92	236	94	3	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	208	83	198	79	5	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	210	84	210	84	0	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12783-7MS	N66429.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7MSD	N66430.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7	N66441.D	1	08/07/12	JP	n/a	n/a	MSN2497

6.3.2

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	MC12783-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	244	98	239	96	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	228	91	222	89	3	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1180	94	1270	102	7	70-130/30
97-63-2	Ethyl methacrylate	ND		250	265	106	266	106	0	72-139/30
100-41-4	Ethylbenzene	1.3		250	239	95	239	95	0	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	252	101	249	100	1	70-130/30
591-78-6	2-Hexanone	ND		250	243	97	258	103	6	70-130/30
98-82-8	Isopropylbenzene	ND		250	262	105	251	100	4	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	270	108	259	104	4	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	214	86	211	84	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	237	95	249	100	5	70-130/30
74-95-3	Methylene bromide	ND		250	236	94	229	92	3	70-130/30
75-09-2	Methylene chloride	ND		250	205	82	200	80	2	70-130/30
103-65-1	n-Propylbenzene	ND		250	266	106	252	101	5	70-130/30
100-42-5	Styrene	ND		250	266	106	264	106	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	251	100	251	100	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	258	103	253	101	2	70-130/30
127-18-4	Tetrachloroethene	ND		250	247	99	249	100	1	70-130/30
108-88-3	Toluene	ND		250	241	96	237	95	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	254	102	250	100	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	258	103	249	100	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	193	77	188	75	3	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	224	90	223	89	0	70-130/30
79-01-6	Trichloroethene	ND		250	215	86	212	85	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	157	63* [b]	149	60* [b]	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	237	95	243	97	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	257	103	237	95	8	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	235	94	225	90	4	70-130/30
108-05-4	Vinyl Acetate	ND		250	234	94	239	96	2	70-130/30
75-01-4	Vinyl chloride	ND		250	181	72	177	71	2	70-130/30
	m,p-Xylene	1.3		500	527	105	522	104	1	70-130/30
95-47-6	o-Xylene	ND		250	277	111	275	110	1	70-130/30
1330-20-7	Xylene (total)	1.6		750	804	107	798	106	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12783-7MS	N66429.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7MSD	N66430.D	5	08/07/12	JP	n/a	n/a	MSN2497
MC12783-7	N66441.D	1	08/07/12	JP	n/a	n/a	MSN2497

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

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Surrogate Recoveries	MS	MSD	MC12783-7	Limits
1868-53-7	Dibromofluoromethane	86%	85%	92%	70-130%
2037-26-5	Toluene-D8	98%	99%	96%	70-130%
460-00-4	4-Bromofluorobenzene	93%	92%	99%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

6.3.2

Volatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2495-CC2468	Injection Date:	08/06/12
Lab File ID:	N66367.D	Injection Time:	09:08
Instrument ID:	GCMSN	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	131413	9.02	213012	9.89	125669	13.15	113102	15.70	60962	6.57
Upper Limit [a]	262826	9.52	426024	10.39	251338	13.65	226204	16.20	121924	7.07
Lower Limit [b]	65707	8.52	106506	9.39	62835	12.65	56551	15.20	30481	6.07
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2495-BS	151024	9.02	246054	9.89	143780	13.14	123496	15.70	62874	6.57
MSN2495-BSD	161982	9.02	262596	9.89	146488	13.14	132981	15.70	64911	6.56
MSN2495-MB	148848	9.02	241318	9.89	130551	13.15	104104	15.70	60769	6.57
ZZZZZZ	143716	9.02	229916	9.89	123917	13.15	100914	15.71	52959	6.57
ZZZZZZ	142687	9.02	231605	9.89	126056	13.15	98937	15.70	61958	6.57
MC12815-1	137718	9.02	224588	9.89	131216	13.15	109470	15.70	64098	6.57
ZZZZZZ	137718	9.02	224588	9.89	131216	13.15	109470	15.70	64098	6.57
MC12815-1MS	153009	9.02	248132	9.89	139431	13.14	127952	15.70	75453	6.57
MC12815-1MSD	167569	9.02	270362	9.89	153716	13.15	136968	15.70	76802	6.56
ZZZZZZ	165598	9.02	261775	9.89	141056	13.15	129508	15.70	89710	6.57
ZZZZZZ	169783	9.02	273340	9.89	145377	13.15	118519	15.71	76663	6.57
MC12567-5	160574	9.02	259851	9.89	141972	13.15	111476	15.71	76287	6.58
GP14846-LB1	155358	9.02	249958	9.89	135177	13.15	110512	15.70	61469	6.57
ZZZZZZ	146877	9.02	232166	9.89	131365	13.15	109773	15.70	59164	6.57
ZZZZZZ	147845	9.02	237650	9.89	126231	13.15	104704	15.70	57730	6.57
ZZZZZZ	142684	9.02	228437	9.89	124375	13.15	99827	15.70	53924	6.58
ZZZZZZ	147448	9.02	234252	9.89	132663	13.15	122507	15.70	54707	6.57
ZZZZZZ	156913	9.02	252021	9.89	133302	13.15	114041	15.70	58967	6.57
GP14846-LS1	144528	9.02	238462	9.89	140640	13.15	130484	15.70	66036	6.56

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

(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 Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2497-CC2468	Injection Date:	08/07/12
Lab File ID:	N66415.D	Injection Time:	07:42
Instrument ID:	GCMSN	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	140360	9.02	231393	9.89	133001	13.15	122105	15.70	61698	6.56
Upper Limit [a]	280720	9.52	462786	10.39	266002	13.65	244210	16.20	123396	7.06
Lower Limit [b]	70180	8.52	115697	9.39	66501	12.65	61053	15.20	30849	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2497-BS	156792	9.02	250774	9.89	144945	13.14	130502	15.70	72078	6.56
MSN2497-BSD	158126	9.02	260961	9.89	142219	13.15	131689	15.70	77347	6.56
MSN2497-MB	147491	9.02	241295	9.89	131196	13.15	105615	15.70	72610	6.58
MC12567-1	166514	9.02	267942	9.89	147150	13.15	124918	15.70	63433	6.57
MC12567-2	178219	9.01	281235	9.89	157218	13.15	128746	15.71	71639	6.57
MC12567-3	183309	9.02	294475	9.89	155533	13.15	130538	15.70	78410	6.56
MC12567-4	177367	9.02	284170	9.89	148682	13.14	142905	15.70	76742	6.57
ZZZZZZ	194344	9.02	306662	9.89	165247	13.15	154331	15.70	79912	6.57
ZZZZZZ	210851	9.02	326832	9.89	176261	13.15	158504	15.70	90517	6.57
ZZZZZZ	236702	9.02	363073	9.89	186580	13.15	182339	15.70	121168	6.57
ZZZZZZ	239529	9.02	370805	9.89	187014	13.15	176731	15.70	94591	6.56
MC12783-7MS	238174	9.01	373703	9.89	195881	13.15	182532	15.70	85906	6.56
MC12783-7MSD	241187	9.02	369820	9.89	189144	13.15	182639	15.70	92544	6.56

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

(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: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12567-1	N66420.D	93.0	102.0	106.0
MC12567-2	N66421.D	94.0	102.0	106.0
MC12567-3	N66422.D	93.0	98.0	103.0
MC12567-4	N66423.D	92.0	100.0	94.0
MC12567-5	N66380.D	99.0	99.0	105.0
MC12783-7MS	N66429.D	86.0	98.0	93.0
MC12783-7MSD	N66430.D	85.0	99.0	92.0
MC12815-1MS	N66375.D	99.0	102.0	100.0
MC12815-1MSD	N66376.D	96.0	100.0	96.0
MSN2495-BS	N66368.D	100.0	99.0	100.0
MSN2495-BSD	N66369.D	98.0	99.0	98.0
MSN2495-MB	N66371.D	101.0	100.0	107.0
MSN2497-BS	N66416.D	98.0	101.0	98.0
MSN2497-BSD	N66417.D	99.0	99.0	95.0
MSN2497-MB	N66419.D	102.0	100.0	102.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-MB	W3396.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.68	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-MB	W3396.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	35%	15-110%
4165-62-2	Phenol-d5	25%	15-110%
118-79-6	2,4,6-Tribromophenol	74%	15-110%
4165-60-0	Nitrobenzene-d5	75%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	90%	30-130%

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

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29818-MB	W3355.D	1	07/30/12	KR	07/27/12	OP29818	MSW155

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.061	0.10	0.014	ug/l	J
208-96-8	Acenaphthylene	0.058	0.10	0.013	ug/l	J
120-12-7	Anthracene	0.064	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	0.047	0.050	0.024	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.059	0.10	0.038	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	0.072	0.10	0.033	ug/l	J
86-73-7	Fluorene	0.063	0.10	0.046	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.056	0.10	0.046	ug/l	J
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	0.065	0.20	0.052	ug/l	J
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	0.082	0.050	0.013	ug/l	
129-00-0	Pyrene	0.069	0.10	0.036	ug/l	J

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	69%	30-130%
321-60-8	2-Fluorobipbenyl	62%	30-130%
1718-51-0	Terphenyl-d14	99%	30-130%

Blank Spike Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-BS	W3397.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	33.3	33	30-130
95-57-8	2-Chlorophenol	100	68.3	68	30-130
59-50-7	4-Chloro-3-methyl phenol	100	76.2	76	30-130
120-83-2	2,4-Dichlorophenol	100	74.8	75	30-130
105-67-9	2,4-Dimethylphenol	100	64.4	64	30-130
51-28-5	2,4-Dinitrophenol	100	80.1	80	30-130
534-52-1	4,6-Dinitro-o-cresol	100	99.7	100	30-130
95-48-7	2-Methylphenol	100	58.8	59	30-130
	3&4-Methylphenol	200	116	58	30-130
88-75-5	2-Nitrophenol	100	78.6	79	30-130
100-02-7	4-Nitrophenol	100	43.7	44	30-130
87-86-5	Pentachlorophenol	100	86.2	86	30-130
108-95-2	Phenol	100	33.9	34	30-130
95-95-4	2,4,5-Trichlorophenol	100	82.8	83	30-130
88-06-2	2,4,6-Trichlorophenol	100	81.6	82	30-130
62-53-3	Aniline	50	19.9	40	40-140
101-55-3	4-Bromophenyl phenyl ether	50	40.5	81	40-140
85-68-7	Butyl benzyl phthalate	50	45.5	91	40-140
100-51-6	Benzyl Alcohol	50	32.4	65	40-140
91-58-7	2-Chloronaphthalene	50	37.8	76	40-140
106-47-8	4-Chloroaniline	50	34.3	69	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	42.0	84	40-140
111-44-4	bis(2-Chloroethyl)ether	50	41.3	83	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	46.7	93	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	41.8	84	40-140
122-66-7	1,2-Diphenylhydrazine	50	45.8	92	40-140
121-14-2	2,4-Dinitrotoluene	50	43.8	88	40-140
606-20-2	2,6-Dinitrotoluene	50	43.3	87	40-140
91-94-1	3,3'-Dichlorobenzidine	50	33.7	67	40-140
132-64-9	Dibenzofuran	50	37.7	75	40-140
84-74-2	Di-n-butyl phthalate	50	46.4	93	40-140
117-84-0	Di-n-octyl phthalate	50	44.8	90	40-140
84-66-2	Diethyl phthalate	50	44.9	90	40-140
131-11-3	Dimethyl phthalate	50	43.4	87	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	45.8	92	40-140
118-74-1	Hexachlorobenzene	50	42.6	85	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-BS	W3397.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	19.2	38* a	40-140
67-72-1	Hexachloroethane	50	32.8	66	40-140
78-59-1	Isophorone	50	40.6	81	40-140
88-74-4	2-Nitroaniline	50	42.5	85	40-140
99-09-2	3-Nitroaniline	50	37.2	74	40-140
100-01-6	4-Nitroaniline	50	37.2	74	40-140
98-95-3	Nitrobenzene	50	41.6	83	40-140
62-75-9	n-Nitrosodimethylamine	50	24.5	49	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	45.2	90	40-140
86-30-6	N-Nitrosodiphenylamine	50	44.3	89	40-140
110-86-1	Pyridine	50	21.5	43	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	44%	15-110%
4165-62-2	Phenol-d5	31%	15-110%
118-79-6	2,4,6-Tribromophenol	89%	15-110%
4165-60-0	Nitrobenzene-d5	81%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	94%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

7.2.1

7

Blank Spike Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29818-BS	W3356.D	1	07/30/12	KR	07/27/12	OP29818	MSW155

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	35.2	70	40-140
208-96-8	Acenaphthylene	50	30.2	60	40-140
120-12-7	Anthracene	50	45.1	90	40-140
56-55-3	Benzo(a)anthracene	50	47.2	94	40-140
50-32-8	Benzo(a)pyrene	50	35.1	70	40-140
205-99-2	Benzo(b)fluoranthene	50	45.9	92	40-140
191-24-2	Benzo(g,h,i)perylene	50	47.8	96	40-140
207-08-9	Benzo(k)fluoranthene	50	43.6	87	40-140
218-01-9	Chrysene	50	40.2	80	40-140
53-70-3	Dibenzo(a,h)anthracene	50	48.8	98	40-140
206-44-0	Fluoranthene	50	47.3	95	40-140
86-73-7	Fluorene	50	40.5	81	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	48.6	97	40-140
90-12-0	1-Methylnaphthalene	50	32.2	64	40-140
91-57-6	2-Methylnaphthalene	50	35.0	70	40-140
91-20-3	Naphthalene	50	35.1	70	40-140
85-01-8	Phenanthrene	50	42.9	86	40-140
129-00-0	Pyrene	50	45.7	91	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	106%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-MS	W3398.D	1	07/31/12	KR	07/27/12	OP29817	MSW156
OP29817-MSD	W3399.D	1	07/31/12	KR	07/27/12	OP29817	MSW156
MC12600-3	W3400.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	MC12600-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	35.0	35	36.1	36	3	30-130/20
95-57-8	2-Chlorophenol	ND		100	70.0	70	71.1	71	2	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	76.7	77	78.1	78	2	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	77.1	77	77.2	77	0	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	63.3	63	60.9	61	4	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	82.0	82	84.0	84	2	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	104	104	104	104	0	30-130/20
95-48-7	2-Methylphenol	ND		100	61.3	61	63.7	64	4	30-130/20
	3&4-Methylphenol	ND		200	120	60	124	62	3	30-130/20
88-75-5	2-Nitrophenol	ND		100	80.3	80	81.3	81	1	30-130/20
100-02-7	4-Nitrophenol	ND		100	38.6	39	45.4	45	16	30-130/20
87-86-5	Pentachlorophenol	ND		100	87.8	88	87.9	88	0	30-130/20
108-95-2	Phenol	ND		100	35.3	35	36.6	37	4	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	84.6	85	87.2	87	3	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	82.5	83	84.9	85	3	30-130/20
62-53-3	Aniline	ND		50	20.3	41	21.1	42	4	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	42.4	85	43.5	87	3	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	44.9	90	46.3	93	3	40-140/20
100-51-6	Benzyl Alcohol	ND		50	33.5	67	34.6	69	3	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	39.9	80	42.1	84	5	40-140/20
106-47-8	4-Chloroaniline	ND		50	34.3	69	35.2	70	3	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	42.4	85	43.4	87	2	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	41.8	84	43.1	86	3	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	48.3	97	50.3	101	4	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	43.3	87	44.5	89	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	46.4	93	48.7	97	5	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	44.1	88	44.0	88	0	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	42.9	86	44.2	88	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	35.2	70	34.3	69	3	40-140/20
132-64-9	Dibenzofuran	ND		50	38.7	77	40.2	80	4	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	45.8	92	47.1	94	3	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	46.4	93	48.0	96	3	40-140/20
84-66-2	Diethyl phthalate	ND		50	44.6	89	45.3	91	2	40-140/20
131-11-3	Dimethyl phthalate	ND		50	42.9	86	44.0	88	3	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	46.0	92	47.6	95	3	40-140/20
118-74-1	Hexachlorobenzene	ND		50	43.4	87	44.8	90	3	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29817-MS	W3398.D	1	07/31/12	KR	07/27/12	OP29817	MSW156
OP29817-MSD	W3399.D	1	07/31/12	KR	07/27/12	OP29817	MSW156
MC12600-3	W3400.D	1	07/31/12	KR	07/27/12	OP29817	MSW156

The QC reported here applies to the following samples: Method: SW846 8270C

MC12567-1, MC12567-2, MC12567-3, MC12567-4

7.3.1

7

CAS No.	Compound	MC12600-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	19.3	39* [a]	19.9	40	3	40-140/20
67-72-1	Hexachloroethane	ND		50	34.3	69	34.9	70	2	40-140/20
78-59-1	Isophorone	ND		50	40.8	82	41.5	83	2	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.1	86	44.0	88	2	40-140/20
99-09-2	3-Nitroaniline	ND		50	36.7	73	37.0	74	1	40-140/20
100-01-6	4-Nitroaniline	ND		50	37.8	76	38.1	76	1	40-140/20
98-95-3	Nitrobenzene	ND		50	42.4	85	43.1	86	2	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	26.3	53	26.8	54	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	45.2	90	46.7	93	3	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	43.4	87	44.9	90	3	40-140/20
110-86-1	Pyridine	ND		50	24.1	48	24.1	48	0	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12600-3	Limits
367-12-4	2-Fluorophenol	46%	47%	37%	15-110%
4165-62-2	Phenol-d5	33%	35%	28%	15-110%
118-79-6	2,4,6-Tribromophenol	91%	95%	75%	15-110%
4165-60-0	Nitrobenzene-d5	84%	86%	76%	30-130%
321-60-8	2-Fluorobiphenyl	78%	79%	67%	30-130%
1718-51-0	Terphenyl-d14	98%	103%	98%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29818-MS	W3357.D	1	07/30/12	KR	07/27/12	OP29818	MSW155
OP29818-MSD	W3358.D	1	07/30/12	KR	07/27/12	OP29818	MSW155
MC12600-4	W3359.D	1	07/30/12	KR	07/27/12	OP29818	MSW155

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12567-1, MC12567-2, MC12567-3, MC12567-4

CAS No.	Compound	MC12600-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.027		50	36.3	73	38.4	77	6	40-140/20
208-96-8	Acenaphthylene	0.023		50	31.0	62	32.6	65	5	40-140/20
120-12-7	Anthracene	0.021		50	44.2	88	46.2	92	4	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	47.6	95	48.8	98	2	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	35.6	71	36.6	73	3	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	46.5	93	47.8	96	3	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	48.3	97	50.3	101	4	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	44.6	89	46.3	93	4	40-140/20
218-01-9	Chrysene	ND		50	40.8	82	41.7	83	2	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	49.5	99	51.3	103	4	40-140/20
206-44-0	Fluoranthene	ND		50	47.6	95	48.4	97	2	40-140/20
86-73-7	Fluorene	ND		50	41.1	82	43.1	86	5	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	49.2	98	50.9	102	3	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	34.2	68	36.6	73	7	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	36.7	73	38.1	76	4	40-140/20
91-20-3	Naphthalene	0.048		50	37.3	75	38.4	77	3	40-140/20
85-01-8	Phenanthrene	0.037		50	43.0	86	44.4	89	3	40-140/20
129-00-0	Pyrene	ND		50	45.8	92	46.8	94	2	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12600-4	Limits
4165-60-0	Nitrobenzene-d5	78%	80%	70%	30-130%
321-60-8	2-Fluorobiphenyl	72%	74%	61%	30-130%
1718-51-0	Terphenyl-d14	113%	116%	107%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2683-CC2682	Injection Date:	07/31/12
Lab File ID:	F56370.D	Injection Time:	16:54
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	400672	4.05	1487071	5.04	940578	6.46	1710048	7.83	1589967	10.60	1534070	12.06
Upper Limit [a]	801344	4.55	2974142	5.54	1881156	6.96	3420096	8.33	3179934	11.10	3068140	12.56
Lower Limit [b]	200336	3.55	743536	4.54	470289	5.96	855024	7.33	794984	10.10	767035	11.56
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
MC12567-1	384581	4.04	1417251	5.03	890247	6.46	1627551	7.82	1522148	10.59	1385384	12.06
MC12567-2	405633	4.05	1499922	5.03	941571	6.46	1704478	7.82	1588015	10.60	1432640	12.06
MC12567-3	418752	4.05	1539107	5.03	946502	6.46	1711748	7.82	1575145	10.60	1527776	12.06
MC12567-4	394319	4.05	1455504	5.03	897540	6.46	1602570	7.82	1483308	10.60	1354287	12.06
ZZZZZZ	421639	4.05	1585750	5.03	982272	6.46	1816742	7.82	1703331	10.60	1945393	12.06
ZZZZZZ	398892	4.05	1480705	5.03	931098	6.46	1701599	7.82	1639465	10.60	1882734	12.06
ZZZZZZ	419409	4.05	1565344	5.03	947771	6.46	1692854	7.82	1522612	10.60	1848529	12.06
ZZZZZZ	400917	4.04	1492416	5.03	915680	6.46	1656997	7.82	1565932	10.59	1753422	12.06
ZZZZZZ	395842	4.04	1499531	5.03	921971	6.46	1692413	7.82	1559440	10.59	1777468	12.06
ZZZZZZ	408621	4.04	1523062	5.03	954051	6.46	1748705	7.82	1649648	10.59	1881762	12.06
ZZZZZZ	397498	4.04	1487798	5.03	926314	6.46	1679311	7.82	1583151	10.59	1923674	12.06
ZZZZZZ	394298	4.05	1453118	5.04	936791	6.46	1712044	7.83	1549091	10.61	2033839	12.07
ZZZZZZ	391347	4.05	1465062	5.04	932649	6.46	1693825	7.83	1552456	10.61	2005100	12.07
ZZZZZZ	433956	4.05	1629852	5.03	995504	6.46	1839863	7.82	1695831	10.60	2067369	12.07
ZZZZZZ	420170	4.05	1589287	5.03	983545	6.46	1785313	7.82	1610584	10.60	1994086	12.07
ZZZZZZ	409525	4.04	1524588	5.03	966541	6.46	1745252	7.82	1623152	10.59	1809037	12.06
ZZZZZZ	387197	4.05	1453228	5.03	904073	6.46	1638117	7.82	1492084	10.60	1697011	12.06
ZZZZZZ	402550	4.04	1509373	5.03	956357	6.46	1731050	7.82	1560837	10.59	1822306	12.06
ZZZZZZ	402803	4.05	1518564	5.03	959704	6.46	1750134	7.82	1640195	10.60	1829188	12.06
OP29848-MS	408242	4.04	1530932	5.03	952282	6.46	1777292	7.82	1697428	10.59	2069174	12.06
OP29848-MSD	408681	4.04	1511463	5.03	952960	6.46	1787992	7.82	1661757	10.60	1987837	12.07
MC12675-5	389600	4.05	1462186	5.03	936911	6.46	1728937	7.82	1608671	10.60	1990832	12.06
ZZZZZZ	425310	4.04	1644028	5.03	1024595	6.46	1880444	7.82	1746949	10.59	1952995	12.07
ZZZZZZ	452246	4.04	1715551	5.03	1067190	6.46	1937337	7.83	1841312	10.60	2128744	12.07
ZZZZZZ	421274	4.05	1561513	5.03	959453	6.46	1703527	7.82	1560173	10.60	1818347	12.07
ZZZZZZ	368964	4.05	1420800	5.03	884757	6.46	1633546	7.82	1498479	10.60	1696190	12.06
ZZZZZZ	532940	4.04	1972672	5.03	1212985	6.46	2117560	7.82	2009674	10.60	2366410	12.07
ZZZZZZ	425535	4.05	1576954	5.03	975377	6.46	1760367	7.83	1617454	10.60	1863387	12.07
ZZZZZZ	477069	4.04	1776758	5.03	1104153	6.47	2002536	7.82	1839744	10.60	2132933	12.07

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2683-CC2682	Injection Date:	07/31/12
Lab File ID:	F56370.D	Injection Time:	16:54
Instrument ID:	GCMSF	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 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.

7.4.1

7

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW154-CC129	Injection Date:	07/30/12
Lab File ID:	W3353.D	Injection Time:	16:46
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	401184	3.87	1506692	4.86	934163	6.29	1784410	7.62	2117652	10.53	1867557	12.10
Upper Limit [a]	802368	4.37	3013384	5.36	1868326	6.79	3568820	8.12	4235304	11.03	3735114	12.60
Lower Limit [b]	200592	3.37	753346	4.36	467082	5.79	892205	7.12	1058826	10.03	933779	11.60

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
OP29818-MB	1046889[c]	3.87	3993997[c]	4.86	2295712[c]	6.28	3867388[c]	7.62	4111992[c]	10.40	6257469[c]	11.85
OP29818-BS	1128738[c]	3.87	4166921[c]	4.86	2352005[c]	6.29	3805264[c]	7.62	3811046[c]	10.40	5546991[c]	11.86
OP29818-MS	1111564[c]	3.87	4197348[c]	4.86	2403618[c]	6.29	3926938[c]	7.62	3900641[c]	10.40	5585082[c]	11.86
OP29818-MSD	1060831[c]	3.87	3974615[c]	4.86	2235795[c]	6.29	3603560[c]	7.62	3611805[c]	10.40	5165643[c]	11.86
MC12600-4	1016802[c]	3.87	3832649[c]	4.86	2199214[c]	6.28	3655443[c]	7.62	3714882[c]	10.40	5695498[c]	11.85
ZZZZZZ	964389[c]	3.87	3704152[c]	4.86	2108117[c]	6.28	3537906[c]	7.62	3681527[c]	10.40	5697309[c]	11.85
ZZZZZZ	980591[c]	3.87	3790680[c]	4.86	2158640[c]	6.28	3628199[c]	7.62	3797537[c]	10.40	5980878[c]	11.85
ZZZZZZ	948822[c]	3.87	3646962[c]	4.86	2065055[c]	6.28	3421949[c]	7.62	3648591[c]	10.40	5576754[c]	11.85
ZZZZZZ	922870[c]	3.87	3533165[c]	4.86	2019030[c]	6.28	3409735[c]	7.62	3647661[c]	10.40	6117191[c]	11.85
OP29833-MB	370709	3.86	1400269	4.85	841716	6.28	1525905	7.62	1783514	10.52	1929765	12.10
OP29833-BS	362191	3.87	1339509	4.86	815809	6.28	1461703	7.62	1789215	10.52	1771748	12.10
OP29833-MS	371420	3.87	1393464	4.86	845802	6.29	1506035	7.62	1806032	10.52	1773798	12.10
OP29833-MSD	402795	3.87	1499729	4.86	915643	6.29	1620771	7.62	1911941	10.52	1831242	12.10
MC12594-1	354547	3.86	1332806	4.85	805599	6.28	1478613	7.62	1773738	10.52	2058784	12.10
ZZZZZZ	335065	3.86	1271664	4.85	765033	6.28	1400985	7.62	1644268	10.52	1732604	12.09
OP29834-MB	339641	3.86	1256935	4.85	745600	6.28	1314587	7.62	1383205	10.52	1083196	12.09
OP29834-BS	332212	3.87	1251628	4.86	739899	6.29	1304622	7.62	1411523	10.52	1056358	12.10
OP29834-MS	319163	3.87	1185029	4.86	707808	6.28	1242188	7.62	1343366	10.52	1001701	12.09
OP29834-MSD	339541	3.87	1269504	4.86	753975	6.29	1345440	7.62	1498855	10.52	1095966	12.09
MC12602-1	340411	3.86	1261715	4.85	741757	6.28	1275738	7.62	1297038	10.52	1012485	12.09
ZZZZZZ	347076	3.86	1267574	4.85	751500	6.28	1284409	7.62	1305646	10.52	1046287	12.09
ZZZZZZ	333594	3.86	1241941	4.85	753297	6.28	1315099	7.62	1332777	10.52	1051043	12.09
ZZZZZZ	338924	3.86	1248736	4.85	732690	6.28	1253118	7.62	999985*	10.52	741091*	12.09
ZZZZZZ	336387	3.86	1226777	4.85	731215	6.28	1258211	7.62	1036847*	10.52	758875*	12.09
ZZZZZZ	322842	3.86	1184663	4.85	702104	6.28	1208223	7.62	1020230*	10.52	771567*	12.09
ZZZZZZ	325835	3.86	1212177	4.85	722064	6.28	1267276	7.62	1375171	10.52	1178869	12.09
ZZZZZZ	330623	3.86	1238452	4.85	722448	6.28	1243310	7.62	1197391	10.52	924220*	12.09
ZZZZZZ	333991	3.87	1226750	4.86	719312	6.29	1225557	7.62	1207471	10.52	930332*	12.10
ZZZZZZ	466793	3.87	1729424	4.86	1122121	6.29	2002050	7.63	2007936	10.52	1961935	12.10

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

7.4.2 7

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW154-CC129	Injection Date:	07/30/12
Lab File ID:	W3353.D	Injection Time:	16:46
Instrument ID:	GCMSW	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 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.
(c) Internal standard spiked at SIM concentration.

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW156-CC129	Injection Date:	07/31/12
Lab File ID:	W3391.D	Injection Time:	07:48
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	390969	3.86	1459828	4.85	895105	6.28	1679905	7.61	2006527	10.52	1771316	12.09
Upper Limit [a]	781938	4.36	2919656	5.35	1790210	6.78	3359810	8.11	4013054	11.02	3542632	12.59
Lower Limit [b]	195485	3.36	729914	4.35	447553	5.78	839953	7.11	1003264	10.02	885658	11.59
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
ZZZZZZ	937763[c]	3.86	3594238[c]	4.84	2013412[c]	6.28	3334288[c]	7.61	3318412[c]	10.39	3865455[c]	11.84
ZZZZZZ	946792[c]	3.86	2847437[c]	4.85	2110474[c]	6.28	3348085[c]	7.61	3247545[c]	10.39	3715998[c]	11.84
ZZZZZZ	945815[c]	3.86	3552724[c]	4.84	1996712[c]	6.28	3326184	7.61	3348969	10.39	3943527[c]	11.84
OP29817-MB	394794	3.86	1450230	4.85	874166	6.27	1579255	7.61	1872703	10.51	1966450	12.08
OP29817-BS	380207	3.86	1401071	4.85	846417	6.27	1504909	7.61	1842837	10.51	1830715	12.08
OP29817-MS	399631	3.86	1477020	4.85	891443	6.27	1582347	7.61	1941225	10.51	1880192	12.08
OP29817-MSD	382384	3.86	1423877	4.85	846401	6.27	1469500	7.61	1775736	10.51	1717598	12.08
MC12600-3	383958	3.86	1424727	4.85	852461	6.27	1546366	7.61	1824231	10.51	2008775	12.08
OP29848-MB	320741	3.86	1193205	4.85	705963	6.27	1245570	7.61	1406013	10.50	1293639	12.08
OP29848-BS	336661	3.86	1254933	4.85	747033	6.27	1318038	7.61	1577855	10.51	1362847	12.08
OP29848-BSD	367316	3.86	1357841	4.85	821920	6.27	1461893	7.61	1733485	10.51	1485157	12.08
ZZZZZZ	391292	3.86	1454385	4.85	865224	6.27	1537275	7.61	1751755	10.51	1581304	12.08
ZZZZZZ	368814	3.86	1375072	4.85	829973	6.27	1486621	7.61	1756833	10.51	1912859	12.08
ZZZZZZ	383305	3.86	1427665	4.85	852350	6.27	1493528	7.61	1717782	10.50	1874447	12.08
ZZZZZZ	362630	3.86	1358997	4.85	825604	6.27	1476332	7.61	1748306	10.50	1872672	12.08
ZZZZZZ	365721	3.86	1371834	4.85	819549	6.27	1484358	7.61	1757802	10.51	2079135	12.08
ZZZZZZ	1155418[c]	3.86	4238041[c]	4.84	2419179[c]	6.28	3940559[c]	7.61	3871065[c]	10.39	4439476[c]	11.84
ZZZZZZ	1100563[c]	3.86	4095157[c]	4.84	2283919[c]	6.28	3728513[c]	7.61	3693070[c]	10.39	4150264[c]	11.84
ZZZZZZ	964740[c]	3.86	3599224[c]	4.84	2003413[c]	6.28	3288778[c]	7.61	3227426[c]	10.39	3644125[c]	11.84

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-DI0
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.
(c) Internal standard spiked at SIM concentration.

7.4.3

7

Semivolatile Internal Standard Area Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW164-CC72	Injection Date:	08/02/12
Lab File ID:	W3523.D	Injection Time:	09:33
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	883213	3.84	3358929	4.82	1955429	6.25	3313062	7.58	3290826	10.36	4555968	11.81
Upper Limit [a]	1766426	4.34	6717858	5.32	3910858	6.75	6626124	8.08	6581652	10.86	9111936	12.31
Lower Limit [b]	441607	3.34	1679465	4.32	977715	5.75	1656531	7.08	1645413	9.86	2277984	11.31
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
ZZZZZZ	677091	3.84	2639072	4.82	1489000	6.25	2383662	7.58	2397841	10.35	3336946	11.81
ZZZZZZ	678679	3.84	2627104	4.82	1500221	6.25	2468671	7.58	2464862	10.35	3423351	11.81
ZZZZZZ	802130	3.84	3088385	4.82	1766581	6.25	2933365	7.58	2884862	10.35	4014660	11.81
ZZZZZZ	674367	3.84	2608995	4.82	1492927	6.25	2541958	7.58	2643459	10.36	3679199	11.81
ZZZZZZ	675366	3.84	2723299	4.82	1527496	6.25	2511610	7.58	2521873	10.35	3435595	11.81
ZZZZZZ	705917	3.84	2768024	4.82	1591099	6.25	2626661	7.58	2645088	10.35	3647128	11.81
MC12567-1	743005	3.84	2812723	4.82	1597324	6.25	2647951	7.58	2621213	10.35	2876008	11.81
MC12567-2	814216	3.84	3090793	4.82	1762153	6.25	2952760	7.58	2975623	10.35	3272293	11.81
MC12567-3	872512	3.84	3325342	4.82	1908259	6.25	3210205	7.58	3290067	10.36	3903730	11.81
MC12567-4	767395	3.84	2910613	4.82	1659574	6.25	2743874	7.58	2744022	10.35	3010409	11.81
OP29842-MB	702140	3.84	2668954	4.82	1496271	6.25	2493755	7.58	2391700	10.35	2369823	11.80
OP29842-BS	796280	3.84	2997344	4.82	1684331	6.25	2750561	7.58	2604662	10.36	2511542	11.81

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 Surrogate Recovery Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12567-1	F56371.D	36.0	31.0	79.0	71.0	72.0	86.0
MC12567-2	F56372.D	34.0	38.0	77.0	63.0	65.0	86.0
MC12567-3	F56373.D	32.0	29.0	73.0	66.0	66.0	85.0
MC12567-4	F56374.D	37.0	38.0	75.0	68.0	67.0	89.0
OP29817-BS	W3397.D	44.0	31.0	89.0	81.0	73.0	94.0
OP29817-MB	W3396.D	35.0	25.0	74.0	75.0	68.0	90.0
OP29817-MS	W3398.D	46.0	33.0	91.0	84.0	78.0	98.0
OP29817-MSD	W3399.D	47.0	35.0	95.0	86.0	79.0	103.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12567-1	W3532.D	69.0	70.0	111.0
MC12567-2	W3533.D	63.0	63.0	111.0
MC12567-3	W3534.D	64.0	64.0	111.0
MC12567-4	W3535.D	67.0	65.0	115.0
OP29818-BS	W3356.D	76.0	68.0	106.0
OP29818-MB	W3355.D	69.0	62.0	99.0
OP29818-MS	W3357.D	78.0	72.0	113.0
OP29818-MSD	W3358.D	80.0	74.0	116.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MB	BB43070.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12567-1, MC12567-2, MC12567-3, MC12567-4, MC12567-6

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	99%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	36-173%

Blank Spike Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-BS	BB43071.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12567-1, MC12567-2, MC12567-3, MC12567-4, MC12567-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.047	66	60-140
106-93-4	1,2-Dibromoethane	0.071	0.052	73	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	75%	36-173%
460-00-4	Bromofluorobenzene (S)	73%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MS	BB43072.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
OP29882-MSD	BB43073.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
MC12669-1	BB43074.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12567-1, MC12567-2, MC12567-3, MC12567-4, MC12567-6

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.0702	0.078	111	0.076	112	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.0702	0.071	101	0.073	107	3	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12669-1	Limits
460-00-4	Bromofluorobenzene (S)	127%	118%	97%	36-173%
460-00-4	Bromofluorobenzene (S)	127%	123%	98%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12567-1	BB43085.D	133.0	135.0
MC12567-2	BB43086.D	129.0	131.0
MC12567-3	BB43087.D	142.0	153.0
MC12567-4	BB43088.D	102.0	113.0
MC12567-6	BB43089.D	91.0	99.0
OP29882-BS	BB43071.D	75.0	73.0
OP29882-MB	BB43070.D	99.0	95.0
OP29882-MS	BB43072.D	127.0	127.0
OP29882-MSD	BB43073.D	118.0	123.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43069.D	Injection Time:	01:14
Instrument ID:	GCBB	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.91	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP29882-MB	BB43070.D	08/04/12	01:40	3.91	3.80
OP29882-BS	BB43071.D	08/04/12	02:06	3.91	3.80
OP29882-MS	BB43072.D	08/04/12	02:32	3.91	3.80
OP29882-MSD	BB43073.D	08/04/12	02:59	3.91	3.80
MC12669-1	BB43074.D	08/04/12	03:26	3.91	3.80
ZZZZZZ	BB43075.D	08/04/12	03:52	3.91	3.80
ZZZZZZ	BB43076.D	08/04/12	04:18	3.91	3.80
ZZZZZZ	BB43077.D	08/04/12	04:45	3.91	3.80
ZZZZZZ	BB43078.D	08/04/12	05:11	3.91	3.80
ZZZZZZ	BB43079.D	08/04/12	05:38	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC12567
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43080.D	Injection Time:	06:04
Instrument ID:	GCBB	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.90	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB43081.D	08/04/12	06:31	3.92	3.80
ZZZZZZ	BB43082.D	08/04/12	06:57	3.91	3.80
ZZZZZZ	BB43083.D	08/04/12	07:24	3.90	3.80
ZZZZZZ	BB43084.D	08/04/12	07:50	3.91	3.80
MC12567-1	BB43085.D	08/04/12	08:16	3.90	3.80
MC12567-2	BB43086.D	08/04/12	08:42	3.90	3.80
MC12567-3	BB43087.D	08/04/12	09:09	3.90	3.80
MC12567-4	BB43088.D	08/04/12	09:35	3.91	3.80
MC12567-6	BB43089.D	08/04/12	10:02	3.91	3.80
ZZZZZZ	BB43090.D	08/04/12	10:28	3.91	3.80
GBB2630-ECC263	BB43091.D	08/04/12	10:55	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12669

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 8/30/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW3-ROX-072712	MW12-ROX-072712
MW11-ROX-072712	MW10-ROX-072712 EB
MW10-ROX-072712	MW9-ROX-072712
TB-072712-HCL	TB-072712-ST

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries were outside evaluation criteria. PAH method blank, LCS, and PAHs internal standard area recoveries were outside evaluation criteria for samples MW3-ROX-072712, MW12-ROX-072712, MW11-ROX-072712, MW10-ROX-072712 EB, MW10-ROX-072712, and MW9-ROX-072712. PAH MS/MSD internal standard area recoveries were outside evaluation criteria for sample MW3-ROX-072712. Although not indicated in the laboratory case narrative, target analytes were detected in the blanks. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, the initial calibration verification for acetone exceeded 50 percent difference (%D). The continuing calibration check standards for acrolein and bromomethane exceeded 50% D.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 0.9ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
MW10-ROX-072712 EB	VOCs	Acetone	6.3 ug/L
MW10-ROX-072712 EB	VOCs	Benzene	2.8 ug/L
MW10-ROX-072712 EB	VOCs	Chloroform	0.56 ug/L
MW10-ROX-072712 EB	SVOCs	Di-n-butyl phthalate	0.42 ug/L
MW10-ROX-072712 EB	SVOCs	bis(2-Ethylhexyl)phthalate	0.46 ug/L
OP29851-MB	SVOCs	Di-n-butyl phthalate	0.59 ug/L
OP29851-MB	SVOCs	bis(2-Ethylhexyl)phthalate	0.51 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. Professional judgment was used to not qualify or reject samples associated with MW10-ROX-072712 EB due comparable historical detections.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW3-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW3-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW12-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW12-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW11-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW11-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW10-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW10-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW9-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW9-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2498-BS1	VOCs	Acrolein	**194**	NA	70-130
MSN2498-BS1	VOCs	Acrylonitrile	**436**	NA	70-130
MSN2498-BS1	VOCs	Bromomethane	**149**	NA	70-130
MSN2498-BS1	VOCs	Carbon disulfide	**69**	NA	70-130
MSN2498-BS1	VOCs	Chloroethane	**145**	NA	70-130
MSN2498-BS/BSD	VOCs	Acrolein	126/**131**	4	70-130/25
MSN2498-BS/BSD	VOCs	Acrylonitrile	**448/476**	6	70-130/25

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2498-BS/BSD	VOCs	Carbon disulfide	**66/67**	1	70-130/25
MSN2498-BS/BSD	VOCs	Dichlorodifluoromethane	**55/57**	2	70-130/25
MSN2498-BS/BSD	VOCs	Trichlorofluoromethane	**65/64**	2	70-130/25
MSN2500-BS/BSD	VOCs	Acrylonitrile	**514/510**	1	70-130/25
MSN2500-BS/BSD	VOCs	Bromomethane	**134**/119	12	70-130/25
MSN2500-BS/BSD	VOCs	Chloromethane	**160/149**	7	70-130/25
MSN2500-BS/BSD	VOCs	Dichlorodifluoromethane	**169/148**	14	70-130/25
MSN2500-BS/BSD	VOCs	Vinyl chloride	**133**/117	12	70-130/25
OP29851-BS	SVOCs	3&4-Methylphenol	**29**	NA	30-130
OP29851-BS	SVOCs	Aniline	**39**	NA	40-140
OP29851-BS	SVOCs	N-Nitrosodiphenylamine	**198**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS/LCSD MSN2498-BS/BSD was associated with trip blank TB-072712-HCL and equipment blank MW10-ROX-072712 EB. LCS OP29851-BS was also associated with equipment blank MW10-ROX-072712 EB. Trip blanks and equipment blanks are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification
MW3-ROX-072712	VOCs	Carbon disulfide	**UJ**
MW3-ROX-072712	VOCs	Dichlorodifluoromethane	**UJ**
MW3-ROX-072712	VOCs	Triclorofluoromethane	**UJ**
MW3-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW3-ROX-072712	SVOCs	Aniline	**UJ**
MW12-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW12-ROX-072712	SVOCs	Aniline	**UJ**
MW11-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW11-ROX-072712	SVOCs	Aniline	**UJ**
MW10-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW10-ROX-072712	SVOCs	Aniline	**UJ**
MW9-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW9-ROX-072712	SVOCs	Aniline	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, sample MW3-ROX-072712 was spiked and analyzed for VOCs, SVOCs, PAHs, and 8011 VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW3-ROX-072712	VOCs	Acrolein	125/**132**	6	70-130/30
MW3-ROX-072712	VOCs	Acrylonitrile	**504/526**	4	70-130/30
MW3-ROX-072712	VOCs	Chloromethane	118/**141**	17	70-130/30
MW3-ROX-072712	VOCs	Dichlorodifluoromethane	**160/151**	5	70-130/30
MW3-ROX-072712	SVOCs	3&4-Methylphenol	**29**/35	20	30-130/20
MW3-ROX-072712	SVOCs	Phenol	36/46	**28**	30-130/20
MW3-ROX-072712	SVOCs	Aniline	**37/33**	6	40-140/20
MW3-ROX-072712	SVOCs	3,3'-Dichlorobenzidine	44/**32**	**28**	40-140/20

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, PAH method blank, LCS, and PAHs internal standard area recoveries were outside evaluation criteria for samples MW3-ROX-072712, MW12-ROX-072712, MW11-ROX-072712, MW10-ROX-072712 EB, MW10-ROX-072712, and MW9-ROX-072712. PAH MS/MSD internal standard area recoveries were outside evaluation criteria for sample MW3-ROX-072712.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
OP29852-MB	PAHs	1,4-Dichlorobenzene-d_4	**951369**	187448-749790
OP29852-MB	PAHs	Naphthalene-d_8	**3639166**	719122-2876486
OP29852-MB	PAHs	Acenaphthene-d_{10}	**2068818**	444813-1779252
OP29852-MB	PAHs	Penanthrene-d_{10}	**3442895**	848573-3394292
OP29852-MB	PAHs	Chrysene-d_{12}	**3487828**	1023698-4094790
OP29852-MB	PAHs	Perylene-d_{12}	**5172874**	918280-3673118
OP29852-BS	PAHs	1,4-Dichlorobenzene-d_4	**999695**	187448-749790
OP29852-BS	PAHs	Naphthalene-d_8	**3728157**	719122-2876486
OP29852-BS	PAHs	Acenaphthene-d_{10}	**2125311**	444813-1779252
OP29852-BS	PAHs	Penanthrene-d_{10}	**3703972**	848573-3394292
OP29852-BS	PAHs	Chrysene-d_{12}	**3586644**	1023698-4094790
OP29852-BS	PAHs	Perylene-d_{12}	**4755558**	918280-3673118
OP29852-MS	PAHs	1,4-Dichlorobenzene-d_4	**1030049**	187448-749790
OP29852-MS	PAHs	Naphthalene-d_8	**3883111**	179122-2876486
OP29852-MS	PAHs	Acenaphthene-d_{10}	**2191252**	444813-1779252
OP29852-MS	PAHs	Penanthrene-d_{10}	**3594302**	848573-3394292
OP29852-MS	PAHs	Chrysene-d_{12}	**3584983**	1023698-4094790
OP29852-MS	PAHs	Perylene-d_{12}	**5057958**	918280-3673118
OP29852-MSD	PAHs	1,4-Dichlorobenzene-d_4	**1025984**	187448-749790
OP29852-MSD	PAHs	Naphthalene-d_8	**3839198**	179122-2876486
OP29852-MSD	PAHs	Acenaphthene-d_{10}	**2171069**	444813-1779252
OP29852-MSD	PAHs	Penanthrene-d_{10}	**3544760**	848573-3394292
OP29852-MSD	PAHs	Chrysene-d_{12}	**3524651**	1023698-4094790
OP29852-MSD	PAHs	Perylene-d_{12}	**5132476**	918280-3673118
MW3-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**873554**	187448-749790
MW3-ROX-072712	PAHs	Naphthalene-d_8	**3358062**	179122-2876486
MW3-ROX-072712	PAHs	Acenaphthene-d_{10}	**1932021**	444813-1779252
MW3-ROX-072712	PAHs	Penanthrene-d_{10}	**3259325**	848573-3394292
MW3-ROX-072712	PAHs	Chrysene-d_{12}	**3350262**	1023698-4094790
MW3-ROX-072712	PAHs	Perylene-d_{12}	**5117040**	918280-3673118
MW12-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**900723**	187448-749790
MW12-ROX-072712	PAHs	Naphthalene-d_8	**3430794**	179122-2876486
MW12-ROX-072712	PAHs	Acenaphthene-d_{10}	**1963517**	444813-1779252
MW12-ROX-072712	PAHs	Penanthrene-d_{10}	**3279552**	848573-3394292
MW12-ROX-072712	PAHs	Chrysene-d_{12}	**3366934**	1023698-4094790
MW12-ROX-072712	PAHs	Perylene-d_{12}	**5415724**	918280-3673118
MW11-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**848972**	187448-749790
MW11-ROX-072712	PAHs	Naphthalene-d_8	**3267315**	179122-2876486
MW11-ROX-072712	PAHs	Acenaphthene-d_{10}	**1865953**	444813-1779252
MW11-ROX-072712	PAHs	Penanthrene-d_{10}	**3140745**	848573-3394292
MW11-ROX-072712	PAHs	Chrysene-d_{12}	**3253037**	1023698-4094790
MW11-ROX-072712	PAHs	Perylene-d_{12}	**5154364**	918280-3673118
MW10-ROX-072712 EB	PAHs	1,4-Dichlorobenzene-d_4	**912101**	187448-749790
MW10-ROX-072712 EB	PAHs	Naphthalene-d_8	**3466787**	179122-2876486
MW10-ROX-072712 EB	PAHs	Acenaphthene-d_{10}	**1976349**	444813-1779252
MW10-ROX-072712 EB	PAHs	Penanthrene-d_{10}	**3323898**	848573-3394292
MW10-ROX-072712 EB	PAHs	Chrysene-d_{12}	**3377925**	1023698-4094790
MW10-ROX-072712 EB	PAHs	Perylene-d_{12}	**5180070**	918280-3673118
MW10-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**884513**	187448-749790
MW10-ROX-072712	PAHs	Naphthalene-d_8	**3414871**	179122-2876486
MW10-ROX-072712	PAHs	Acenaphthene-d_{10}	**1956725**	444813-1779252

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
MW10-ROX-072712	PAHs	Penanthrene-d_{10}	**3240834**	848573-3394292
MW10-ROX-072712	PAHs	Chrysene-d_{12}	**3390632**	1023698-4094790
MW10-ROX-072712	PAHs	Perylene-d_{12}	**5231854**	918280-3673118
MW9-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**941346**	187448-749790
MW9-ROX-072712	PAHs	Naphthalene-d_8	**3554753**	179122-2876486
MW9-ROX-072712	PAHs	Acenaphthene-d_{10}	**1997934**	444813-1779252
MW9-ROX-072712	PAHs	Penanthrene-d_{10}	**3316822**	848573-3394292
MW9-ROX-072712	PAHs	Chrysene-d_{12}	**3399571**	1023698-4094790
MW9-ROX-072712	PAHs	Perylene-d_{12}	**5493769**	918280-3673118

Analytical data that required qualification based on internal standard data are included in the table below. Analytical results reported as non-detect and associated with internal standard recoveries above evaluation criteria, indicating a high bias, did not require qualification. Method blanks, equipment blanks, MS/MSDs and LCS/LCSDs are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification
MW3-ROX-072712	PAHs	Phenanthrene	**J**

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

No

1.0 VALIDATION OF VOC DATA – SDG MC12669

This section describes the validation for five groundwater samples which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12669. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
MW3-ROX-072712	MW12-ROX-072712
MW11-ROX-072712	MW10-ROX-072712
MW9-ROX-072712	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries were outside evaluation criteria. Initial calibration relative response factors and calibration percent differences were outside evaluation criteria. The initial calibration verification percent

difference for acetone in exceeded fifty percent (50%) difference. Additionally, the continuing calibration check standard for acrolein and bromomethane exceeded fifty percent (50%) difference. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that samples were received by the laboratory at 0.9ºC which is outside the 4ºC ± 2ºC criteria. The samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4ºC ± 2º C. In addition, the samples were analyzed within 14 days of collection at a pH < 2. No qualifications to the data were required based on holding times and sample preservation.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the summary forms, the ion abundance criteria were within evaluation criteria for all masses. No qualifications to the data were required based on instrument performance criteria.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatiles analyses. Validated samples included in this SDG were analyzed using instrument MAMSN. The ICAL for instrument MAMSN was established on 7/17/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8260B. For the ICAL, the response factors (RFs) were reviewed and were greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, greater than 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane, and greater than 0.05 for all other target analytes with the exceptions of acrolein (0.043), acrylonitrile (0.026), and 1,4-dioxane (0.003) analyzed using instrument MAMSN.

Qualifications of data due to ICAL RRF are summarized in the following table.

Sample ID	Analyte	Qualification
MW3-ROX-072712	Acrolein	**R**
MW3-ROX-072712	Acrylonitrile	**R**
MW3-ROX-072712	1,4-Dioxane	**R**
MW12-ROX-072712	Acrolein	**R**
MW12-ROX-072712	Acrylonitrile	**R**
MW12-ROX-072712	1,4-Dioxane	**R**
MW11-ROX-072712	Acrolein	**R**

Sample ID	Analyte	Qualification
MW11-ROX-072712	Acrylonitrile	R
MW11-ROX-072712	1,4-Dioxane	R
MW10-ROX-072712	Acrolein	R
MW10-ROX-072712	Acrylonitrile	R
MW10-ROX-072712	1,4-Dioxane	R
MW9-ROX-072712	Acrolein	R
MW9-ROX-072712	Acrylonitrile	R
MW9-ROX-072712	1,4-Dioxane	R

Review of the initial calibration summary forms indicated percent relative standard deviations (%RSDs) were $\leq$ 30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and $\leq$ 15% for non-CCCs with some exceptions. The initial calibration for compounds with %RSD values outside evaluation criteria was determined using least square linear regression: correlation coefficients (r) were greater than 0.990.

A second source verification, initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exceptions of dichlorodifluoromethane (-40.1%), acrolein (32.6%), acetone (-55.0%), 2-butanone (-45.1%), vinyl acetate (-34.3%), and 2-hexanaone (-22.8%).

Qualifications of data due to ICV %D are summarized in the following table. The results for the compound acrolein were rejected based on ICAL RRF <0.05 and do not require further qualification.

Sample ID	Analyte	Qualifications
MW3-ROX-072712	Dichlorodifluoromethane	UJ
MW3-ROX-072712	Acetone	UJ
MW3-ROX-072712	Vinyl acetate	UJ
MW3-ROX-072712	2-Butanone	UJ
MW3-ROX-072712	2-Hexanone	UJ
MW12-ROX-072712	Dichlorodifluoromethane	UJ
MW12-ROX-072712	Acetone	UJ
MW12-ROX-072712	Vinyl acetate	UJ
MW12-ROX-072712	2-Butanone	UJ
MW12-ROX-072712	2-Hexanone	UJ
MW11-ROX-072712	Dichlorodifluoromethane	UJ
MW11-ROX-072712	Acetone	UJ
MW11-ROX-072712	Vinyl acetate	UJ
MW11-ROX-072712	2-Butanone	UJ
MW11-ROX-072712	2-Hexanone	UJ
MW10-ROX-072712	Dichlorodifluoromethane	UJ
MW10-ROX-072712	Acetone	UJ
MW10-ROX-072712	Vinyl acetate	UJ
MW10-ROX-072712	2-Butanone	UJ
MW10-ROX-072712	2-Hexanone	UJ

Sample ID	Analyte	Qualifications
MW9-ROX-072712	Dichlorodifluoromethane	UJ
MW9-ROX-072712	Acetone	UJ
MW9-ROX-072712	Vinyl acetate	UJ
MW9-ROX-072712	2-Butanone	UJ
MW9-ROX-072712	2-Hexanone	UJ

Recalculation of the %RSDs and RFs for a compound associated with each internal standard was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

1.6 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Review of CV summary forms indicated RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other target analytes with the exceptions of acrylonitrile (previously rejected) and 2-butanone (poor responder and > 0.01); therefore, no further qualification of data was required.

In addition, percent differences (%Ds) met the evaluation criteria of $\leq$ 30% for CCCs and < 20% for all other target analytes with exceptions summarized in the following table.

CV (Date/Time)	Analyte	%D
8/7/2012 15:13	Trichlorofluoromethane	26.5
8/7/2012 15:13	Acrolein	-86.0
8/7/2012 15:13	Carbon disulfide	23.8
8/7/2012 15:13	1,2-Dichloroethane	20.5
8/8/2012 5:22	Ethanol	-33.9
8/8/2012 5:22	Bromomethane	-49.4
8/8/2012 5:22	Chloroethane	-44.4
8/8/2012 5:22	Trichlorofluoromethane	21.1
8/8/2012 5:22	Acrolein	-20.9
8/8/2012 5:22	Carbon disulfide	28.6
8/8/2012 5:22	2,2-Dichloropropane	22.6
8/9/2012 9:24	Dichlorodifluoromethane	-22.7
8/9/2012 9:24	Chloromethane	-39.1
8/9/2012 9:24	Bromomethane	-54.7
8/9/2012 9:24	Acrolein	-100.0
8/9/2012 9:24	1,4-Dioxane	-39.8
8/9/2012 9:24	Styrene	-22.2

Analytical data that required qualification based on continuing calibration verification data are included in the table below. The compounds trichlorofluoromethane, carbon disulfide, 1,2-dichloroethane, trichlorofluoromethane, carbon disulfide, and 2,2-dichloropropane were not qualified for the validated samples due to marginal increases in response and these

compounds were non-detect in the validated samples. Results for the compounds acrolein and 1,4-dioxane were previously rejected due to ICAL RRF. Dichlorodifluoromethane was previously qualified due to ICV %D; therefore, no further qualification of data was required.

Sample ID	Analyte	Qualifications
MW3-ROX-072712	Ethanol	UJ
MW3-ROX-072712	Bromomethane	UJ
MW3-ROX-072712	Chloroethane	UJ
MW3-ROX-072712	Carbon disulfide	UJ
MW12-ROX-072712	Chloromethane	UJ
MW12-ROX-072712	Bromomethane	UJ
MW12-ROX-072712	1,4-Dioxane	UJ
MW12-ROX-072712	Styrene	UJ
MW11-ROX-072712	Chloromethane	UJ
MW11-ROX-072712	Bromomethane	UJ
MW11-ROX-072712	1,4-Dioxane	UJ
MW11-ROX-072712	Styrene	UJ
MW10-ROX-072712	Chloromethane	UJ
MW10-ROX-072712	Bromomethane	UJ
MW10-ROX-072712	1,4-Dioxane	UJ
MW10-ROX-072712	Styrene	UJ
MW9-ROX-072712	Chloromethane	UJ
MW9-ROX-072712	Bromomethane	UJ
MW9-ROX-072712	1,4-Dioxane	UJ
MW9-ROX-072712	Styrene	UJ

Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B. VOC target compounds were reported as non-detect in the method blank. Professional judgment was used to not qualify or reject samples associated with MW10-ROX-072712 EB due to possible cross contamination and comparative historical detections. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. All surrogate recoveries were within the method acceptance criteria for the validated samples. Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample MW3-ROX-072712 was spiked and analyzed for VOCs.

All MS/MSD recoveries were within the method acceptance criteria for the validated samples with the exception of those summarized in the table below.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW3-ROX-072712	VOCs	Acrolein	125/**132**	6	70-130/30
MW3-ROX-072712	VOCs	Acrylonitrile	**504**/**526**	4	70-130/30
MW3-ROX-072712	VOCs	Chloromethane	118/**141**	17	70-130/30
MW3-ROX-072712	VOCs	Dichlorodifluoromethane	**160**/**151**	5	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 1.11 of this data validation. No further qualification of data was required.

Approximately 10% of the MS/MSD spiking recoveries were recalculated and verified using the MS/MSD summary forms, and no calculation or transcription errors were noted.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted. No qualifications to the data were required based on internal standard areas or retention times.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS data were within evaluation criteria, with the exception of those summarized in the following table.

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2498-BS1	VOCs	Acrolein	**194**	NA	70-130
MSN2498-BS1	VOCs	Acrylonitrile	**436**	NA	70-130
MSN2498-BS1	VOCs	Bromomethane	**149**	NA	70-130
MSN2498-BS1	VOCs	Carbon disulfide	**69**	NA	70-130
MSN2498-BS1	VOCs	Chloroethane	**145**	NA	70-130
MSN2498-BS/BSD	VOCs	Acrolein	126/**131**	4	70-130/25
MSN2498-BS/BSD	VOCs	Acrylonitrile	**448**/**476**	6	70-130/25
MSN2498-BS/BSD	VOCs	Carbon disulfide	**66**/**67**	1	70-130/25

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2498-BS/BSD	VOCs	Dichlorodifluoromethane	**55/57**	2	70-130/25
MSN2498-BS/BSD	VOCs	Trichlorofluoromethane	**65/64**	2	70-130/25
MSN2500-BS/BSD	VOCs	Acrylonitrile	**514/510**	1	70-130/25
MSN2500-BS/BSD	VOCs	Bromomethane	**134**/119	12	70-130/25
MSN2500-BS/BSD	VOCs	Chloromethane	**160/149**	7	70-130/25
MSN2500-BS/BSD	VOCs	Dichlorodifluoromethane	**169/148**	14	70-130/25
MSN2500-BS/BSD	VOCs	Vinyl chloride	**133**/117	12	70-130/25
OP29851-BS	SVOCs	3&4-Methylphenol	**29**	NA	30-130
OP29851-BS	SVOCs	Aniline	**39**	NA	40-140
OP29851-BS	SVOCs	N-Nitrosodiphenylamine	**198**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. Results for the compound acrolein were rejected due to ICAL RRF < 0.05, however remain listed in the table above.

Sample ID	Parameter	Analyte	Qualification
MW3-ROX-072712	VOCs	Carbon disulfide	**UJ**
MW3-ROX-072712	VOCs	Dichlorodifluoromethane	**UJ**
MW3-ROX-072712	VOCs	Triclorofluoromethane	**UJ**

Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately 10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately 10% of the detected target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results, other than those rejected, for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, surrogate and MS/MSD data were achieved for this SDG.

1.0 VALIDATION OF SVOC DATA – SDG MC12669

This section describes the full validation for five groundwater samples which were prepared by USEPA SW-846 Method 3520C and analyzed for semi-volatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C and for polycyclic aromatic hydrocarbons (PAHs) by USEPA SW-846 Method 8270C SIM. Samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts, and submitted as part of sample delivery group (SDG) MC12669. Samples included as part of this validation are listed below:

Sample Identification	Sample Identification
MW3-ROX-072712	MW12-ROX-072712
MW11-ROX-072712	MW10-ROX-072712
MW9-ROX-072712	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standard areas
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.0 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

Yes, the laboratory case narrative indicated that SVOC LCS recoveries were outside evaluation criteria. LCS internal standard area recoveries were outside evaluation criteria for samples MW3-ROX-072712, MW12-ROX-072712, MW11-ROX-072712, MW10-ROX-072712 EB, MW10-ROX-072712, and MW9-ROX-072712. PAH MS/MSD internal standard area recoveries

were outside evaluation criteria for sample MW3-ROX-072712. Although not indicated in the laboratory case narrative, SVOCs were detected in the equipment blank, and SVOCs were detected in the method blank. Initial calibration verification and continuing calibration percent differences were outside evaluation criteria. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 0.9ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were extracted within seven days of collection and analyzed within 40 days of extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for semi-volatile analysis. SVOC samples as part of SDG MC12699 were analyzed using instrument MSF, and PAH samples were analyzed using instrument MSW. The ICAL for instrument MSF was established on 7/31/2012, and the ICAL for instrument MSW was established on 5/23/2012 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms for SVOCs and PAHs indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15% CCCs with some exceptions. The initial calibration for compounds with %RSD values outside evaluation criteria was determined using least square linear regression and the correlation coefficients (r) were greater than 0.990.

Initial calibration verifications (ICVs) for SVOCs and PAHs were analyzed following the initial calibrations. Percent difference (%D) values comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exceptions of aniline (64.9%) and 4-chloroaniline (42.2%).

Qualifications of SVOC data due to ICV %D are summarized in the following table.

Sample ID	Analyte	Qualifications
MW3-ROX-072712	Aniline	UJ
MW3-ROX-072712	4-Chloroaniline	UJ
MW12-ROX-072712	Aniline	UJ
MW12-ROX-072712	4-Chloroaniline	UJ
MW11-ROX-072712	Aniline	UJ
MW11-ROX-072712	4-Chloroaniline	UJ
MW10-ROX-072712	Aniline	UJ
MW10-ROX-072712	4-Chloroaniline	UJ
MW9-ROX-072712	Aniline	UJ
MW9-ROX-072712	4-Chloroaniline	UJ

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed prior to sample analysis. Review of continuing calibration summary forms for SVOCs and PAHs indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 20% for CCCs and target analytes that were quantitated using linear calibration (response factor) with the exceptions summarized in the following table.

CV (Date/Time)	Analyte	%D
8/1/2012 16:55	2,4-Dinitrophenol	31.9
8/1/2012 8:07	Benzo[g,h,i]perylene	-20.4

Analytical data that required qualification based on continuing calibration verification data are included in the table below. The SVOC compound, 2,4-dinitrophenol was not qualified for the validated samples due to marginal increase in response and this compound was non-detect in the validated samples.

Sample ID	Analyte	Qualifications
MW3-ROX-072712	Benzo[g,h,i]perylene	UJ
MW12-ROX-072712	Benzo[g,h,i]perylene	UJ
MW11-ROX-072712	Benzo[g,h,i]perylene	UJ
MW10-ROX-072712	Benzo[g,h,i]perylene	UJ
MW9-ROX-072712	Benzo[g,h,i]perylene	UJ

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were

analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. Target compounds in the blank samples were reported as non-detect with exceptions summarized in the following table.

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29851-MB	SVOCs	Di-n-butyl phthalate	0.59 ug/L
OP29851-MB	SVOCs	bis(2-Ethylhexyl)phthalate	0.51 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW3-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW3-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW12-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW12-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW11-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW11-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW10-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW10-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**
MW9-ROX-072712	SVOCs	Di-n-butyl phthalate	-	**U**
MW9-ROX-072712	SVOCs	bis(2-Ethylhexyl)phthalate	-	**U**

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples.

Approximately 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample MW3-ROX-072712 was spiked and analyzed for SVOCs and PAHs.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW3-ROX-072712	VOCs	Acrolein	125/**132**	6	70-130/30
MW3-ROX-072712	VOCs	Acrylonitrile	**504**/**526**	4	70-130/30
MW3-ROX-072712	VOCs	Chloromethane	118/**141**	17	70-130/30
MW3-ROX-072712	VOCs	Dichlorodifluoromethane	**160**/**151**	5	70-130/30
MW3-ROX-072712	SVOCs	3&4-Methylphenol	**29**/35	20	30-130/20

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW3-ROX-072712	SVOCs	Phenol	36/46	**28**	30-130/20
MW3-ROX-072712	SVOCs	Aniline	**37/33**	6	40-140/20
MW3-ROX-072712	SVOCs	3,3'-Dichlorobenzidine	44/**32**	**28**	40-140/20

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 1.11 of this data validation. No further qualification of data was required.

Approximately 10% of the MS/MSD spiking recoveries were recalculated and verified using MS/MSD summary forms, and no calculation or transcription errors were noted,

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria with exceptions summarized in the following table.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
MW3-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**873554**	187448-749790
MW3-ROX-072712	PAHs	Naphthalene-d_8	**3358062**	179122-2876486
MW3-ROX-072712	PAHs	Acenaphthene-d_{10}	**1932021**	444813-1779252
MW3-ROX-072712	PAHs	Penanthrene-d_{10}	**3259325**	848573-3394292
MW3-ROX-072712	PAHs	Chrysene-d_{12}	**3350262**	1023698-4094790
MW3-ROX-072712	PAHs	Perylene-d_{12}	**5117040**	918280-3673118
MW12-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**900723**	187448-749790
MW12-ROX-072712	PAHs	Naphthalene-d_8	**3430794**	179122-2876486
MW12-ROX-072712	PAHs	Acenaphthene-d_{10}	**1963517**	444813-1779252
MW12-ROX-072712	PAHs	Penanthrene-d_{10}	**3279552**	848573-3394292
MW12-ROX-072712	PAHs	Chrysene-d_{12}	**3366934**	1023698-4094790
MW12-ROX-072712	PAHs	Perylene-d_{12}	**5415724**	918280-3673118
MW11-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**848972**	187448-749790
MW11-ROX-072712	PAHs	Naphthalene-d_8	**3267315**	179122-2876486
MW11-ROX-072712	PAHs	Acenaphthene-d_{10}	**1865953**	444813-1779252
MW11-ROX-072712	PAHs	Penanthrene-d_{10}	**3140745**	848573-3394292
MW11-ROX-072712	PAHs	Chrysene-d_{12}	**3253037**	1023698-4094790
MW11-ROX-072712	PAHs	Perylene-d_{12}	**5154364**	918280-3673118
MW10-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**884513**	187448-749790
MW10-ROX-072712	PAHs	Naphthalene-d_8	**3414871**	179122-2876486
MW10-ROX-072712	PAHs	Acenaphthene-d_{10}	**1956725**	444813-1779252
MW10-ROX-072712	PAHs	Penanthrene-d_{10}	**3240834**	848573-3394292
MW10-ROX-072712	PAHs	Chrysene-d_{12}	**3390632**	1023698-4094790

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
MW10-ROX-072712	PAHs	Perylene-d_{12}	**5231854**	918280-3673118
MW9-ROX-072712	PAHs	1,4-Dichlorobenzene-d_4	**941346**	187448-749790
MW9-ROX-072712	PAHs	Naphthalene-d_8	**3554753**	179122-2876486
MW9-ROX-072712	PAHs	Acenaphthene-d_{10}	**1997934**	444813-1779252
MW9-ROX-072712	PAHs	Penanthrene-d_{10}	**3316822**	848573-3394292
MW9-ROX-072712	PAHs	Chrysene-d_{12}	**3399571**	1023698-4094790
MW9-ROX-072712	PAHs	Perylene-d_{12}	**5493769**	918280-3673118

Analytical data that required qualification based on internal standard data are included in the table below. Analytical results reported as non-detect and associated with internal standard recoveries above evaluation criteria, indicating a high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW3-ROX-072712	PAHs	Phenanthrene	**J**

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria with the exceptions summarized in the following table.

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
OP29851-BS	SVOCs	3&4-Methylphenol	**29**	NA	30-130
OP29851-BS	SVOCs	Aniline	**39**	NA	40-140
OP29851-BS	SVOCs	n-Nitrosodiphenylamine	**198**	NA	40-140

Analytical data that required qualification based on LCS data are included in the following table. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW3-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW3-ROX-072712	SVOCs	Aniline	**UJ**
MW12-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW12-ROX-072712	SVOCs	Aniline	**UJ**
MW11-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW11-ROX-072712	SVOCs	Aniline	**UJ**
MW10-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW10-ROX-072712	SVOCs	Aniline	**UJ**
MW9-ROX-072712	SVOCs	3&4-Methylphenol	**UJ**
MW9-ROX-072712	SVOCs	Aniline	**UJ**

Approximately 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, MS/MSD, and surrogate data were achieved for this SDG.

1.0 VALIDATION OF EDB/DBCP DATA – SDG MC12699

This section describes the validation for five investigative groundwater samples which were prepared and analyzed for 1,2-dibromoethane (EDB) and 1,2-dibromo-3-chloropropane (DBCP) by USEPA SW-846 Method 8011. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12699. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
MW3-ROX-072712	MW12-ROX-072712
MW11-ROX-072712	MW10-ROX-072712
MW9-ROX-072712	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

No problems were indicated in the laboratory case narrative for the validated samples.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 0.9ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ± 2°C. In addition, the samples were analyzed within 14 days of collection. No qualifications to the data were required based on holding times and sample preservation.

1.4 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for EDB/DBCP analyses. Validated samples included in this SDG were analyzed using instrument GCBB-gc23. The ICAL for instrument GCBB-gc23 was established on 8/3/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8011.

Review of the initial calibration summary forms indicated percent relative standard deviations (%RSDs) were ≤ 15% for target analytes. A recalculation of the %RSDs was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

Review of the sample chromatograms indicated that a second source calibration was performed immediately following the initial calibration. Review of ICV summary forms indicated percent difference (%D) ≤ 15% for target analytes. Recalculation of the percent recoveries was completed and no errors in calculation were noted.

1.5 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Percent differences (%Ds) met the evaluation criteria of ≤ 15% for target analytes. Recalculations of the %Ds for target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.6 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8011. Also, trip blanks were analyzed to evaluate the existence and magnitude of contamination problems emanating during sample shipment to the laboratory. Equipment blank samples are used to evaluate the efficiency of the decontamination of sampling equipment. All target compounds were reported as non-detect. No qualification of data was required.

1.7 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. Surrogate recoveries were within the method acceptance criteria for the validated samples. No qualification of data was required.

Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample MW3-ROX-072712 was spiked and analyzed for 1,2-dibromomethane and 1,2-dibromo-3-chloropropane. MS/MSD recoveries were within the method acceptance criteria for the validated samples.

Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted. No qualification of data was required.

1.9 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. All LCS data were within evaluation criteria. Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.10 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately 10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

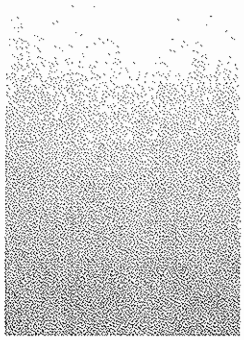
For the validation of compound quantitation, the matrix spike results were recalculated from the raw data since all target analytes were non-detect, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, surrogate and MS/MSD data were achieved for this SDG.

New England ACCUTEST LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12669

Sampling Date: 07/27/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **113**

Reviewed On 8/30/12

Reza Rand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

ccutest Laboratories is the sole authority for authorizing edits or modifications to this cument. Unauthorized modification of this report is strictly prohibited.

Table of Contents

Sections: 1 2 3 4 5 6 7 8

-1-

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **8**
4.1: MC12669-1: MW3-ROX-072712 9
4.2: MC12669-2: MW12-ROX-072712 16
4.3: MC12669-3: MW11-ROX-072712 23
4.4: MC12669-4: MW10-ROX-072712 EB 30
4.5: MC12669-5: MW10-ROX-072712 37
4.6: MC12669-6: MW9-ROX-072712 44
4.7: MC12669-7: TB-072712-HCL 51
4.8: MC12669-8: TB-072712-ST 54
Section 5: Misc. Forms **55**
5.1: Chain of Custody 56
5.2: Sample Tracking Chronicle 58
5.3: Internal Chain of Custody 60
Section 6: GC/MS Volatiles - QC Data Summaries **63**
6.1: Method Blank Summary 64
6.2: Blank Spike Summary 73
6.3: Blank Spike/Blank Spike Duplicate Summary 76
6.4: Matrix Spike/Matrix Spike Duplicate Summary 82
6.5: Internal Standard Area Summaries 88
6.6: Surrogate Recovery Summaries 91
Section 7: GC/MS Semi-volatiles - QC Data Summaries **92**
7.1: Method Blank Summary 93
7.2: Blank Spike Summary 96
7.3: Matrix Spike/Matrix Spike Duplicate Summary 99
7.4: Internal Standard Area Summaries 102
7.5: Surrogate Recovery Summaries 105
Section 8: GC Volatiles - QC Data Summaries **107**
8.1: Method Blank Summary 108
8.2: Blank Spike Summary 109
8.3: Matrix Spike/Matrix Spike Duplicate Summary 110
8.4: Surrogate Recovery Summaries 111
8.5: GC Surrogate Retention Time Summaries 112

Sample Summary

Shell Oil

Job No: MC12669

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12669-1	07/27/12	09:00	KHNM	07/28/12	AQ	Ground Water	MW3-ROX-072712
MC12669-1D	07/27/12	09:00	KHNM	07/28/12	AQ	Water Dup/MSD	MW3-ROX-072712
MC12669-1S	07/27/12	09:00	KHNM	07/28/12	AQ	Water Matrix Spike	MW3-ROX-072712
MC12669-2	07/27/12	10:10	KHNM	07/28/12	AQ	Ground Water	MW12-ROX-072712
MC12669-3	07/27/12	11:05	KHNM	07/28/12	AQ	Ground Water	MW11-ROX-072712
MC12669-4	07/27/12	12:40	KHNM	07/28/12	AQ	Equipment Blank	MW10-ROX-072712 EB
MC12669-5	07/27/12	13:25	KHNM	07/28/12	AQ	Ground Water	MW10-ROX-072712
MC12669-6	07/27/12	14:20	KHNM	07/28/12	AQ	Ground Water	MW9-ROX-072712
MC12669-7	07/27/12	00:00	KHNM	07/28/12	AQ	Trip Blank Water	TB-072712-HCL
MC12669-8	07/27/12	00:00	KHNM	07/28/12	AQ	Trip Blank Water	TB-072712-ST

ACCUTEST LABORATORIES

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12669
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/14/2012 11:15:31 AM

6 Sample(s), 2 Trip Blank(s) were collected on 07/27/2012 and were received at Accutest on 07/28/2012 properly preserved, at 0.9 Deg. C and intact. These Samples received an Accutest job number of MC12669. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)aeridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** MSN2498

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- BS1 Recovery(s) for Bromomethane, Carbon disulfide, Chloroethane are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for Dichlorodifluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Acrolein, Chloromethane, Dichlorodifluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MSN2498-BS1 for Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- MSN2498-BS1/BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-deteet for this compound.
- MC12669-1MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Calibration check standard MSN2499-CC2468 utilized the same file N66461 as MSN2499-CC2468.
- BSD Recovery(s) for Acetone, Carbon disulfide, Dichlorodifluoromethane, Trichlorofluoromethane are outside control limits. Blank Spike meets program technical requirements.
- Continuing calibration check standard MSN2498-CC2468 for acrolein exceeds 50% Difference (results biased high). Associated samples are non-detect for these compounds.
- Initial calibration verification MSN2468-ICV2468 for acetone exceeds 50% Difference. Acetone is within criteria in continuing calibration check standard MSN2498-CC2468, MSN2500-CC2468.
- BS Recovery(s) for Carbon disulfide, Dichlorodifluoromethane, Trichlorofluoromethane are outside control limits. Blank Spike meets program technical requirements.

Matrix AQ **Batch ID:** MSN2500

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12896-9MS, MC12896-9MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Bromomethane, Chloromethane, Vinyl chloride are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 2,2-Dichloropropane, Chloromethane, Dichlorodifluoromethane, Naphthalene, Acrylonitrile are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 2,2-Dichloropropane, Acrolein, Trichlorofluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Dichlorodifluoromethane are outside control limits for sample MC12896-9MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: MSN2500

- MSN2500-BS/BSD for Acrylonitrile, Dichlorodifluoromethane: Outside control limits. Associated samples are non-detect for this compound.
- MC12896-9MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Blank Spike Duplicate Recovery(s) for Chloromethane are outside control limits. Blank Spike meets program technical reqnirements.
- Continuing calibration check standard MSN2500-CC2468 for bromomethane, acrolein exceeds 50% Difference (results biased high). Associated samples are non-detect for these compounds.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP29851

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 3&4-Methylphenol, Aniline are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 3&4-Methylphenol, Aniline are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Aniline, 3,3'-Dichlorobenzidine are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 3,3'-Dichlorobenzidine, Phenol are outside control limits for sample OP29851-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- OP29851-BS for N-Nitrosodiphenylamine: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP29852

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- OP29852-MB/BS/MS/MSD and MC12669-1,2,3,4,5,6: Internal standard spiked at SIM concentration.
- Calibration standard MSW138-ICC138, MSW138-ICV138, MSW139-ICV138, MSW159-CC138 not associated with this job.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP29882

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12669).

Summary of Hits

Job Number: MC12669
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/27/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12669-1	MW3-ROX-072712					
Benzene		8.9	0.50	0.24	ug/l	SW846 8260B
Di-n-butyl phthalate		0.66 J	5.3	0.38	ug/l	SW846 8270C
his(2-Ethylhexyl)phthalate		0.67 J	2.1	0.40	ug/l	SW846 8270C
Phenanthrene		0.025 J	0.053	0.013	ug/l	SW846 8270C BY SIM
MC12669-2	MW12-ROX-072712					
Benzene		1.3	0.50	0.24	ug/l	SW846 8260B
Butyl benzyl phthalate		0.29 J	5.3	0.28	ug/l	SW846 8270C
Di-n-butyl phthalate		0.63 J	5.3	0.38	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		1.9 J	2.1	0.40	ug/l	SW846 8270C
MC12669-3	MW11-ROX-072712					
Benzene		0.73	0.50	0.24	ug/l	SW846 8260B
Di-n-bntyl phthalate		0.57 J	5.8	0.42	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.56 J	2.3	0.44	ug/l	SW846 8270C
MC12669-4	MW10-ROX-072712 EB					
Acetone		6.3	5.0	3.0	ug/l	SW846 8260B
Benzene		2.8	0.50	0.24	ug/l	SW846 8260B
Chloroform		0.56 J	1.0	0.50	ug/l	SW846 8260B
Di-n-butyl phthalate		0.42 J	5.2	0.38	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.46 J	2.1	0.39	ug/l	SW846 8270C
MC12669-5	MW10-ROX-072712					
Benzene		0.58	0.50	0.24	ug/l	SW846 8260B
Di-n-butyl phthalate		0.43 J	5.0	0.36	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.67 J	2.0	0.38	ug/l	SW846 8270C
MC12669-6	MW9-ROX-072712					
Benzene		0.58	0.50	0.24	ug/l	SW846 8260B
Di-n-butyl phthalate		0.54 J	5.0	0.36	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.43 J	2.0	0.38	ug/l	SW846 8270C
MC12669-7	TB-072712-HCL					

No hits reported in this sample.

Summary of Hits

Job Number: MC12669
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/27/12

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12669-8	TB-072712-ST					

No hits reported in this sample.

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66471.D	1	08/08/12	JP	n/a	n/a	MSN2498
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	R
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	R
71-43-2	Benzene	8.9	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	UJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	UJ
104-51-8	n-Bntylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	UJ
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	UJ
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroetbane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadieue	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	UJ
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Tolnene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ng/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND UJ	1.0	0.29	ug/l	UJ
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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

Report of Analysis

Client Sample ID:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56444.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol UJ	ND	11	0.80	ug/l	UJ
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.66~~ U	5.3	0.38	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	MW3-ROX-072712		
Lab Sample ID:	MC12669-I	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxaua, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.67	2.1	0.40	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopeutadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		15-110%
4165-62-2	Phenol-d5	32%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrohenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	70%		30-130%

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

Report of Analysis

Client Sample ID:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3461.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	UJ
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.034	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.048	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.055	ug/l	
91-20-3	Naphthalene	ND	0.11	0.038	ug/l	
85-01-8	Phenanthrene	0.025 J	0.053	0.013	ug/l	J J
129-00-0	Pyrene	ND	0.11	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	91%		30-130%

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:	MW3-ROX-072712		
Lab Sample ID:	MC12669-1	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43074.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	36.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.012	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	97%		36-173%
460-00-4	Bromofluorobenzene (S)	98%		36-173%

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:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66494.D	1	08/09/12	JP	n/a	n/a	MSN2500
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	R
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	R
71-43-2	Benzene	1.3	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	UJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	UJ
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	UJ
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobeuzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dicbloroetbene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	UJ
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	UJ
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Tolnene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

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 componnd

Report of Analysis

Client Sample ID:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56447.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND UJ	11	0.80	ug/l	UJ
88-75-5	2-Nitrophenol	ND	11	0.50	ng/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	1I	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ng/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	0.29	5.3	0.28	ug/l	J
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotolnene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.63~~ U	5.3	0.38	ug/l	JU
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~1.9~~ 1.4	2.1	0.40	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		15-110%
4165-62-2	Phenol-d5	31%		15-110%
118-79-6	2,4,6-Tribromophenol	70%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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

Report of Analysis

Client Sample ID:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3463.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	UJ
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ng/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.055	ug/l	
91-20-3	Naphthalene	ND	0.11	0.038	ug/l	
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# I	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	112%		30-130%

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:	MW12-ROX-072712		
Lab Sample ID:	MC12669-2	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43075.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	36.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.012	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	92%		36-173%
460-00-4	Bromofluorobenzene (S)	94%		36-173%

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:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	**Date Sampled:**	07/27/12
Matrix:	AQ - Ground Water	**Date Received:**	07/28/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66495.D	1	08/09/12	JP	n/a	n/a	MSN2500
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	R
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	R
71-43-2	Benzene	0.73	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	UJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	UJ
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	UJ
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ng/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

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

Report of Analysis

Client Sample ID:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ng/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	UJ
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Bntyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	UJ
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ng/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ng/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ng/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ng/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ng/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

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

Report of Analysis

Client Sample ID:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56448.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
Run #2							

	Initial Volume	Final Volume
Run #1	860 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	12	1.3	ug/l	
95-57-8	2-Chlorophenol	ND	5.8	0.47	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	12	0.44	ug/l	
120-83-2	2,4-Dichlorophenol	ND	12	0.43	ug/l	
105-67-9	2,4-Dimethylphenol	ND	12	3.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	23	1.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	12	5.8	ug/l	
95-48-7	2-Methylphenol	ND	12	0.70	ug/l	
	3&4-Methylphenol	ND UJ	12	0.88	ug/l	UJ
88-75-5	2-Nitrophenol	ND	12	0.55	ug/l	
100-02-7	4-Nitrophenol	ND	23	3.2	ug/l	
87-86-5	Pentachlorophenol	ND	12	0.74	ug/l	
108-95-2	Phenol	ND	5.8	1.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	12	0.57	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	12	0.41	ug/l	
62-53-3	Aniline	ND UJ	12	2.3	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.8	0.38	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.8	0.31	ug/l	
100-51-6	Benzyl Alcohol	ND	12	0.30	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.8	0.21	ug/l	
106-47-8	4-Chloroaniline	ND	12	0.73	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.8	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.8	0.44	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.8	0.33	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.8	0.34	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.8	0.25	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	12	2.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	12	0.24	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.8	1.0	ug/l	
132-64-9	Dibenzofuran	ND	2.3	0.25	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.57~~ U	5.8	0.42	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.8	0.28	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:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.8	0.22	ug/l	
131-11-3	Dimethyl phthalate	ND	5.8	5.8	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.56~~ 4	2.3	0.44	ug/l	J 4
118-74-1	Hexachlorobenzene	ND	5.8	0.29	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	12	5.8	ug/l	
67-72-1	Hexachloroethane	ND	5.8	2.3	ug/l	
78-59-1	Isophorone	ND	5.8	0.37	ug/l	
88-74-4	2-Nitroaniline	ND	12	0.26	ug/l	
99-09-2	3-Nitroaniline	ND	12	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	12	2.3	ug/l	
98-95-3	Nitrobenzene	ND	5.8	0.28	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.8	0.69	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.8	0.32	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.8	0.51	ug/l	
110-86-1	Pyridine	ND	12	5.8	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	70%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	89%		30-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Semi-Volatile		0	ng/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:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3473.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

	Initial Volume	Final Volume
Run #1	860 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.12	0.016	ug/l	
208-96-8	Acenaphthylene	ND	0.12	0.015	ug/l	
120-12-7	Anthracene	ND	0.12	0.020	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.058	0.035	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.12	0.020	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.058	0.027	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.12	0.044	ug/l	UJ
207-08-9	Benzo(k)fluoranthene	ND	0.12	0.068	ug/l	
218-01-9	Chrysene	ND	0.12	0.085	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.12	0.048	ug/l	
206-44-0	Fluoranthene	ND	0.12	0.038	ug/l	
86-73-7	Fluorene	ND	0.12	0.054	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.12	0.053	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.23	0.16	ug/l	
91-57-6	2-Methyluaphthalene	ND	0.23	0.060	ug/l	
91-20-3	Naphthalene	ND	0.12	0.042	ug/l	
85-01-8	Phenanthrene	ND	0.058	0.015	ug/l	
129-00-0	Pyrene	ND	0.12	0.041	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	112%		30-130%

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:	MW11-ROX-072712		
Lab Sample ID:	MC12669-3	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43076.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	94%		36-173%
460-00-4	Bromofluorobenzene (S)	95%		36-173%

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:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66437.D	1	08/07/12	JP	n/a	n/a	MSN2498
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.3	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	2.8	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	0.56	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ng/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ng/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56449.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.63	ug/l	
	3&4-Methylphenol	ND	10	0.78	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.49	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.66	ug/l	
108-95-2	Phenol	ND	5.2	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.51	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.37	ug/l	
62-53-3	Aniliue	ND	10	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.66	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.39	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.1	ug/l	
606-20-2	2,6-Diuitrotoluene	ND	10	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	0.93	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.22	ug/l	
84-74-2	Di-u-butyl phthalate	0.42	5.2	0.38	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.2	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:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.2	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.46	2.1	0.39	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.2	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.2	ug/l	
67-72-1	Hexachloroethane	ND	5.2	2.1	ug/l	
78-59-1	Isophorone	ND	5.2	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.45	ug/l	
110-86-1	Pyridine	ND	10	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Equipment Blank	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3474.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.014	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.039	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.061	ug/l	
218-01-9	Chrysene	ND	0.10	0.076	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.034	ug/l	
86-73-7	Fluorene	ND	0.10	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.048	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.054	ug/l	
91-20-3	Naphthalene	ND	0.10	0.037	ug/l	
85-01-8	Phenanthrene	ND	0.052	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	116%		30-130%

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:	MW10-ROX-072712 EB		
Lab Sample ID:	MC12669-4	Date Sampled:	07/27/12
Matrix:	AQ - Eqnipment Blank	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43077.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	82%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66496.D	1	08/09/12	JP	n/a	n/a	MSN2500
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	R
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	R
71-43-2	Benzene	0.58	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	UJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	UJ
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	UJ
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorohenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	UJ
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	UJ
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbeuzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Projcet:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

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 valne 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:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56450.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND UJ	10	0.75	ug/l	UJ
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.43~~ U	5.0	0.36	ug/l	JU
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	~~0.67~~ 4	2.0	0.38	ug/l	J 4
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		15-110%
4165-62-2	Phenol-d5	32%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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

Report of Analysis

Client Sample ID:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3475.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	UJ
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ng/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	114%		30-130%

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:	MW10-ROX-072712		
Lab Sample ID:	MC12669-5	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43078.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	106%		36-173%
460-00-4	Bromofluorobenzene (S)	110%		36-173%

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:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66497.D	1	08/09/12	JP	n/a	n/a	MSN2500
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	R
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	R
71-43-2	Benzene	0.58	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	UJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	UJ
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	UJ
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	UJ
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	UJ
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	og/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

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

Report of Analysis

Client Sample ID:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56451.D	1	08/02/12	KR	07/30/12	OP29851	MSF2686
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND UJ	10	0.75	ug/l	UJ
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Dipheuylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobeuzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.54~~ U	5.0	0.36	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Speeial List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.43 U	2.0	0.38	ug/l	J U
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		15-110%
4165-62-2	Phenol-d5	35%		15-110%
118-79-6	2,4,6-Tribromophenol	70%		15-110%
4165-60-0	Nitrobenzene-d5	77%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	84%		30-130%

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

Report of Analysis

Client Sample ID:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3476.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	UJ
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	109%		30-130%

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

Report of Analysis

Client Sample ID:	MW9-ROX-072712		
Lab Sample ID:	MC12669-6	Date Sampled:	07/27/12
Matrix:	AQ - Ground Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43079.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	101%		36-173%
460-00-4	Bromofluorobenzene (S)	104%		36-173%

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:	TB-072712-HCL		
Lab Sample ID:	MC12669-7	Date Sampled:	07/27/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66436.D	1	08/07/12	JP	n/a	n/a	MSN2498
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ng/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-072712-HCL		
Lab Sample ID:	MC12669-7	Date Sampled:	07/27/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-072712-HCL		
Lab Sample ID:	MC12669-7	Date Sampled:	07/27/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/28/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	TB-072712-ST		
Lab Sample ID:	MC12669-8	Date Sampled:	07/27/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/28/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43081.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	36.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.014	0.012	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.014	0.0099	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	85%		36-173%
460-00-4	Bromofluorobenzeue (S)	92%		36-173%

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 England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER Accutest Labs 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200)
☐ Lab Vendor # (_____)
☐ SPL (_____)

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SOBCH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 7/27/12

PAGE 1 of 1

SAMPLING COMPANY	URS CORPORATION
LOGIC ID	
ADDRESS	1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110
PROJECT CONTACT (Hardcopy or PDF Report)	Erik Arthur
TELEPHONE	314-265-1553
FAX	314-479-0462
ME TO CONTACT E-MAIL	erik.arthur@urs.com
SITE ADDRESS (Street and City)	900 South Central Ave, ROXANA
State	IL
GLOBAL ID NO	
EDF DELIVERABLE TO (Name, Company, Office Location)	
PHONE NO	
E-MAIL	
CONSULTANT PROJECT NO	Roxana Quarterly GW / 21562735.00008
SAMPLER NAME (Print)	K. Hurst / N. McNurlen
LAB USE ONLY	MC12669

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCS REPORT FORMAT ☐ LIST AGENCY

DELIVERABLES ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports
* Please provide sample receipt upon login

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1SD	MW3-ROX-072712	7/27	0900	Water	2			2	2	6	X	X	X	X		
-1SD	MW3-ROX-072712 MS		0900		2			2	2	6	X	X	X	X		
-1SD	MW3-ROX-072712 MSD		0900		2			2	2	6	X	X	X	X		
-2	MW12-ROX-072712		1010		2			2	2	6	X	X	X	X		
-3	MW11-ROX-072712		1105		2			2	2	6	X	X	X	X		
-4	MW10-ROX-072712 EB		1240		2			2	2	6	X	X	X	X		19C, 4B3
-5	MW10-ROX-072712		1325		2			2	2	6	X	X	X	X		
-6	MW9-ROX-072712		1420		2			2	2	6	X	X	X	X		
-7	TB-072712-HCL				2					2	X					
-8	TB-072712-ST								2	2		X				

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	7/27/12	1500
Fedex	[signature]	7/28/12	10:00

05/2/06 Revision 0.9

5.1

5

MC12669: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12669 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 7/28/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL No. Coolers: 1 Airbill #'s:

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

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

Quality Control Preservatio	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

5

MC12669: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12669

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12669-1 Collected: 27-JUL-12 09:00 By: KHNM Received: 28-JUL-12 By: MW3-ROX-072712						
MC12669-1	SW846 8270C BY SIM	01-AUG-12 10:01	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-1	SW846 8270C	01-AUG-12 21:25	KR	30-JUL-12	MS	AB8270SL+
MC12669-1	SW846 8011	04-AUG-12 03:26	CZ	01-AUG-12	BJ	V8011SL
MC12669-1	SW846 8260B	08-AUG-12 10:04	JP			V8260SL+
MC12669-2 Collected: 27-JUL-12 10:10 By: KHNM Received: 28-JUL-12 By: MW12-ROX-072712						
MC12669-2	SW846 8270C BY SIM	01-AUG-12 10:46	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-2	SW846 8270C	01-AUG-12 22:32	KR	30-JUL-12	MS	AB8270SL+
MC12669-2	SW846 8011	04-AUG-12 03:52	CZ	01-AUG-12	BJ	V8011SL
MC12669-2	SW846 8260B	09-AUG-12 14:34	JP			V8260SL+
MC12669-3 Collected: 27-JUL-12 11:05 By: KHNM Received: 28-JUL-12 By: MW11-ROX-072712						
MC12669-3	SW846 8270C BY SIM	01-AUG-12 12:15	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-3	SW846 8270C	01-AUG-12 22:55	KR	30-JUL-12	MS	AB8270SL+
MC12669-3	SW846 8011	04-AUG-12 04:18	CZ	01-AUG-12	BJ	V8011SL
MC12669-3	SW846 8260B	09-AUG-12 15:02	JP			V8260SL+
MC12669-4 Collected: 27-JUL-12 12:40 By: KHNM Received: 28-JUL-12 By: MW10-ROX-072712 EB						
MC12669-4	SW846 8270C BY SIM	01-AUG-12 12:37	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-4	SW846 8270C	01-AUG-12 23:17	KR	30-JUL-12	MS	AB8270SL+
MC12669-4	SW846 8011	04-AUG-12 04:45	CZ	01-AUG-12	BJ	V8011SL
MC12669-4	SW846 8260B	07-AUG-12 18:02	JP			V8260SL+
MC12669-5 Collected: 27-JUL-12 13:25 By: KHNM Received: 28-JUL-12 By: MW10-ROX-072712						
MC12669-5	SW846 8270C BY SIM	01-AUG-12 12:59	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-5	SW846 8270C	01-AUG-12 23:40	KR	30-JUL-12	MS	AB8270SL+
MC12669-5	SW846 8011	04-AUG-12 05:11	CZ	01-AUG-12	BJ	V8011SL
MC12669-5	SW846 8260B	09-AUG-12 15:30	JP			V8260SL+

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12669

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12669-6 Collected: 27-JUL-12 14:20 By: KHNM Received: 28-JUL-12 By: MW9-ROX-072712						
MC12669-6	SW846 8270C BY SIM	01-AUG-12 13:22	KR	30-JUL-12	MS	B8270SIMPAH
MC12669-6	SW846 8270C	02-AUG-12 00:03	KR	30-JUL-12	MS	AB8270SL+
MC12669-6	SW846 8011	04-AUG-12 05:38	CZ	01-AUG-12	BJ	V8011SL
MC12669-6	SW846 8260B	09-AUG-12 15:58	JP			V8260SL+
MC12669-7 Collected: 27-JUL-12 00:00 By: KHNM Received: 28-JUL-12 By: TB-072712-HCL						
MC12669-7	SW846 8260B	07-AUG-12 17:34	JP			V8260SL+
MC12669-8 Collected: 27-JUL-12 00:00 By: KHNM Received: 28-JUL-12 By: TB-072712-ST						
MC12669-8	SW846 8011	04-AUG-12 06:31	CZ	01-AUG-12	BJ	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/28/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12669-1.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-1.3	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-1.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-1.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-1.4	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-1.4	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-1.4	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-1.4	Jugal Patel	VOC Ref #4	08/08/12 10:02	Retnrn to Storage
MC12669-1.6	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-1.6	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-1.7	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-1.7	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-1.9	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-1.9	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-1.9	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-1.9	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-1.10	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-1.10	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-1.10	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-1.10	Jugal Patel	VOC Ref #4	08/08/12 10:02	Retnrn to Storage
MC12669-1.12	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-1.12	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-1.13	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-1.13	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-1.14	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-1.14	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-1.15	VOC Ref #4	Jugal Patel	08/08/12 09:24	Retrieve from Storage
MC12669-1.15	Jugal Patel	GCMSN	08/08/12 09:24	Load on Instrument
MC12669-1.15	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-1.15	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-1.17	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-1.17	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-2.1	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/28/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12669-2.1	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-2.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-2.3	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-2.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-2.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-2.4	VOC Ref #4	Jugal Patel	08/08/12 12:44	Retrieve from Storage
MC12669-2.4	Jugal Patel	GCMSN	08/08/12 12:44	Load on Instrument
MC12669-2.4	GCMSN	Jugal Patel	08/10/12 10:13	Unload from Instrument
MC12669-2.4	Jugal Patel	VOC Ref #4	08/10/12 10:13	Return to Storage
MC12669-2.5	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-2.5	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-3.2	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-3.2	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-3.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-3.3	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-3.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-3.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-3.4	VOC Ref #4	Jugal Patel	08/08/12 12:44	Retrieve from Storage
MC12669-3.4	Jugal Patel	GCMSN	08/08/12 12:44	Load on Instrument
MC12669-3.4	GCMSN	Jugal Patel	08/10/12 10:13	Unload from Instrument
MC12669-3.4	Jugal Patel	VOC Ref #4	08/10/12 10:13	Return to Storage
MC12669-3.5	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-3.5	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-4.2	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-4.2	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-4.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-4.3	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-4.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-4.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-4.6	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-4.6	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-5.1	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-5.1	Nick Krasinski		07/30/12 22:48	Depleted

5.3

Accutest Internal Chain of Custody

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/28/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12669-5.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-5.3	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-5.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-5.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-5.4	VOC Ref #4	Jugal Patel	08/08/12 12:44	Retrieve from Storage
MC12669-5.4	Jugal Patel	GCMSN	08/08/12 12:44	Load on Instrument
MC12669-5.4	GCMSN	Jugal Patel	08/10/12 10:13	Unload from Instrument
MC12669-5.4	Jugal Patel	VOC Ref #4	08/10/12 10:13	Return to Storage
MC12669-5.6	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-5.6	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-6.1	Walk In Ref #22	Nick Krasinski	07/30/12 14:18	Retrieve from Storage
MC12669-6.1	Nick Krasinski		07/30/12 22:48	Depleted
MC12669-6.3	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-6.3	Jngal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-6.3	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-6.3	Jugal Patel	VOC Ref #4	08/08/12 10:02	Retnrn to Storage
MC12669-6.4	VOC Ref #4	Jugal Patel	08/08/12 12:44	Retrieve from Storage
MC12669-6.4	Jugal Patel	GCMSN	08/08/12 12:44	Load on Instrument
MC12669-6.4	GCMSN	Jugal Patel	08/10/12 10:13	Unload from Instrument
MC12669-6.4	Jngal Patel	VOC Ref #4	08/10/12 10:13	Return to Storage
MC12669-6.6	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-6.6	Bijan Jafari		08/24/12 10:20	Depleted
MC12669-7.1	VOC Ref #4	Jugal Patel	08/07/12 16:08	Retrieve from Storage
MC12669-7.1	Jugal Patel	GCMSN	08/07/12 16:08	Load on Instrument
MC12669-7.1	GCMSN	Jugal Patel	08/08/12 10:02	Unload from Instrument
MC12669-7.1	Jugal Patel	VOC Ref #4	08/08/12 10:02	Return to Storage
MC12669-8.1	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12669-8.1	Bijan Jafari		08/24/12 10:20	Depleted

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB	N66435.D	1	08/07/12	JP	n/a	n/a	MSN2498

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

MC12669-4, MC12669-7

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ng/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ng/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB	N66435.D	1	08/07/12	JP	n/a	n/a	MSN2498

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

MC12669-4, MC12669-7

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobntadiene	ND	5.0	2.1	ng/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB	N66435.D	1	08/07/12	JP	n/a	n/a	MSN2498

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

MC12669-4, MC12669-7

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	85%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

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

6.1.1

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB1	N66464.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbeuzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB1	N66464.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ng/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

6.1.2

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-MB1	N66464.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

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

6.1.2

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-MB	N66487.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ng/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Cblorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorndifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-MB	N66487.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ng/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-MB	N66487.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	106%	70-130%

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

6.1.3

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS1	N66462.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	48.8	98	70-130
107-02-8	Acrolein	250	486	194* a	70-130
107-13-1	Acrylonitrile	50	218	436* a	70-130
71-43-2	Benzene	50	44.5	89	70-130
108-86-1	Bromobenzene	50	47.2	94	70-130
74-97-5	Bromochloromethane	50	46.5	93	70-130
75-27-4	Bromodichloromethane	50	47.2	94	70-130
75-25-2	Bromoform	50	49.6	99	70-130
74-83-9	Bromomethane	50	74.5	149* b	70-130
78-93-3	2-Butanone (MEK)	50	49.4	99	70-130
104-51-8	n-Butylbenzene	50	48.3	97	70-130
135-98-8	sec-Butylbenzene	50	52.0	104	70-130
98-06-6	tert-Butylbenzene	50	51.3	103	70-130
75-15-0	Carbon disulfide	50	34.3	69* b	70-130
56-23-5	Carbon tetrachloride	50	48.8	98	70-130
108-90-7	Chlorobenzene	50	50.1	100	70-130
75-00-3	Chloroethane	50	72.7	145* b	70-130
110-75-8	2-Chloroethyl vinyl ether	50	44.9	90	70-130
67-66-3	Chloroform	50	45.3	91	70-130
74-87-3	Chloromethane	50	59.7	119	70-130
95-49-8	o-Chlorotoluene	50	48.3	97	70-130
106-43-4	p-Chlorotoluene	50	49.5	99	70-130
124-48-1	Dibromochloromethane	50	52.1	104	70-130
95-50-1	1,2-Dichlorobenzene	50	50.8	102	70-130
541-73-1	1,3-Dichlorobenzene	50	49.6	99	70-130
106-46-7	1,4-Dichlorobenzene	50	47.0	94	70-130
75-71-8	Dichlorodifluoromethane	50	40.3	81	70-130
75-34-3	1,1-Dichloroethane	50	44.4	89	70-130
107-06-2	1,2-Dichloroethane	50	46.5	93	70-130
75-35-4	1,1-Dichloroethene	50	45.5	91	70-130
156-59-2	cis-1,2-Dichloroethene	50	46.6	93	70-130
156-60-5	trans-1,2-Dichloroethene	50	43.0	86	70-130
78-87-5	1,2-Dichloropropane	50	44.6	89	70-130
142-28-9	1,3-Dichloropropane	50	45.9	92	70-130
594-20-7	2,2-Dichloropropane	50	37.2	74	70-130
563-58-6	1,1-Dichloropropene	50	44.7	89	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS1	N66462.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	48.9	98	70-130
10061-02-6	trans-1,3-Dichloropropene	50	49.3	99	70-130
123-91-1	1,4-Dioxane	250	277	111	70-130
97-63-2	Ethyl methacrylate	50	53.4	107	77-137
100-41-4	Ethylbenzene	50	45.1	90	70-130
87-68-3	Hexachlorobutadiene	50	50.4	101	70-130
591-78-6	2-Hexanone	50	48.2	96	70-130
98-82-8	Isopropylbenzene	50	49.6	99	70-130
99-87-6	p-Isopropyltoluene	50	50.9	102	70-130
1634-04-4	Methyl Tert Butyl Ether	50	48.0	96	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	50.9	102	70-130
74-95-3	Methylene bromide	50	52.1	104	70-130
75-09-2	Methylene chloride	50	42.9	86	70-130
103-65-1	n-Propylbenzene	50	50.0	100	70-130
100-42-5	Styrene	50	49.6	99	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	48.1	96	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.4	103	70-130
127-18-4	Tetrachloroethene	50	43.9	88	70-130
108-88-3	Toluene	50	47.3	95	70-130
87-61-6	1,2,3-Trichlorobenzene	50	48.9	98	70-130
120-82-1	1,2,4-Trichlorobenzene	50	47.7	95	70-130
71-55-6	1,1,1-Trichloroethane	50	45.3	91	70-130
79-00-5	1,1,2-Trichloroethane	50	47.0	94	70-130
79-01-6	Trichloroethene	50	43.8	88	70-130
75-69-4	Trichlorofluoromethane	50	43.4	87	70-130
96-18-4	1,2,3-Trichloropropane	50	48.1	96	70-130
95-63-6	1,2,4-Trimethylbenzene	50	48.2	96	70-130
108-67-8	1,3,5-Trimethylbenzene	50	45.6	91	70-130
108-05-4	Vinyl Acetate	50	44.2	88	70-130
75-01-4	Vinyl chloride	50	50.2	100	70-130
	m,p-Xylene	100	94.8	95	70-130
95-47-6	o-Xylene	50	52.1	104	70-130
1330-20-7	Xylene (total)	150	147	98	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS1	N66462.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluorometbane	96%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS	N66432.D	1	08/07/12	JP	n/a	n/a	MSN2498
MSN2498-BSD	N66433.D	1	08/07/12	JP	n/a	n/a	MSN2498

6.3.1

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	37.9	76	39.3	79	4	70-130/25
107-02-8	Acrolein	250	315	126	327	131* a	4	70-130/25
107-13-1	Acrylonitrile	50	224	448* b	238	476* b	6	70-130/25
71-43-2	Benzene	50	44.9	90	45.5	91	1	70-130/25
108-86-1	Bromobenzene	50	50.4	101	53.0	106	5	70-130/25
74-97-5	Bromochloromethane	50	45.2	90	45.2	90	0	70-130/25
75-27-4	Bromodichloromethaue	50	44.0	88	45.5	91	3	70-130/25
75-25-2	Bromoform	50	54.9	110	56.1	112	2	70-130/25
74-83-9	Bromomethane	50	44.9	90	45.0	90	0	70-130/25
78-93-3	2-Butanone (MEK)	50	46.2	92	51.3	103	10	70-130/25
104-51-8	n-Butylbenzene	50	52.2	104	51.9	104	1	70-130/25
135-98-8	sec-Butylbenzene	50	53.8	108	55.8	112	4	70-130/25
98-06-6	tert-Butylbenzene	50	50.9	102	52.3	105	3	70-130/25
75-15-0	Carbon disulfide	50	33.1	66* a	33.5	67* a	1	70-130/25
56-23-5	Carbon tetrachloride	50	43.2	86	43.0	86	0	70-130/25
108-90-7	Chlorobenzene	50	54.8	110	54.6	109	0	70-130/25
75-00-3	Chloroethane	50	40.3	81	39.0	78	3	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	45.4	91	46.7	93	3	70-130/25
67-66-3	Chloroform	50	39.8	80	41.2	82	3	70-130/25
74-87-3	Chloromethane	50	42.1	84	38.8	78	8	70-130/25
95-49-8	o-Chlorotoluene	50	49.4	99	50.5	101	2	70-130/25
106-43-4	p-Chlorotoluene	50	51.1	102	53.0	106	4	70-130/25
124-48-1	Dibromochloromethane	50	54.8	110	55.1	110	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	53.5	107	55.5	111	4	70-130/25
541-73-1	1,3-Dichlorobenzene	50	53.5	107	54.4	109	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	50.6	101	52.5	105	4	70-130/25
75-71-8	Dichlorodifluoromethane	50	27.7	55* a	28.4	57* a	2	70-130/25
75-34-3	1,1-Dichloroethane	50	40.7	81	41.2	82	1	70-130/25
107-06-2	1,2-Dichloroethane	50	37.3	75	39.1	78	5	70-130/25
75-35-4	1,1-Dichloroethene	50	44.9	90	45.0	90	0	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	44.7	89	45.1	90	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	43.1	86	45.5	91	5	70-130/25
78-87-5	1,2-Dichloropropane	50	45.1	90	46.4	93	3	70-130/25
142-28-9	1,3-Dichloropropane	50	47.7	95	47.8	96	0	70-130/25
594-20-7	2,2-Dichloropropane	50	41.9	84	41.8	84	0	70-130/25
563-58-6	1,1-Dichloropropene	50	43.5	87	43.0	86	1	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS	N66432.D	1	08/07/12	JP	n/a	n/a	MSN2498
MSN2498-BSD	N66433.D	1	08/07/12	JP	n/a	n/a	MSN2498

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	49.6	99	51.2	102	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	47.3	95	48.6	97	3	70-130/25
123-91-1	1,4-Dioxane	250	271	108	290	116	7	70-130/25
97-63-2	Ethyl methacrylate	50	55.9	112	56.7	113	1	77-137/25
100-41-4	Ethylbenzene	50	48.4	97	48.1	96	1	70-130/25
87-68-3	Hexachlorobntadiene	50	53.8	108	56.3	113	5	70-130/25
591-78-6	2-Hexanone	50	51.0	102	55.4	111	8	70-130/25
98-82-8	Isopropylbenzene	50	52.4	105	53.5	107	2	70-130/25
99-87-6	p-Isopropyltoluene	50	55.0	110	56.2	112	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	44.4	89	45.6	91	3	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	50.1	100	53.2	106	6	70-130/25
74-95-3	Methylene bromide	50	47.0	94	48.9	98	4	70-130/25
75-09-2	Methylene chloride	50	40.5	81	41.2	82	2	70-130/25
103-65-1	n-Propylbenzene	50	53.9	108	54.4	109	1	70-130/25
100-42-5	Styrene	50	54.4	109	53.8	108	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	52.0	104	52.4	105	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	53.6	107	56.7	113	6	70-130/25
127-18-4	Tetrachloroethene	50	51.7	103	50.2	100	3	70-130/25
108-88-3	Tolnene	50	47.4	95	47.8	96	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	52.7	105	54.5	109	3	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	52.9	106	54.1	108	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	39.8	80	38.9	78	2	70-130/25
79-00-5	1,1,2-Trichloroethane	50	46.0	92	46.9	94	2	70-130/25
79-01-6	Trichloroethene	50	44.3	89	44.6	89	1	70-130/25
75-69-4	Trichlorofluoromethane	50	32.6	65* [a]	31.9	64* [a]	2	70-130/25
96-18-4	1,2,3-Trichloropropane	50	50.6	101	54.5	109	7	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.8	100	51.1	102	3	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	47.7	95	49.6	99	4	70-130/25
108-05-4	Vinyl Acetate	50	49.2	98	50.5	101	3	70-130/25
75-01-4	Vinyl chloride	50	37.1	74	37.5	75	1	70-130/25
	m,p-Xylene	100	105	105	104	104	1	70-130/25
95-47-6	o-Xylene	50	56.6	113	55.7	111	2	70-130/25
1330-20-7	Xylene (total)	150	162	108	160	107	1	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2498-BS	N66432.D	1	08/07/12	JP	n/a	n/a	MSN2498
MSN2498-BSD	N66433.D	1	08/07/12	JP	n/a	n/a	MSN2498

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	86%	85%	70-130%
2037-26-5	Toluene-D8	100%	98%	70-130%
460-00-4	4-Bromofluorobenzene	93%	93%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-BS	N66484.D	1	08/09/12	JP	n/a	n/a	MSN2500
MSN2500-BSD	N66485.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	48.0	96	45.2	90	6	70-130/25
107-02-8	Acrolein	250	299	120	290	116	3	70-130/25
107-13-1	Acrylonitrile	50	257	514* a	255	510* a	1	70-130/25
71-43-2	Benzene	50	50.8	102	47.0	94	8	70-130/25
108-86-1	Bromobenzene	50	54.9	110	49.3	99	11	70-130/25
74-97-5	Bromochloromethane	50	49.6	99	48.7	97	2	70-130/25
75-27-4	Bromodichloromethane	50	52.3	105	48.8	98	7	70-130/25
75-25-2	Bromoform	50	60.5	121	53.3	107	13	70-130/25
74-83-9	Bromomethane	50	67.1	134* b	59.5	119	12	70-130/25
78-93-3	2-Butanone (MEK)	50	53.2	106	51.8	104	3	70-130/25
104-51-8	n-Butylbenzene	50	58.1	116	50.5	101	14	70-130/25
135-98-8	sec-Bntylbenzene	50	62.7	125	55.0	110	13	70-130/25
98-06-6	tert-Butylbenzene	50	61.2	122	54.2	108	12	70-130/25
75-15-0	Carbon disulfide	50	43.7	87	39.4	79	10	70-130/25
56-23-5	Carbon tetrachloride	50	59.5	119	54.3	109	9	70-130/25
108-90-7	Chlorobenzene	50	58.6	117	51.2	102	13	70-130/25
75-00-3	Chloroethane	50	51.6	103	47.4	95	8	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	51.0	102	46.7	93	9	70-130/25
67-66-3	Chloroform	50	49.8	100	46.3	93	7	70-130/25
74-87-3	Chloromethane	50	80.0	160* b	74.6	149* b	7	70-130/25
95-49-8	o-Chlorotoluene	50	56.7	113	50.7	101	11	70-130/25
106-43-4	p-Chlorotoluene	50	58.5	117	53.0	106	10	70-130/25
124-48-1	Dibromochloromethane	50	61.3	123	54.3	109	12	70-130/25
95-50-1	1,2-Dichlorobenzene	50	56.7	113	51.5	103	10	70-130/25
541-73-1	1,3-Dichlorobenzene	50	58.0	116	52.5	105	10	70-130/25
106-46-7	1,4-Dichlorobenzene	50	54.4	109	49.5	99	9	70-130/25
75-71-8	Dichlorodifluoromethane	50	84.5	169* a	73.8	148* a	14	70-130/25
75-34-3	1,1-Dichloroethane	50	50.6	101	46.6	93	8	70-130/25
107-06-2	1,2-Dichloroethane	50	50.2	100	46.4	93	8	70-130/25
75-35-4	1,1-Dichloroethene	50	54.5	109	50.4	101	8	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.5	105	46.9	94	11	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	52.4	105	46.9	94	11	70-130/25
78-87-5	1,2-Dichloropropane	50	50.6	101	46.4	93	9	70-130/25
142-28-9	1,3-Dichloropropane	50	52.4	105	46.8	94	11	70-130/25
594-20-7	2,2-Dichloropropane	50	56.3	113	51.1	102	10	70-130/25
563-58-6	1,1-Dichloropropene	50	52.3	105	49.1	98	6	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-BS	N66484.D	1	08/09/12	JP	n/a	n/a	MSN2500
MSN2500-BSD	N66485.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	55.8	112	51.9	104	7	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	54.5	109	50.5	101	8	70-130/25
123-91-1	1,4-Dioxane	250	281	112	278	111	1	70-130/25
97-63-2	Ethyl methacrylate	50	59.8	120	55.4	111	8	77-137/25
100-41-4	Ethylbenzene	50	53.8	108	46.2	92	15	70-130/25
87-68-3	Hexachlorobutadiene	50	60.9	122	55.3	111	10	70-130/25
591-78-6	2-Hexanone	50	53.9	108	49.8	100	8	70-130/25
98-82-8	Isopropylbenzene	50	60.7	121	53.8	108	12	70-130/25
99-87-6	p-Isopropyltoluene	50	59.9	120	54.6	109	9	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	54.4	109	52.1	104	4	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.7	105	51.7	103	2	70-130/25
74-95-3	Methylene bromide	50	54.9	110	51.8	104	6	70-130/25
75-09-2	Methylene chloride	50	48.8	98	44.4	89	9	70-130/25
103-65-1	n-Propylbenzene	50	61.7	123	54.1	108	13	70-130/25
100-42-5	Styrene	50	57.1	114	50.8	102	12	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	59.2	118	51.3	103	14	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	57.5	115	54.9	110	5	70-130/25
127-18-4	Tetrachloroethene	50	57.8	116	47.9	96	19	70-130/25
108-88-3	Toluene	50	53.8	108	49.4	99	9	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	54.2	108	49.9	100	8	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	54.8	110	50.7	101	8	70-130/25
71-55-6	1,1,1-Trichloroethane	50	52.7	105	48.8	98	8	70-130/25
79-00-5	1,1,2-Trichloroethane	50	49.1	98	47.0	94	4	70-130/25
79-01-6	Trichloroethene	50	52.8	106	47.6	95	10	70-130/25
75-69-4	Trichlorofluoromethane	50	47.3	95	42.2	84	11	70-130/25
96-18-4	1,2,3-Trichloropropane	50	56.8	114	53.2	106	7	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	56.6	113	49.6	99	13	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	54.7	109	49.0	98	11	70-130/25
108-05-4	Vinyl Acetate	50	58.5	117	54.1	108	8	70-130/25
75-01-4	Vinyl chloride	50	66.5	133* b	58.7	117	12	70-130/25
	m,p-Xylene	100	114	114	99.3	99	14	70-130/25
95-47-6	o-Xylene	50	60.7	121	52.3	105	15	70-130/25
1330-20-7	Xylene (total)	150	175	117	152	101	14	70-130/25

* = Outside of Control Limits.

6.3.2

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2500-BS	N66484.D	1	08/09/12	JP	n/a	n/a	MSN2500
MSN2500-BSD	N66485.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dihromofluoromethane	94%	93%	70-130%
2037-26-5	Toluene-D8	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	99%	97%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12669-1MS	N66455.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1MSD	N66456.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1	N66471.D	1	08/08/12	JP	n/a	n/a	MSN2498

6.4.1

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	53.9	108	54.7	109	1	70-130/30
107-02-8	Acrolein	ND		250	312	125	330	132* a	6	70-130/30
107-13-1	Acrylonitrile	ND		50	252	504* b	263	526* b	4	70-130/30
71-43-2	Benzene	8.9		50	57.6	98	56.6	96	2	70-130/30
108-86-1	Bromobenzene	ND		50	50.5	101	52.4	105	4	70-130/30
74-97-5	Bromochloromethane	ND		50	50.1	100	53.1	106	6	70-130/30
75-27-4	Bromodichloromethane	ND		50	55.7	111	53.7	107	4	70-130/30
75-25-2	Bromoform	ND		50	52.4	105	55.2	110	5	70-130/30
74-83-9	Bromomethane	ND		50	48.7	97	59.8	120	20	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	50.8	102	54.8	110	8	70-130/30
104-51-8	n-Butylbenzene	ND		50	53.6	107	55.0	110	3	70-130/30
135-98-8	sec-Butylbenzene	ND		50	58.4	117	58.5	117	0	70-130/30
98-06-6	tert-Butylbenzene	ND		50	58.4	117	57.3	115	2	70-130/30
75-15-0	Carbon disulfide	ND		50	44.2	88	42.9	86	3	70-130/30
56-23-5	Carbon tetrachloride	ND		50	59.2	118	58.8	118	1	70-130/30
108-90-7	Chlorobenzene	ND		50	53.8	108	54.2	108	1	70-130/30
75-00-3	Chloroethane	ND		50	51.8	104	52.5	105	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	49.8	100	48.8	98	2	70-130/30
67-66-3	Chloroform	ND		50	52.5	105	51.0	102	3	70-130/30
74-87-3	Chloromethane	ND		50	59.1	118	70.3	141* a	17	70-130/30
95-49-8	o-Chlorotoluene	ND		50	54.0	108	54.0	108	0	70-130/30
106-43-4	p-Chlorotoluene	ND		50	57.0	114	55.8	112	2	70-130/30
124-48-1	Dibromochloromethane	ND		50	56.3	113	56.6	113	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	54.4	109	54.2	108	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	53.7	107	53.6	107	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	51.2	102	51.5	103	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	79.8	160* a	75.7	151* a	5	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	52.5	105	51.2	102	3	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	52.3	105	50.4	101	4	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	55.2	110	53.7	107	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	52.1	104	51.6	103	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	48.4	97	50.9	102	5	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	49.4	99	48.5	97	2	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	49.3	99	50.5	101	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	48.5	97	48.5	97	0	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	52.9	106	51.6	103	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12669-1MS	N66455.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1MSD	N66456.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1	N66471.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	53.9	108	53.5	107	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	52.4	105	53.1	106	1	70-130/30
123-91-1	1,4-Dioxane	ND		250	263	105	269	108	2	70-130/30
97-63-2	Ethyl methacrylate	ND		50	57.9	116	61.0	122	5	72-139/30
100-41-4	Ethylbenzene	ND		50	50.0	100	50.4	101	1	70-130/30
87-68-3	Hexachlorobntadiene	ND		50	54.9	110	54.4	109	1	70-130/30
591-78-6	2-Hexanone	ND		50	50.9	102	54.1	108	6	70-130/30
98-82-8	Isopropylbenzene	ND		50	56.8	114	57.3	115	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	56.5	113	56.5	113	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	52.5	104	55.3	109	5	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	52.7	105	56.9	114	8	70-130/30
74-95-3	Methylene bromide	ND		50	53.6	107	55.9	112	4	70-130/30
75-09-2	Methylene chloride	ND		50	47.6	95	47.1	94	1	70-130/30
103-65-1	n-Propylbenzene	ND		50	57.8	116	57.4	115	1	70-130/30
100-42-5	Styrene	ND		50	52.1	104	53.2	106	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	54.5	109	53.1	106	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	54.1	108	56.6	113	5	70-130/30
127-18-4	Tetrachloroethene	ND		50	50.8	99	51.0	99	0	70-130/30
108-88-3	Tolnene	ND		50	51.9	104	51.4	103	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	49.9	100	52.6	105	5	70-130/30
120-82-1	1,2,4-Tricblorobenzene	ND		50	49.6	99	51.7	103	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	54.9	110	53.3	107	3	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	48.8	98	51.1	102	5	70-130/30
79-01-6	Trichloroethene	ND		50	52.0	104	50.5	101	3	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	48.5	97	47.9	96	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	52.0	104	54.4	109	5	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	53.2	106	53.5	107	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	51.7	103	51.3	103	1	70-130/30
108-05-4	Vinyl Acetate	ND		50	57.5	115	61.6	123	7	70-130/30
75-01-4	Vinyl chloride	ND		50	55.1	110	58.5	117	6	70-130/30
	m,p-Xylene	ND		100	104	104	103	103	1	70-130/30
95-47-6	o-Xylene	ND		50	55.8	112	55.3	111	1	70-130/30
1330-20-7	Xylene (total)	ND		150	160	107	159	106	1	70-130/30

* = Ontside of Control Limits.

6.4.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12669-1MS	N66455.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1MSD	N66456.D	1	08/08/12	JP	n/a	n/a	MSN2498
MC12669-1	N66471.D	1	08/08/12	JP	n/a	n/a	MSN2498

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

MC12669-1, MC12669-4, MC12669-7

CAS No.	Surrogate Recoveries	MS	MSD	MC12669-1	Limits
1868-53-7	Dibromofluoromethane	97%	96%	104%	70-130%
2037-26-5	Toluene-D8	99%	101%	98%	70-130%
460-00-4	4-Bromofluorobenzene	98%	100%	103%	70-130%

(a) Ontside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12896-9MS	N66507.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9MSD	N66508.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9	N66505.D	1	08/09/12	JP	n/a	n/a	MSN2500

6.4.2

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	MC12896-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	249	100	267	107	7	70-130/30
107-02-8	Acrolein	ND		1250	1350	108	1820	146* a	30	70-130/30
107-13-1	Acrylonitrile	ND		250	1150	460* b	1490	596* b	26	70-130/30
71-43-2	Benzene	5.4		250	243	95	248	97	2	70-130/30
108-86-1	Bromobenzene	ND		250	243	97	226	90	7	70-130/30
74-97-5	Bromochloromethane	ND		250	233	93	261	104	11	70-130/30
75-27-4	Bromodichloromethane	ND		250	259	104	215	86	19	70-130/30
75-25-2	Bromoform	ND		250	245	98	240	96	2	70-130/30
74-83-9	Bromomethane	ND		250	274	110	326	130	17	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	224	90	291	116	26	70-130/30
104-51-8	n-Butylbenzene	ND		250	256	102	226	90	12	70-130/30
135-98-8	sec-Bntylbenzene	ND		250	268	107	237	95	12	70-130/30
98-06-6	tert-Butylbenzene	ND		250	269	108	225	90	18	70-130/30
75-15-0	Carbon disulfide	ND		250	188	75	219	88	15	70-130/30
56-23-5	Carbon tetrachloride	ND		250	255	102	190	76	29	70-130/30
108-90-7	Chlorobenzene	ND		250	262	105	275	110	5	70-130/30
75-00-3	Chloroethane	ND		250	231	92	283	113	20	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	239	96	252	101	5	70-130/30
67-66-3	Chloroform	ND		250	229	92	222	89	3	70-130/30
74-87-3	Chloromethane	ND		250	350	140* a	285	114	20	70-130/30
95-49-8	o-Chlorotoluene	ND		250	262	105	230	92	13	70-130/30
106-43-4	p-Chlorotoluene	ND		250	271	108	244	98	10	70-130/30
124-48-1	Dibromochloromethane	ND		250	276	110	270	108	2	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	266	106	253	101	5	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	259	104	255	102	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	246	98	235	94	5	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	351	140* a	251	100	33* c	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	230	92	241	96	5	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	246	98	188	75	27	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	231	92	269	108	15	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	240	96	262	105	9	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	225	90	259	104	14	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	237	95	251	100	6	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	241	96	259	104	7	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	140	56* a	124	50* a	12	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	240	96	212	85	12	70-130/30

* = Ontside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12896-9MS	N66507.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9MSD	N66508.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9	N66505.D	1	08/09/12	JP	n/a	n/a	MSN2500

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Compound	MC12896-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	241	96	224	90	7	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	228	91	205	82	11	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1400	112	1420	114	1	70-130/30
97-63-2	Ethyl methacrylate	ND		250	265	106	268	107	1	72-139/30
100-41-4	Ethylbenzene	ND		250	239	96	227	91	5	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	267	107	210	84	24	70-130/30
591-78-6	2-Hexanone	ND		250	235	94	288	115	20	70-130/30
98-82-8	Isopropylbenzene	ND		250	263	105	235	94	11	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	262	105	242	97	8	70-130/30
1634-04-4	Methyl Tert Butyl Ether	2.1		250	247	98	244	97	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	249	100	261	104	5	70-130/30
74-95-3	Methylene bromide	ND		250	263	105	247	99	6	70-130/30
75-09-2	Methylene chloride	ND		250	214	86	256	102	18	70-130/30
103-65-1	n-Propylbenzene	ND		250	277	111	246	98	12	70-130/30
100-42-5	Styrene	ND		250	254	102	265	106	4	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	255	102	242	97	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	258	103	259	104	0	70-130/30
127-18-4	Tetrachloroethene	ND		250	239	96	242	97	1	70-130/30
108-88-3	Toluene	ND		250	247	99	246	98	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	288	115	227	91	24	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	289	116	214	86	30	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	232	93	195	78	17	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	231	92	243	97	5	70-130/30
79-01-6	Trichloroethene	ND		250	238	95	219	88	8	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	197	79	166	66* [a]	17	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	240	96	246	98	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	258	103	224	90	14	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	243	97	210	84	15	70-130/30
108-05-4	Vinyl Acetate	ND		250	251	100	325	130	26	70-130/30
75-01-4	Vinyl chloride	2.8		250	282	112	216	85	27	70-130/30
	m,p-Xylene	ND		500	497	99	507	101	2	70-130/30
95-47-6	o-Xylene	ND		250	265	106	276	110	4	70-130/30
1330-20-7	Xylene (total)	ND		750	763	102	784	105	3	70-130/30

* = Ontside of Control Limits.

6.4.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12896-9MS	N66507.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9MSD	N66508.D	5	08/09/12	JP	n/a	n/a	MSN2500
MC12896-9	N66505.D	I	08/09/12	JP	n/a	n/a	MSN2500

6.4.2

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

MC12669-2, MC12669-3, MC12669-5, MC12669-6

CAS No.	Surrogate Recoveries	MS	MSD	MC12896-9	Limits
1868-53-7	Dibromofluoromethane	90%	92%	93%	70-130%
2037-26-5	Toluene-D8	100%	96%	98%	70-130%
460-00-4	4-Bromofluorobenzene	97%	89%	104%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2498-CC2468	Injection Date:	08/07/12
Lab File ID:	N66431.D	Injection Time:	15:13
Instrument ID:	GCMSN	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	235905	9.02	367982	9.89	190598	13.15	176363	15.70	92781	6.56
Upper Limit [a]	471810	9.52	735964	10.39	381196	13.65	352726	16.20	185562	7.06
Lower Limit [b]	117953	8.52	183991	9.39	95299	12.65	88182	15.20	46391	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2498-BS	238480	9.01	372804	9.89	192855	13.15	180576	15.70	94869	6.56
MSN2497-BS1	238480	9.01	372804	9.89	192855	13.15	180576	15.70	94869	6.56
MSN2498-BSD	225819	9.02	349077	9.89	185355	13.14	169126	15.70	86824	6.56
MSN2497-BSD1	225819	9.02	349077	9.89	185355	13.14	169126	15.70	86824	6.56
MSN2497-MB1	224604	9.02	350532	9.89	176142	13.15	159332	15.70	84402	6.57
MSN2498-MB	224604	9.02	350532	9.89	176142	13.15	159332	15.70	84402	6.57
MC12669-7	207953	9.02	325722	9.89	159879	13.15	142741	15.70	83796	6.58
MC12669-4	202987	9.02	316302	9.89	157723	13.15	136649	15.71	75640	6.57
ZZZZZZ	206531	9.02	321248	9.89	163580	13.14	140878	15.71	75691	6.58
ZZZZZZ	197871	9.02	317080	9.89	162668	13.15	136733	15.70	80124	6.57
ZZZZZZ	182246	9.02	285435	9.89	149661	13.15	124765	15.70	66776	6.56
MC12783-7	192105	9.02	309576	9.89	156941	13.15	132684	15.70	67727	6.57
ZZZZZZ	185842	9.02	298327	9.89	156116	13.15	142042	15.70	76212	6.56
ZZZZZZ	193379	9.02	298833	9.89	154317	13.15	133036	15.70	80254	6.57
ZZZZZZ	186940	9.02	293456	9.89	156018	13.15	125794	15.70	79773	6.56
MC12669-1MS	166269	9.02	269452	9.89	150433	13.15	135877	15.70	73043	6.56
MC12669-1MSD	176450	9.01	288393	9.89	159746	13.15	143718	15.71	80429	6.56

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

(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.

6.5.1

Volatile Internal Standard Area Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2499-CC2468	Injection Date:	08/08/12
Lab File ID:	N66461.D	Injection Time:	05:22
Instrument ID:	GCMSN	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	174426	9.02	283552	9.89	157297	13.15	144492	15.70	78095	6.57
Upper Limit [a]	348852	9.52	567104	10.39	314594	13.65	288984	16.20	156190	7.07
Lower Limit [b]	87213	8.52	141776	9.39	78649	12.65	72246	15.20	39048	6.07
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2499-BS	182025	9.02	291980	9.89	161771	13.14	149705	15.70	84042	6.56
MSN2498-BS1	182025	9.02	291980	9.89	161771	13.14	149705	15.70	84042	6.56
MSN2499-MB	161218	9.02	261412	9.89	137812	13.15	115591	15.70	73632	6.57
MSN2498-MB1	161218	9.02	261412	9.89	137812	13.15	115591	15.70	73632	6.57
ZZZZZZ	152529	9.02	251592	9.89	133919	13.15	105458	15.70	97489	6.57
ZZZZZZ	159135	9.02	249430	9.89	137748	13.15	110003	15.70	65977	6.57
ZZZZZZ	143334	9.02	235554	9.89	128204	13.15	125400	15.70	56841	6.58
ZZZZZZ	148977	9.02	246587	9.89	128819	13.15	107181	15.71	60961	6.57
ZZZZZZ	148090	9.02	244178	9.89	127726	13.15	107797	15.71	57831	6.57
ZZZZZZ	146425	9.02	237194	9.89	129846	13.14	102058	15.70	71241	6.56
MC12669-1	136995	9.02	224428	9.89	120582	13.15	96490	15.70	57620	6.58
ZZZZZZ	142706	9.02	233082	9.89	125559	13.15	101427	15.70	65079	6.57
ZZZZZZ	142584	9.02	227943	9.89	127856	13.15	98393	15.70	47940	6.57
ZZZZZZ	133372	9.02	217798	9.89	120747	13.15	91009	15.71	60979	6.56
MC12735-5	136324	9.02	220522	9.89	123329	13.15	95497	15.70	62972	6.57
ZZZZZZ	132684	9.02	220422	9.89	116918	13.15	91958	15.70	47680	6.58
ZZZZZZ	133810	9.02	214696	9.89	119668	13.15	103024	15.70	57307	6.57
ZZZZZZ	132270	9.02	216918	9.89	118427	13.15	103360	15.70	56030	6.57
ZZZZZZ	135097	9.02	213873	9.89	120484	13.15	109029	15.70	57979	6.57
ZZZZZZ	141453	9.02	235547	9.89	125764	13.15	103762	15.70	60735	6.57
MC12735-5MS	147123	9.02	243135	9.89	138297	13.14	136934	15.70	64348	6.56
MC12735-5MSD	159556	9.02	257949	9.89	148261	13.15	137669	15.70	77102	6.56

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

(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.

6.5.2

Volatile Internal Standard Area Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2500-CC2468	Injection Date:	08/09/12
Lab File ID:	N66483.D	Injection Time:	09:24
Instrument ID:	GCMSN	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	211095	9.01	359065	9.88	175965	13.14	170174	15.70	82384	6.56
Upper Limit [a]	422190	9.51	718130	10.38	351930	13.64	340348	16.20	164768	7.06
Lower Limit [b]	105548	8.51	179533	9.38	87983	12.64	85087	15.20	41192	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2500-BS	183577	9.02	291556	9.89	153256	13.14	140108	15.70	83002	6.56
MSN2500-BSD	196329	9.02	311593	9.89	174028	13.15	153429	15.70	85641	6.56
MSN2500-MB	181107	9.02	282734	9.89	147564	13.15	118085	15.70	84196	6.58
ZZZZZZ	169351	9.02	271978	9.89	142095	13.15	117057	15.70	72460	6.57
ZZZZZZ	164672	9.02	265515	9.89	142121	13.15	120572	15.71	69375	6.57
ZZZZZZ	164024	9.02	268685	9.89	151728	13.14	133362	15.70	70709	6.57
ZZZZZZ	178382	9.02	282660	9.89	146418	13.15	127699	15.70	67902	6.58
ZZZZZZ	165923	9.02	263075	9.89	142369	13.15	124927	15.70	71458	6.57
ZZZZZZ	147309	9.02	240254	9.89	129294	13.15	107443	15.70	83942	6.57
MC12669-2	150977	9.02	244397	9.89	137319	13.15	154518	15.70	65258	6.57
MC12669-3	149482	9.02	243027	9.89	130066	13.15	103900	15.71	77857	6.57
MC12669-5	148776	9.02	244521	9.89	129788	13.15	106130	15.70	59338	6.57
MC12669-6	144975	9.02	246722	9.89	127870	13.15	116325	15.70	69022	6.57
ZZZZZZ	139943	9.02	226798	9.89	125583	13.15	115889	15.70	58795	6.57
ZZZZZZ	138503	9.02	228463	9.89	123025	13.15	103801	15.70	59331	6.57
ZZZZZZ	133955	9.02	220158	9.89	124604	13.15	93893	15.70	53955	6.58
ZZZZZZ	130909	9.02	212318	9.89	120349	13.15	122101	15.70	61532	6.57
ZZZZZZ	143345	9.02	233922	9.89	132759	13.15	142701	15.71	62718	6.57
ZZZZZZ	163965	9.02	264297	9.89	138031	13.14	123669	15.70	64068	6.58
ZZZZZZ	154079	9.02	272434	9.89	141791	13.15	128992	15.70	73576	6.57
MC12896-9	172441	9.02	271011	9.89	146168	13.15	111292	15.70	67214	6.57
ZZZZZZ	165642	9.02	269074	9.89	146554	13.15	132734	15.70	76644	6.57
MC12896-9MS	188864	9.02	289872	9.89	159946	13.15	144818	15.70	67950	6.56
MC12896-9MSD	254290	9.02	433914	9.89	207644	13.15	203148	15.70	108755	6.56

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of cbeck standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12669-1	N66471.D	104.0	98.0	103.0
MC12669-2	N66494.D	99.0	97.0	99.0
MC12669-3	N66495.D	100.0	98.0	107.0
MC12669-4	N66437.D	86.0	100.0	98.0
MC12669-5	N66496.D	99.0	99.0	105.0
MC12669-6	N66497.D	97.0	95.0	94.0
MC12669-7	N66436.D	87.0	97.0	97.0
MC12669-1MS	N66455.D	97.0	99.0	98.0
MC12669-1MSD	N66456.D	96.0	101.0	100.0
MC12896-9MS	N66507.D	90.0	100.0	97.0
MC12896-9MSD	N66508.D	92.0	96.0	89.0
MSN2498-BS	N66432.D	86.0	100.0	93.0
MSN2498-BS1	N66462.D	96.0	101.0	95.0
MSN2498-BSD	N66433.D	85.0	98.0	93.0
MSN2498-MB	N66435.D	85.0	98.0	94.0
MSN2498-MB1	N66464.D	100.0	99.0	99.0
MSN2500-BS	N66484.D	94.0	99.0	99.0
MSN2500-BSD	N66485.D	93.0	98.0	97.0
MSN2500-MB	N66487.D	92.0	98.0	106.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-MB	F56440.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chluroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-bntyl phthalate	0.59	5.0	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-MB	F56440.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoverics		Limits
367-12-4	2-Fluorophenol	44%	15-110%
4165-62-2	Phenol-d5	31%	15-110%
118-79-6	2,4,6-Tribromophenol	70%	15-110%
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	89%	30-130%

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

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29852-MB	W3457.D	1	08/01/12	KR	07/30/12	OP29852	MSW160

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	114%	30-130%

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-BS	F56441.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	31.4	31	30-130
95-57-8	2-Chlorophenol	100	70.5	71	30-130
59-50-7	4-Chloro-3-methyl phenol	100	73.7	74	30-130
120-83-2	2,4-Dichlorophenol	100	78.0	78	30-130
105-67-9	2,4-Dimethylphenol	100	70.0	70	30-130
51-28-5	2,4-Dinitrophenol	100	72.1	72	30-130
534-52-1	4,6-Dinitro-o-cresol	100	92.2	92	30-130
95-48-7	2-Methylphenol	100	63.8	64	30-130
	3&4-Methylphenol	200	57.7	29* [a]	30-130
88-75-5	2-Nitrophenol	100	79.6	80	30-130
100-02-7	4-Nitrophenol	100	44.7	45	30-130
87-86-5	Pentachlorophenol	100	81.0	81	30-130
108-95-2	Phenol	100	38.0	38	30-130
95-95-4	2,4,5-Trichlorophenol	100	83.1	83	30-130
88-06-2	2,4,6-Trichlorophenol	100	82.5	83	30-130
62-53-3	Aniline	50	19.4	39* [a]	40-140
101-55-3	4-Bromophenyl phenyl ether	50	42.3	85	40-140
85-68-7	Butyl benzyl phthalate	50	42.2	84	40-140
100-51-6	Benzyl Alcohol	50	35.3	71	40-140
91-58-7	2-Chloronaphthalene	50	49.2	98	40-140
106-47-8	4-Chloroaniline	50	31.6	63	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	42.5	85	40-140
111-44-4	bis(2-Chloroethyl)ether	50	40.6	81	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	44.7	89	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	39.5	79	40-140
122-66-7	1,2-Diphenylhydrazine	50	42.4	85	40-140
121-14-2	2,4-Dinitrotoluene	50	42.8	86	40-140
606-20-2	2,6-Dinitrotoluene	50	42.5	85	40-140
91-94-1	3,3'-Dichlorobenzidine	50	31.6	63	40-140
132-64-9	Dibenzofuran	50	38.6	77	40-140
84-74-2	Di-n-butyl phthalate	50	43.2	86	40-140
117-84-0	Di-n-octyl phthalate	50	37.8	76	40-140
84-66-2	Diethyl phthalate	50	40.5	81	40-140
131-11-3	Dimethyl phthalate	50	41.4	83	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	40.8	82	40-140
118-74-1	Hexachlorobenzene	50	41.6	83	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-BS	F56441.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	23.1	46	40-140
67-72-1	Hexachloroethane	50	25.5	51	40-140
78-59-1	Isophorone	50	39.7	79	40-140
88-74-4	2-Nitroaniline	50	42.7	85	40-140
99-09-2	3-Nitroaniline	50	38.7	77	40-140
100-01-6	4-Nitroaniline	50	39.7	79	40-140
98-95-3	Nitrobenzene	50	39.9	80	40-140
62-75-9	n-Nitrosodimethylamine	50	26.4	53	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	41.0	82	40-140
86-30-6	N-Nitrosodiphenylamine	50	99.0	198* b	40-140
110-86-1	Pyridine	50	24.5	49	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	51%	15-110%
4165-62-2	Phenol-d5	36%	15-110%
118-79-6	2,4,6-Tribromophenol	81%	15-110%
4165-60-0	Nitrobenzene-d5	78%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29852-BS	W3458.D	1	08/01/12	KR	07/30/12	OP29852	MSW160

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	37.7	75	40-140
208-96-8	Acenaphthylene	50	32.2	64	40-140
120-12-7	Anthracene	50	44.5	89	40-140
56-55-3	Benzo(a)anthracene	50	49.0	98	40-140
50-32-8	Benzo(a)pyrene	50	40.1	80	40-140
205-99-2	Benzo(b)fluoranthene	50	56.2	112	40-140
191-24-2	Benzo(g,h,i)perylene	50	54.2	108	40-140
207-08-9	Benzo(k)fluoranthene	50	50.1	100	40-140
218-01-9	Chrysene	50	41.0	82	40-140
53-70-3	Dibenzo(a,h)anthracene	50	55.8	112	40-140
206-44-0	Fluoranthene	50	48.3	97	40-140
86-73-7	Fluorene	50	44.1	88	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	55.8	112	40-140
90-12-0	1-Methylnaphthalene	50	28.8	58	40-140
91-57-6	2-Methylnaphthalene	50	35.9	72	40-140
91-20-3	Naphthalene	50	37.1	74	40-140
85-01-8	Phenanthrene	50	43.5	87	40-140
129-00-0	Pyrene	50	46.9	94	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	83%	30-130%
321-60-8	2-Fluorobiphenyl	71%	30-130%
1718-51-0	Terphenyl-d14	120%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-MS	F56442.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
OP29851-MSD	F56443.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
MC12669-1	F56444.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

7.3.1

7

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		101	38.3	38	39.7	38	4	30-130/20
95-57-8	2-Chlorophenol	ND		101	71.8	71	74.9	71	4	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		101	74.5	74	79.6	76	7	30-130/20
120-83-2	2,4-Dichlorophenol	ND		101	77.0	76	78.3	74	2	30-130/20
105-67-9	2,4-Dimethylphenol	ND		101	71.7	71	70.8	67	1	30-130/20
51-28-5	2,4-Dinitrophenol	ND		101	78.2	77	79.7	76	2	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		101	87.4	87	92.5	88	6	30-130/20
95-48-7	2-Methylphenol	ND		101	64.2	64	73.8	70	14	30-130/20
	3&4-Methylphenol	ND		202	59.5	29* a	72.7	35	20	30-130/20
88-75-5	2-Nitrophenol	ND		101	79.4	79	82.9	79	4	30-130/20
100-02-7	4-Nitrophenol	ND		101	38.2	38	40.6	39	6	30-130/20
87-86-5	Pentachlorophenol	ND		101	82.0	81	85.3	81	4	30-130/20
108-95-2	Phenol	ND		101	36.3	36	48.2	46	28* b	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		101	79.4	79	80.6	77	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		101	82.3	81	83.2	79	1	30-130/20
62-53-3	Aniline	ND		50.5	18.5	37* a	17.5	33* a	6	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50.5	41.4	82	42.1	80	2	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50.5	43.4	86	43.6	83	0	40-140/20
100-51-6	Benzyl Alcobol	ND		50.5	34.9	69	36.1	69	3	40-140/20
91-58-7	2-Chloronaphthalene	ND		50.5	42.0	83	42.3	80	1	40-140/20
106-47-8	4-Chloroaniline	ND		50.5	29.0	57	27.0	51	7	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50.5	43.0	85	43.7	83	2	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50.5	42.4	84	42.9	82	1	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50.5	47.7	94	47.9	91	0	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50.5	41.1	81	41.9	80	2	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50.5	40.7	81	41.8	79	3	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50.5	43.9	87	43.8	83	0	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50.5	41.9	83	42.3	80	1	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50.5	22.0	44	16.6	32* a	28* b	40-140/20
132-64-9	Dibenzofuran	ND		50.5	39.1	77	40.0	76	2	40-140/20
84-74-2	Di-n-butyl phthalate	0.66	J	50.5	40.4	79	41.6	78	3	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50.5	32.8	65	34.5	66	5	40-140/20
84-66-2	Diethyl phthalate	ND		50.5	40.2	80	40.3	77	0	40-140/20
131-11-3	Dimethyl phthalate	ND		50.5	42.2	84	42.3	80	0	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	0.67	J	50.5	39.5	77	40.3	75	2	40-140/20
118-74-1	Hexachlorobenzene	ND		50.5	39.3	78	40.2	76	2	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29851-MS	F56442.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
OP29851-MSD	F56443.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686
MC12669-1	F56444.D	1	08/01/12	KR	07/30/12	OP29851	MSF2686

The QC reported here applies to the following samples: Method: SW846 8270C

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50.5	24.4	48	25.5	48	4	40-140/20
67-72-1	Hexachloroethane	ND		50.5	30.0	59	30.5	58	2	40-140/20
78-59-1	Isophorone	ND		50.5	41.4	82	40.8	78	1	40-140/20
88-74-4	2-Nitroaniline	ND		50.5	43.2	86	43.6	83	1	40-140/20
99-09-2	3-Nitroaniline	ND		50.5	32.1	64	31.3	59	3	40-140/20
100-01-6	4-Nitroaniline	ND		50.5	38.7	77	38.8	74	0	40-140/20
98-95-3	Nitrobenzene	ND		50.5	41.8	83	41.4	79	1	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50.5	26.4	52	26.8	51	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50.5	42.8	85	44.0	84	3	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50.5	41.6	82	42.6	81	2	40-140/20
110-86-1	Pyridine	ND		50.5	24.0	48	24.0	46	0	40-140/20

CAS No.	Surrogate Recoverics	MS	MSD	MC12669-1	Limits
367-12-4	2-Fluorophenol	49%	51%	44%	15-110%
4165-62-2	Phenol-d5	34%	43%	32%	15-110%
118-79-6	2,4,6-Tribromophenol	77%	75%	72%	15-110%
4165-60-0	Nitrobenzene-d5	80%	78%	74%	30-130%
321-60-8	2-Fluorobiphenyl	74%	72%	69%	30-130%
1718-51-0	Terphenyl-d14	70%	74%	70%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29852-MS	W3459.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
OP29852-MSD	W3460.D	1	08/01/12	KR	07/30/12	OP29852	MSW160
MC12669-1	W3461.D	1	08/01/12	KR	07/30/12	OP29852	MSW160

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	40.3	81	39.4	78	2	40-140/20
208-96-8	Acenaphthylene	ND		50	32.5	65	31.4	62	3	40-140/20
120-12-7	Anthracene	ND		50	47.3	95	46.0	91	3	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	46.1	92	46.0	91	0	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	34.8	70	34.0	67	2	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	45.3	91	44.2	88	2	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	47.0	94	46.0	91	2	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	43.4	87	42.5	84	2	40-140/20
218-01-9	Chrysene	ND		50	39.1	78	39.6	78	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	47.9	96	46.9	93	2	40-140/20
206-44-0	Fluoranthene	ND		50	49.3	99	48.6	96	1	40-140/20
86-73-7	Fluorene	ND		50	44.9	90	43.7	87	3	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	47.6	95	46.6	92	2	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	37.7	75	35.9	71	5	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	39.2	78	38.6	76	2	40-140/20
91-20-3	Naphthalene	ND		50	39.2	78	38.5	76	2	40-140/20
85-01-8	Phenanthrene	0.025	J	50	45.7	91	44.8	89	2	40-140/20
129-00-0	Pyrene	ND		50	47.6	95	47.0	93	1	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12669-1	Limits
4165-60-0	Nitrobenzene-d5	83%	81%	78%	30-130%
321-60-8	2-Fluorobiphenyl	73%	72%	66%	30-130%
1718-51-0	Terphenyl-d14	88%	94%	91%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Check Std:	MSF2686-CC2682	Injection Date:	08/01/12
Lab File ID:	F56432.D	Injection Time:	16:55
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	396038	4.03	1470993	5.02	937880	6.45	1685742	7.81	1560012	10.58	1500656	12.04
Upper Limit [a]	792076	4.53	2941986	5.52	1875760	6.95	3371484	8.31	3120024	11.08	3001312	12.54
Lower Limit [b]	198019	3.53	735497	4.52	468940	5.95	842871	7.31	780006	10.08	750328	11.54

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
OP29875-MB	366584	4.03	1328455	5.02	838298	6.45	1508235	7.81	1414817	10.58	1552688	12.04
OP29875-BS	384465	4.04	1424642	5.02	886744	6.45	1616488	7.81	1456310	10.58	1607347	12.04
OP29875-MS	417280	4.03	1550526	5.02	973677	6.45	1790464	7.81	1637363	10.58	1776408	12.04
OP29875-MSD	432643	4.03	1582469	5.02	1001296	6.45	1828931	7.81	1711265	10.58	1834823	12.05
MC12689-2	406441	4.03	1517127	5.02	937258	6.45	1702252	7.81	1582096	10.58	1728622	12.04
ZZZZZZ	419477	4.03	1532290	5.02	968602	6.45	1754812	7.81	1580591	10.58	1763150	12.04
OP29851-MB	439424	4.03	1621747	5.02	1027544	6.45	1873670	7.81	1759576	10.58	2041926	12.05
OP29851-BS	453385	4.04	1664893	5.02	1007605	6.45	1751632	7.81	1705166	10.59	1844545	12.05
OP29851-MS	457874	4.03	1679016	5.02	1037675	6.45	1887300	7.81	1672038	10.58	1963060	12.04
OP29851-MSD	453934	4.03	1697681	5.02	1040756	6.45	1869806	7.81	1680157	10.58	1975166	12.05
MC12669-1	440158	4.04	1611538	5.02	1014645	6.45	1835041	7.81	1736269	10.58	2084361	12.04
ZZZZZZ	830684*	4.03	3024535*	5.02	1905034*	6.45	3451768*	7.81	3153837*	10.59	3751440*	12.05
MC12669-2	443899	4.03	1693513	5.02	1044245	6.45	1914001	7.81	1807603	10.58	2282492	12.04
MC12669-3	436663	4.03	1633315	5.02	1017678	6.45	1897914	7.81	1739571	10.58	2143780	12.05
MC12669-4	434995	4.03	1642948	5.02	1008613	6.45	1879878	7.81	1733376	10.58	2136174	12.04
MC12669-5	435975	4.03	1634942	5.02	1036238	6.45	1903095	7.81	1820744	10.58	2197981	12.05
MC12669-6	447098	4.03	1649842	5.02	1030065	6.45	1890968	7.81	1773828	10.58	2211971	12.05
ZZZZZZ	428234	4.03	1615834	5.02	1022585	6.45	1852753	7.81	1740856	10.58	2122372	12.05
ZZZZZZ	437729	4.03	1667269	5.02	1044184	6.45	1878861	7.81	1781925	10.58	2159653	12.05
ZZZZZZ	408450	4.03	1529547	5.02	953070	6.45	1746846	7.81	1612473	10.58	2108863	12.04
ZZZZZZ	392295	4.03	1450605	5.02	895322	6.45	1626976	7.81	1532063	10.58	1955240	12.05
ZZZZZZ	471737	4.03	176930I	5.02	1115704	6.45	2044141	7.81	1874798	10.58	2074033	12.05
ZZZZZZ	447126	4.03	1667434	5.02	1052090	6.45	1901179	7.81	1791960	10.58	2020432	12.05
ZZZZZZ	416191	4.04	1510160	5.02	952036	6.45	1683659	7.81	1552712	10.58	1741656	12.04
ZZZZZZ	417823	4.03	1553726	5.02	972101	6.45	1802537	7.81	1679102	10.58	1851474	12.05
ZZZZZZ	419313	4.03	1599268	5.02	1010619	6.45	1857096	7.81	1719775	10.58	1946094	12.05
ZZZZZZ	413202	4.03	1538762	5.02	962396	6.45	1768041	7.81	1654173	10.58	1893071	12.05

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

Semivolatile Internal Standard Area Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2686-CC2682	Injection Date:	08/01/12
Lab File ID:	F56432.D	Injection Time:	16:55
Instrument ID:	GCMSF	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

(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: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW159-CC138	Injection Date:	08/01/12
Lab File ID:	W3455.D	Injection Time:	07:44
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	374895	3.85	1438243	4.84	889626	6.26	1697146	7.60	2047395	10.50	1836559	12.07
Upper Limit [a]	749790	4.35	2876486	5.34	1779252	6.76	3394292	8.10	4094790	11.00	3673118	12.57
Lower Limit [b]	187448	3.35	719122	4.34	444813	5.76	848573	7.10	1023698	10.00	918280	11.57

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
OP29852-MB	951369[c]	3.85	3639166[c]	4.83	2068818[c]	6.26	3442895[c]	7.60	3487828[c]	10.37	5172874[c]	11.83
OP29852-BS	999695[c]	3.85	3728157[c]	4.84	2125311[c]	6.26	3703972[c]	7.60	3586644[c]	10.38	4755558[c]	11.83
OP29852-MS	1030049[c]	3.85	3883111[c]	4.83	2191252[c]	6.26	3594302[c]	7.60	3584983[c]	10.38	5057958[c]	11.83
OP29852-MSD	1025984[c]	3.85	3839198[c]	4.83	2171069[c]	6.26	3544760[c]	7.60	3524651[c]	10.38	5132476[c]	11.83
MC12669-1	873554[c]	3.85	3358062[c]	4.83	1932021[c]	6.26	3259325[c]	7.60	3350262[c]	10.37	5117040[c]	11.83
ZZZZZZ	912128[c]	3.85	3463380[c]	4.83	1980804[c]	6.26	3320236[c]	7.59	3426313[c]	10.37	5159316[c]	11.83
MC12669-2	900723[c]	3.85	3430794[c]	4.83	1963517[c]	6.26	3279552[c]	7.60	3366934[c]	10.37	5415724[c]	11.83
OP29853-MB	305893	3.85	1152255	4.83	694725	6.26	1256323	7.59	1488198	10.49	1546998	12.06
OP29853-BS	318312	3.85	1174779	4.83	712241	6.26	1368519	7.60	1538658	10.49	1401554	12.07
ZZZZZZ	682164	3.85	2490826	4.84	1593486	6.26	2887769	7.60	3611302	10.50	3740884*	12.07
MC12669-3	848972[c]	3.85	3267315[c]	4.83	1865953[c]	6.26	3140745[c]	7.59	3253037[c]	10.37	5154364[c]	11.83
MC12669-4	912101[c]	3.85	3466787[c]	4.83	1976349[c]	6.26	3323898[c]	7.59	3377925[c]	10.37	5180070[c]	11.83
MC12669-5	884513[c]	3.85	3414871[c]	4.83	1956725[c]	6.26	3240834[c]	7.59	3390632[c]	10.37	5231854[c]	11.83
MC12669-6	941346[c]	3.85	3554753[c]	4.83	1997934[c]	6.26	3316822[c]	7.59	3399571[c]	10.37	5493769[c]	11.83
ZZZZZZ	896448[c]	3.85	2787011[c]	4.84	1234711[c]	6.29	2946132[c]	7.64	3293771[c]	10.38	4335380[c]	11.83
ZZZZZZ	765517*	3.85	2960072*	4.83	1699421	6.26	2840253	7.59	2906774	10.37	4096803*	11.83

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.
(c) Internal standard spiked at SIM concentration.

7.4.2

7

Semivolatile Surrogate Recovery Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12669-1	F56444.D	44.0	32.0	72.0	74.0	69.0	70.0
MC12669-2	F56447.D	45.0	31.0	70.0	73.0	68.0	85.0
MC12669-3	F56448.D	47.0	34.0	70.0	75.0	69.0	89.0
MC12669-4	F56449.D	46.0	33.0	72.0	75.0	72.0	90.0
MC12669-5	F56450.D	47.0	32.0	72.0	73.0	69.0	85.0
MC12669-6	F56451.D	49.0	35.0	70.0	77.0	72.0	84.0
OP29851-BS	F56441.D	51.0	36.0	81.0	78.0	72.0	92.0
OP29851-MB	F56440.D	44.0	31.0	70.0	76.0	68.0	89.0
OP29851-MS	F56442.D	49.0	34.0	77.0	80.0	74.0	70.0
OP29851-MSD	F56443.D	51.0	43.0	75.0	78.0	72.0	74.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12669-1	W3461.D	78.0	66.0	91.0
MC12669-2	W3463.D	79.0	67.0	112.0
MC12669-3	W3473.D	79.0	67.0	112.0
MC12669-4	W3474.D	81.0	70.0	116.0
MC12669-5	W3475.D	80.0	68.0	114.0
MC12669-6	W3476.D	80.0	70.0	109.0
OP29852-BS	W3458.D	83.0	71.0	120.0
OP29852-MB	W3457.D	79.0	68.0	114.0
OP29852-MS	W3459.D	83.0	73.0	88.0
OP29852-MSD	W3460.D	81.0	72.0	94.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MB	BB43070.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6, MC12669-8

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	99%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	36-173%

Blank Spike Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-BS	BB43071.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6, MC12669-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.047	66	60-140
106-93-4	1,2-Dibromoethane	0.071	0.052	73	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	75%	36-173%
460-00-4	Bromofluorobenzene (S)	73%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Projeet: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File 1D	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MS	BB43072.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
OP29882-MSD	BB43073.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
MC12669-1	BB43074.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12669-1, MC12669-2, MC12669-3, MC12669-4, MC12669-5, MC12669-6, MC12669-8

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.0702	0.078	111	0.076	112	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.0702	0.071	101	0.073	107	3	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12669-1	Limits
460-00-4	Bromofluorohenzene (S)	127%	118%	97%	36-173%
460-00-4	Bromofluorobenzene (S)	127%	123%	98%	36-173%

8.3.1

8

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12669-1	BB43074.D	97.0	98.0
MC12669-2	BB43075.D	92.0	94.0
MC12669-3	BB43076.D	94.0	95.0
MC12669-4	BB43077.D	82.0	89.0
MC12669-5	BB43078.D	106.0	110.0
MC12669-6	BB43079.D	101.0	104.0
MC12669-8	BB43081.D	85.0	92.0
OP29882-BS	BB43071.D	75.0	73.0
OP29882-MB	BB43070.D	99.0	95.0
OP29882-MS	BB43072.D	127.0	127.0
OP29882-MSD	BB43073.D	118.0	123.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43069.D	Injection Time:	01:14
Instrument ID:	GCBB	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.91	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP29882-MB	BB43070.D	08/04/12	01:40	3.91	3.80
OP29882-BS	BB43071.D	08/04/12	02:06	3.91	3.80
OP29882-MS	BB43072.D	08/04/12	02:32	3.91	3.80
OP29882-MSD	BB43073.D	08/04/12	02:59	3.91	3.80
MC12669-1	BB43074.D	08/04/12	03:26	3.91	3.80
MC12669-2	BB43075.D	08/04/12	03:52	3.91	3.80
MC12669-3	BB43076.D	08/04/12	04:18	3.91	3.80
MC12669-4	BB43077.D	08/04/12	04:45	3.91	3.80
MC12669-5	BB43078.D	08/04/12	05:11	3.91	3.80
MC12669-6	BB43079.D	08/04/12	05:38	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC12669
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43080.D	Injection Time:	06:04
Instrument ID:	GCBB	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.90	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12669-8	BB43081.D	08/04/12	06:31	3.92	3.80
ZZZZZZ	BB43082.D	08/04/12	06:57	3.91	3.80
ZZZZZZ	BB43083.D	08/04/12	07:24	3.90	3.80
ZZZZZZ	BB43084.D	08/04/12	07:50	3.91	3.80
ZZZZZZ	BB43085.D	08/04/12	08:16	3.90	3.80
ZZZZZZ	BB43086.D	08/04/12	08:42	3.90	3.80
ZZZZZZ	BB43087.D	08/04/12	09:09	3.90	3.80
ZZZZZZ	BB43088.D	08/04/12	09:35	3.91	3.80
ZZZZZZ	BB43089.D	08/04/12	10:02	3.91	3.80
ZZZZZZ	BB43090.D	08/04/12	10:28	3.91	3.80
GBB2630-ECC263B	BB43091.D	08/04/12	10:55	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12698

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/5/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW1-ROX-073012	MW2-ROX-073012
TB-073012-HCL	TB-073012-ST

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC and SVOC LCS/LCSD recoveries and SVOC LCS/LCSD RPDs were outside evaluation criteria. Sample MW2-ROX-073012 was diluted due to high levels of VOCs. Although not indicated in the laboratory case narrative, di-n-butyl phthalate was detected in the method blank. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, the initial calibration verification for aniline exceeded fifty percent difference (% D).

The cooler receipt form indicated samples were received by the laboratory at a temperature of 1.4ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29890-MB	SVOCs	Di-n-butyl phthalate	0.37 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW1-ROX-073012	SVOCs	Di-n-butyl phthalate	-	**U**
MW2-ROX-073012	SVOCs	Di-n-butyl phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2504-BS/BSD	VOCs	Acrolein	**188**/**182**	3	70-130/25
MSN2504-BS/BSD	VOCs	Acrylonitrile	**550**/**528**	4	70-130/25
MSN2504-BS/BSD	VOCs	Trichlorofluoromethane	74/**69**	7	70-130/25
OP29890-BS/BSD	SVOCs	3&4-Methylphenol	31/64	**69**	30-130/20
OP29890-BS/BSD	SVOCs	Aniline	**6**/**39**	**146**	40-140/20
OP29890-BS/BSD	SVOCs	4-Chloroaniline	**14**/72	**134**	40-140/20
OP29890-BS/BSD	SVOCs	3,3'-Dichlorobenzidine	**1**/81	**193**	40-140/20
OP29890-BS/BSD	SVOCs	3-Nitroaniline	44/85	**63**	40-140/20
OP29890-BS/BSD	SVOCs	Pyridine	**5**/53	**164**	40-140/20

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS/LCSD MSN2504-BS/BSD was associated with trip blank TB-073012-HCL. Trip blanks and equipment blanks are quality control samples and are not qualified. LCS samples are not qualified based on RPD alone, therefore, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW1-ROX-073012	VOCs	Trichlorofluoromethane	**UJ**
MW2-ROX-073012	VOCs	Trichlorofluoromethane	**UJ**
MW1-ROX-073012	SVOCs	Aniline	**UJ**
MW1-ROX-073012	SVOCs	4-Chloroaniline	**UJ**
MW1-ROX-073012	SVOCs	3,3'-Dichlorobenzidine	**UJ**
MW1-ROX-073012	SVOCs	Pyridine	**UJ**
MW2-ROX-073012	SVOCs	Aniline	**UJ**
MW2-ROX-073012	SVOCs	4-Chloroaniline	**UJ**
MW2-ROX-073012	SVOCs	3,3'-Dichlorobenzidine	**UJ**

Sample ID	Parameter	Analyte	Qualification
MW2-ROX-073012	SVOCs	Pyridine	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

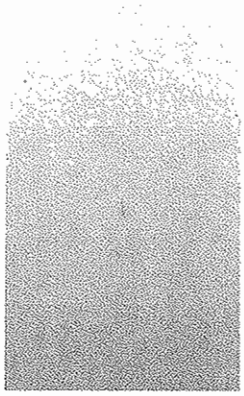
12.0 Additional Qualifications

Were additional qualifications applied?

No

New England ACCUTEST LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12698

Sampling Date: 07/30/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **67**

Reviewed on 9/5/12

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Table of Contents

Sections: 1 2 3 4 5 6 7 8

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **7**
4.1: MC12698-1: MW1-ROX-073012 8
4.2: MC12698-2: MW2-ROX-073012 15
4.3: MC12698-3: TB-073012-HCL 22
4.4: MC12698-4: TB-073012-ST 25
Section 5: Misc. Forms **26**
5.1: Chain of Custody 27
5.2: Sample Tracking Chronicle 29
5.3: Internal Chain of Custody 30
Section 6: GC/MS Volatiles - QC Data Summaries **31**
6.1: Method Blank Summary 32
6.2: Blank Spike/Blank Spike Duplicate Summary 35
6.3: Matrix Spike/Matrix Spike Duplicate Summary 38
6.4: Internal Standard Area Summaries 41
6.5: Surrogate Recovery Summaries 42
Section 7: GC/MS Semi-volatiles - QC Data Summaries **43**
7.1: Method Blank Summary 44
7.2: Blank Spike/Blank Spike Duplicate Summary 47
7.3: Matrix Spike/Matrix Spike Duplicate Summary 50
7.4: Internal Standard Area Summaries 53
7.5: Surrogate Recovery Summaries 59
Section 8: GC Volatiles - QC Data Summaries **61**
8.1: Method Blank Summary 62
8.2: Blank Spike Summary 63
8.3: Matrix Spike/Matrix Spike Duplicate Summary 64
8.4: Surrogate Recovery Summaries 65
8.5: GC Surrogate Retention Time Summaries 66

Sample Summary

Shell Oil

Job No: MC12698

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12698-1	07/30/12	12:45	KHNM	07/31/12	AQ	Ground Water	MW1-ROX-073012
MC12698-2	07/30/12	13:55	KHNM	07/31/12	AQ	Ground Water	MW2-ROX-073012
MC12698-3	07/30/12	00:00	KHNM	07/31/12	AQ	Trip Blank Water	TB-073012-HCL
MC12698-4	07/30/12	00:00	KHNM	07/31/12	AQ	Trip Blank Water	TB-073012-ST

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12698
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/17/2012 3:17:33 PM

2 Sample(s), 2 Trip Blank(s) and 0 Field Blank(s) were collected on 07/30/2012 and were received at Accutest on 07/31/2012 properly preserved, at 1.4 Deg. C and intact. These Samples received an Accutest job number of MC12698. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** MSN2504

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12872-2MS, MC12872-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSN2504-BS/BSD for Acrolein, Acrylonitrile are outside control limits. Associated samples are non-detect for this compound.
- MC12872-2MS/MSD for 2-Butanone (MEK), Acetone, Vinyl Acetate are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12872-2MS for Vinyl Acetate are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12872-2MS/MSD: The pH of the sample aliquot for VOA analysis was >2 at time of analysis.
- MC12872-2MS/MSD for Acrylonitrile, Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- MSN2504-BSD for Trichlorofluoromethane are outside control limits. Associated samples are non-detect for this compound. Blank Spike meets program technical requirements.
- Continuing calibration check standard MSN2504-CC2468 for acrolein exceed 50% Difference (results biased high). Samples are non-detect for this compound.
- MC12872-2MSD for Trichlorofluoromethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- Initial calibration verification MSN2468-ICV2468 for acetone exceeds 50% Difference. Acetone is within criteria in continuing calibration check MSN2504-CC2468.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29890

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12689-6MS, MC12689-6MSD were used as the QC samples indicated.
- OP29890-BS/BSD for Aniline are outside control limits. Blank Spike meets program technical requirements.
- OP29890-MS for Pyridine are outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- OP29890-MS/MSD for Aniline are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPRPD(s) for OP29890-MSD for Aniline, Pyridine are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD(s) for OP29890-BSD for 3-Nitroaniline, Pyridine, 3,3'-Dichlorobenzidine, 4-Chloroaniline, Aniline, 3&4-Methylphenol: Outside control limits. Blank Spike meets program technical requirements.
- Initial calibration verification MSF2682-ICV2682 for Aniline exceeds 50% Difference. Aniline is within criteria in continuing calibration check MSF2687-CC2682, MSF2688-CC2682.
- OP29890-BS for Pyridine, 3,3'-Dichlorobenzidine, 4-Chloroaniline: Outside control limits. Blank Spike meets program technical requirements.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29891

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12689-7MS, MC12689-7MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29882

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12669-1MS, MC12669-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12698).

Summary of Hits

Job Number: MC12698
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 07/30/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12698-1	MW1-ROX-073012					
Methyl Tert Butyl Ether		2.2	1.0	0.41	ug/l	SW846 8260B
Di-n-butyl phthalate		0.43 J	5.3	0.38	ug/l	SW846 8270C
Diethyl phthalate		0.32 J	5.3	0.20	ug/l	SW846 8270C
Naphthalene		0.10 J	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene		0.025 J	0.053	0.013	ug/l	SW846 8270C BY SIM
MC12698-2	MW2-ROX-073012					
Benzene		10.0	0.50	0.24	ug/l	SW846 8260B
sec-Butylbenzene		7.8	5.0	0.55	ug/l	SW846 8260B
tert-Butylbenzene		1.0 J	5.0	0.64	ug/l	SW846 8260B
Ethylbenzene		952	100	51	ug/l	SW846 8260B
Isopropylbenzene		81.8	5.0	0.50	ug/l	SW846 8260B
p-Isopropyltoluene		9.0	5.0	0.57	ug/l	SW846 8260B
n-Propylbenzene		116	5.0	0.58	ug/l	SW846 8260B
Tolnene		37.4	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		338	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		135	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene		1270	100	73	ug/l	SW846 8260B
o-Xylene		90.6	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		1340	100	58	ug/l	SW846 8260B
2,4-Dimethylphenol		4.5 J	11	2.9	ug/l	SW846 8270C
Di-n-butyl phthalate		0.47 J	5.3	0.38	ug/l	SW846 8270C
Diethyl phthalate		0.36 J	5.3	0.20	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.59 J	2.1	0.40	ug/l	SW846 8270C
Acenaphthene		0.051 J	0.11	0.014	ug/l	SW846 8270C BY SIM
1-Methylnaphthaleue		9.7	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		22.9	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene		55.4	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene		0.040 J	0.053	0.013	ug/l	SW846 8270C BY SIM
Pyrene		0.039 J	0.11	0.038	ug/l	SW846 8270C BY SIM
MC12698-3	TB-073012-HCL					
No hits reported in this sample.						
MC12698-4	TB-073012-ST					
No hits reported in this sample.						

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxaua, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66601.D	1	08/13/12	JP	n/a	n/a	MSN2504
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbeuzeue	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethaue	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochlorouethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethaue	ND	2.0	1.7	ng/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	traus-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

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

Report of Analysis

Client Sample ID:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Aveuue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Etbylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorohutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.2	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroetbane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Tricbloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND UJ	1.0	0.29	ug/l	UJ
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

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

Report of Analysis

Client Sample ID:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56514.D	1	08/03/12	KR	08/01/12	OP29890	MSF2688
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND	11	0.80	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND UJ	11	0.67	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND UJ	5.3	0.95	ug/l	UJ
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.43~~ U	5.3	0.38	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.32	5.3	0.20	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ng/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND UJ	11	5.3	ug/l	UJ

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Flnorophenol	35%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	65%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

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

Report of Analysis

Client Sample ID:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3548.D	1	08/02/12	KR	08/01/12	OP29891	MSW165
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluorantbene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.055	ug/l	
91-20-3	Naphthalene	0.10	0.11	0.038	ug/l	J
85-01-8	Phenanthrene	0.025	0.053	0.013	ug/l	J
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		30-130%
321-60-8	2-Fluorobiphenyl	64%		30-130%
1718-51-0	Terphenyl-d14	117%		30-130%

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:	MW1-ROX-073012		
Lab Sample ID:	MC12698-1	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43082.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.1 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	131%		36-173%
460-00-4	Bromofluorobenzene (S)	136%		36-173%

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:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66602.D	1	08/13/12	JP	n/a	n/a	MSN2504
Run #2	N66605.D	100	08/13/12	JP	n/a	n/a	MSN2504

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	10.0	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ng/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	7.8	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	1.0	5.0	0.64	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	952 [a]	100	51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	81.8	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	9.0	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	116	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	37.4	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ng/l	
75-69-4	Trichlorofluoromethane	ND UJ	1.0	0.29	ug/l	UJ
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbeuzene	338	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	135	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	1270 [a]	100	73	ug/l	
95-47-6	o-Xylene	90.6	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	1340 [a]	100	58	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 fonnd in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%	90%	70-130%
2037-26-5	Toluene-D8	101%	97%	70-130%
460-00-4	4-Bromofluorobenzene	92%	96%	70-130%

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

(a) Result is from Run# 2

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:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56515.D	1	08/03/12	KR	08/01/12	OP29890	MSF2688
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	4.5	11	2.9	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND	11	0.80	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND UJ	11	0.67	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ng/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ng/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND UJ	5.3	0.95	ug/l	UJ
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.47~~ U	5.3	0.38	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.36	5.3	0.20	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.59	2.1	0.40	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND UCJ	11	5.3	ug/l	UCJ

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		15-110%
4165-62-2	Phenol-d5	26%		15-110%
118-79-6	2,4,6-Tribromophenol	70%		15-110%
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	61%		30-130%
1718-51-0	Terphenyl-d14	87%		30-130%

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

Report of Analysis

Client Sample ID:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3549.D	1	08/02/12	KR	08/01/12	OP29891	MSW165
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.051	0.11	0.014	ug/l	J
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ng/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	9.7	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	22.9	0.21	0.055	ug/l	
91-20-3	Naphthalene	55.4	0.11	0.038	ug/l	
85-01-8	Phenanthrene	0.040	0.053	0.013	ug/l	J
129-00-0	Pyrene	0.039	0.11	0.038	ug/l	J

CAS No.	Surrogate Recoverics	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorohiphenyl	60%		30-130%
1718-51-0	Terphenyl-d14	115%		30-130%

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

Report of Analysis

Client Sample ID:	MW2-ROX-073012		
Lab Sample ID:	MC12698-2	Date Sampled:	07/30/12
Matrix:	AQ - Ground Water	Date Received:	07/31/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43083.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	120%		36-173%
460-00-4	Bromofluorobenzene (S)	122%		36-173%

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:	TB-073012-HCL		
Lab Sample ID:	MC12698-3	Date Sampled:	07/30/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66594.D	1	08/13/12	JP	n/a	n/a	MSN2504
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodiflnoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-073012-HCL		
Lab Sample ID:	MC12698-3	Date Sampled:	07/30/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Bntyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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 = Iudicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-073012-HCL		
Lab Sample ID:	MC12698-3	Date Sampled:	07/30/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/31/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ng/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:	TB-073012-ST		
Lab Sample ID:	MC12698-4	Date Sampled:	07/30/12
Matrix:	AQ - Trip Blank Water	Date Received:	07/31/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB43084.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
Run #2							

	Initial Volume	Final Volume
Run #1	34.7 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	103%		36-173%
460-00-4	Bromofluorobenzene (S)	105%		36-173%

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 England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

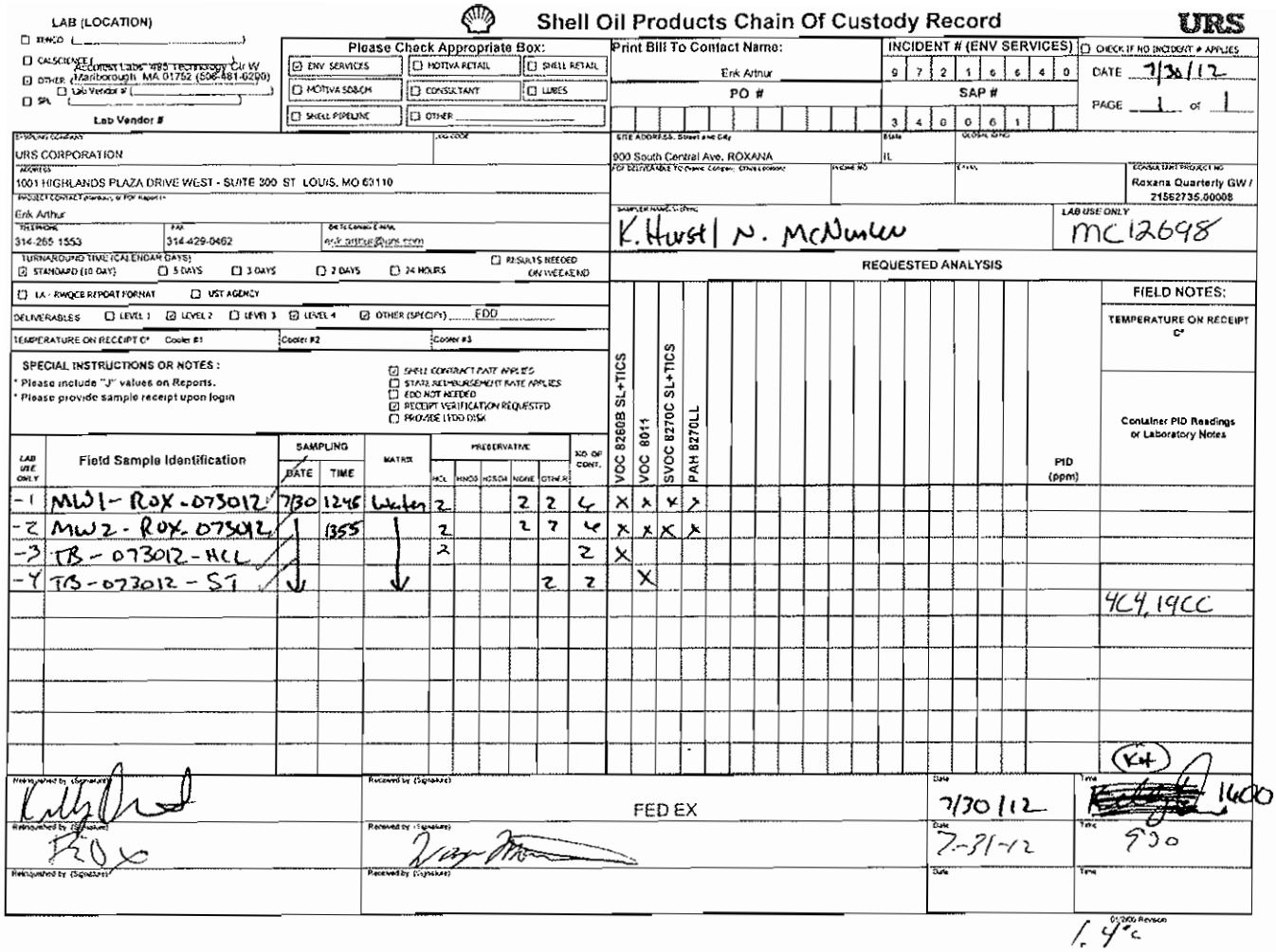
Includes the following where applicable:

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

LAB (LOCATION)

☐ RENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs 485 Technology Ctr W Marlborough MA 01752 (508-481-6200))
☐ Lab Vendor # (_____)
☐ SPL (_____)

Lab Vendor #



Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 7/30/12

PAGE 1 of 1

SAMPLING COMPANY: URS CORPORATION

LOG CODE:

SITE ADDRESS: Street and City: 900 South Central Ave. ROXANA

State: IL

GLOBAL ID NO:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300 ST LOUIS, MO 63110

FOR DELIVERABLE TO (Name, Company, Office Location):

PHONE NO:

EMAIL:

CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562735.00008

PROJECT CONTACT (Manager, or PM Report): Erik Arthur

TELEPHONE: 314-265-1553

FAX: 314-429-0462

Bill To Contact E-MAIL: erik.arthur@urs.com

SAMPLER NAME(S) (Print): K. Hurst / N. McNunlen

LAB USE ONLY: MC12698

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	MW1-ROX-073012	7/30	1246	Water	2			2	2	4	X	X	X	X		
-2	MW2-ROX-073012	↓	1355	↓	2			2	2	4	X	X	X	X		
-3	TB-073012-HCL	↓		↓	2					2	X					
-4	TB-073012-ST	↓		↓					2	2		X				
																4C4, 19CC

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	7/30/12	~~[illegible]~~ 1600 (KH)
ROX	[signature]	7-31-12	930

01/2006 Revision

1.4°C

5.1

5

MC12698: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12698 Client: URS Immediata Client Services Action Required: No

Date / Time Received: 7/31/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL No. Coolers: 1 Airbill #'s:

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

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

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

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

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

Sample Integrity - Instructions	Y or 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

5.1

MC12698: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12698

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

5.2

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12698-1 Collected: 30-JUL-12 12:45 By: KHNM Received: 31-JUL-12 By: MW1-ROX-073012						
MC12698-1	SW846 8270C BY SIM	02-AUG-12 23:30	KR	01-AUG-12	SC	B8270SIMPAH
MC12698-1	SW846 8270C	03-AUG-12 02:54	KR	01-AUG-12	SC	AB8270SL+
MC12698-1	SW846 8011	04-AUG-12 06:57	CZ	01-AUG-12	BJ	V8011SL
MC12698-1	SW846 8260B	13-AUG-12 14:59	JP			V8260SL+
MC12698-2 Collected: 30-JUL-12 13:55 By: KHNM Received: 31-JUL-12 By: MW2-ROX-073012						
MC12698-2	SW846 8270C BY SIM	02-AUG-12 23:52	KR	01-AUG-12	SC	B8270SIMPAH
MC12698-2	SW846 8270C	03-AUG-12 03:16	KR	01-AUG-12	SC	AB8270SL+
MC12698-2	SW846 8011	04-AUG-12 07:24	CZ	01-AUG-12	BJ	V8011SL
MC12698-2	SW846 8260B	13-AUG-12 15:27	JP			V8260SL+
MC12698-2	SW846 8260B	13-AUG-12 16:52	JP			V8260SL+
MC12698-3 Collected: 30-JUL-12 00:00 By: KHNM Received: 31-JUL-12 By: TB-073012-HCL						
MC12698-3	SW846 8260B	13-AUG-12 11:42	JP			V8260SL+
MC12698-4 Collected: 30-JUL-12 00:00 By: KHNM Received: 31-JUL-12 By: TB-073012-ST						
MC12698-4	SW846 8011	04-AUG-12 07:50	CZ	01-AUG-12	BJ	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 07/31/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12698-1.2	Walk In Ref #22	Nick Krasinski	08/01/12 14:21	Retrieve from Storage
MC12698-1.2	Nick Krasinski		08/03/12 21:11	Depleted
MC12698-1.4	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12698-1.4	Bijan Jafari		08/24/12 10:20	Depleted
MC12698-1.5	VOC Ref #4	Jugal Patel	08/13/12 10:58	Retrieve from Storage
MC12698-1.5	Jugal Patel	GCMSN	08/13/12 10:58	Load on Instrument
MC12698-1.5	GCMSN	Jugal Patel	08/14/12 11:53	Unload from Instrument
MC12698-1.5	Jugal Patel	VOC Ref #4	08/14/12 11:53	Return to Storage
MC12698-2.2	Walk In Ref #22	Nick Krasinski	08/01/12 14:21	Retrieve from Storage
MC12698-2.2	Nick Krasinski		08/03/12 21:11	Depleted
MC12698-2.4	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12698-2.4	Bijan Jafari		08/24/12 10:20	Depleted
MC12698-2.5	VOC Ref #4	Jugal Patel	08/13/12 10:58	Retrieve from Storage
MC12698-2.5	Jugal Patel	GCMSN	08/13/12 10:58	Load on Instrument
MC12698-2.5	GCMSN	Jugal Patel	08/14/12 11:53	Unload from Instrument
MC12698-2.5	Jugal Patel	VOC Ref #4	08/14/12 11:53	Return to Storage
MC12698-3.1	VOC Ref #4	Jugal Patel	08/13/12 10:58	Retrieve from Storage
MC12698-3.1	Jugal Patel	GCMSN	08/13/12 10:58	Load on Instrument
MC12698-3.1	GCMSN	Jugal Patel	08/14/12 11:53	Unload from Instrument
MC12698-3.1	Jugal Patel	VOC Ref #4	08/14/12 11:53	Return to Storage
MC12698-4.1	VOC Ref #4	Bijan Jafari	08/01/12 11:40	Retrieve from Storage
MC12698-4.1	Bijan Jafari		08/24/12 10:20	Depleted

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-MB	N66593.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-MB	N66593.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ng/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Tricblorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

6.1.1

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-MB	N66593.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

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

6.1.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-BS	N66590.D	1	08/13/12	JP	n/a	n/a	MSN2504
MSN2504-BSD	N66591.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	41.5	83	41.6	83	0	70-130/25
107-02-8	Acrolein	250	470	188* a	455	182* a	3	70-130/25
107-13-1	Acrylonitrile	50	275	550* a	264	528* a	4	70-130/25
71-43-2	Benzene	50	48.7	97	46.8	94	4	70-130/25
108-86-1	Bromobenzene	50	47.8	96	49.3	99	3	70-130/25
74-97-5	Bromochloromethane	50	50.7	101	48.9	98	4	70-130/25
75-27-4	Bromodichloromethane	50	44.6	89	42.0	84	6	70-130/25
75-25-2	Bromoform	50	50.1	100	47.5	95	5	70-130/25
74-83-9	Bromomethane	50	56.3	113	60.9	122	8	70-130/25
78-93-3	2-Butanone (MEK)	50	54.1	108	53.2	106	2	70-130/25
104-51-8	n-Butylbenzene	50	49.5	99	50.0	100	1	70-130/25
135-98-8	sec-Butylbenzene	50	53.6	107	53.4	107	0	70-130/25
98-06-6	tert-Butylbenzene	50	47.6	95	47.7	95	0	70-130/25
75-15-0	Carbon disulfide	50	43.9	88	42.5	85	3	70-130/25
56-23-5	Carbon tetrachloride	50	43.2	86	41.1	82	5	70-130/25
108-90-7	Chlorobenzene	50	55.1	110	54.6	109	1	70-130/25
75-00-3	Chloroethane	50	53.8	108	51.0	102	5	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	49.6	99	47.8	96	4	70-130/25
67-66-3	Chloroform	50	44.8	90	42.9	86	4	70-130/25
74-87-3	Chloromethane	50	49.0	98	47.4	95	3	70-130/25
95-49-8	o-Chlorotoluene	50	47.9	96	47.9	96	0	70-130/25
106-43-4	p-Chlorotoluene	50	49.3	99	49.6	99	1	70-130/25
124-48-1	Dibromochloromethane	50	53.3	107	51.4	103	4	70-130/25
95-50-1	1,2-Dichlorobenzene	50	52.5	105	52.1	104	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	51.2	102	51.2	102	0	70-130/25
106-46-7	1,4-Dichlorobenzene	50	48.7	97	48.2	96	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	48.5	97	45.9	92	6	70-130/25
75-34-3	1,1-Dichloroethane	50	48.8	98	46.5	93	5	70-130/25
107-06-2	1,2-Dichloroethane	50	38.4	77	36.7	73	5	70-130/25
75-35-4	1,1-Dichloroethene	50	54.6	109	52.5	105	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.8	106	52.5	105	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	52.0	104	51.5	103	1	70-130/25
78-87-5	1,2-Dichloropropane	50	49.2	98	47.5	95	4	70-130/25
142-28-9	1,3-Dichloropropane	50	50.2	100	48.0	96	4	70-130/25
594-20-7	2,2-Dichloropropane	50	44.2	88	42.2	84	5	70-130/25
563-58-6	1,1-Dichloropropene	50	44.7	89	41.8	84	7	70-130/25

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-BS	N66590.D	1	08/13/12	JP	n/a	n/a	MSN2504
MSN2504-BSD	N66591.D	1	08/13/12	JP	n/a	n/a	MSN2504

6.2.1

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	49.3	99	47.7	95	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	44.2	88	43.2	86	2	70-130/25
123-91-1	1,4-Dioxane	250	262	105	247	99	6	70-130/25
97-63-2	Ethyl methacrylate	50	52.2	104	48.3	97	8	77-137/25
100-41-4	Ethylbenzene	50	49.2	98	48.3	97	2	70-130/25
87-68-3	Hexachlorobutadiene	50	45.5	91	46.0	92	1	70-130/25
591-78-6	2-Hexanone	50	50.9	102	49.4	99	3	70-130/25
98-82-8	Isopropylbenzene	50	51.1	102	51.3	103	0	70-130/25
99-87-6	p-Isopropyltoluene	50	50.8	102	50.9	102	0	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	47.6	95	45.5	91	5	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	49.5	99	46.4	93	6	70-130/25
74-95-3	Methylene bromide	50	50.1	100	46.8	94	7	70-130/25
75-09-2	Methylene chloride	50	50.7	101	48.9	98	4	70-130/25
103-65-1	n-Propylbenzene	50	53.2	106	53.2	106	0	70-130/25
100-42-5	Styrene	50	56.0	112	54.6	109	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	49.8	100	48.1	96	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	56.5	113	55.1	110	3	70-130/25
127-18-4	Tetrachloroethene	50	52.8	106	49.1	98	7	70-130/25
108-88-3	Toluene	50	48.5	97	47.2	94	3	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	47.3	95	46.5	93	2	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	47.1	94	46.3	93	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	42.5	85	40.7	81	4	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.8	96	46.2	92	3	70-130/25
79-01-6	Trichloroethene	50	44.4	89	43.3	87	3	70-130/25
75-69-4	Trichlorofluoromethane	50	37.1	74	34.7	69* b	7	70-130/25
96-18-4	1,2,3-Trichloropropane	50	50.1	100	48.5	97	3	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	47.4	95	47.2	94	0	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	45.7	91	45.3	91	1	70-130/25
108-05-4	Vinyl Acetate	50	60.8	122	58.0	116	5	70-130/25
75-01-4	Vinyl chloride	50	40.5	81	39.0	78	4	70-130/25
	m,p-Xylene	100	109	109	105	105	4	70-130/25
95-47-6	o-Xylene	50	58.7	117	56.6	113	4	70-130/25
1330-20-7	Xylene (total)	150	168	112	162	108	4	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Projeet: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2504-BS	N66590.D	1	08/13/12	JP	n/a	n/a	MSN2504
MSN2504-BSD	N66591.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	94%	93%	70-130%
2037-26-5	Toluene-D8	96%	95%	70-130%
460-00-4	4-Bromofluorobenzene	92%	94%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

6.2.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12872-2MS [a]	N66613.D	5	08/13/12	JP	n/a	n/a	MSN2504
MC12872-2MSD [a]	N66614.D	5	08/13/12	JP	n/a	n/a	MSN2504
MC12872-2	N66599.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	MC12872-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	418	167* [b]	420	168* [b]	0	70-130/30
107-02-8	Acrolein	ND		1250	2440	195* [c]	2320	186* [c]	5	70-130/30
107-13-1	Acrylonitrile	ND		250	1410	564* [c]	1420	568* [c]	1	70-130/30
71-43-2	Benzene	ND		250	247	99	239	96	3	70-130/30
108-86-1	Bromobenzene	ND		250	227	91	232	93	2	70-130/30
74-97-5	Bromochloromethane	ND		250	259	104	256	102	1	70-130/30
75-27-4	Bromodichloromethane	ND		250	217	87	206	82	5	70-130/30
75-25-2	Bromoform	ND		250	236	94	230	92	3	70-130/30
74-83-9	Bromomethane	ND		250	282	113	311	124	10	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	369	148* [b]	361	144* [b]	2	70-130/30
104-51-8	n-Butylbenzene	ND		250	237	95	239	96	1	70-130/30
135-98-8	sec-Butylbenzene	ND		250	260	104	259	104	0	70-130/30
98-06-6	tert-Butylbenzene	ND		250	228	91	228	91	0	70-130/30
75-15-0	Carbon disulfide	ND		250	232	93	216	86	7	70-130/30
56-23-5	Carbon tetrachloride	ND		250	200	80	195	78	3	70-130/30
108-90-7	Chlorobenzene	ND		250	275	110	266	106	3	70-130/30
75-00-3	Chloroethane	ND		250	291	116	273	109	6	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	259	104	248	99	4	70-130/30
67-66-3	Chloroform	ND		250	230	92	215	86	7	70-130/30
74-87-3	Chloromethane	ND		250	266	106	264	106	1	70-130/30
95-49-8	o-Chlorotoluene	ND		250	235	94	229	92	3	70-130/30
106-43-4	p-Chlorotoluene	ND		250	240	96	238	95	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	249	100	254	102	2	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	254	102	249	100	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	248	99	248	99	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	234	94	238	95	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	271	108	242	97	11	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	250	100	238	95	5	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	188	75	184	74	2	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	284	114	270	108	5	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	276	110	260	104	6	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	268	107	256	102	5	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	258	103	247	99	4	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	246	98	241	96	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	206	82	200	80	3	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	226	90	214	86	5	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12872-2MS [a]	N66613.D	5	08/13/12	JP	n/a	n/a	MSN2504
MC12872-2MSD [a]	N66614.D	5	08/13/12	JP	n/a	n/a	MSN2504
MC12872-2	N66599.D	1	08/13/12	JP	n/a	n/a	MSN2504

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Compound	MC12872-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	244	98	238	95	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	217	87	213	85	2	70-130/30
123-91-1	1,4-Dioxane	97.4		1250	1510	113	1670	126	10	70-130/30
97-63-2	Ethyl methacrylate	ND		250	267	107	256	102	4	72-139/30
100-41-4	Ethylbenzene	ND		250	242	97	232	93	4	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	195	78	201	80	3	70-130/30
591-78-6	2-Hexanone	ND		250	302	121	310	124	3	70-130/30
98-82-8	Isopropylbenzene	ND		250	245	98	240	96	2	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	242	97	242	97	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	232	93	228	91	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	269	108	270	108	0	70-130/30
74-95-3	Methylene bromide	ND		250	253	101	246	98	3	70-130/30
75-09-2	Methylene chloride	ND		250	263	105	248	99	6	70-130/30
103-65-1	n-Propylbenzene	ND		250	264	106	256	102	3	70-130/30
100-42-5	Styrene	ND		250	273	109	270	108	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	237	95	233	93	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	280	112	286	114	2	70-130/30
127-18-4	Tetrachloroethene	ND		250	256	102	237	95	8	70-130/30
108-88-3	Toluene	ND		250	252	101	238	95	6	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	213	85	222	89	4	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	209	84	220	88	5	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	209	84	195	78	7	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	249	100	243	97	2	70-130/30
79-01-6	Trichloroethene	ND		250	235	94	224	90	5	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	184	74	168	67* [b]	9	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	244	98	245	98	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	227	91	227	91	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	218	87	217	87	0	70-130/30
108-05-4	Vinyl Acetate	ND		250	333	133* [b]	316	126	5	70-130/30
75-01-4	Vinyl chloride	ND		250	218	87	206	82	6	70-130/30
	m,p-Xylene	ND		500	534	107	522	104	2	70-130/30
95-47-6	o-Xylene	ND		250	288	115	278	111	4	70-130/30
1330-20-7	Xylene (total)	ND		750	822	110	800	107	3	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12872-2MS [a]	N66613.D	5	08/I3/12	JP	n/a	n/a	MSN2504
MC12872-2MSD [a]	N666I4.D	5	08/13/12	JP	n/a	n/a	MSN2504
MC12872-2	N66599.D	1	08/13/I2	JP	n/a	n/a	MSN2504

6.3.1

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

MC12698-1, MC12698-2, MC12698-3

CAS No.	Surrogate Recoveries	MS	MSD	MC12872-2	Limits
1868-53-7	Dibromofluoromethane	93%	92%	97%	70-130%
2037-26-5	Tolnene-D8	97%	96%	95%	70-130%
460-00-4	4-Bromofluorobenzene	89%	90%	101%	70-130%

(a) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2504-CC2468	Injection Date:	08/13/12
Lab File ID:	N66589.D	Injection Time:	09:21
Instrument ID:	GCMSN	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	238882	9.02	396201	9.89	198432	13.14	187318	15.70	98642	6.56
Upper Limit [a]	477764	9.52	792402	10.39	396864	13.64	374636	16.20	197284	7.06
Lower Limit [b]	119441	8.52	198101	9.39	99216	12.64	93659	15.20	49321	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2504-BS	246596	9.02	419271	9.89	207123	13.14	198403	15.70	106845	6.56
MSN2504-BSD	247668	9.02	424941	9.89	208761	13.15	193860	15.70	94575	6.56
MSN2504-MB	234150	9.02	401321	9.89	193654	13.15	159466	15.71	88490	6.57
MC12698-3	226012	9.02	389051	9.89	182268	13.15	152839	15.70	86970	6.57
ZZZZZZ	222291	9.02	376126	9.89	179537	13.15	149114	15.71	88604	6.57
ZZZZZZ	210742	9.02	362924	9.89	172453	13.15	143577	15.71	67629	6.57
MC12872-2	203879	9.02	358715	9.89	170282	13.15	136893	15.71	82171	6.58
ZZZZZZ	192557	9.02	334805	9.89	160956	13.15	125530	15.70	87666	6.57
MC12698-1	202246	9.02	345221	9.89	164452	13.15	133264	15.70	76057	6.57
MC12698-2	220877	9.02	378687	9.89	210742	13.14	200074	15.70	67090	6.56
ZZZZZZ	255992	9.02	425144	9.89	202549	13.15	174959	15.71	92093	6.57
ZZZZZZ	230420	9.02	394052	9.89	191818	13.15	156853	15.70	106695	6.57
MC12698-2	237694	9.02	393339	9.89	193765	13.15	169395	15.70	97160	6.57
ZZZZZZ	228738	9.02	389996	9.89	188912	13.14	155544	15.71	78171	6.57
ZZZZZZ	214948	9.02	368466	9.89	175055	13.15	141717	15.70	96908	6.57
ZZZZZZ	215092	9.02	371651	9.89	176586	13.15	143153	15.70	89160	6.57
ZZZZZZ	208608	9.02	361887	9.89	171588	13.15	141449	15.70	87354	6.56
ZZZZZZ	200769	9.02	347202	9.89	165511	13.15	133951	15.70	70975	6.57
ZZZZZZ	204164	9.02	350299	9.89	169208	13.15	132778	15.70	75690	6.57
ZZZZZZ	200449	9.02	349515	9.89	163801	13.15	130761	15.71	85068	6.57
MC12872-2MS [c]	207881	9.02	362290	9.89	184893	13.14	181064	15.70	87308	6.56
MC12872-2MSD [c]	231072	9.02	395498	9.89	199083	13.15	188777	15.70	96029	6.56

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

(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) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

6.4.1

Volatile Surrogate Recovery Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12698-1	N66601.D	94.0	96.0	100.0
MC12698-2	N66605.D	90.0	97.0	96.0
MC12698-2	N66602.D	89.0	101.0	92.0
MC12698-3	N66594.D	96.0	95.0	99.0
MC12872-2MS	N66613.D	93.0	97.0	89.0
MC12872-2MSD	N66614.D	92.0	96.0	90.0
MSN2504-BS	N66590.D	94.0	96.0	92.0
MSN2504-BSD	N66591.D	93.0	95.0	94.0
MSN2504-MB	N66593.D	96.0	95.0	100.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-MB	F56476.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	0.37	5.0	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-MB	F56476.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	36%	15-110%
4165-62-2	Phenol-d5	28%	15-110%
118-79-6	2,4,6-Tribromophenol	74%	15-110%
4165-60-0	Nitrobenzene-d5	67%	30-130%
321-60-8	2-Fluorobiphenyl	59%	30-130%
1718-51-0	Terphenyl-d14	93%	30-130%

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

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29891-MB	U9010.D	1	08/03/12	NS	08/01/12	OP29891	MSU502

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12698-1, MC12698-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ng/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Flnorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthaleue	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Rccoveries		Limits
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	62%	30-130%
1718-51-0	Terphenyl-d14	100%	30-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-BS	F56477.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
OP29890-BSD	F56478.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	100	41.8	42	40.1	40	4	30-130/20
95-57-8	2-Chlorophenol	100	70.8	71	72.7	73	3	30-130/20
59-50-7	4-Chloro-3-methyl phenol	100	76.9	77	80.3	80	4	30-130/20
120-83-2	2,4-Dichlorophenol	100	76.7	77	80.9	81	5	30-130/20
105-67-9	2,4-Dimethylphenol	100	75.2	75	74.7	75	1	30-130/20
51-28-5	2,4-Dinitrophenol	100	72.7	73	76.3	76	5	30-130/20
534-52-1	4,6-Dinitro-o-cresol	100	89.1	89	94.5	95	6	30-130/20
95-48-7	2-Methylphenol	100	65.6	66	66.8	67	2	30-130/20
	3&4-Methylphenol	200	62.5	31	128	64	69* a	30-130/20
88-75-5	2-Nitrophenol	100	78.1	78	83.6	84	7	30-130/20
100-02-7	4-Nitrophenol	100	40.8	41	40.9	41	0	30-130/20
87-86-5	Pentachlorophenol	100	86.5	87	88.2	88	2	30-130/20
108-95-2	Phenol	100	39.7	40	38.8	39	2	30-130/20
95-95-4	2,4,5-Trichlorophenol	100	79.8	80	85.4	85	7	30-130/20
88-06-2	2,4,6-Trichlorophenol	100	83.8	84	89.1	89	6	30-130/20
62-53-3	Aniline	50	3.1	6* a	19.7	39* a	146* a	40-140/20
101-55-3	4-Bromophenyl phenyl ether	50	43.3	87	44.3	89	2	40-140/20
85-68-7	Butyl benzyl phthalate	50	45.6	91	48.1	96	5	40-140/20
100-51-6	Benzyl Alcohol	50	35.8	72	38.2	76	6	40-140/20
91-58-7	2-Chloronaphthalene	50	39.3	79	43.1	86	9	40-140/20
106-47-8	4-Chloroaniline	50	7.1	14* a	36.1	72	134* a	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	50	41.3	83	44.3	89	7	40-140/20
111-44-4	bis(2-Chloroethyl)ether	50	40.3	81	43.0	86	6	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	50	45.7	91	48.3	97	6	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	50	41.4	83	44.8	90	8	40-140/20
122-66-7	1,2-Diphenylhydrazine	50	43.9	88	45.4	91	3	40-140/20
121-14-2	2,4-Dinitrotolnene	50	43.8	88	46.6	93	6	40-140/20
606-20-2	2,6-Dinitrotoluene	50	42.9	86	45.9	92	7	40-140/20
91-94-1	3,3'-Dichlorobenzidine	50	0.70	1* a	40.7	81	193* a	40-140/20
132-64-9	Dibenzofuran	50	39.8	80	42.2	84	6	40-140/20
84-74-2	Di-n-butyl phthalate	50	43.4	87	45.3	91	4	40-140/20
117-84-0	Di-n-octyl phthalate	50	41.3	83	42.2	84	2	40-140/20
84-66-2	Diethyl phthalate	50	41.9	84	44.2	88	5	40-140/20
131-11-3	Dimethyl phthalate	50	44.0	88	47.1	94	7	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	50	45.4	91	46.6	93	3	40-140/20
118-74-1	Hexachlorobenzene	50	41.2	82	43.7	87	6	40-140/20

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-BS	F56477.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
OP29890-BSD	F56478.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

7.2.1

7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	50	23.0	46	24.5	49	6	40-140/20
67-72-1	Hexachloroethane	50	28.4	57	30.0	60	5	40-140/20
78-59-1	Isophorone	50	40.8	82	43.3	87	6	40-140/20
88-74-4	2-Nitroaniline	50	43.5	87	46.4	93	6	40-140/20
99-09-2	3-Nitroaniline	50	22.0	44	42.3	85	63* a	40-140/20
100-01-6	4-Nitroaniline	50	36.0	72	43.3	87	18	40-140/20
98-95-3	Nitrobenzene	50	39.5	79	42.2	84	7	40-140/20
62-75-9	n-Nitrosodimethylamine	50	24.8	50	27.0	54	8	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	50	43.4	87	45.4	91	5	40-140/20
86-30-6	N-Nitrosodiphenylamine	50	42.3	85	45.8	92	8	40-140/20
110-86-1	Pyridine	50	2.6	5* a	26.3	53	164* a	40-140/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	49%	50%	15-110%
4165-62-2	Phenol-d5	37%	36%	15-110%
118-79-6	2,4,6-Tribromophenol	79%	82%	15-110%
4165-60-0	Nitrobenzene-d5	75%	79%	30-130%
321-60-8	2-Fluorobiphenyl	68%	71%	30-130%
1718-51-0	Terphenyl-d14	100%	103%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29891-BS	U9011.D	1	08/03/12	NS	08/01/12	OP29891	MSU502
OP29891-BSD	U9012.D	1	08/03/12	NS	08/01/12	OP29891	MSU502

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12698-1, MC12698-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	50	40.9	82	43.8	88	7	40-140/30
208-96-8	Acenaphthylene	50	30.5	61	33.0	66	8	40-140/30
120-12-7	Anthracene	50	42.0	84	45.0	90	7	40-140/30
56-55-3	Benzo(a)anthracene	50	48.7	97	52.3	105	7	40-140/30
50-32-8	Benzo(a)pyrene	50	43.7	87	46.8	94	7	40-140/30
205-99-2	Benzo(b)fluoranthene	50	50.2	100	53.2	106	6	40-140/30
191-24-2	Benzo(g,h,i)perylene	50	46.4	93	48.5	97	4	40-140/30
207-08-9	Benzo(k)fluoranthene	50	56.2	112	59.6	119	6	40-140/30
218-01-9	Chrysene	50	45.0	90	47.8	96	6	40-140/30
53-70-3	Dibenzo(a,h)anthracene	50	47.4	95	49.5	99	4	40-140/30
206-44-0	Fluoranthene	50	45.1	90	47.2	94	5	40-140/30
86-73-7	Fluorene	50	41.1	82	44.0	88	7	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	50	47.1	94	49.4	99	5	40-140/30
90-12-0	1-Methylnaphthalene	50	31.3	63	33.8	68	8	40-140/30
91-57-6	2-Methylnaphthalene	50	34.8	70	37.6	75	8	40-140/30
91-20-3	Naphthalene	50	36.1	72	38.7	77	7	40-140/30
85-01-8	Phenanthrene	50	43.6	87	45.5	91	4	40-140/30
129-00-0	Pyrene	50	43.4	87	45.6	91	5	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	17%	22%	15-110%
4165-62-2	Phenol-d5	39%	39%	15-110%
118-79-6	2,4,6-Tribromophenol	97%	99%	15-110%
4165-60-0	Nitrobenzene-d5	90%	94%	30-130%
321-60-8	2-Fluorobiphenyl	69%	71%	30-130%
1718-51-0	Terphenyl-d14	110%	115%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-MS	F56481.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
OP29890-MSD	F56482.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
MC12689-6	F56483.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

CAS No.	Compound	MC12689-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	37.0	37	36.5	37	I	30-130/20
95-57-8	2-Chlorophenol	ND		100	66.4	66	69.4	69	4	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	74.6	75	74.6	75	0	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	75.3	75	75.7	76	1	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	72.9	73	68.5	69	6	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	73.4	73	73.8	74	1	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	91.5	92	88.5	89	3	30-130/20
95-48-7	2-Methylphenol	ND		100	61.8	62	63.2	63	2	30-130/20
	3&4-Methylphenol	ND		200	118	59	119	60	1	30-130/20
88-75-5	2-Nitrophenol	ND		100	77.2	77	78.1	78	1	30-130/20
100-02-7	4-Nitrophenol	ND		100	37.4	37	37.3	37	0	30-130/20
87-86-5	Pentachlorophenol	ND		100	85.9	86	84.3	84	2	30-130/20
108-95-2	Phenol	ND		100	35.0	35	35.1	35	0	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	80.0	80	78.2	78	2	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	82.2	82	80.4	80	2	30-130/20
62-53-3	Aniline	ND		50	12.4	25* [a]	17.3	35* [a]	33* [b]	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	43.3	87	41.3	83	5	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	46.0	92	45.8	92	0	40-140/20
100-51-6	Benzyl Alcohol	ND		50	34.0	68	34.5	69	1	40-140/20
91-58-7	2-Chloronaphtbalene	ND		50	39.6	79	38.6	77	3	40-140/20
106-47-8	4-Chloroaniline	ND		50	27.2	54	32.2	64	17	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	42.1	84	40.8	82	3	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	38.8	78	40.0	80	3	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	43.7	87	45.1	90	3	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	41.7	83	40.3	81	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	43.5	87	41.2	82	5	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	43.5	87	43.1	86	1	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	44.4	89	43.0	86	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	35.4	71	39.3	79	10	40-140/20
132-64-9	Dibenzofuran	ND		50	40.1	80	38.9	78	3	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	44.2	88	43.3	87	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	38.9	78	39.6	79	2	40-140/20
84-66-2	Diethyl phthalate	ND		50	42.6	85	41.2	82	3	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.1	88	43.2	86	2	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	45.9	92	46.0	92	0	40-140/20
118-74-1	Hexachlorobenzene	ND		50	42.2	84	39.8	80	6	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29890-MS	F56481.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
OP29890-MSD	F56482.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687
MC12689-6	F56483.D	1	08/02/12	KR	08/01/12	OP29890	MSF2687

The QC reported here applies to the following samples: Method: SW846 8270C

MC12698-1, MC12698-2

CAS No.	Compound	MC12689-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	21.0	42	20.6	41	2	40-140/20
67-72-1	Hexachloroethane	ND		50	24.1	48	23.6	47	2	40-140/20
78-59-1	Isophorone	ND		50	40.7	81	40.6	81	0	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.6	87	42.7	85	2	40-140/20
99-09-2	3-Nitroaniline	ND		50	39.6	79	39.7	79	0	40-140/20
100-01-6	4-Nitroaniline	ND		50	41.2	82	40.5	81	2	40-140/20
98-95-3	Nitrobenzene	ND		50	38.1	76	39.1	78	3	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	23.7	47	24.8	50	5	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	41.8	84	43.1	86	3	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	44.0	88	42.0	84	5	40-140/20
110-86-1	Pyridine	ND		50	11.4	23* [a]	23.4	47	69* [b]	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12689-6	Limits
367-12-4	2-Fluorophenol	43%	45%	36%	15-110%
4165-62-2	Phenol-d5	32%	33%	28%	15-110%
118-79-6	2,4,6-Tribromophenol	79%	76%	72%	15-110%
4165-60-0	Nitrobenzene-d5	72%	75%	67%	30-130%
321-60-8	2-Fluorobiphenyl	67%	67%	64%	30-130%
1718-51-0	Terphenyl-d14	100%	100%	92%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29891-MS	W3545.D	1	08/02/12	KR	08/01/12	OP29891	MSW165
OP29891-MSD	W3546.D	1	08/02/12	KR	08/01/12	OP29891	MSW165
MC12689-7	W3547.D	1	08/02/12	KR	08/01/12	OP29891	MSW165

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12698-1, MC12698-2

7.3.2 7

CAS No.	Compound	MC12689-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	40.3	81	39.4	79	2	40-140/20
208-96-8	Acenaphthylene	ND		50	34.5	69	33.7	67	2	40-140/20
120-12-7	Anthracene	ND		50	49.9	100	48.6	97	3	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	53.6	107	54.3	109	1	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	42.7	85	42.2	84	1	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	55.4	111	54.7	109	1	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	59.0	118	58.7	117	1	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	55.9	112	55.9	112	0	40-140/20
218-01-9	Chrysene	ND		50	46.0	92	46.6	93	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	59.8	120	59.7	119	0	40-140/20
206-44-0	Fluoranthene	0.056		50	52.8	105	53.1	106	1	40-140/20
86-73-7	Fluorene	ND		50	45.8	92	45.1	90	2	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	59.6	119	59.4	119	0	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	28.9	58	30.0	60	4	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	36.1	72	35.6	71	1	40-140/20
91-20-3	Naphthalene	ND		50	36.6	73	36.3	73	1	40-140/20
85-01-8	Pheuanthrene	0.040		50	48.1	96	47.5	95	1	40-140/20
129-00-0	Pyrene	0.060		50	51.3	102	51.3	102	0	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12689-7	Limits
367-12-4	2-Fluorophenol	45%	46%		15-110%
4165-62-2	Phenol-d5	35%	35%		15-110%
118-79-6	2,4,6-Tribromophenol	192%* [a]	187%* [a]		15-110%
4165-60-0	Nitrobenzene-d5	77%	78%	73%	30-130%
321-60-8	2-Fluorobiphenyl	66%	67%	65%	30-130%
1718-51-0	Terphenyl-d14	123%	123%	87%	30-130%

(a) Outside control limits. Individual spike recoveries within acceptance limits.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2687-CC2682	Injection Date:	08/02/12
Lab File ID:	F56466.D	Injection Time:	08:04
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	402298	4.02	1470407	5.01	918644	6.44	1644023	7.80	1532642	10.57	1459951	12.03
Upper Limit [a]	804596	4.52	2940814	5.51	1837288	6.94	3288046	8.30	3065284	11.07	2919902	12.53
Lower Limit [b]	201149	3.52	735204	4.51	459322	5.94	822012	7.30	766321	10.07	729976	11.53
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
OP29861-MB	442156	4.02	1626996	5.01	989749	6.44	1753817	7.80	1539733	10.57	1660769	12.03
OP29861-BS	467626	4.02	1673448	5.01	1002754	6.44	1730867	7.80	1463667	10.57	1554979	12.04
ZZZZZZ	439841	4.02	1615860	5.01	979319	6.44	1723073	7.80	1509812	10.57	1564975	12.03
ZZZZZZ	469909	4.03	1783383	5.01	1070989	6.44	1840479	7.80	1456100	10.57	1208452	12.03
ZZZZZZ	430363	4.02	1583999	5.01	961112	6.43	1596744	7.80	1280579	10.57	1054814	12.03
ZZZZZZ	418990	4.02	1582981	5.01	987217	6.44	1669246	7.80	1405675	10.57	1201894	12.03
ZZZZZZ	515797	4.02	1879223	5.01	1135099	6.44	1982740	7.80	1632786	10.57	1426627	12.03
ZZZZZZ	515736	4.02	1885209	5.01	1139889	6.44	1993380	7.80	1608361	10.57	1471822	12.03
OP29890-MB	365266	4.03	1339886	5.01	843802	6.44	1528166	7.80	1439157	10.57	1623312	12.03
OP29890-BS	387527	4.02	1444474	5.02	884025	6.44	1556053	7.80	1390796	10.57	1544248	12.04
OP29890-BSD	350787	4.02	1283067	5.01	776039	6.44	1394050	7.80	1236051	10.57	1407510	12.04
ZZZZZZ	393201	4.02	1462223	5.01	898395	6.44	1633775	7.79	1487557	10.57	1752831	12.04
ZZZZZZ	390618	4.03	1447345	5.01	905157	6.44	1633507	7.80	1464260	10.57	1737072	12.04
OP29890-MS	374213	4.02	1381495	5.01	838894	6.44	1505495	7.80	1377080	10.57	1606288	12.04
OP29890-MSD	356855	4.02	1334824	5.01	832714	6.44	1515255	7.80	1367608	10.57	1587669	12.04
MC12689-6	378650	4.02	1397412	5.01	866383	6.44	1594736	7.80	1487769	10.57	1667844	12.03
ZZZZZZ	351470	4.02	1291818	5.01	800881	6.44	1477008	7.80	1378432	10.57	1559896	12.03
ZZZZZZ	372764	4.02	1380427	5.01	862863	6.44	1592900	7.79	1496207	10.57	1712461	12.03

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: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2688-CC2682	Injection Date:	08/02/12
Lab File ID:	F56488.D	Injection Time:	17:07
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	395790	4.02	1464062	5.02	920295	6.44	1680669	7.80	1500774	10.57	1461771	12.04
Upper Limit [a]	791580	4.52	2928124	5.52	1840590	6.94	3361338	8.30	3001548	11.07	2923542	12.54
Lower Limit [b]	197895	3.52	732031	4.52	460148	5.94	840335	7.30	750387	10.07	730886	11.54
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
OP29878-MB	396208	4.02	1447592	5.01	895016	6.44	1629328	7.80	1462480	10.57	1661695	12.03
OP29878-BS	397803	4.03	1448440	5.01	897303	6.44	1607676	7.80	1411908	10.57	1590954	12.03
OP29878-MS	403393	4.02	1480094	5.01	909292	6.44	1615910	7.80	1359140	10.57	1624245	12.04
OP29878-MSD	437004	4.03	1585074	5.01	959534	6.44	1690169	7.80	1432950	10.58	1713366	12.04
MC12730-1	432690	4.03	1571730	5.01	963807	6.44	1674709	7.80	1392321	10.57	1601230	12.04
ZZZZZZ	408566	4.02	1518111	5.01	929941	6.44	1669212	7.80	1491556	10.57	1756795	12.03
ZZZZZZ	392304	4.03	1462781	5.01	907751	6.44	1628172	7.80	1460123	10.57	1635344	12.03
ZZZZZZ	389226	4.02	1453902	5.01	899626	6.44	1602739	7.80	1464323	10.57	1698196	12.04
ZZZZZZ	403410	4.03	1500076	5.01	927115	6.44	1692974	7.80	1519956	10.57	1776367	12.03
ZZZZZZ	391000	4.02	1443682	5.01	887675	6.44	1622359	7.80	1457501	10.57	1709728	12.03
ZZZZZZ	384394	4.03	1377907	5.01	901320	6.44	1636814	7.80	1492551	10.57	1732059	12.03
ZZZZZZ	404010	4.03	1488897	5.01	932982	6.44	1653326	7.80	1490140	10.57	1733793	12.03
ZZZZZZ	437335	4.02	1613149	5.01	1013433	6.44	1783780	7.80	1584179	10.57	1768090	12.03
ZZZZZZ	428311	4.02	1597726	5.01	970985	6.44	1725251	7.79	1546091	10.57	1778908	12.04
ZZZZZZ	426577	4.02	1578045	5.01	966946	6.44	1713932	7.80	1491953	10.57	1655977	12.03
ZZZZZZ	478601	4.02	1742097	5.01	1053587	6.44	1862653	7.80	1635143	10.57	1828324	12.03
ZZZZZZ	429694	4.02	1587033	5.01	958048	6.44	1719230	7.80	1524648	10.57	1754055	12.03
ZZZZZZ	458484	4.02	1696399	5.01	1038637	6.44	1852463	7.79	1619585	10.57	1842593	12.04
ZZZZZZ	453429	4.03	1654983	5.01	1028177	6.44	1838709	7.80	1604422	10.57	1827617	12.03
ZZZZZZ	450219	4.02	1673154	5.01	1019620	6.44	1789100	7.80	1530413	10.57	1722802	12.03
ZZZZZZ	486156	4.02	1784756	5.01	1073540	6.44	1923957	7.80	1630750	10.57	1799115	12.03
ZZZZZZ	473661	4.02	1756950	5.01	1044222	6.44	1829781	7.80	1513373	10.57	1746564	12.04
ZZZZZZ	382863	4.02	1424961	5.01	894640	6.44	1600959	7.80	1497806	10.57	1703091	12.04
ZZZZZZ	354138	4.03	1328399	5.01	842042	6.44	1548187	7.80	1498183	10.57	1662646	12.03
MC12698-1	398432	4.03	1456392	5.01	908050	6.44	1633394	7.80	1539239	10.57	1727749	12.03
MC12698-2	362392	4.02	1348098	5.01	859149	6.44	1556405	7.80	1495278	10.57	1724329	12.04
ZZZZZZ	439802	4.02	1627949	5.01	1008020	6.44	1778632	7.80	1492839	10.57	1345454	12.03
ZZZZZZ	490392	4.03	1789791	5.01	1075822	6.44	1919605	7.80	1637360	10.57	1475002	12.03
ZZZZZZ	440947	4.02	1632645	5.01	1004100	6.44	1791548	7.80	1445600	10.57	1328834	12.04

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-dI2

7.4.2

Semivolatile Internal Standard Area Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2688-CC2682	Injection Date:	08/02/12
Lab File ID:	F56488.D	Injection Time:	17:07
Instrument ID:	GCMSF	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 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.

7.4.2

7

Semivolatile Internal Standard Area Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU502-CC486	Injection Date:	08/03/12
Lab File ID:	U9000.D	Injection Time:	10:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	89351	3.80	264597	4.78	146183	6.20	271491	7.53	177737	10.30	301210	11.75
Upper Limit [a]	178702	4.30	529194	5.28	292366	6.70	542982	8.03	355474	10.80	602420	12.25
Lower Limit [b]	44676	3.30	132299	4.28	73092	5.70	135746	7.03	88869	9.80	150605	11.25
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
ZZZZZZ	79306	3.80	235690	4.78	127705	6.20	232492	7.53	149943	10.30	244813	11.75
OP29902-MB	83685	3.80	248091	4.78	134071	6.20	244020	7.53	161175	10.30	259446	11.75
OP29902-BS	81615	3.80	235458	4.78	127188	6.20	234099	7.53	149666	10.30	244787	11.75
ZZZZZZ	82106	3.80	246162	4.78	133167	6.20	245486	7.53	161590	10.30	262167	11.75
OP29891-MB	86786	3.80	250710	4.78	137298	6.20	251769	7.53	165187	10.30	281846	11.75
OP29891-BS	88303	3.80	251211	4.78	136785	6.20	245739	7.53	154816	10.31	273329	11.75
OP29891-BSD	75114	3.80	216756	4.78	118610	6.20	220353	7.53	140497	10.31	248181	11.75

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: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW165-CC72	Injection Date:	08/02/12
Lab File ID:	W3541.D	Injection Time:	20:54
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	861353	3.83	3276042	4.82	1856286	6.24	3082573	7.56	3131348	10.35	4348884	11.79
Upper Limit [a]	1722706	4.33	6552084	5.32	3712572	6.74	6165146	8.06	6262696	10.85	8697768	12.29
Lower Limit [b]	430677	3.33	1638021	4.32	928143	5.74	1541287	7.06	1565674	9.85	2174442	11.29
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
OP29891-MS	682924	3.83	2588397	4.82	1433758	6.24	2326059	7.56	2344075	10.35	3166218	11.79
OP29891-MSD	658540	3.83	2520307	4.82	1416072	6.24	2312203	7.56	2295085	10.35	3134775	11.79
MC12689-7	622849	3.83	2369081	4.81	1320527	6.24	2188047	7.56	2236586	10.34	3107708	11.79
MC12698-1	607006	3.83	2333731	4.81	1302112	6.24	2185041	7.56	2239920	10.34	3118433	11.79
MC12698-2	645928	3.83	2490938	4.81	1380832	6.24	2246129	7.57	2224808	10.34	3060496	11.79
ZZZZZZ	737665	3.83	2768756	4.81	1537517	6.24	2456775	7.57	2404132	10.34	3318834	11.79
ZZZZZZ	615377	3.83	2386511	4.81	1346326	6.24	2211439	7.56	2248455	10.34	3228897	11.79
ZZZZZZ	714568	3.83	2757719	4.81	1572549	6.24	2567503	7.57	2593941	10.34	3795068	11.79
ZZZZZZ	719604	3.83	2716859	4.81	1494085	6.24	2401907	7.57	2319290	10.34	3206642	11.79
OP29842-MS	745683	3.83	2801826	4.82	1555030	6.24	2513971	7.57	2347282	10.35	2261864	11.79
OP29842-MSD	745319	3.83	2798184	4.82	1543032	6.24	2485973	7.56	2380563	10.35	2338553	11.79
MC12611-17	737421	3.83	2753807	4.81	1532327	6.24	2458520	7.57	2252862	10.34	2253196	11.79
ZZZZZZ	705109	3.83	2640298	4.81	1467198	6.24	2380690	7.57	2228359	10.34	2455649	11.79
ZZZZZZ	677136	3.83	2576205	4.81	1477400	6.24	2380482	7.56	2156648	10.35	2276629	11.79
ZZZZZZ	696930	3.83	2726709	4.82	1602597	6.25	2639107	7.57	2259664	10.34	2309305	11.79
ZZZZZZ	671798	3.83	2566196	4.81	1434532	6.24	2331947	7.56	2307696	10.34	3244491	11.79
ZZZZZZ	695236	3.83	2632831	4.81	1480009	6.24	2408815	7.57	2291442	10.34	3207984	11.79
ZZZZZZ	699222	3.83	2646607	4.81	1477149	6.24	2423303	7.56	2315761	10.34	3245167	11.79
ZZZZZZ	685755	3.83	2607341	4.81	1467106	6.24	2383272	7.56	2294079	10.34	3225513	11.79
ZZZZZZ	723872	3.83	2702844	4.81	1514410	6.24	2456343	7.57	2342799	10.34	3270530	11.79
ZZZZZZ	706177	3.83	2676494	4.81	1516661	6.24	2460764	7.56	2312555	10.34	3248969	11.79
ZZZZZZ	685885	3.83	2562323	4.81	1438586	6.24	2316871	7.56	2223373	10.34	3158415	11.79
ZZZZZZ	697920	3.83	2622020	4.81	1456957	6.24	2377202	7.56	2228612	10.34	3228576	11.79
ZZZZZZ	699486	3.83	2765166	4.82	1652675	6.24	2649610	7.57	2346754	10.34	3526048	11.79
ZZZZZZ	658583	3.83	2577455	4.81	1504675	6.24	2402104	7.57	2220095	10.34	3174515	11.79
ZZZZZZ	680971	3.83	2564735	4.81	1426406	6.24	2308650	7.56	2216338	10.34	3176164	11.79

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.

Semivolatile Internal Standard Area Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW165-CC72	Injection Date:	08/02/12
Lab File ID:	W3541.D	Injection Time:	20:54
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

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

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Surrogate Recovery Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12698-1	F56514.D	35.0	25.0	72.0	66.0	65.0	90.0
MC12698-2	F56515.D	34.0	26.0	70.0	63.0	61.0	87.0
OP29890-BS	F56477.D	49.0	37.0	79.0	75.0	68.0	100.0
OP29890-BSD	F56478.D	50.0	36.0	82.0	79.0	71.0	103.0
OP29890-MB	F56476.D	36.0	28.0	74.0	67.0	59.0	93.0
OP29890-MS	F56481.D	43.0	32.0	79.0	72.0	67.0	100.0
OP29890-MSD	F56482.D	45.0	33.0	76.0	75.0	67.0	100.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12698-1	W3548.D	69.0	64.0	117.0
MC12698-2	W3549.D	66.0	60.0	115.0
OP29891-BS	U9011.D	90.0	69.0	110.0
OP29891-BSD	U9012.D	94.0	71.0	115.0
OP29891-MB	U9010.D	79.0	62.0	100.0
OP29891-MS	W3545.D	77.0	66.0	123.0
OP29891-MSD	W3546.D	78.0	67.0	123.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MB	BB43070.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12698-1, MC12698-2, MC12698-4

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	99%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	36-173%

8.1.1

Blank Spike Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-BS	BB43071.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12698-1, MC12698-2, MC12698-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.047	66	60-140
106-93-4	1,2-Dibromoethane	0.071	0.052	73	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	75%	36-173%
460-00-4	Bromofluorobenzene (S)	73%	36-173%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29882-MS	BB43072.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
OP29882-MSD	BB43073.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630
MC12669-1	BB43074.D	1	08/04/12	CZ	08/01/12	OP29882	GBB2630

The QC reported here applies to the following samples: Method: SW846 8011

MC12698-1, MC12698-2, MC12698-4

CAS No.	Compound	MC12669-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dihromo-3-chloropropane	ND		0.0702	0.078	111	0.076	112	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.0702	0.071	101	0.073	107	3	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12669-1	Limits
460-00-4	Bromofluorobenzene (S)	127%	118%	97%	36-173%
460-00-4	Bromofluorobenzene (S)	127%	123%	98%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12698-1	BB43082.D	131.0	136.0
MC12698-2	BB43083.D	120.0	122.0
MC12698-4	BB43084.D	103.0	105.0
OP29882-BS	BB43071.D	75.0	73.0
OP29882-MB	BB43070.D	99.0	95.0
OP29882-MS	BB43072.D	127.0	127.0
OP29882-MSD	BB43073.D	118.0	123.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43069.D	Injection Time:	01:14
Instrument ID:	GCBB	Method:	SW846 8011

	SI [a] RT	S1 [b] RT
Check Std	3.91	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP29882-MB	BB43070.D	08/04/12	01:40	3.91	3.80
OP29882-BS	BB43071.D	08/04/12	02:06	3.91	3.80
OP29882-MS	BB43072.D	08/04/12	02:32	3.91	3.80
OP29882-MSD	BB43073.D	08/04/12	02:59	3.91	3.80
MC12669-1	BB43074.D	08/04/12	03:26	3.91	3.80
ZZZZZZ	BB43075.D	08/04/12	03:52	3.91	3.80
ZZZZZZ	BB43076.D	08/04/12	04:18	3.91	3.80
ZZZZZZ	BB43077.D	08/04/12	04:45	3.91	3.80
ZZZZZZ	BB43078.D	08/04/12	05:11	3.91	3.80
ZZZZZZ	BB43079.D	08/04/12	05:38	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC12698
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBB2630-CC2630	Injection Date:	08/04/12
Lab File ID:	BB43080.D	Injection Time:	06:04
Instrument ID:	GCBB	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.90	3.80

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB43081.D	08/04/12	06:31	3.92	3.80
MC12698-1	BB43082.D	08/04/12	06:57	3.91	3.80
MC12698-2	BB43083.D	08/04/12	07:24	3.90	3.80
MC12698-4	BB43084.D	08/04/12	07:50	3.91	3.80
ZZZZZZ	BB43085.D	08/04/12	08:16	3.90	3.80
ZZZZZZ	BB43086.D	08/04/12	08:42	3.90	3.80
ZZZZZZ	BB43087.D	08/04/12	09:09	3.90	3.80
ZZZZZZ	BB43088.D	08/04/12	09:35	3.91	3.80
ZZZZZZ	BB43089.D	08/04/12	10:02	3.91	3.80
ZZZZZZ	BB43090.D	08/04/12	10:28	3.91	3.80
GBB2630-ECC263B	BB43091.D	08/04/12	10:55	3.91	3.80

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12784

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/5/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW6A-ROX-080112	MW6B-ROX-080112
MW6C-ROX-080112	MW6C-ROX-080112 EB
TB-080112-R	TB-080112-R

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC and SVOC LCS recoveries were outside evaluation criteria. VOC MS/MSD recoveries were outside evaluation criteria. Although not indicated in the laboratory case narrative, VOCs and PAHs were detected in the equipment blank. These issues are addressed further in the appropriate sections below. Although beyond the scope of this review, the initial calibration verification for aniline exceeded fifty percent (50%) difference.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 1.4ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
MW6C-ROX-080112 EB	VOCs	Acetone	7.8 ug/L
MW6C-ROX-080112 EB	VOCs	Chloroform	0.51 ug/L
MW6C-ROX-080112 EB	VOCs	Toluene	0.52 ug/L
MW6C-ROX-080112 EB	PAHs	Naphthalene	0.040 ug/L
MW6C-ROX-080112 EB	PAHs	Phenanthrene	0.019 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW6B-ROX-080112	VOCs	Acetone	-	**U**
MW6C-ROX-080112	VOCs	Acetone	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS	Parameter	Analyte	LCS Recovery	LCS Criteria
MSV436-BS	VOCs	Acetone	**137**	70-130
MSV436-BS	VOCs	Acrylonitrile	**474**	70-130
MSV438-BS	VOCs	Acetone	**131**	70-130
MSV438-BS	VOCs	Acrylonitrile	**500**	70-130
OP29915-BS	SVOCs	Aniline	**32**	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS OP29915-BS was associated with equipment blank MW6C-ROX-080112 EB. Equipment blanks are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification
MW6A-ROX-080112	SVOCs	Aniline	**UJ**
MW6B-ROX-080112	SVOCs	Aniline	**UJ**
MW6C-ROX-080112	SVOCs	Aniline	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, although not requested, sample MW6A-ROX-080112 was spiked and analyzed for VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW6A-ROX-080112	VOCs	Acrylonitrile	**528/512**	3	70-130/30
MW6A-ROX-080112	VOCs	2-Chloroethyl vinyl ether	**0/0**	NA	70-130/30
MW6A-ROX-080112	VOCs	2,2-Dichloropropane	**65/67**	4	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

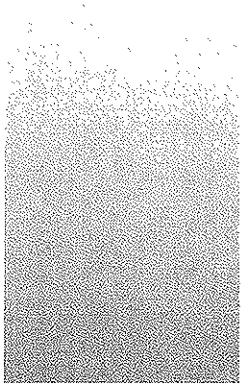
12.0 Additional Qualifications

Were additional qualifications applied?

No

New England ACCUTEST LABORATORIES

09/10/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12784

Sampling Date: 08/01/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **92**

Reviewed on 9/5/2012

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

Section 1: Sample Summary 3
Section 2: Case Narrative/Conformance Summary 4
Section 3: Summary of Hits 6
Section 4: Sample Results 7
4.1: MC12784-1: MW6A-ROX-080112 8
4.2: MC12784-2: MW6B-ROX-080112 15
4.3: MC12784-3: MW6C-ROX-080112 22
4.4: MC12784-4: MW6C-ROX-080112 EB 29
4.5: MC12784-5: TB-080112-R 36
4.6: MC12784-6: TB-080112-R 39
Section 5: Misc. Forms 40
5.1: Chain of Custody 41
5.2: Sample Tracking Chronicle 43
5.3: Internal Chain of Custody 45
Section 6: GC/MS Volatiles - QC Data Summaries 47
6.1: Method Blank Summary 48
6.2: Blank Spike Summary 54
6.3: Matrix Spike/Matrix Spike Duplicate Summary 60
6.4: Internal Standard Area Summaries 66
6.5: Surrogate Recovery Summaries 68
Section 7: GC/MS Semi-volatiles - QC Data Summaries 69
7.1: Method Blank Summary 70
7.2: Blank Spike Summary 73
7.3: Matrix Spike/Matrix Spike Duplicate Summary 76
7.4: Internal Standard Area Summaries 79
7.5: Surrogate Recovery Summaries 84
Section 8: GC Volatiles - QC Data Summaries 86
8.1: Method Blank Summary 87
8.2: Blank Spike Summary 88
8.3: Matrix Spike/Matrix Spike Duplicate Summary 89
8.4: Surrogate Recovery Summaries 90
8.5: GC Surrogate Retention Time Summaries 91

Sample Summary

Shell Oil

Job No: MC12784

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12784-1	08/01/12	11:05	DMCW	08/02/12	AQ	Ground Water	MW6A-ROX-080112
MC12784-2	08/01/12	13:45	DMCW	08/02/12	AQ	Ground Water	MW6B-ROX-080112
MC12784-3	08/01/12	15:45	DMCW	08/02/12	AQ	Ground Water	MW6C-ROX-080112
MC12784-4	08/01/12	16:05	DMCW	08/02/12	AQ	Equipment Blank	MW6C-ROX-080112 EB
MC12784-5	08/01/12	00:00	DMCW	08/02/12	AQ	Trip Blank Water	TB-080112-R
MC12784-6	08/01/12	00:00	DMCW	08/02/12	AQ	Trip Blank Water	TB-080112-R

ACCUTEST Laboratories

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12784
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/17/2012 3:11:08 PM

4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 08/01/2012 and were received at Accutest on 08/02/2012 properly preserved, at 1.4 Deg. C and intact. These Samples received an Accutest job number of MC12784. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** MSV436

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12978-4MS, MC12978-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSV436-BS for Acetone are outside control limits. Blank Spike meets program technical requirements.
- MC12978-4MS for Dichlorodifluoromethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12978-4MS/MSD for 2-Chloroethyl vinyl ether are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MSV436-BS for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC12978-4MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Matrix: AQ **Batch ID:** MSV438

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12784-1MS, MC12784-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSV438-BS for Acetone are outside control limits. Blank Spike meets program technical requirements.
- MC12784-1MS/MSD for 2,2-Dichloropropane, 2-Chloroethyl vinyl ether are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12784-1MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MSV438-BS for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29915

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12712-7MS, MC12712-7MSD were used as the QC samples indicated.
- OP29915-MS for Pyridine are outside control limits due to possible matrix interference. Refer to Blank Spike.
- OP29915-BS for Aniline are outside control limits. Blank Spike meets program technical requirements.
- OP29915-MS/MSD for Aniline are outside control limits due to possible matrix interference. Refer to Blank Spike.
- Initial calibration verification MSF2682-ICV2682 for Aniline exceeds 50% Difference. Aniline is within criteria in continuing calibration check MSF2691-CC2682.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29916

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12712-6MS, MC12712-6MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-7MS, MC12879-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12784).

Summary of Hits

Job Number: MC12784
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/01/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12784-1	MW6A-ROX-080112					
Benzene		1.6	0.50	0.24	ug/l	SW846 8260B
Methyl Tert Butyl Ether		1.9	1.0	0.41	ug/l	SW846 8260B
Di-n-butyl phthalate		0.49 J	5.0	0.36	ug/l	SW846 8270C
MC12784-2	MW6B-ROX-080112					
Acetone		3.2 J	5.0	3.0	ug/l	SW846 8260B
Benzene		0.45 J	0.50	0.24	ug/l	SW846 8260B
Methyl Tert Butyl Ether		12.2	1.0	0.41	ug/l	SW846 8260B
Di-n-butyl phthalate		0.70 J	5.1	0.36	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.49 J	2.0	0.38	ug/l	SW846 8270C
MC12784-3	MW6C-ROX-080112					
Acetone		3.0 J	5.0	3.0	ug/l	SW846 8260B
Benzene		0.61	0.50	0.24	ug/l	SW846 8260B
Di-n-butyl phthalate		1.0 J	5.0	0.36	ug/l	SW846 8270C
MC12784-4	MW6C-ROX-080112 EB					
Acetone		7.8	5.0	3.0	ug/l	SW846 8260B
Chloroform		0.51 J	1.0	0.50	ug/l	SW846 8260B
Toluene		0.52 J	1.0	0.51	ug/l	SW846 8260B
Naphthalene		0.040 J	0.10	0.037	ug/l	SW846 8270C BY SIM
Phenanthrene		0.019 J	0.052	0.013	ug/l	SW846 8270C BY SIM
MC12784-5	TB-080112-R					
No hits reported in this sample.						
MC12784-6	TB-080112-R					
No hits reported in this sample.						

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10529.D	1	08/15/12	AMY	n/a	n/a	MSV438
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	1.6	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ng/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzeue	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dihromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ng/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorohenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ng/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ng/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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 iu associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Bntyl Ether	1.9	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

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

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Grouud Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56596.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ul	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	0.49	5.0	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	53%		30-130%

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

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3678.D	1	08/07/12	KR	08/03/12	OP29916	MSW169
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ng/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ng/l	
90-12-0	1-Methylnaphtbalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnapbthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphtbalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	77%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terpbenyl-d14	66%		30-130%

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

Report of Analysis

Client Sample ID:	MW6A-ROX-080112		
Lab Sample ID:	MC12784-1	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15939.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.1 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	99%		36-173%
460-00-4	Bromofluorobenzene (S)	79%		36-173%

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:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10530.D	1	08/15/12	AMY	n/a	n/a	MSV438
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~3.2~~ 4	5.0	3.0	ug/l	J 4
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	0.45	0.50	0.24	ug/l	J
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ng/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	12.2	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56597.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.61	ug/l	
	3&4-Methylphenol	ND	10	0.76	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.1	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroauiline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.90	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	0.70	5.1	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.1	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.49	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ng/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.1	ug/l	
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	32%		15-110%
118-79-6	2,4,6-Tribromophenol	74%		15-110%
4165-60-0	Nitrobenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	64%		30-130%

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

Report of Analysis

Client Sample ID:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3679.D	1	08/07/12	KR	08/03/12	OP29916	MSW169
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.030	ng/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ng/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ng/l	
85-01-8	Phenanthrene	ND	0.051	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	82%		30-130%

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

Report of Analysis

Client Sample ID:	MW6B-ROX-080112		
Lab Sample ID:	MC12784-2	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15940.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	95%		36-173%
460-00-4	Bromofluorobenzene (S)	88%		36-173%

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:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10531.D	1	08/15/12	AMY	n/a	n/a	MSV438
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~3.0~~ U	5.0	3.0	ug/l	J U
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	0.61	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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 blauk
N = Iudicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobeuzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56598.D	1	08/06/12	KR	08/03/12	OP2991S	MSF2691
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotolnene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	5.0	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ng/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ng/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	86%		30-130%

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

Report of Analysis

Client Sample ID:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3680.D	1	08/07/12	KR	08/03/12	OP29916	MSW169
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	71%		30-130%
1718-51-0	Terphenyl-d14	109%		30-130%

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:	MW6C-ROX-080112		
Lab Sample ID:	MC12784-3	Date Sampled:	08/01/12
Matrix:	AQ - Ground Water	Date Received:	08/02/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15941.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	103%		36-173%
460-00-4	Bromofluorobenzene (S)	86%		36-173%

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:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10479.D	1	08/14/12	AMY	n/a	n/a	MSV436
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	7.8	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	0.51	1.0	0.50	ug/l	J
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methyleue chloride	ND	2.0	0.83	ng/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Tolnene	0.52	1.0	0.51	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzeue	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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 aualyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56599.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.63	ug/l	
	3&4-Methylphenol	ND	10	0.78	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.49	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.66	ug/l	
108-95-2	Phenol	ND	5.2	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.51	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.37	ug/l	
62-53-3	Aniline	ND	10	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.66	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.39	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	0.93	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.38	ng/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	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:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.2	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.39	ug/l	
118-74-1	Hexachlorohenzene	ND	5.2	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.2	ug/l	
67-72-1	Hexachloroethane	ND	5.2	2.1	ug/l	
78-59-1	Isophorone	ND	5.2	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.45	ug/l	
110-86-1	Pyridine	ND	10	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	74%		15-110%
4165-60-0	Nitrohenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	94%		30-130%

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 valne 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:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxaua 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3681.D	1	08/07/12	KR	08/03/12	OP29916	MSW169
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphtheue	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.014	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthraceue	ND	0.052	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.039	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.061	ug/l	
218-01-9	Chrysene	ND	0.10	0.076	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.034	ug/l	
86-73-7	Fluorene	ND	0.10	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyreue	ND	0.10	0.048	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.054	ug/l	
91-20-3	Naphthalene	0.040	0.10	0.037	ug/l	J
85-01-8	Phenanthrene	0.019	0.052	0.013	ug/l	J
129-00-0	Pyrene	ND	0.10	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-dI4	118%		30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibratiou 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:	MW6C-ROX-080112 EB		
Lab Sample ID:	MC12784-4	Date Sampled:	08/01/12
Matrix:	AQ - Equipment Blank	Date Received:	08/02/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15942.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.7 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	100%		36-173%
460-00-4	Bromofluorobenzene (S)	83%		36-173%

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:	TB-080112-R		
Lab Sample ID:	MC12784-5	Date Sampled:	08/01/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10478.D	1	08/14/12	AMY	n/a	n/a	MSV436
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ng/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	og/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	og/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080112-R		
Lab Sample ID:	MC12784-5	Date Sampled:	08/01/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Tolnene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorohenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ng/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylhenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080112-R		
Lab Sample ID:	MC12784-5	Date Sampled:	08/01/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/02/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080112-R		
Lab Sample ID:	MC12784-6	Date Sampled:	08/01/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/02/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15943.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	105%		36-173%
460-00-4	Bromofluorobenzene (S)	91%		36-173%

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

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

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

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs, 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200))
☐ Lab Vendor # (_____)
☐ SPL (_____)
Lab Vendor #

Please Check Appropriate Box:
☑ ENV SERVICES | ☐ MOTIVA RETAIL | ☐ SHELL RETAIL
☐ MOTIVA SD&CM | ☐ CONSULTANT | ☐ LUBES
☐ SHELL PIPELINE | ☐ OTHER

Print Bill To Contact Name: Erik Arthur
PO #
INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0
SAP #: 3 4 0 0 5 1
☐ CHECK IF NO INCIDENT # APPLIES
DATE 8/1/12
PAGE 1 of 1

COMPANY/COMPANY: URS CORPORATION
COST CODE
ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300 ST LOUIS MO 63110
PROJECT CONTACT (Hardcopy or PDF Report to): Erik Arthur
TELEPHONE: 314-265-1553
FAX: 314-429-0462
Bill To Contact E-MAIL: Erik.Arthur@URS.COM
SITE ADDRESS, Street and City: 900 South Central Ave ROXANA
State: IL
GLOBAL ID #
TOP DELIVERABLE TO (Name, Company, Office Location)
PHONE NO
E-MAIL
CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562735.00008
SAMPLER NAME(S) (Print): D Mattingly, C. Williams
LAB USE ONLY: MC12784

TURNAROUND TIME (CALENDAR DAYS)
☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS
☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY
DELIVERABLES ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD
TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

REQUESTED ANALYSIS

SPECIAL INSTRUCTIONS OR NOTES :
* Please include "J" values on Reports
* Please provide sample receipt upon login
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE EDD DISK

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	MW6A-ROX-080112	8/1/12	1105	Water	2			2	2	6	X	X	X	X	0	
-2	MW6B-ROX-080112		1345		2			2	2	6	X	X	X	X		
-3	MW6C-ROX-080112		1515		2			2	2	6	X	X	X	X		
-4	MW6C-ROX-080112 EB		1605		2			2	2	6	X	X	X	X		
-5	TB-080112-R		0000		2					2	X					
-6	TB-080112-R2		0000						2	2		X				16CC, 4E5

FIELD NOTES:
TEMPERATURE ON RECEIPT C°

Relinquished by (Signature)	Received by (Signature)	Date	Time
Donnella Mattingly	FED EX	8/1/12	1800
FEDX		8-2-12	930

05/06 Revision
1.4°C

MC12784: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12784 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/2/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL AVE No. Coolers: 1 Airbill #'s:

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

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

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

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

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

Sample Integrity - Instructions	Y or 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

5.1

MC12784: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12784

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12784-1 Collected: 01-AUG-12 11:05 By: DMCW Received: 02-AUG-12 By: MW6A-ROX-080112						
MC12784-1	SW846 8270C	06-AUG-12 17:40	KR	03-AUG-12	BJ	AB8270SL+
MC12784-1	SW846 8270C BY SIM	07-AUG-12 08:15	KR	03-AUG-12	BJ	B8270SIMPAH
MC12784-1	SW846 8011	10-AUG-12 09:03	AP	08-AUG-12	SC	V8011SL
MC12784-1	SW846 8260B	15-AUG-12 20:17	AMY			V8260SL+
MC12784-2 Collected: 01-AUG-12 13:45 By: DMCW Received: 02-AUG-12 By: MW6B-ROX-080112						
MC12784-2	SW846 8270C	06-AUG-12 18:03	KR	03-AUG-12	BJ	AB8270SL+
MC12784-2	SW846 8270C BY SIM	07-AUG-12 08:37	KR	03-AUG-12	BJ	B8270SIMPAH
MC12784-2	SW846 8011	10-AUG-12 09:27	AP	08-AUG-12	SC	V8011SL
MC12784-2	SW846 8260B	15-AUG-12 20:46	AMY			V8260SL+
MC12784-3 Collected: 01-AUG-12 15:45 By: DMCW Received: 02-AUG-12 By: MW6C-ROX-080112						
MC12784-3	SW846 8270C	06-AUG-12 18:25	KR	03-AUG-12	BJ	AB8270SL+
MC12784-3	SW846 8270C BY SIM	07-AUG-12 08:59	KR	03-AUG-12	BJ	B8270SIMPAH
MC12784-3	SW846 8011	10-AUG-12 09:52	AP	08-AUG-12	SC	V8011SL
MC12784-3	SW846 8260B	15-AUG-12 21:15	AMY			V8260SL+
MC12784-4 Collected: 01-AUG-12 16:05 By: DMCW Received: 02-AUG-12 By: MW6C-ROX-080112 EB						
MC12784-4	SW846 8270C	06-AUG-12 18:48	KR	03-AUG-12	BJ	AB8270SL+
MC12784-4	SW846 8270C BY SIM	07-AUG-12 09:21	KR	03-AUG-12	BJ	B8270SIMPAH
MC12784-4	SW846 8011	10-AUG-12 10:16	AP	08-AUG-12	SC	V8011SL
MC12784-4	SW846 8260B	14-AUG-12 19:26	AMY			V8260SL+
MC12784-5 Collected: 01-AUG-12 00:00 By: DMCW Received: 02-AUG-12 By: TB-080112-R						
MC12784-5	SW846 8260B	14-AUG-12 18:57	AMY			V8260SL+
MC12784-6 Collected: 01-AUG-12 00:00 By: DMCW Received: 02-AUG-12 By: TB-080112-R						

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12784

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

5.2

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12784-6	SW846 8011	10-AUG-12 10:40	AP	08-AUG-12	SC	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/02/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12784-1.1	Walk In Ref #22	Nick Krasinski	08/03/12 14:10	Retrieve from Storage
MC12784-1.1	Nick Krasinski		08/03/12 21:11	Depleted
MC12784-1.3	VOC Ref #4	Amy Min Yang	08/15/12 17:39	Retrieve from Storage
MC12784-1.3	Amy Min Yang	GCMSV	08/15/12 17:39	Load on Instrument
MC12784-1.3	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-1.3	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12784-1.4	VOC Ref #4	Amy Min Yang	08/14/12 16:43	Retrieve from Storage
MC12784-1.4	Amy Min Yang	GCMSV	08/14/12 16:43	Load on Instrument
MC12784-1.4	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-1.4	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12784-1.5	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12784-1.5	Nick Krasinski		08/08/12 23:10	Depleted
MC12784-2.2	Walk In Ref #22	Nick Krasinski	08/03/12 14:10	Retrieve from Storage
MC12784-2.2	Nick Krasinski		08/03/12 21:11	Depleted
MC12784-2.3	VOC Ref #4	Amy Min Yang	08/14/12 16:43	Retrieve from Storage
MC12784-2.3	Amy Min Yang	GCMSV	08/14/12 16:43	Load on Instrument
MC12784-2.3	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-2.3	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12784-2.4	VOC Ref #4	Amy Min Yang	08/15/12 17:39	Retrieve from Storage
MC12784-2.4	Amy Min Yang	GCMSV	08/15/12 17:39	Load on Instrument
MC12784-2.4	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-2.4	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12784-2.6	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12784-2.6	Nick Krasinski		08/08/12 23:10	Depleted
MC12784-3.2	Walk In Ref #22	Nick Krasinski	08/03/12 14:10	Retrieve from Storage
MC12784-3.2	Nick Krasinski		08/03/12 21:11	Depleted
MC12784-3.3	VOC Ref #4	Amy Min Yang	08/15/12 17:39	Retrieve from Storage
MC12784-3.3	Amy Min Yang	GCMSV	08/15/12 17:39	Load on Instrument
MC12784-3.3	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-3.3	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12784-3.4	VOC Ref #4	Amy Min Yang	08/14/12 16:43	Retrieve from Storage
MC12784-3.4	Amy Min Yang	GCMSV	08/14/12 16:43	Load on Instrument
MC12784-3.4	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12784-3.4	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL
Received: 08/02/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12784-3.5	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12784-3.5	Nick Krasinski		08/08/12 23:10	Depleted
MC12784-4.2	Walk In Ref #22	Nick Krasinski	08/03/12 14:10	Retrieve from Storage
MC12784-4.2	Nick Krasinski		08/03/12 21:11	Depleted
MC12784-4.4	VOC Ref #4	Amy Min Yang	08/14/12 16:43	Retrieve from Storage
MC12784-4.4	Amy Min Yang	GCMSV	08/14/12 16:43	Load on Instrument
MC12784-4.4	GCMSV	Amy Min Yang	08/15/12 17:23	Unload from Instrument
MC12784-4.4	Amy Min Yang	VOC Ref #4	08/15/12 17:23	Return to Storage
MC12784-4.5	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12784-4.5	Nick Krasinski		08/08/12 23:10	Depleted
MC12784-5.1	VOC Ref #4	Amy Min Yang	08/14/12 16:43	Retrieve from Storage
MC12784-5.1	Amy Min Yang	GCMSV	08/14/12 16:43	Load on Instrument
MC12784-5.1	GCMSV	Amy Min Yang	08/15/12 17:23	Unload from Instrument
MC12784-5.1	Amy Min Yang	VOC Ref #4	08/15/12 17:23	Return to Storage
MC12784-6.2	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12784-6.2	Nick Krasinski		08/08/12 23:10	Depleted

New England ACCUTEST LABORATORIES

GC/MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-MB	V10475.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ng/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

6.1.1

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-MB	V10475.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ng/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ng/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

6.1.1

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-MB	V10475.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

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

6.1.1

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-MB	V10528.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ng/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

6.1.2

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-MB	V10528.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Tolnene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorohenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

6.1.2

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-MB	V10528.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

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

6.1.2

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-BS	V10473.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	68.4	137* [a]	70-130
107-02-8	Acrolein	250	239	96	70-130
107-13-1	Acrylonitrile	50	237	474* [b]	70-130
71-43-2	Benzene	50	45.8	92	70-130
108-86-1	Bromobenzene	50	49.4	99	70-130
74-97-5	Bromochloromethane	50	48.0	96	70-130
75-27-4	Bromodichloromethane	50	44.4	89	70-130
75-25-2	Bromoform	50	45.2	90	70-130
74-83-9	Bromomethane	50	44.7	89	70-130
78-93-3	2-Butanone (MEK)	50	56.9	114	70-130
104-51-8	n-Butylbenzene	50	50.0	100	70-130
135-98-8	sec-Butylbenzene	50	53.6	107	70-130
98-06-6	tert-Butylbenzene	50	52.0	104	70-130
75-15-0	Carbon disulfide	50	53.2	106	70-130
56-23-5	Carbon tetrachloride	50	44.3	89	70-130
108-90-7	Chlorobenzeue	50	51.5	103	70-130
75-00-3	Chloroethane	50	47.1	94	70-130
110-75-8	2-Chloroethyl vinyl ether	50	51.3	103	70-130
67-66-3	Chloroform	50	46.4	93	70-130
74-87-3	Chloromethane	50	48.8	98	70-130
95-49-8	o-Chlorotoluene	50	49.0	98	70-130
106-43-4	p-Chlorotoluene	50	50.3	101	70-130
124-48-1	Dibromochloromethane	50	41.9	84	70-130
95-50-1	1,2-Dichlorobenzene	50	50.7	101	70-130
541-73-1	1,3-Dichlorobenzene	50	50.4	101	70-130
106-46-7	1,4-Dichlorobenzene	50	46.5	93	70-130
75-71-8	Dichlorodifluoromethane	50	63.4	127	70-130
75-34-3	1,1-Dichloroethane	50	46.9	94	70-130
107-06-2	1,2-Dichloroethane	50	45.7	91	70-130
75-35-4	1,1-Dichloroethene	50	53.5	107	70-130
156-59-2	cis-1,2-Dichloroethene	50	46.2	92	70-130
156-60-5	trans-1,2-Dichloroethene	50	47.0	94	70-130
78-87-5	1,2-Dichloropropane	50	47.2	94	70-130
142-28-9	1,3-Dichloropropane	50	48.1	96	70-130
594-20-7	2,2-Dichloropropane	50	52.6	105	70-130
563-58-6	1,1-Dichloropropene	50	49.9	100	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-BS	V10473.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	41.9	84	70-130
10061-02-6	trans-1,3-Dichloropropene	50	43.5	87	70-130
123-91-1	1,4-Dioxane	250	222	89	70-130
97-63-2	Ethyl methacrylate	50	45.7	91	77-137
100-41-4	Ethylbenzene	50	48.8	98	70-130
87-68-3	Hexachlorobutadiene	50	47.6	95	70-130
591-78-6	2-Hexanone	50	58.9	118	70-130
98-82-8	Isopropylbenzene	50	52.8	106	70-130
99-87-6	p-Isopropyltoluene	50	52.2	104	70-130
1634-04-4	Methyl Tert Butyl Ether	50	49.1	98	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	50.7	101	70-130
74-95-3	Methylene bromide	50	49.2	98	70-130
75-09-2	Methylene chloride	50	45.3	91	70-130
103-65-1	n-Propylbenzene	50	52.4	105	70-130
100-42-5	Styrene	50	50.7	101	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	43.9	88	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	46.5	93	70-130
127-18-4	Tetrachloroethene	50	46.9	94	70-130
108-88-3	Tolnene	50	46.9	94	70-130
87-61-6	1,2,3-Trichlorobenzene	50	51.5	103	70-130
120-82-1	1,2,4-Trichlorobenzene	50	49.6	99	70-130
71-55-6	1,1,1-Trichloroethane	50	46.4	93	70-130
79-00-5	1,1,2-Trichloroethane	50	48.5	97	70-130
79-01-6	Trichloroethene	50	46.9	94	70-130
75-69-4	Trichlorofluoromethane	50	51.0	102	70-130
96-18-4	1,2,3-Trichloropropane	50	47.5	95	70-130
95-63-6	1,2,4-Trimethylbenzene	50	46.6	93	70-130
108-67-8	1,3,5-Trimethylbenzene	50	47.1	94	70-130
108-05-4	Vinyl Acetate	50	47.8	96	70-130
75-01-4	Vinyl chloride	50	45.5	91	70-130
	m,p-Xylene	100	102	102	70-130
95-47-6	o-Xylene	50	52.6	105	70-130
1330-20-7	Xylene (total)	150	154	103	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV436-BS	V10473.D	1	08/14/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
2037-26-5	Toluene-D8	104%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-BS	V10526.D	1	08/15/12	AMY	n/a	n/a	MSV438

6.2.2

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	65.7	131* [a]	70-130
107-02-8	Acrolein	250	251	100	70-130
107-13-1	Acrylonitrile	50	250	500* [b]	70-130
71-43-2	Benzene	50	45.9	92	70-130
108-86-1	Bromobenzene	50	48.4	97	70-130
74-97-5	Bromochloromethane	50	48.3	97	70-130
75-27-4	Bromodichloromethane	50	45.5	91	70-130
75-25-2	Bromoform	50	45.5	91	70-130
74-83-9	Bromomethane	50	48.3	97	70-130
78-93-3	2-Butanone (MEK)	50	57.4	115	70-130
104-51-8	n-Butylbenzene	50	50.7	101	70-130
135-98-8	sec-Butylbenzene	50	53.1	106	70-130
98-06-6	tert-Butylbenzene	50	52.1	104	70-130
75-15-0	Carbon disulfide	50	54.7	109	70-130
56-23-5	Carbon tetrachloride	50	44.2	88	70-130
108-90-7	Chlorobenzene	50	49.1	98	70-130
75-00-3	Chloroethane	50	48.9	98	70-130
110-75-8	2-Chloroethyl vinyl ether	50	49.7	99	70-130
67-66-3	Chloroform	50	48.6	97	70-130
74-87-3	Chloromethane	50	47.0	94	70-130
95-49-8	o-Chlorotoluene	50	49.1	98	70-130
106-43-4	p-Chlorotoluene	50	50.6	101	70-130
124-48-1	Dibromochloromethane	50	42.2	84	70-130
95-50-1	1,2-Dichlorobenzene	50	50.7	101	70-130
541-73-1	1,3-Dichlorobenzene	50	49.3	99	70-130
106-46-7	1,4-Dichlorobenzene	50	45.6	91	70-130
75-71-8	Dichlorodifluoromethane	50	57.0	114	70-130
75-34-3	1,1-Dichloroethane	50	47.6	95	70-130
107-06-2	1,2-Dichloroethane	50	46.2	92	70-130
75-35-4	1,1-Dichloroethene	50	55.8	112	70-130
156-59-2	cis-1,2-Dichloroethene	50	47.4	95	70-130
156-60-5	trans-1,2-Dichloroethene	50	48.2	96	70-130
78-87-5	1,2-Dichloropropane	50	46.2	92	70-130
142-28-9	1,3-Dichloropropane	50	47.5	95	70-130
594-20-7	2,2-Dichloropropane	50	43.4	87	70-130
563-58-6	1,1-Dichloropropene	50	49.6	99	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-BS	V10526.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	39.0	78	70-130
10061-02-6	trans-1,3-Dichloropropene	50	40.3	81	70-130
123-91-1	1,4-Dioxane	250	247	99	70-130
97-63-2	Ethyl methacrylate	50	45.9	92	77-137
100-41-4	Ethylbenzene	50	48.1	96	70-130
87-68-3	Hexachlorobutadiene	50	44.2	88	70-130
591-78-6	2-Hexanone	50	58.1	116	70-130
98-82-8	Isopropylbenzene	50	52.5	105	70-130
99-87-6	p-Isopropyltoluene	50	50.0	100	70-130
1634-04-4	Methyl Tert Butyl Ether	50	48.4	97	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	53.1	106	70-130
74-95-3	Methylene bromide	50	50.2	100	70-130
75-09-2	Methylene chloride	50	47.0	94	70-130
103-65-1	n-Propylbenzene	50	52.8	106	70-130
100-42-5	Styrene	50	48.9	98	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	42.2	84	70-130
79-34-5	1,1,2,2-Tetrachloroetbane	50	49.0	98	70-130
127-18-4	Tetrachloroethene	50	45.0	90	70-130
108-88-3	Toluene	50	46.2	92	70-130
87-61-6	1,2,3-Trichlorobenzene	50	49.3	99	70-130
120-82-1	1,2,4-Tricblorobenzeue	50	47.1	94	70-130
71-55-6	1,1,1-Trichloroethane	50	46.8	94	70-130
79-00-5	1,1,2-Trichloroethane	50	48.8	98	70-130
79-01-6	Trichloroethene	50	47.1	94	70-130
75-69-4	Trichlorofluoromethane	50	50.0	100	70-130
96-18-4	1,2,3-Trichloropropane	50	44.6	89	70-130
95-63-6	1,2,4-Trimethylbenzene	50	45.8	92	70-130
108-67-8	1,3,5-Trimethylbenzene	50	46.5	93	70-130
108-05-4	Vinyl Acetate	50	49.2	98	70-130
75-01-4	Vinyl chloride	50	44.4	89	70-130
	m,p-Xylene	100	96.9	97	70-130
95-47-6	o-Xylene	50	49.9	100	70-130
1330-20-7	Xylene (total)	150	147	98	70-130

* = Outside of Control Limits.

6.2.2

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV438-BS	V10526.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Ontside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12978-4MS	V10492.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4MSD	V10493.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4	V10491.D	1	08/15/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Compound	MC12978-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	8.0		50	46.4	77	43.8	72	6	70-130/30
107-02-8	Acrolein	ND		250	229	92	227	91	1	70-130/30
107-13-1	Acrylonitrile	ND		50	264	528* [a]	258	516* [a]	2	70-130/30
71-43-2	Benzene	ND		50	48.5	97	47.5	95	2	70-130/30
108-86-1	Bromobenzene	ND		50	50.4	101	49.9	100	1	70-130/30
74-97-5	Bromochloromethane	ND		50	49.4	99	49.2	98	0	70-130/30
75-27-4	Bromodichloromethane	ND		50	45.6	91	45.6	91	0	70-130/30
75-25-2	Bromoform	ND		50	42.8	86	44.2	88	3	70-130/30
74-83-9	Bromomethane	ND		50	53.5	107	51.7	103	3	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	45.8	92	45.5	91	1	70-130/30
104-51-8	n-Butylbenzene	ND		50	52.5	105	51.4	103	2	70-130/30
135-98-8	sec-Butylbenzene	ND		50	56.0	112	55.0	110	2	70-130/30
98-06-6	tert-Butylbenzene	ND		50	55.6	111	54.4	109	2	70-130/30
75-15-0	Carbon disulfide	ND		50	52.4	105	55.1	110	5	70-130/30
56-23-5	Carbon tetrachloride	ND		50	47.0	94	47.1	94	0	70-130/30
108-90-7	Chlorobenzene	ND		50	52.5	105	51.9	104	1	70-130/30
75-00-3	Chloroethane	ND		50	57.8	116	55.3	111	4	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* [b]	ND	0* [b]	nc	70-130/30
67-66-3	Chloroform	ND		50	50.2	100	49.7	99	1	70-130/30
74-87-3	Chloromethane	ND		50	58.0	116	56.5	113	3	70-130/30
95-49-8	o-Chlorotoluene	ND		50	51.5	103	50.9	102	1	70-130/30
106-43-4	p-Chlorotoluene	ND		50	53.0	106	52.0	104	2	70-130/30
124-48-1	Dibromochloromethane	ND		50	40.9	82	41.5	83	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	51.8	104	51.5	103	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	51.1	102	50.7	101	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	47.2	94	46.4	93	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	68.4	137* [b]	64.4	129	6	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	50.2	100	49.6	99	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	47.6	95	46.6	93	2	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	59.1	118	58.2	116	2	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	49.7	99	48.8	98	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	51.2	102	50.1	100	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	48.5	97	47.8	96	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	47.9	96	47.8	96	0	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	41.8	84	41.9	84	0	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	53.7	107	52.0	104	3	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12978-4MS	V10492.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4MSD	V10493.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4	V10491.D	1	08/15/12	AMY	n/a	n/a	MSV436

6.3.1

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

MC12784-4, MC12784-5

CAS No.	Compound	MC12978-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	39.4	79	39.2	78	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	39.8	80	40.2	80	1	70-130/30
123-91-1	1,4-Dioxane	ND		250	222	89	223	89	0	70-130/30
97-63-2	Ethyl methacrylate	ND		50	43.5	87	43.5	87	0	72-139/30
100-41-4	Ethylbenzene	1.2		50	51.9	101	51.0	100	2	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	44.3	89	45.1	90	2	70-130/30
591-78-6	2-Hexanone	ND		50	46.4	93	46.2	92	0	70-130/30
98-82-8	Isopropylbenzene	ND		50	55.5	111	54.2	108	2	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	53.3	107	52.5	105	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	47.0	94	47.5	95	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	46.6	93	46.7	93	0	70-130/30
74-95-3	Methylene bromide	ND		50	49.7	99	49.5	99	0	70-130/30
75-09-2	Methylene chloride	ND		50	49.0	98	48.1	96	2	70-130/30
103-65-1	n-Propylbenzene	ND		50	55.6	111	54.5	109	2	70-130/30
100-42-5	Styrene	ND		50	51.5	103	50.9	102	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	44.5	89	44.5	89	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	45.6	91	46.2	92	1	70-130/30
127-18-4	Tetrachloroethene	ND		50	47.3	95	46.3	93	2	70-130/30
108-88-3	Toluene	0.87		50	48.8	96	47.8	94	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	41.2	82	48.0	96	15	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	45.5	91	47.0	94	3	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	49.3	99	49.7	99	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	48.5	97	48.0	96	1	70-130/30
79-01-6	Trichloroethene	ND		50	49.3	99	48.1	96	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	54.4	109	53.9	108	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	41.4	83	41.5	83	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	48.1	96	47.3	95	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	48.9	98	48.0	96	2	70-130/30
108-05-4	Vinyl Acetate	ND		50	46.3	93	47.2	94	2	70-130/30
75-01-4	Vinyl chloride	ND		50	54.3	109	52.2	104	4	70-130/30
	m,p-Xylene	0.93		100	105	104	102	101	3	70-130/30
95-47-6	o-Xylene	ND		50	53.4	107	52.6	105	2	70-130/30
1330-20-7	Xylene (total)	1.4		150	158	104	155	102	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12978-4MS	V10492.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4MSD	V10493.D	1	08/15/12	AMY	n/a	n/a	MSV436
MC12978-4	V10491.D	1	08/15/12	AMY	n/a	n/a	MSV436

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

MC12784-4, MC12784-5

CAS No.	Surrogate Recoveries	MS	MSD	MC12978-4	Limits
1868-53-7	Dibromofluoromethane	100%	101%	95%	70-130%
2037-26-5	Toluene-D8	99%	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	96%	96%	97%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12784-1MS	V10547.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1MSD	V10548.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1	V10529.D	1	08/15/12	AMY	n/a	n/a	MSV438

6.3.2

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	MC12784-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	219	88	219	88	0	70-130/30
107-02-8	Acrolein	ND		1250	1140	91	1120	90	2	70-130/30
107-13-1	Acrylonitrile	ND		250	1320	528* a	1280	512* a	3	70-130/30
71-43-2	Benzene	1.6		250	242	96	236	94	3	70-130/30
108-86-1	Bromobenzene	ND		250	246	98	241	96	2	70-130/30
74-97-5	Bromochloromethane	ND		250	247	99	242	97	2	70-130/30
75-27-4	Bromodichloromethane	ND		250	228	91	228	91	0	70-130/30
75-25-2	Bromoform	ND		250	209	84	211	84	1	70-130/30
74-83-9	Bromomethane	ND		250	289	116	275	110	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	223	89	213	85	5	70-130/30
104-51-8	n-Butylbenzene	ND		250	256	102	251	100	2	70-130/30
135-98-8	sec-Butylbenzene	ND		250	273	109	268	107	2	70-130/30
98-06-6	tert-Butylbenzene	ND		250	270	108	264	106	2	70-130/30
75-15-0	Carbon disulfide	ND		250	269	108	280	112	4	70-130/30
56-23-5	Carbon tetrachloride	ND		250	226	90	229	92	1	70-130/30
108-90-7	Chlorobenzene	ND		250	253	101	250	100	1	70-130/30
75-00-3	Chloroethane	ND		250	302	121	283	113	6	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	ND	0* b	ND	0* b	nc	70-130/30
67-66-3	Chloroform	ND		250	255	102	250	100	2	70-130/30
74-87-3	Chloromethane	ND		250	294	118	277	111	6	70-130/30
95-49-8	o-Chlorotoluene	ND		250	255	102	248	99	3	70-130/30
106-43-4	p-Chlorotoluene	ND		250	261	104	254	102	3	70-130/30
124-48-1	Dibromochloromethane	ND		250	199	80	202	81	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	255	102	253	101	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	251	100	247	99	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	233	93	228	91	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	290	116	303	121	4	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	248	99	243	97	2	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	234	94	229	92	2	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	295	118	285	114	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	251	100	245	98	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	258	103	249	100	4	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	238	95	234	94	2	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	231	92	228	91	1	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	162	65* b	168	67* b	4	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	262	105	257	103	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12784-1MS	V10547.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1MSD	V10548.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1	V10529.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Compound	MC12784-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	184	74	184	74	0	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	181	72	183	73	1	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1030	82	952	76	8	70-130/30
97-63-2	Ethyl methacrylate	ND		250	212	85	211	84	0	72-139/30
100-41-4	Ethylbenzene	ND		250	249	100	245	98	2	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	209	84	207	83	1	70-130/30
591-78-6	2-Hexanone	ND		250	226	90	224	90	1	70-130/30
98-82-8	Isopropylbenzene	ND		250	274	110	266	106	3	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	255	102	251	100	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	1.9		250	229	91	226	90	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	230	92	226	90	2	70-130/30
74-95-3	Methylene bromide	ND		250	248	99	243	97	2	70-130/30
75-09-2	Methylene chloride	ND		250	248	99	241	96	3	70-130/30
103-65-1	n-Propylbenzene	ND		250	273	109	266	106	3	70-130/30
100-42-5	Styrene	ND		250	249	100	247	99	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	212	85	212	85	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	225	90	222	89	1	70-130/30
127-18-4	Tetrachloroethene	ND		250	227	91	227	91	0	70-130/30
108-88-3	Toluene	ND		250	239	96	236	94	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	196	78	224	90	13	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	216	86	222	89	3	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	241	96	245	98	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	238	95	234	94	2	70-130/30
79-01-6	Trichloroethene	ND		250	242	97	238	95	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	268	107	269	108	0	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	203	81	201	80	1	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	237	95	232	93	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	241	96	236	94	2	70-130/30
108-05-4	Vinyl Acetate	ND		250	236	94	236	94	0	70-130/30
75-01-4	Vinyl chloride	ND		250	274	110	258	103	6	70-130/30
	m,p-Xylene	ND		500	497	99	492	98	1	70-130/30
95-47-6	o-Xylene	ND		250	256	102	254	102	1	70-130/30
1330-20-7	Xylene (total)	ND		750	754	101	746	99	1	70-130/30

* = Outside of Control Limits.

6.3.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12784-1MS	V10547.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1MSD	V10548.D	5	08/16/12	AMY	n/a	n/a	MSV438
MC12784-1	V10529.D	1	08/15/12	AMY	n/a	n/a	MSV438

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

MC12784-1, MC12784-2, MC12784-3

CAS No.	Surrogate Recoveries	MS	MSD	MC12784-1	Limits
1868-53-7	Dibromofluoromethane	103%	102%	98%	70-130%
2037-26-5	Toluene-D8	99%	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	96%	95%	96%	70-130%

(a) Ontside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

6.3.2

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSV436-CC436	Injection Date:	08/14/12
Lab File ID:	V10473.D	Injection Time:	16:24
Instrument ID:	GCMSV	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	492683	6.53	834769	7.72	458798	11.08	376520	13.31	219409	3.49
Upper Limit [a]	985366	7.03	1669538	8.22	917596	11.58	753040	13.81	438818	3.99
Lower Limit [b]	246342	6.03	417385	7.22	229399	10.58	188260	12.81	109705	2.99
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV436-BS	492683	6.53	834769	7.72	458798	11.08	376520	13.31	219409	3.49
MSV436-MB	474379	6.54	821945	7.73	446793	11.08	357628	13.31	211406	3.51
ZZZZZZ	471993	6.54	811718	7.72	439858	11.08	350451	13.31	208816	3.51
ZZZZZZ	468868	6.54	809272	7.73	436958	11.08	347041	13.31	204454	3.51
MC12784-5	459155	6.54	798006	7.73	430893	11.08	339384	13.31	196145	3.51
MC12784-4	458566	6.53	794640	7.72	433418	11.08	339016	13.31	192000	3.50
ZZZZZZ	453374	6.54	787666	7.73	425476	11.08	333826	13.31	188772	3.51
ZZZZZZ	452683	6.54	787414	7.73	427926	11.08	334265	13.31	185661	3.52
ZZZZZZ	452807	6.53	781316	7.72	425283	11.08	335334	13.31	181222	3.51
ZZZZZZ	444982	6.54	769934	7.73	420108	11.08	325557	13.31	177054	3.51
ZZZZZZ	463025	6.53	807680	7.72	439343	11.08	340611	13.31	177922	3.51
ZZZZZZ	446611	6.54	773669	7.73	423143	11.08	326386	13.31	167077	3.51
ZZZZZZ	444437	6.54	775469	7.73	419562	11.08	326890	13.31	161095	3.51
ZZZZZZ	447060	6.54	777115	7.73	425781	11.08	333607	13.31	163872	3.52
ZZZZZZ	449078	6.54	783773	7.73	428792	11.08	337100	13.31	159582	3.51
ZZZZZZ	455677	6.54	779840	7.73	421066	11.08	330061	13.31	162970	3.51
ZZZZZZ	434471	6.54	757639	7.73	411586	11.08	323859	13.31	156161	3.51
MC12978-4	446388	6.53	772351	7.72	419797	11.08	327418	13.31	158023	3.50
MC12978-4MS	451732	6.54	775749	7.73	424641	11.08	341267	13.31	169032	3.51
MC12978-4MSD	450187	6.53	781959	7.72	426053	11.08	343648	13.31	173123	3.50

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

(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.

6.4.1

Volatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSV438-CC436	Injection Date:	08/15/12
Lab File ID:	V10525.D	Injection Time:	18:19
Instrument ID:	GCMSV	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	419715	6.55	726864	7.73	404512	11.08	320394	13.31	192684	3.52
Upper Limit [a]	839430	7.05	1453728	8.23	809024	11.58	640788	13.81	385368	4.02
Lower Limit [b]	209858	6.05	363432	7.23	202256	10.58	160197	12.81	96342	3.02
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV438-BS	421621	6.55	734246	7.73	406653	11.08	323326	13.31	189923	3.52
MSV438-MB	414455	6.55	726914	7.73	395289	11.08	303592	13.31	164685	3.52
MC12784-1	408786	6.55	719943	7.73	392533	11.08	303375	13.31	155513	3.51
MC12784-2	432474	6.55	758674	7.73	416954	11.08	320321	13.31	157857	3.51
MC12784-3	403315	6.55	710297	7.73	389144	11.08	297021	13.31	148391	3.52
ZZZZZZ	404374	6.54	710090	7.73	391337	11.08	301224	13.31	146246	3.51
ZZZZZZ	408797	6.55	721028	7.73	394912	11.08	311440	13.31	163332	3.53
ZZZZZZ	415858	6.54	724048	7.73	396692	11.08	317806	13.31	143255	3.51
ZZZZZZ	442954	6.55	773936	7.73	425488	11.08	338832	13.31	145309	3.52
ZZZZZZ	417158	6.54	729483	7.73	395216	11.08	310010	13.31	124756	3.52
ZZZZZZ	415771	6.54	727510	7.73	398291	11.08	304583	13.31	120444	3.51
ZZZZZZ	411116	6.54	718115	7.73	391129	11.08	302693	13.31	132797	3.52
ZZZZZZ	407635	6.54	721047	7.73	391918	11.08	300545	13.31	123655	3.52
ZZZZZZ	405101	6.55	713193	7.73	391833	11.08	298532	13.32	125633	3.52
ZZZZZZ	407197	6.54	717962	7.73	392603	11.08	298891	13.32	126126	3.51
ZZZZZZ	408937	6.55	720946	7.73	392250	11.08	301879	13.32	121812	3.52
ZZZZZZ	436986	6.54	768522	7.73	420032	11.08	322571	13.32	141618	3.51
ZZZZZZ	399301	6.55	706566	7.73	386544	11.08	296645	13.32	125772	3.52
ZZZZZZ	399199	6.55	702495	7.73	385419	11.08	293780	13.32	117951	3.52
MC12784-1MS	405335	6.54	704109	7.73	391620	11.08	307020	13.32	127883	3.51
MC12784-1MSD	406009	6.55	704595	7.73	390235	11.08	310292	13.32	124055	3.51

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

(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: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12784-1	V10529.D	98.0	98.0	96.0
MC12784-2	V10530.D	98.0	98.0	96.0
MC12784-3	V10531.D	97.0	97.0	97.0
MC12784-4	V10479.D	95.0	99.0	97.0
MC12784-5	V10478.D	96.0	99.0	98.0
MC12784-1MS	V10547.D	103.0	99.0	96.0
MC12784-1MSD	V10548.D	102.0	99.0	95.0
MC12978-4MS	V10492.D	100.0	99.0	96.0
MC12978-4MSD	V10493.D	101.0	99.0	96.0
MSV436-BS	V10473.D	103.0	104.0	102.0
MSV436-MB	V10475.D	95.0	98.0	95.0
MSV438-BS	V10526.D	101.0	98.0	95.0
MSV438-MB	V10528.D	96.0	97.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Tolnene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-MB	F56590.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Auiline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-MB	F56590.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	47%	15-110%
4165-62-2	Phenol-d5	32%	15-110%
118-79-6	2,4,6-Tribromophenol	76%	15-110%
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	75%	30-130%
1718-51-0	Terphenyl-d14	94%	30-130%

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

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29916-MB	W3685.D	1	08/07/12	KR	08/03/12	OP29916	MSW169

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyreue	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	119%	30-130%

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-BS	F56591.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	38.1	38	30-130
95-57-8	2-Chlorophenol	100	75.0	75	30-130
59-50-7	4-Chloro-3-methyl phenol	100	78.8	79	30-130
120-83-2	2,4-Dichlorophenol	100	82.2	82	30-130
105-67-9	2,4-Dimethylphenol	100	75.4	75	30-130
51-28-5	2,4-Dinitrophenol	100	72.8	73	30-130
534-52-1	4,6-Dinitro-o-cresol	100	90.4	90	30-130
95-48-7	2-Methylphenol	100	67.9	68	30-130
	3&4-Methylphenol	200	128	64	30-130
88-75-5	2-Nitrophenol	100	83.6	84	30-130
100-02-7	4-Nitrophenol	100	39.2	39	30-130
87-86-5	Pentachlorophenol	100	81.4	81	30-130
108-95-2	Phenol	100	39.9	40	30-130
95-95-4	2,4,5-Trichlorophenol	100	80.8	81	30-130
88-06-2	2,4,6-Trichlorophenol	100	82.6	83	30-130
62-53-3	Aniline	50	15.8	32* a	40-140
101-55-3	4-Bromophenyl phenyl ether	50	41.7	83	40-140
85-68-7	Butyl benzyl phthalate	50	42.5	85	40-140
100-51-6	Benzyl Alcohol	50	34.3	69	40-140
91-58-7	2-Chloronaphthalene	50	41.7	83	40-140
106-47-8	4-Chloroaniline	50	29.3	59	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	43.0	86	40-140
111-44-4	bis(2-Chloroethyl)ether	50	41.4	83	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.4	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	41.5	83	40-140
122-66-7	1,2-Diphenylhydrazine	50	40.3	81	40-140
121-14-2	2,4-Dinitrotoluene	50	42.9	86	40-140
606-20-2	2,6-Dinitrotoluene	50	42.3	85	40-140
91-94-1	3,3'-Dichlorobenzidine	50	32.4	65	40-140
132-64-9	Dibenzofuran	50	39.6	79	40-140
84-74-2	Di-n-butyl phthalate	50	40.9	82	40-140
117-84-0	Di-n-octyl phthalate	50	35.4	71	40-140
84-66-2	Diethyl phthalate	50	40.0	80	40-140
131-11-3	Dimethyl phthalate	50	41.8	84	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	40.7	81	40-140
118-74-1	Hexachlorobenzene	50	40.1	80	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-BS	F56591.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	24.5	49	40-140
67-72-1	Hexachloroethane	50	31.9	64	40-140
78-59-1	Isophorone	50	40.3	81	40-140
88-74-4	2-Nitroaniline	50	42.4	85	40-140
99-09-2	3-Nitroaniline	50	34.0	68	40-140
100-01-6	4-Nitroaniline	50	38.0	76	40-140
98-95-3	Nitrobenzene	50	42.0	84	40-140
62-75-9	n-Nitrosodimethylamine	50	26.0	52	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	44.1	88	40-140
86-30-6	N-Nitrosodiphenylamine	50	41.5	83	40-140
110-86-1	Pyridine	50	21.3	43	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	53%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	77%	15-110%
4165-60-0	Nitrobenzene-d5	80%	30-130%
321-60-8	2-Fluorobiphenyl	76%	30-130%
1718-51-0	Terphenyl-d14	93%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29916-BS	W3643.D	1	08/06/12	KR	08/03/12	OP29916	MSW168

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	41.2	82	40-140
208-96-8	Acenaphthylene	50	34.5	69	40-140
120-12-7	Anthracene	50	48.0	96	40-140
56-55-3	Benzo(a)anthracene	50	50.3	101	40-140
50-32-8	Benzo(a)pyrene	50	37.6	75	40-140
205-99-2	Benzo(b)fluoranthene	50	49.2	98	40-140
191-24-2	Benzo(g,h,i)perylene	50	52.1	104	40-140
207-08-9	Benzo(k)fluoranthene	50	48.3	97	40-140
218-01-9	Chrysene	50	43.3	87	40-140
53-70-3	Dibenzo(a,h)anthracene	50	52.2	104	40-140
206-44-0	Fluoranthene	50	48.3	97	40-140
86-73-7	Fluorene	50	46.2	92	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	52.3	105	40-140
90-12-0	1-Methylnaphthalene	50	36.0	72	40-140
91-57-6	2-Methylnaphthalene	50	40.5	81	40-140
91-20-3	Naphthalene	50	41.7	83	40-140
85-01-8	Phenanthrene	50	46.3	93	40-140
129-00-0	Pyrene	50	47.6	95	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	78%	30-130%
1718-51-0	Terphenyl-d14	114%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-MS	F56592.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
OP29915-MSD	F56593.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
MC12712-7	F56594.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	MC12712-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	38.1	38	38.5	39	1	30-130/20
95-57-8	2-Chlorophenol	ND		100	72.4	72	77.9	78	7	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	76.5	77	82.9	83	8	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	78.8	79	84.5	85	7	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	70.9	71	77.7	78	9	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	75.4	75	81.3	81	8	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	87.2	87	96.8	97	10	30-130/20
95-48-7	2-Methylphenol	ND		100	65.9	66	70.4	70	7	30-130/20
	3&4-Methylphenol	ND		200	123	62	132	66	7	30-130/20
88-75-5	2-Nitrophenol	ND		100	79.9	80	87.7	88	9	30-130/20
100-02-7	4-Nitrophenol	ND		100	38.9	39	41.3	41	6	30-130/20
87-86-5	Pentachlorophenol	ND		100	77.7	78	83.5	84	7	30-130/20
108-95-2	Phenol	ND		100	39.3	39	40.5	41	3	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	79.3	79	86.0	86	8	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	82.7	83	90.4	90	9	30-130/20
62-53-3	Aniline	ND		50	14.7	29* [a]	16.9	34* [a]	14	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	39.3	79	43.1	86	9	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	41.6	83	45.5	91	9	40-140/20
100-51-6	Benzyl Alcohol	ND		50	33.1	66	35.6	71	7	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	38.4	77	40.9	82	6	40-140/20
106-47-8	4-Chloroaniline	ND		50	28.8	58	32.4	65	12	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	41.5	83	45.2	90	9	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	39.3	79	43.0	86	9	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	43.3	87	46.8	94	8	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	40.0	80	43.7	87	9	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	38.4	77	41.6	83	8	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	42.8	86	46.0	92	7	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	41.7	83	44.8	90	7	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	34.7	69	36.5	73	5	40-140/20
132-64-9	Dibenzofuran	ND		50	37.6	75	40.5	81	7	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	39.5	79	42.9	86	8	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	33.3	67	36.1	72	8	40-140/20
84-66-2	Diethyl phthalate	ND		50	39.7	79	43.4	87	9	40-140/20
131-11-3	Dimethyl phthalate	ND		50	41.7	83	45.2	90	8	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	41.0	82	44.1	88	7	40-140/20
118-74-1	Hexachlorobenzene	ND		50	38.9	78	41.8	84	7	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Ceutral Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29915-MS	F56592.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
OP29915-MSD	F56593.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691
MC12712-7	F56594.D	1	08/06/12	KR	08/03/12	OP29915	MSF2691

The QC reported here applies to the following samples: Method: SW846 8270C

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	MC12712-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	19.8	40	22.0	44	11	40-140/20
67-72-1	Hexachloroethane	ND		50	26.8	54	28.2	56	5	40-140/20
78-59-1	Isophorone	ND		50	39.8	80	41.8	84	5	40-140/20
88-74-4	2-Nitroaniline	ND		50	41.6	83	45.5	91	9	40-140/20
99-09-2	3-Nitroaniline	ND		50	35.3	71	38.1	76	8	40-140/20
100-01-6	4-Nitroaniline	ND		50	37.1	74	40.9	82	10	40-140/20
98-95-3	Nitrobenzene	ND		50	39.8	80	42.6	85	7	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	23.9	48	26.3	53	10	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	42.3	85	45.9	92	8	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	40.2	80	43.6	87	8	40-140/20
110-86-1	Pyridine	ND		50	19.0	38* [a]	21.7	43	13	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12712-7	Limits
367-12-4	2-Fluorophenol	52%	53%	46%	15-110%
4165-62-2	Phenol-d5	37%	38%	31%	15-110%
118-79-6	2,4,6-Tribromophenol	75%	82%	72%	15-110%
4165-60-0	Nitrobenzene-d5	77%	84%	75%	30-130%
321-60-8	2-Fluorobiphenyl	69%	77%	70%	30-130%
1718-51-0	Terphenyl-d14	91%	100%	93%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29916-MS	W3644.D	1	08/06/12	KR	08/03/12	OP29916	MSW168
OP29916-MSD	W3645.D	1	08/06/12	KR	08/03/12	OP29916	MSW168
MC12712-6	W3646.D	1	08/06/12	KR	08/03/12	OP29916	MSW168

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12784-1, MC12784-2, MC12784-3, MC12784-4

CAS No.	Compound	MC12712-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.018		50	38.3	77	41.5	83	8	40-140/20
208-96-8	Acenaphthylene	ND		50	32.2	64	34.7	69	7	40-140/20
120-12-7	Anthracene	ND		50	46.2	92	50.6	101	9	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	48.9	98	53.2	106	8	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	36.4	73	39.2	78	7	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	47.4	95	50.6	101	7	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	50.2	100	54.2	108	8	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	46.8	94	50.5	101	8	40-140/20
218-01-9	Chrysene	ND		50	42.4	85	46.1	92	8	40-140/20
53-70-3	Dibenzo(a,b)anthracene	ND		50	50.5	101	54.5	109	8	40-140/20
206-44-0	Fluoranthene	ND		50	47.3	95	51.7	103	9	40-140/20
86-73-7	Fluorene	ND		50	44.4	89	47.7	95	7	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	50.7	101	54.5	109	7	40-140/20
90-12-0	1-Methylnapbthalene	ND		50	30.8	62	31.0	62	1	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	36.2	72	38.5	77	6	40-140/20
91-20-3	Naphthalene	ND		50	37.2	74	39.9	80	7	40-140/20
85-01-8	Phenanthrene	0.019		50	45.1	90	48.5	97	7	40-140/20
129-00-0	Pyrene	ND		50	46.2	92	50.1	100	8	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12712-6	Limits
4165-60-0	Nitrobenzene-d5	83%	89%	82%	30-130%
321-60-8	2-Fluorobiphenyl	70%	77%	67%	30-130%
1718-51-0	Terphenyl-d14	109%	122%	118%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2691-CC2682	Injection Date:	08/06/12
Lab File ID:	F56589.D	Injection Time:	15:02
Instrument ID:	GCMSF	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	432950	3.99	1631613	4.98	1044581	6.40	1933815	7.76	1782479	10.53	1710404	11.99
Upper Limit [a]	865900	4.49	3263226	5.48	2089162	6.90	3867630	8.26	3564958	11.03	3420808	12.49
Lower Limit [b]	216475	3.49	815807	4.48	522291	5.90	966908	7.26	891240	10.03	855202	11.49
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	1S 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP29915-MB	383650	3.99	1437821	4.98	907299	6.40	1696845	7.76	1570844	10.53	1822542	11.99
OP29915-BS	418118	3.99	1538950	4.98	988216	6.40	1791223	7.76	1694824	10.53	1935287	11.99
OP29915-MS	436229	3.99	1607758	4.98	1020447	6.41	1900410	7.76	1728310	10.53	2099324	11.99
OP29915-MSD	402216	3.99	1487896	4.98	941735	6.41	1745345	7.76	1599738	10.53	1955955	11.99
MC12712-7	396414	3.99	1479004	4.98	923875	6.40	1671577	7.76	1603384	10.53	1964464	11.99
ZZZZZZ	427835	3.99	1601739	4.97	998637	6.40	1823384	7.76	1706117	10.53	2074537	11.99
MC12784-1	409583	3.99	1525751	4.97	958692	6.40	1728938	7.76	1640200	10.53	1998028	11.99
MC12784-2	406549	3.99	1538543	4.98	940592	6.40	1710294	7.76	1586298	10.53	1934047	11.99
MC12784-3	393285	3.99	1481827	4.98	914958	6.40	1667369	7.76	1566609	10.53	1891745	11.99
MC12784-4	406739	3.99	1485869	4.98	956983	6.40	1741932	7.76	1617003	10.53	1961484	11.99
OP29913-MB	438216	3.99	1579899	4.97	974103	6.40	1721295	7.76	1137697	10.53	966525	11.99
OP29913-BS	449657	3.99	1643524	4.98	1003988	6.41	1806382	7.76	1166998	10.53	985455	11.99
OP29913-MS	479854	3.99	1746006	4.98	1076826	6.41	1911585	7.76	1696703	10.54	1888633	11.99
OP29913-MSD	470246	3.99	1704887	4.98	1069728	6.40	1895865	7.76	1663094	10.53	1777284	11.99
MC12802-4	498577	3.99	1827931	4.97	1131169	6.40	2029158	7.76	1775783	10.53	1759471	11.99
ZZZZZZ	466830	3.99	1669951	4.98	1058462	6.40	1916240	7.76	1648111	10.53	1597537	11.99
ZZZZZZ	468133	3.99	1714786	4.98	1059444	6.41	1905364	7.76	1617097	10.53	1549703	11.99
ZZZZZZ	456363	3.99	1669126	4.98	1035231	6.40	1817256	7.76	1595312	10.53	1522923	11.99
ZZZZZZ	492269	3.99	1844114	4.98	1152515	6.41	2020688	7.76	1655477	10.53	1395627	11.99
ZZZZZZ	452289	3.99	1670208	4.98	1027604	6.41	1784172	7.76	1473576	10.53	1257377	11.99
ZZZZZZ	438063	3.99	1624022	4.98	1019445	6.40	1809419	7.76	1445035	10.53	1219928	11.99
ZZZZZZ	450870	3.99	1674794	4.98	1029454	6.40	1843976	7.76	1652467	10.53	2035826	11.99
ZZZZZZ	427581	3.99	1559440	4.98	943546	6.41	1677679	7.76	1567724	10.53	1905392	11.99
ZZZZZZ	487095	3.99	1763097	4.98	1075475	6.41	1907123	7.76	1683625	10.53	2012400	11.99
ZZZZZZ	446207	3.99	1659081	4.98	1064460	6.40	1916454	7.76	1788087	10.53	1920691	11.99
ZZZZZZ	437852	3.99	1641716	4.98	1032841	6.40	1864183	7.76	1697041	10.53	1828261	11.99
ZZZZZZ	539439	3.99	1976552	4.98	1190109	6.41	2072088	7.76	1719619	10.53	2031859	11.99
ZZZZZZ	425645	3.99	1600729	4.98	996332	6.41	1795515	7.76	1619594	10.53	1990029	12.00
ZZZZZZ	395855	3.99	1476618	4.98	915590	6.41	1604991	7.76	1426754	10.54	1753604	12.00

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2691-CC2682	Injection Date:	08/06/12
Lab File ID:	F56589.D	Injection Time:	15:02
Instrument ID:	GCMSF	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 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: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW168-CC72	Injection Date:	08/06/12
Lab File ID:	W3636.D	Injection Time:	13:27
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	1236243	3.82	4608746	4.80	2670470	6.23	4429888	7.55	4560101	10.33	6355294	11.79
Upper Limit [a]	2472486	4.32	9217492	5.30	5340940	6.73	8859776	8.05	9120202	10.83	1271058	12.29
Lower Limit [b]	618122	3.32	2304373	4.30	1335235	5.73	2214944	7.05	2280051	9.83	3177647	11.29
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
OP29924-MB	854039	3.82	3285396	4.80	1869834	6.23	3113316	7.55	3187347	10.33	3999071	11.78
OP29924-BS	747448	3.82	2889281	4.80	1638807	6.23	2676159	7.55	2818519	10.33	3502535	11.78
OP29924-MS	752483	3.82	2951476	4.80	1687908	6.23	2689239	7.55	2798210	10.33	3462956	11.78
OP29924-MSD	769493	3.82	3042349	4.80	1735851	6.23	2803353	7.55	2894624	10.33	3635667	11.78
MC12811-2	690291	3.82	2774892	4.80	1600814	6.23	2619326	7.55	2627804	10.33	3464084	11.78
OP29916-BS	679320	3.82	2620928	4.80	1469583	6.23	2438504	7.55	2536571	10.33	3650316	11.78
OP29916-MS	705396	3.82	2724361	4.80	1528107	6.23	2527821	7.55	2636182	10.33	3797544	11.78
OP29916-MSD	637393	3.82	2486426	4.80	1396176	6.23	2322425	7.55	2421497	10.33	3551264	11.78
MC12712-6	625353	3.81	2438851	4.80	1371448	6.23	2256770	7.55	2307062	10.33	3514408	11.78
ZZZZZZ	598376[c]	3.82	2420629	4.80	1401288	6.23	2261785	7.55	2303029	10.33	3300513	11.78
ZZZZZZ	625988	3.82	2506981	4.80	1441863	6.23	2374874	7.55	2430518	10.33	3450583	11.78
ZZZZZZ	695221	3.82	2777106	4.80	1606825	6.23	2608695	7.55	2626670	10.33	3828232	11.78
ZZZZZZ	722239	3.82	2855563	4.80	1614861	6.23	2632607	7.55	2666859	10.33	3807740	11.78
ZZZZZZ	622929	3.82	2526902	4.80	1467084	6.23	2366218	7.55	2368338	10.33	3426368	11.78
ZZZZZZ	620711	3.82	2529754	4.80	1478558	6.23	2397389	7.55	2411035	10.33	3571723	11.78
ZZZZZZ	744538	3.82	2884797	4.80	1638134	6.23	2716054	7.55	2784856	10.33	3341822	11.78
ZZZZZZ	765124	3.82	2987410	4.80	1689621	6.23	2763380	7.55	2788840	10.33	3286926	11.78
ZZZZZZ	669721	3.82	2627775	4.80	1479963	6.23	2419144	7.55	2460373	10.33	3352514	11.78
ZZZZZZ	718698	3.82	2909365	4.80	1681949	6.23	2654273	7.55	2658237	10.33	3603629	11.78
ZZZZZZ	688151	3.82	2730940	4.80	1599751	6.23	2584324	7.55	2595978	10.33	3405029	11.78
ZZZZZZ	669911	3.82	2651156	4.80	1541574	6.23	2492482	7.55	2517278	10.33	3412123	11.78
ZZZZZZ	660321	3.82	2641123	4.80	1524823	6.23	2478141	7.55	2489280	10.33	3328976	11.78
ZZZZZZ	665311	3.82	2691126	4.80	1545892	6.23	2512413	7.55	2521539	10.33	2889432[c]	11.78
ZZZZZZ	689877	3.82	2805738	4.80	1625488	6.23	2656063	7.55	2630700	10.33	3037230[c]	11.78
ZZZZZZ	675299	3.82	2650857	4.80	1516344	6.23	2479854	7.55	2607983	10.33	3063383[c]	11.78
ZZZZZZ	639503	3.82	2512904	4.80	1413339	6.23	2353293	7.55	2414033	10.33	3018570[c]	11.78

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.

Semivolatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW168-CC72	Injection Date:	08/06/12
Lab File ID:	W3636.D	Injection Time:	13:27
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

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

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Internal Standard Area Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW169-CC72	Injection Date:	08/07/12
Lab File ID:	W3677.D	Injection Time:	07:52
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	1027123	3.82	3921337	4.80	2254134	6.23	3690573	7.55	3828401	10.33	5274554	11.78
Upper Limit [a]	2054246	4.32	7842674	5.30	4508268	6.73	7381146	8.05	7656802	10.83	1054910	12.28
Lower Limit [b]	513562	3.32	1960669	4.30	1127067	5.73	1845287	7.05	1914201	9.83	2637277	11.28
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
MC12784-1	643439	3.82	2516268	4.80	1426910	6.22	2378429	7.55	2450632	10.33	3720381	11.78
MC12784-2	675445	3.82	2627686	4.80	1475817	6.22	2455961	7.55	2509180	10.33	3836876	11.78
MC12784-3	657861	3.82	2561579	4.80	1441362	6.22	2392782	7.55	2462335	10.33	3735190	11.78
MC12784-4	659769	3.82	2560479	4.80	1441011	6.23	2384883	7.55	2479644	10.33	3800217	11.78
ZZZZZZ	676655	3.82	2608170	4.80	1504666	6.22	2442812	7.55	2477446	10.33	3356295	11.78
ZZZZZZ	665147	3.82	2562771	4.80	1489948	6.23	2469378	7.55	2463824	10.33	3346855	11.78
ZZZZZZ	875971	3.82	3301897	4.80	1886806	6.23	3087276	7.55	3152656	10.33	4217277	11.78
OP29916-MB	684327	3.82	2676907	4.80	1494269	6.23	2472759	7.55	2565038	10.33	3749408	11.78
ZZZZZZ	604244	3.82	2398397	4.80	1350029	6.23	2208439	7.55	2261030	10.33	3317989	11.78
ZZZZZZ	599577	3.82	2398406	4.80	1335557	6.22	2235086	7.55	2300493	10.33	3111892	11.78
ZZZZZZ	615177	3.82	2434986	4.80	1368977	6.23	2282059	7.55	2361201	10.33	3279122	11.78
ZZZZZZ	627289	3.82	2498567	4.80	1407321	6.23	2318709	7.55	2382757	10.33	3288709	11.78
ZZZZZZ	637706	3.82	2539150	4.80	1425545	6.22	2354611	7.55	2393269	10.33	3460374	11.78
ZZZZZZ	677196	3.82	2601345	4.80	1488092	6.23	2429508	7.55	2492825	10.33	3313417	11.78
MC12811-2	667639	3.82	2601204	4.80	1490409	6.23	2426484	7.55	2452884	10.33	3205001	11.78
ZZZZZZ	656590	3.82	2554359	4.80	1475384	6.23	2404694	7.55	2441851	10.33	3256115	11.78
ZZZZZZ	688483	3.82	2675702	4.80	1542976	6.23	2534277	7.55	2559214	10.33	3378703	11.78

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 Surrogate Recovery Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12784-1	F56596.D	43.0	33.0	75.0	74.0	72.0	53.0
MC12784-2	F56597.D	43.0	32.0	74.0	74.0	73.0	64.0
MC12784-3	F56598.D	43.0	30.0	75.0	75.0	73.0	86.0
MC12784-4	F56599.D	43.0	29.0	74.0	75.0	69.0	94.0
OP29915-BS	F56591.D	53.0	38.0	77.0	80.0	76.0	93.0
OP29915-MB	F56590.D	47.0	32.0	76.0	79.0	75.0	94.0
OP29915-MS	F56592.D	52.0	37.0	75.0	77.0	69.0	91.0
OP29915-MSD	F56593.D	53.0	38.0	82.0	84.0	77.0	100.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenne, Roxana, IL

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
MC12784-1	W3678.D	77.0	69.0	66.0
MC12784-2	W3679.D	78.0	70.0	82.0
MC12784-3	W3680.D	81.0	71.0	109.0
MC12784-4	W3681.D	81.0	69.0	118.0
OP29916-BS	W3643.D	86.0	78.0	114.0
OP29916-MB	W3685.D	85.0	73.0	119.0
OP29916-MS	W3644.D	83.0	70.0	109.0
OP29916-MSD	W3645.D	89.0	77.0	122.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MB	BK15933.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12784-1, MC12784-2, MC12784-3, MC12784-4, MC12784-6

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	113%	36-173%
460-00-4	Bromofluorobenzene (S)	94%	36-173%

Blank Spike Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytieal Batch
OP29955-BS	BK15934.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12784-1, MC12784-2, MC12784-3, MC12784-4, MC12784-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP, %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.077	108	60-140
106-93-4	1,2-Dibromoethane	0.071	0.072	101	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	85%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MS	BK15935.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
OP29955-MSD	BK15936.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
MC12879-7	BK15938.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12784-1, MC12784-2, MC12784-3, MC12784-4, MC12784-6

CAS No.	Compound	MC12879-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.070	99	0.072	101	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.069	97	0.070	99	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-7	Limits
460-00-4	Bromofluorobenzene (S)	97%	101%	113%	36-173%
460-00-4	Bromofluorobenzene (S)	86%	86%	95%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12784-1	BK15939.D	99.0	79.0
MC12784-2	BK15940.D	95.0	88.0
MC12784-3	BK15941.D	103.0	86.0
MC12784-4	BK15942.D	100.0	83.0
MC12784-6	BK15943.D	105.0	91.0
OP29955-BS	BK15934.D	85.0	75.0
OP29955-MB	BK15933.D	113.0	94.0
OP29955-MS	BK15935.D	97.0	86.0
OP29955-MSD	BK15936.D	101.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15927.D	08/10/12	04:10	4.40	5.28
ZZZZZZ	BK15928.D	08/10/12	04:34	4.40	5.28
ZZZZZZ	BK15929.D	08/10/12	04:59	4.40	5.28
ZZZZZZ	BK15930.D	08/10/12	05:23	4.40	5.28
ZZZZZZ	BK15931.D	08/10/12	05:48	4.40	5.28
ZZZZZZ	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12784
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15937.D	Injection Time:	08:15
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12879-7	BK15938.D	08/10/12	08:39	4.40	5.28
MC12784-1	BK15939.D	08/10/12	09:03	4.40	5.28
MC12784-2	BK15940.D	08/10/12	09:27	4.40	5.28
MC12784-3	BK15941.D	08/10/12	09:52	4.40	5.28
MC12784-4	BK15942.D	08/10/12	10:16	4.40	5.28
MC12784-6	BK15943.D	08/10/12	10:40	4.40	5.28
ZZZZZZ	BK15944.D	08/10/12	11:04	4.40	5.28
ZZZZZZ	BK15945.D	08/10/12	11:29	4.40	5.28
ZZZZZZ	BK15946.D	08/10/12	11:53	4.40	5.28
ZZZZZZ	BK15947.D	08/10/12	12:17	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12833

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/4/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-080212-ST-W	TB-080212-HCL-W
T12-ROX-080212	P59-ROX-080212
TB-080212-ST-R	TB-080212-HCL-R
MW6D-ROX-080212	P54-ROX-080212
P54-ROX-080212-EB	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC and SVOC LCS recoveries were outside evaluation criteria. VOC MS/MSD recoveries were outside evaluation criteria for sample P54-ROX-080212. PAH LCS internal standard area recovery for perylene-d_{12} was outside evaluation criteria for samples T12-ROX-080212, P59-ROX-080212, MW6D-ROX-080212, P54-ROX-080212, and P54-ROX-080212-EB. Although not indicated in the laboratory case narrative, analytes were detected in the equipment blank. Samples T12-ROX-080212 and P59-ROX-080212 were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

No problems were indicated in the cooler receipt form.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
P54-ROX-080212-EB	VOCs	Acetone	7.7 ug/L
P54-ROX-080212-EB	SVOCs	Benzyl alcohol	0.43 ug/L
P54-ROX-080212-EB	PAHs	Naphthalene	0.048 ug/L

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification. No qualification of data was required.

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS	Parameter	Analyte	LCS Recovery	LCS Criteria
MSV439-BS	VOCs	Acrylonitrile	**496**	70-130
MSV439-BS	VOCs	2,2-Dichloropropane	**57**	70-130
OP29949-BS	SVOCs	Aniline	**33**	40-140
OP29949-BS	SVOCs	Hexachlorocyclopentadiene	**25**	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS MSV439-BS was associated with trip blanks TB-080212-HCL-W and TB-080212-HCL-R, and equipment blank P54-ROX-080212-EB. LCS OP29949-BS was also associated with equipment blank P54-ROX-080212-EB. Trip blanks and equipment blanks are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification
T12-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
P59-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
MW6D-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
P54-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
T12-ROX-080212	SVOCs	Aniline	**UJ**
T12-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
P59-ROX-080212	SVOCs	Aniline	**UJ**
P59-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW6D-ROX-080212	SVOCs	Aniline	**UJ**
MW6D-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
P54-ROX-080212	SVOCs	Aniline	**UJ**
P54-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, although not requested, sample P54-ROX-080212 was spiked and analyzed for VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
P54-ROX-080212	VOCs	Acrylonitrile	**524/528**	1	70-130/30
P54-ROX-080212	VOCs	2-Chloroethyl vinyl ether	**21/10**	**71**	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, PAH internal standard area recovery for perylene-d_{12} was outside evaluation criteria for LCS sample OP29950-BS.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
OP29950-BS	PAHs	Perylene-d_{12}	**218868**	221238-884950

LCS/LCSDs are quality control samples and are not qualified. No qualification of data was required.

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

1.0 VALIDATION OF VOC DATA – SDG MC12833

This section describes the validation for four groundwater samples which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12833. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
T12-ROX-080212	P59-ROX-080212
MW6D-ROX-080212	P54-ROX-080212

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated VOC LCS recoveries were outside evaluation criteria. Samples T12-ROX-080212 and P59-ROX-080212 were diluted due to high levels of target analytes. MS/MSD recoveries were outside evaluation criteria. The initial

calibration average response factor for 1,4-dioxane was outside evaluation criteria. Initial calibration verification and continuing calibration percent differences were outside evaluation criteria. These issues are addressed further in the appropriate sections below.

No problems were indicated in the cooler receipt form.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ± 2° C. In addition, the samples were analyzed within 14 days of collection at a pH < 2. No qualifications to the data were required based on holding times and sample preservation.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the summary forms, the ion abundance criteria were within evaluation criteria for all masses. No qualifications to the data were required based on instrument performance criteria.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatiles analyses. Validated samples included in this SDG were analyzed using instrument MAMSV. The ICAL for instrument MAMSV was established on 8/15/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8260B. For the ICAL, the response factors (RFs) were reviewed and were greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, greater than 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane, and greater than 0.05 for all other target analytes with the exception of 1,4-dioxane (0.004) analyzed using instrument MAMSV.

Qualifications of data due to ICAL RRF are summarized in the following table.

Sample ID	Analyte	Qualification
T12-ROX-080212	1,4-Dioxane	**R**
P59-ROX-080212	1,4-Dioxane	**R**
MW6D-ROX-080212	1,4-Dioxane	**R**
P54-ROX-080212	1,4-Dioxane	**R**

Review of the initial calibration summary forms indicated %RSDs were $\leq$ 30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and $\leq$ 15% for non-CCCs with some exceptions. The initial calibration for compounds with %RSD values outside evaluation criteria was determined using least square linear regression: correlation coefficients (r) were greater than 0.990.

Initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exceptions of dichlorodifluoromethane (-35.6%) and acetone (-44.8%).

Qualifications of data due to ICV %D are summarized in the following table.

Sample ID	Analyte	Qualification
T12-ROX-080212	Dichlorodifluoromethane	**UJ**
T12-ROX-080212	Acetone	**UJ**
P59-ROX-080212	Dichlorodifluoromethane	**UJ**
P59-ROX-080212	Acetone	**UJ**
MW6D-ROX-080212	Dichlorodifluoromethane	**UJ**
MW6D-ROX-080212	Acetone	**UJ**
P54-ROX-080212	Dichlorodifluoromethane	**UJ**
P54-ROX-080212	Acetone	**UJ**

A recalculation of the %RSDs and RFs for a compound associated with each internal standard was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

1.6 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Review of CV summary forms indicated RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other target analytes with the exception of 1,4-dioxane (0.004), discussed in section 1.5.

In addition, percent differences (%Ds) met the evaluation criteria of $\leq$ 30% for CCCs and < 20% for all other target analytes with exceptions summarized in the following table.

CV (Date/Time)	Analyte	%D
8/16/2012 6:59	Acrolein	**29.1**
8/16/2012 6:59	Vinyl acetate	**30.3**
8/16/2012 6:59	2,2-Dichloropropane	**41.0**
8/16/2012 6:59	cis-1,3-Dichloropropene	**25.9**
8/16/2012 6:59	trans-1,3-Dichloropropene	**26.6**

Compounds in the validated samples associated with marginal increases in %D, indicating potential high bias, were non-detect and did not require qualification.

Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B. Target compounds were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. All surrogate recoveries were within the method acceptance criteria for the validated samples. Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Although not requested, sample P54-ROX-080212 was spiked and analyzed for VOCs.

MS/MSD recoveries were within the method acceptance criteria for the validated samples with the exception of those summarized in the following table.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
P54-ROX-080212	VOCs	Acrylonitrile	**524/528**	1	70-130/30
P54-ROX-080212	VOCs	2-Chloroethyl vinyl ether	**21/10**	**71**	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 1.11 of this data validation. No further qualification of data was required.

Approximately 10% of the MS/MSD spiking recoveries were recalculated and verified using the MS/MSD summary forms, and no calculation or transcription errors were noted.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted. No qualifications to the data were required based on internal standard areas or retention times.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS data were within evaluation criteria, with the exception of those summarized in the following table:

LCS/ LCSD ID	Parameter	Analyte	LCS Recoveries	LCS/LCSD Criteria
MSV439-BS	VOCs	Acrylonitrile	**496**	70-130
MSV439-BS	VOCs	2,2-Dichloropropane	**57**	70-130

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
T12-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
P59-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
MW6D-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**
P54-ROX-080212	VOCs	2,2-Dichloropropane	**UJ**

Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately 10% of the detected target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results, other than those rejected, for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, surrogate and MS/MSD data were achieved for this SDG.

1.0 VALIDATION OF SVOC DATA – SDG MC12833

This section describes the validation for four groundwater samples which were prepared by USEPA SW-846 Method 3520C and analyzed for semi-volatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C and for polycyclic aromatic hydrocarbons (PAHs) by USEPA SW-846 Method 8270C SIM. Samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts, and submitted as part of sample delivery group (SDG) MC12833. Samples included as part of this validation are listed below.

Sample Identification	Sample Identification
T12-ROX-080212	P59-ROX-080212
MW6D-ROX-080212	P54-ROX-080212

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standard areas
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.0 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that SVOC LCS recoveries were outside evaluation criteria. PAH LCS internal standard area recovery for perylene-d_{12} was outside evaluation criteria for samples T12-ROX-080212, P59-ROX-080212, MW6D-ROX-080212, and P54-ROX-080212. Samples T12-ROX-080212 and P59-ROX-080212 were diluted due to high levels of target analytes. Initial calibration verifications and continuing calibration verification percent

differences were outside evaluation criteria. These issues are addressed further in the appropriate sections below.

No problems were indicated in the cooler receipt form.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were extracted within seven days of collection and analyzed within 40 days of extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. SVOC samples as part of SDG MC12833 were analyzed using instrument MAMSW, and PAH samples were analyzed using instrument MAMSU. The ICAL for instrument MAMSW was established on 7/12/2012, and the ICAL for instrument MAMSU was established on 7/16/2012 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms for SVOCs and PAHs indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15% CCCs with some exceptions. The initial calibration for compounds with %RSD values outside evaluation criteria was determined using least square linear regression and the correlation coefficients (r) were greater than 0.990.

Initial calibration verifications (ICVs) for SVOCs and PAHs were analyzed following the initial calibrations. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exceptions of aniline (69.6%) and 4-chloroaniline (38.0%).

Qualifications of SVOC data due to ICV %D are summarized in the following table. The results for 4-chloroaniline in the validated samples associated with marginal increases in %D, indicating a potential high bias, were non-detect and did not require qualification.

Sample ID	Analyte	Qualifications
T12-ROX-080212	Aniline	**UJ**
P59-ROX-080212	Aniline	**UJ**
MW6D-ROX-080212	Aniline	**UJ**
P54-ROX-080212	Aniline	**UJ**

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed prior to sample analysis. Review of continuing calibration summary forms for SVOCs and PAHs indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 20% for CCVs and target analytes that were quantitated using linear calibration (response factor) with the exceptions summarized in the following table.

CV (Date/Time)	Analyte	%D
8/9/2012 8:18	Hexachlorocyclopentadiene	**26.5**

Hexachlorocyclopentadiene results in the validated samples were non-detect and associated with marginal increases in response, indicating a high bias. Therefore, no qualification of data was required.

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. Target compounds in the method blank were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples.

Approximately 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. The validated samples were not chosen for MS/MSD analyses.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted. No qualifications to the data were required based on internal standard areas or retention times.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria with the exceptions summarized in the following table.

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
OP29949-BS	SVOCs	Aniline	**33**	NA	40-140
OP29949-BS	SVOCs	Hexachlorocyclopentadiene	**25**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
T12-ROX-080212	SVOCs	Aniline	**UJ**
T12-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
P59-ROX-080212	SVOCs	Aniline	**UJ**
P59-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW6D-ROX-080212	SVOCs	Aniline	**UJ**
MW6D-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**
P54-ROX-080212	SVOCs	Aniline	**UJ**
P54-ROX-080212	SVOCs	Hexachlorocyclopentadiene	**UJ**

Approximately 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG.

1.0 VALIDATION OF EDB/DBCP DATA – SDG MC12833

This section describes the validation for four investigative groundwater samples which were prepared and analyzed for 1,2-dibromoethane (EDB) and 1,2-dibromo-3-chloropropane (DBCP) by USEPA SW-846 Method 8011. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12833. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
T12-ROX-080212	P59-ROX-080212
MW6D-ROX-080212	P54-ROX-080212

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

No problems were indicated in the laboratory case narrative for the validated samples.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 0.9ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ± 2°C. In addition, the samples were analyzed within 14 days of collection. No qualifications to the data were required based on holding times and sample preservation.

1.4 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for EDB/DBCP analyses. Validated samples included in this SDG were analyzed using instrument GCBK. The ICAL for instrument GCBK was established on 8/10/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8011.

Review of the initial calibration summary forms indicated percent relative standard deviations (%RSDs) were ≤ 15% for target analytes. A recalculation of the %RSDs was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

Review of the sample chromatograms indicated that a second source calibration was performed immediately following the initial calibration. Review of ICV summary forms indicated percent differences (%Ds) ≤15% for target analytes. Recalculation of the percent recoveries was completed and no errors in calculation were noted.

1.5 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Percent differences (%Ds) met the evaluation criteria of ≤ 15% for target analytes. Recalculations of the %Ds for target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.6 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8011. Also, trip blanks were analyzed to evaluate the existence and magnitude of contamination problems emanating during sample shipment to the laboratory. All target compounds were reported as non-detect. No qualification of data was required.

1.7 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. Surrogate recoveries were within the method acceptance criteria for the validated samples. No qualification of data was required.

Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. MS/MSD analyses were not performed on the validated samples in this SDG.

1.9 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. All LCS data were within evaluation criteria. Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.10 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately 10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

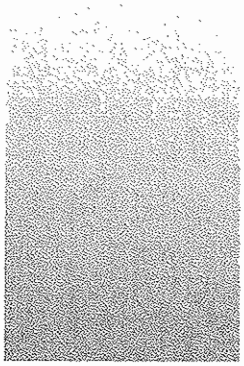
For the validation of compound quantitation, the matrix spike results were recalculated from the raw data since all target analytes were non-detect, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG.

New England
ACCUTEST
LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12833

Sampling Date: 08/02/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **93**

Reviewed on 9/4/12

Reza Pand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

ccutest Laboratories is the sole authority for authorizing edits or modifications to this cument. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

-1-

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **8**
4.1: MC12833-1: TB-080212-ST-W 9
4.2: MC12833-2: TB-080212-HCL-W 10
4.3: MC12833-3: T12-ROX-080212 13
4.4: MC12833-4: P59-ROX-080212 20
4.5: MC12833-5: TB-080212-ST-R 27
4.6: MC12833-6: TB-080212-HCL-R 28
4.7: MC12833-7: MW6D-ROX-080212 31
4.8: MC12833-8: P54-ROX-080212 38
4.9: MC12833-9: P54-ROX-080212-EB 45
Section 5: Misc. Forms **52**
5.1: Chain of Custody 53
5.2: Sample Tracking Chronicle 55
5.3: Internal Chain of Custody 57
Section 6: GC/MS Volatiles - QC Data Summaries **59**
6.1: Method Blank Summary 60
6.2: Blank Spike Summary 63
6.3: Matrix Spike/Matrix Spike Duplicate Summary 66
6.4: Internal Standard Area Summaries 69
6.5: Surrogate Recovery Summaries 70
Section 7: GC/MS Semi-volatiles - QC Data Summaries **71**
7.1: Method Blank Summary 72
7.2: Blank Spike Summary 75
7.3: Matrix Spike/Matrix Spike Duplicate Summary 78
7.4: Internal Standard Area Summaries 81
7.5: Surrogate Recovery Summaries 84
Section 8: GC Volatiles - QC Data Summaries **86**
8.1: Method Blank Summary 87
8.2: Blank Spike Summary 88
8.3: Matrix Spike/Matrix Spike Duplicate Summary 89
8.4: Surrogate Recovery Summaries 90
8.5: GC Surrogate Retention Time Summaries 91

Sample Summary

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12833-1	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-ST-W
MC12833-2	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-HCL-W
MC12833-3	08/02/12	14:15 LRSJ	08/03/12	AQ	Ground Water	T12-ROX-080212
MC12833-4	08/02/12	16:20 LRSJ	08/03/12	AQ	Ground Water	P59-ROX-080212
MC12833-5	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-ST-R
MC12833-6	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-HCL-R
MC12833-7	08/02/12	12:35 LRSJ	08/03/12	AQ	Ground Water	MW6D-ROX-080212
MC12833-8	08/02/12	14:30 LRSJ	08/03/12	AQ	Ground Water	P54-ROX-080212
MC12833-9	08/02/12	14:50 LRSJ	08/03/12	AQ	Equipment Blank	P54-ROX-080212-EB

ACCUTEST LABORATORIES

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12833
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/20/2012 9:39:00 AM

5 Sample(s), 4 Trip Blank(s) were collected on 08/02/2012 and were received at Accutest on 08/03/2012 properly preserved, at 2.7 Deg. C and intact. These Samples received an Accutest job number of MC12833. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** MSV439

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12833-8MS, MC12833-8MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 2,2-Dichloropropane are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Chloroethyl vinyl ether are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- RPD(s) for MSD for 2-Chloroethyl vinyl ether are outside control limits for sample MC12833-8MSD. High RPD due to possible matrix interferenee and/or sample non-homogeneity.
- MSV439-BS for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC12833-8MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ **Batch ID:** OP29949

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12879-4MS, MC12879-4MSD were used as the QC samples indicated.
- BS/MS/MSD Recovery(s) for Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- RPD(s) for MSD for Hexachlorothane are outside control limits for sample OP29949-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD of OP29949-MSD for Hexachlorocyclopentadiene: Outside control limits. Blank Spike meets program technical requirements.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP29950

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12879-5MS, MC12879-5MSD were used as the QC samples indicated.
- RPD(s) for MSD for 1-Methylnaphthalene are outside control limits for sample OP29950-MSD. High RPD due to possible matrix interferenee and/or sample non-homogeneity.
- OP29950-BS has internal standard outside control limits. Individual spike recoveries within acceptanee limits.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP29955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-7MS, MC12879-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12833).

Summary of Hits

Job Number: MC12833
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/02/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12833-1	TB-080212-ST-W					
No hits reported in this sample.						
MC12833-2	TB-080212-HCL-W					
No hits reported in this sample.						
MC12833-3	T12-ROX-080212					
Benzene		1640	5.0	2.4	ug/l	SW846 8260B
Ethylbenzene		573	10	5.1	ug/l	SW846 8260B
Isopropylbenzene		29.7 J	50	5.0	ug/l	SW846 8260B
n-Propylbenzene		48.6 J	50	5.8	ug/l	SW846 8260B
Toluene		197	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		403	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		47.4 J	50	4.7	ug/l	SW846 8260B
m,p-Xylene		1320	10	7.3	ug/l	SW846 8260B
o-Xylene		70.9	10	5.8	ug/l	SW846 8260B
Xylene (total)		1390	10	5.8	ug/l	SW846 8260B
2,4-Dimethylphenol		15.3	11	3.0	ug/l	SW846 8270C
2-Methylphenol		2.I J	11	0.66	ug/l	SW846 8270C
3&4-Methylphenol		2.7 J	11	0.82	ug/l	SW846 8270C
Phenol		42.0	5.4	1.0	ug/l	SW846 8270C
Dibenzofuran		0.30 J	2.2	0.23	ug/l	SW846 8270C
Acenaphtheue		0.44	0.11	0.0I5	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.082 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.10 J	0.11	0.019	ug/l	SW846 8270C BY SIM
Fluoranthene		0.046 J	0.11	0.035	ug/l	SW846 8270C BY SIM
Fluorene		0.29	0.11	0.050	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		19.9	0.22	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		29.4	0.22	0.056	ug/l	SW846 8270C BY SIM
Naphthalene		62.5	0.11	0.039	ug/l	SW846 8270C BY SIM
Phenanthrene		0.89	0.054	0.014	ug/l	SW846 8270C BY SIM
Pyrene		0.062 J	0.11	0.039	ug/l	SW846 8270C BY SIM
MC12833-4	P59-ROX-080212					
Benzene		11000	500	240	ug/l	SW846 8260B
Ethylbenzene		1740	20	10	ug/l	SW846 8260B
Isopropylbenzene		45.2 J	100	10	ug/l	SW846 8260B
n-Propylbenzene		97.4 J	100	12	ug/l	SW846 8260B
Toluene		506	20	10	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		563	100	6.9	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		158	100	9.3	ug/l	SW846 8260B

Summary of Hits

Job Number: MC12833
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/02/12

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
m,p-Xylene	4350	20	15	ug/l	SW846 8260B
o-Xylene	376	20	12	ug/l	SW846 8260B
Xylene (total)	4730	20	12	ug/l	SW846 8260B
2,4-Dimethylphenol	8.8 J	11	2.9	ug/l	SW846 8270C
2-Methylphenol	1.8 J	11	0.64	ug/l	SW846 8270C
3&4-Methylphenol	3.2 J	11	0.79	ug/l	SW846 8270C
Phenol	41.9	5.3	0.98	ug/l	SW846 8270C
Dibenzofuran	0.36 J	2.1	0.23	ug/l	SW846 8270C
Acenaphthene	0.42	0.11	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.10 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene	0.14	0.11	0.019	ug/l	SW846 8270C BY SIM
Benzo(a)anthracene	0.21	0.053	0.032	ug/l	SW846 8270C BY SIM
Benzo(a)pyrene	0.036 J	0.11	0.018	ug/l	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.047 J	0.053	0.025	ug/l	SW846 8270C BY SIM
Fluoranthene	0.15	0.11	0.034	ug/l	SW846 8270C BY SIM
Fluorene	0.48	0.11	0.049	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	13.6	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphtbalene	20.7	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene	88.6	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene	1.0	0.053	0.013	ug/l	SW846 8270C BY SIM
Pyrene	0.21	0.11	0.037	ug/l	SW846 8270C BY SIM
MC12833-5 TB-080212-ST-R					
No hits reported iu this saruple.					
MC12833-6 TB-080212-HCL-R					
No hits reported in this sample.					
MC12833-7 MW6D-ROX-080212					
Benzene	0.68	0.50	0.24	ug/l	SW846 8260B
Diethyl phthalate	0.22 J	5.1	0.19	ug/l	SW846 8270C
MC12833-8 P54-ROX-080212					
No hits reported in this sample.					
MC12833-9 P54-ROX-080212-EB					
Acetone	7.7	5.0	3.0	ug/l	SW846 8260B
Benzyl Alcohol	0.43 J	10	0.26	ug/l	SW846 8270C
Naphthalene	0.048 J	0.10	0.036	ug/l	SW846 8270C BY SIM

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-080212-ST-W		
Lab Sample ID:	MC12833-1	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15944.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	91%		36-173%
460-00-4	Bromofluorobenzene (S)	109%		36-173%

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:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10555.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ng/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ng/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzeue	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

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

Report of Analysis

Client Sample ID:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10562.D	10	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	30	ug/l	UJ
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	1640	5.0	2.4	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ug/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	50	16	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	R
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	573	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	29.7	50	5.0	ug/l	J
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	48.6	50	5.8	ug/l	J
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	197	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	403	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	47.4	50	4.7	ug/l	J
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	1320	10	7.3	ug/l	
95-47-6	o-Xylene	70.9	10	5.8	ug/l	
1330-20-7	Xylene (total)	1390	10	5.8	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Grouud Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Grouud Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3794.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.3	ug/l	
95-57-8	2-Chloropheuol	ND	5.4	0.44	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.41	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.41	ug/l	
105-67-9	2,4-Dimethylphenol	15.3	11	3.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	2.1	11	0.66	ug/l	J
	3&4-Methylphenol	2.7	11	0.82	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND	22	3.0	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.69	ug/l	
108-95-2	Phenol	42.0	5.4	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.2	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.29	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.69	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.24	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.41	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.32	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.23	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.97	ug/l	
132-64-9	Dibenzofuran	0.30	2.2	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.4	0.39	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.4	0.26	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.4	0.21	ug/l	
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	0.41	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.4	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.35	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.25	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.28	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		15-110%
4165-62-2	Phenol-d5	36%		15-110%
118-79-6	2,4,6-Tribromophenol	86%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terpheuyl-d14	105%		30-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9086.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.44	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	0.082	0.11	0.014	ug/l	J
120-12-7	Anthracene	0.10	0.11	0.019	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.054	0.033	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ng/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.064	ng/l	
218-01-9	Chrysene	ND	0.11	0.079	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ug/l	
206-44-0	Fluoranthene	0.046	0.11	0.035	ug/l	J
86-73-7	Fluorene	0.29	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.050	ug/l	
90-12-0	1-Methylnaphthalene	19.9	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	29.4	0.22	0.056	ug/l	
91-20-3	Naphthalene	62.5	0.11	0.039	ug/l	
85-01-8	Phenanthrene	0.89	0.054	0.014	ug/l	
129-00-0	Pyrene	0.062	0.11	0.039	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	99%		30-130%

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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15945.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	33.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.016	0.014	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.016	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	127%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10563.D	20	08/16/12	AMY	n/a	n/a	MSV439
Run #2	V10559.D	1000	08/16/12	AMY	n/a	n/a	MSV439

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	100	60	ug/l	UJ
107-02-8	Acrolein	ND	500	200	ug/l	
107-13-1	Acrylonitrile	ND	100	65	ng/l	
71-43-2	Benzene	11000 [a]	500	240	ug/l	
108-86-1	Bromobenzene	ND	100	12	ug/l	
74-97-5	Bromochloromethane	ND	100	24	ug/l	
75-27-4	Bromodichloromethane	ND	20	12	ug/l	
75-25-2	Bromoform	ND	20	16	ug/l	
74-83-9	Bromomethane	ND	40	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	48	ug/l	
104-51-8	n-Butylbenzene	ND	100	14	ug/l	
135-98-8	sec-Butylbenzene	ND	100	11	ug/l	
98-06-6	tert-Butylbenzene	ND	100	13	ug/l	
75-15-0	Carbon disulfide	ND	100	12	ug/l	
56-23-5	Carbon tetrachloride	ND	20	17	ug/l	
108-90-7	Chlorobenzene	ND	20	9.4	ng/l	
75-00-3	Chloroethane	ND	40	10	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	100	16	ug/l	
67-66-3	Chloroform	ND	20	9.9	ug/l	
74-87-3	Chloromethane	ND	40	15	ug/l	
95-49-8	o-Chlorotoluene	ND	100	13	ug/l	
106-43-4	p-Chlorotoluene	ND	100	9.7	ug/l	
124-48-1	Dibromochloromethane	ND	20	11	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20	19	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20	9.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	13	ug/l	
75-71-8	Dichlorodifluoromethaue	ND	40	35	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	20	12	ug/l	
107-06-2	1,2-Dichloroethane	ND	20	13	ug/l	
75-35-4	1,1-Dichloroethene	ND	20	8.2	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	20	13	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	20	19	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	40	14	ug/l	
142-28-9	1,3-Dichloropropane	ND	100	13	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	100	31	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	100	18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	9.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	3.9	ug/l	
123-91-1	1,4-Dioxane	ND	500	300	ug/l	R
97-63-2	Ethyl methacrylate	ND	100	16	ug/l	
100-41-4	Ethylbenzene	1740	20	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	100	41	ug/l	
591-78-6	2-Hexanone	ND	100	39	ug/l	
98-82-8	Isopropylbenzene	45.2	100	10	ug/l	J
99-87-6	p-Isopropyltoluene	ND	100	11	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20	8.2	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	100	58	ug/l	
74-95-3	Methylene bromide	ND	100	22	ug/l	
75-09-2	Methylene chloride	ND	40	17	ug/l	
103-65-1	n-Propylbenzene	97.4	100	12	ug/l	J
100-42-5	Styrene	ND	100	9.1	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	12	ug/l	
127-18-4	Tetrachloroethene	ND	20	8.4	ug/l	
108-88-3	Toluene	506	20	10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	21	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	26	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20	17	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20	10	ug/l	
79-01-6	Trichloroethene	ND	20	16	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	5.7	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	100	17	ug/l	
95-63-6	1,2,4-Trimethylbenzene	563	100	6.9	ug/l	
108-67-8	1,3,5-Trimethylbenzene	158	100	9.3	ug/l	
108-05-4	Vinyl Acetate	ND	100	20	ug/l	
75-01-4	Vinyl chloride	ND	20	13	ug/l	
	m,p-Xylene	4350	20	15	ug/l	
95-47-6	o-Xylene	376	20	12	ug/l	
1330-20-7	Xylene (total)	4730	20	12	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	98%	70-130%
2037-26-5	Toluene-D8	98%	99%	70-130%
460-00-4	4-Bromofluorobenzene	96%	97%	70-130%

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

(a) Result is from Run# 2

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 presmmptive evidence of a compound

Report of Analysis

Client Sample ID:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3795.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	8.8	11	2.9	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	1.8	11	0.64	ug/l	J
	3&4-Methylphenol	3.2	11	0.79	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.67	ug/l	
108-95-2	Phenol	41.9	5.3	0.98	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.37	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.94	ug/l	
132-64-9	Dibenzofuran	0.36	2.1	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

4.4

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.39	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.3	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	62%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

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

Report of Analysis

Client Sample ID:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9087.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.42	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	0.10	0.11	0.014	ug/l	J
120-12-7	Anthracene	0.14	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	0.21	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	0.036	0.11	0.018	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.047	0.053	0.025	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluorantbene	0.15	0.11	0.034	ug/l	
86-73-7	Fluorene	0.48	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.048	ug/l	
90-12-0	1-Methylnaphthalene	13.6	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	20.7	0.21	0.055	ug/l	
91-20-3	Naphthalene	88.6	0.11	0.038	ug/l	
85-01-8	Phenanthrene	1.0	0.053	0.013	ng/l	
129-00-0	Pyrene	0.21	0.11	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		30-130%
321-60-8	2-Fluorobiphenyl	59%		30-130%
1718-51-0	Terphenyl-d14	88%		30-130%

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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15946.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.0 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	143%		36-173%
460-00-4	Bromofluorobenzene (S)	100%		36-173%

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:	TB-080212-ST-R		
Lab Sample ID:	MC12833-5	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15947.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ng/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	117%		36-173%
460-00-4	Bromofluorobenzene (S)	95%		36-173%

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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10556.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ng/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Bntyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Tricblorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, 1L		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10560.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	0.68	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ng/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ng/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ng/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

4.7 4

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	5.0	1.6	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorohntadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylhenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3796.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ng/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.61	ug/l	
	3&4-Methylphenol	ND	10	0.76	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.1	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.90	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.22	5.1	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.1	ug/l	
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Flnorophenol	47%		15-110%
4165-62-2	Phenol-d5	31%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrohenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	97%		30-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9088.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ng/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.051	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	96%		30-130%

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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15949.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	104%		36-173%
460-00-4	Bromofluorobenzene (S)	87%		36-173%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ng/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	5.0	1.6	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanoue (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ng/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichloroflnoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ng/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ng/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3797.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND	11	0.80	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ng/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotolnene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.3	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophoroue	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ng/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	68%		15-110%
4165-60-0	Nitrobenzene-d5	59%		30-130%
321-60-8	2-Fluorobiphenyl	53%		30-130%
1718-51-0	Terphenyl-d14	94%		30-130%

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

Report of Analysis

Client Sample ID:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9089.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluorauthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.055	ug/l	
91-20-3	Naphthalene	ND	0.11	0.038	ug/l	
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	53%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Bateh
Run #1	BK15950.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	107%		36-173%
460-00-4	Bromofluorobenzene (S)	93%		36-173%

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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10557.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	7.7	5.0	3.0	ug/l	
107-02-8	Acroleiu	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ng/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroetheue	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Tolnene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

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 compnund

Report of Analysis

Client Sample ID:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3798.D	1	08/09/12	KR	08/07/12	OP29949	MSWI74
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ng/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ng/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ng/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	0.43	10	0.26	ug/l	J
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroetbyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniliue	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodipbenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	84%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	106%		30-130%

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 presomptive evidence of a compound

Report of Analysis

Client Sample ID:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Soutb Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9090.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	0.048	0.10	0.036	ug/l	J
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	102%		30-130%

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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15951.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	116%		36-173%
460-00-4	Bromofluorobenzene (S)	100%		36-173%

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 compouud

New England ACCUTEST LABORATORIES

Misc. Forms

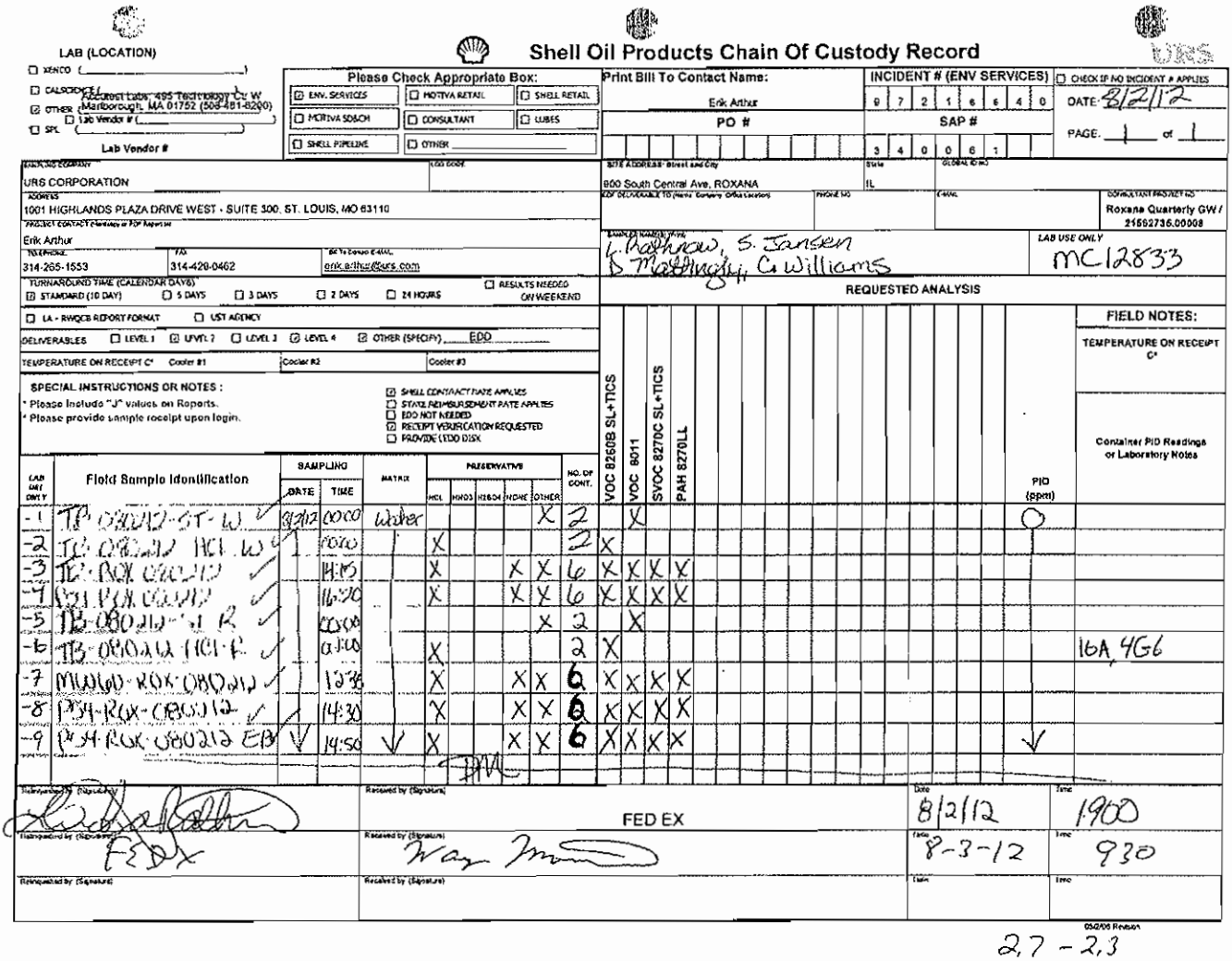
Custody Documents and Other Forms

Includes the following where applicable:

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

Shell Oil Products Chain Of Custody Record

URS



LAB (LOCATION)
☐ XENCO ( )
☐ CALSCIENCE ( )
☑ OTHER (Accutest Labs, 495 Technology Ct W Marlborough, MA 01752 (508-481-6200))
☐ SPL (Lab Vendor # ( ))
Lab Vendor #

Please Check Appropriate Box:
☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name: Erik Arthur
PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0
SAP #: 3 4 0 0 6 1
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 8/2/12
PAGE: 1 of 1

BILLING COMPANY: URS CORPORATION
LOG CODE:
ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110
PROJECT CONTACT (Hardcopy or PDF Report): Erik Arthur
TELEPHONE: 314-265-1553
FAX: 314-429-0462
BC To Consult E-MAIL: erik.arthur@urs.com

SITE ADDRESS: Street and City: 900 South Central Ave, ROXANA
State: IL
GLOBAL ID NO:
EDF DELIVERABLE TO (Name, Company, Office Location):
PHONE NO:
E-MAIL:
CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562736.00008

SAMPLER NAME(S) PRINT: L. Rathnow, S. Jansen, D. Mattingly, C. Williams
LAB USE ONLY: MC12833

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login.

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:
TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	TB-080212-ST-W	8/2/12	00:00	Water					X	2		X			0	
-2	TB-080212-HCL-W		00:00		X					2	X					
-3	TB-ROX-080212		14:15		X			X	X	6	X	X	X	X		
-4	P54-ROX-080212		16:20		X			X	X	6	X	X	X	X		
-5	TB-080212-ST-R		00:00						X	2		X				
-6	TB-080212-HCL-R		00:00		X					2	X					16A, 4G6
-7	MW60-ROX-080212		12:35		X			X	X	6	X	X	X	X		
-8	P54-ROX-080212		14:30		X			X	X	6	X	X	X	X		
-9	P54-ROX-080212-EB		14:50		X			X	X	6	X	X	X	X		

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	8/2/12	1900
FEDX	[signature]	8-3-12	930

05/2/06 Revision

2,7 - 2,3

5.1

5

MC12833: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12833 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/3/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL ROX No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservation	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3 Sample container label / COC agree.	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

Accutest Laboratories
V 508.481.6200

495 Technology Center West, Bldg One
F 508 481 7753

Marlborough, MA
www.accutest.com

MC12833: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12833-1 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-ST-W						
MC12833-1	SW846 8011	10-AUG-12 11:04	AP	08-AUG-12	SC	V8011SL
MC12833-2 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-HCL-W						
MC12833-2	SW846 8260B	16-AUG-12 08:58	AMY			V8260SL+
MC12833-3 Collected: 02-AUG-12 14:15 By: LRSJ Received: 03-AUG-12 By: T12-ROX-080212						
MC12833-3	SW846 8270C BY SIM	08-AUG-12 17:18	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-3	SW846 8270C	09-AUG-12 12:46	KR	07-AUG-12	SC	AB8270SL+
MC12833-3	SW846 8011	10-AUG-12 11:29	AP	08-AUG-12	SC	V8011SL
MC12833-3	SW846 8260B	16-AUG-12 12:23	AMY			V8260SL+
MC12833-4 Collected: 02-AUG-12 16:20 By: LRSJ Received: 03-AUG-12 By: P59-ROX-080212						
MC12833-4	SW846 8270C BY SIM	08-AUG-12 17:41	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-4	SW846 8270C	09-AUG-12 13:08	KR	07-AUG-12	SC	AB8270SL+
MC12833-4	SW846 8011	10-AUG-12 11:53	AP	08-AUG-12	SC	V8011SL
MC12833-4	SW846 8260B	16-AUG-12 10:56	AMY			V8260SL+
MC12833-4	SW846 8260B	16-AUG-12 12:52	AMY			V8260SL+
MC12833-5 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-ST-R						
MC12833-5	SW846 8011	10-AUG-12 12:17	AP	08-AUG-12	SC	V8011SL
MC12833-6 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-HCL-R						
MC12833-6	SW846 8260B	16-AUG-12 09:27	AMY			V8260SL+
MC12833-7 Collected: 02-AUG-12 12:35 By: LRSJ Received: 03-AUG-12 By: MW6D-ROX-080212						

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12833-7	SW846 8270C BY SIM	08-AUG-12 18:04	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-7	SW846 8270C	09-AUG-12 13:30	KR	07-AUG-12	SC	AB8270SL+
MC12833-7	SW846 8011	10-AUG-12 13:06	AP	08-AUG-12	SC	V8011SL
MC12833-7	SW846 8260B	16-AUG-12 11:25	AMY			V8260SL+
MC12833-8 Collected: 02-AUG-12 14:30 By: LRSJ Received: 03-AUG-12 By: P54-ROX-080212						
MC12833-8	SW846 8270C BY SIM	08-AUG-12 18:26	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-8	SW846 8270C	09-AUG-12 13:53	KR	07-AUG-12	SC	AB8270SL+
MC12833-8	SW846 8011	10-AUG-12 13:30	AP	08-AUG-12	SC	V8011SL
MC12833-8	SW846 8260B	16-AUG-12 11:54	AMY			V8260SL+
MC12833-9 Collected: 02-AUG-12 14:50 By: LRSJ Received: 03-AUG-12 By: P54-ROX-080212-EB						
MC12833-9	SW846 8270C BY SIM	08-AUG-12 18:49	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-9	SW846 8270C	09-AUG-12 14:15	KR	07-AUG-12	SC	AB8270SL+
MC12833-9	SW846 8011	10-AUG-12 13:54	AP	08-AUG-12	SC	V8011SL
MC12833-9	SW846 8260B	16-AUG-12 09:57	AMY			V8260SL+

Accutest Internal Chain of Custody

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL
Received: 08/03/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12833-1.1	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-1.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-2.2	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-2.2	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-2.2	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-2.2	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-3.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-3.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-3.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-3.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-3.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-3.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-3.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-3.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-4.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-4.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-4.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-4.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-4.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-4.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-4.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-4.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-5.1	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-5.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-6.1	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-6.1	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-6.1	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-6.1	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-7.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-7.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-7.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-7.4	Nick Krasinski		08/08/12 23:10	Depleted

5.3

Accutest Internal Chain of Custody

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/03/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12833-7.5	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-7.5	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-7.5	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-7.5	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-8.1	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-8.1	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-8.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-8.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-8.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-8.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrnment
MC12833-8.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-8.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-9.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-9.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-9.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-9.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-9.4	VOC Ref #4	Nick Krasinski	08/08/12 21:36	Retrieve from Storage
MC12833-9.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-9.5	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-9.5	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-9.5	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-9.5	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acroleiu	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzeue	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethaue	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dicblorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromoflnorobenzene	96%	70-130%

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

6.1.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	56.7	113	70-130
107-02-8	Acrolein	250	175	70	70-130
107-13-1	Acrylonitrile	50	248	496* a	70-130
71-43-2	Benzene	50	46.1	92	70-130
108-86-1	Bromobenzene	50	48.1	96	70-130
74-97-5	Bromochloromethane	50	47.4	95	70-130
75-27-4	Bromodichloromethane	50	45.5	91	70-130
75-25-2	Bromoform	50	43.0	86	70-130
74-83-9	Bromomethane	50	52.6	105	70-130
78-93-3	2-Butanone (MEK)	50	46.7	93	70-130
104-51-8	n-Butylbenzene	50	49.0	98	70-130
135-98-8	sec-Butylbenzene	50	52.5	105	70-130
98-06-6	tert-Butylbenzene	50	51.8	104	70-130
75-15-0	Carbon disulfide	50	56.2	112	70-130
56-23-5	Carbon tetrachloride	50	44.7	89	70-130
108-90-7	Chlorobenzene	50	49.2	98	70-130
75-00-3	Chloroethane	50	53.2	106	70-130
110-75-8	2-Chloroethyl vinyl ether	50	48.4	97	70-130
67-66-3	Chloroform	50	49.2	98	70-130
74-87-3	Chloromethane	50	50.6	101	70-130
95-49-8	o-Chlorotoluene	50	48.5	97	70-130
106-43-4	p-Chlorotoluene	50	50.1	100	70-130
124-48-1	Dibromochloromethane	50	40.6	81	70-130
95-50-1	1,2-Dichlorobenzene	50	49.9	100	70-130
541-73-1	1,3-Dichlorobenzene	50	48.7	97	70-130
106-46-7	1,4-Dichlorobenzene	50	45.2	90	70-130
75-71-8	Dichlorodifluoromethane	50	54.2	108	70-130
75-34-3	1,1-Dichloroethane	50	47.6	95	70-130
107-06-2	1,2-Dichloroethane	50	45.3	91	70-130
75-35-4	1,1-Dichloroethene	50	55.3	111	70-130
156-59-2	cis-1,2-Dichloroethene	50	48.0	96	70-130
156-60-5	trans-1,2-Dichloroethene	50	48.9	98	70-130
78-87-5	1,2-Dichloropropane	50	46.2	92	70-130
142-28-9	1,3-Dichloropropane	50	45.3	91	70-130
594-20-7	2,2-Dichloropropane	50	28.7	57* b	70-130
563-58-6	1,1-Dichloropropene	50	49.9	100	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	36.1	72	70-130
10061-02-6	trans-1,3-Dichloropropene	50	36.2	72	70-130
123-91-1	1,4-Dioxane	250	214	86	70-130
97-63-2	Ethyl methacrylate	50	41.7	83	77-137
100-41-4	Ethylbenzene	50	48.2	96	70-130
87-68-3	Hexachlorobutadiene	50	42.3	85	70-130
591-78-6	2-Hexanone	50	46.5	93	70-130
98-82-8	Isopropylbenzene	50	52.0	104	70-130
99-87-6	p-Isopropyltoluene	50	49.2	98	70-130
1634-04-4	Methyl Tert Butyl Ether	50	45.2	90	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	44.1	88	70-130
74-95-3	Methylene bromide	50	48.7	97	70-130
75-09-2	Methylene chloride	50	47.5	95	70-130
103-65-1	n-Propylbeuzene	50	52.0	104	70-130
100-42-5	Styrene	50	48.7	97	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	42.1	84	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	39.6	79	70-130
127-18-4	Tetrachloroethene	50	44.8	90	70-130
108-88-3	Toluene	50	46.4	93	70-130
87-61-6	1,2,3-Trichlorobenzene	50	45.6	91	70-130
120-82-1	1,2,4-Trichlorobenzene	50	44.8	90	70-130
71-55-6	1,1,1-Trichloroethane	50	47.9	96	70-130
79-00-5	1,1,2-Trichloroethane	50	46.9	94	70-130
79-01-6	Trichloroethene	50	51.0	102	70-130
75-69-4	Trichlorofluoromethane	50	51.9	104	70-130
96-18-4	1,2,3-Trichloropropane	50	39.9	80	70-130
95-63-6	1,2,4-Trimethylbenzene	50	45.7	91	70-130
108-67-8	1,3,5-Trimethylbenzene	50	46.3	93	70-130
108-05-4	Vinyl Acetate	50	35.5	71	70-130
75-01-4	Vinyl chloride	50	48.3	97	70-130
	m,p-Xylene	100	96.3	96	70-130
95-47-6	o-Xylene	50	50.0	100	70-130
1330-20-7	Xylene (total)	150	146	97	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

6.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

6.3.1

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12833-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	197	79	201	80	2	70-130/30
107-02-8	Acrolein	ND		1250	1090	87	1100	88	1	70-130/30
107-13-1	Acrylonitrile	ND		250	1310	524* a	1320	528* a	1	70-130/30
71-43-2	Benzene	ND		250	237	95	241	96	2	70-130/30
108-86-1	Bromobenzene	ND		250	244	98	244	98	0	70-130/30
74-97-5	Bromochloromethane	ND		250	243	97	243	97	0	70-130/30
75-27-4	Bromodichloromethane	ND		250	224	90	232	93	4	70-130/30
75-25-2	Bromoform	ND		250	205	82	209	84	2	70-130/30
74-83-9	Bromomethane	ND		250	292	117	294	118	1	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	206	82	214	86	4	70-130/30
104-51-8	n-Butylbenzene	ND		250	261	104	264	106	1	70-130/30
135-98-8	sec-Butylbenzene	ND		250	273	109	276	110	1	70-130/30
98-06-6	tert-Butylbenzene	ND		250	267	107	269	108	1	70-130/30
75-15-0	Carbon disulfide	ND		250	277	111	296	118	7	70-130/30
56-23-5	Carbon tetrachloride	ND		250	224	90	236	94	5	70-130/30
108-90-7	Chlorobenzene	ND		250	251	100	254	102	1	70-130/30
75-00-3	Chloroethane	ND		250	296	118	299	120	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	51.8	21* b	24.6	10* b	71* c	70-130/30
67-66-3	Chloroform	ND		250	253	101	255	102	1	70-130/30
74-87-3	Chloromethane	ND		250	281	112	286	114	2	70-130/30
95-49-8	o-Chlorotoluene	ND		250	251	100	252	101	0	70-130/30
106-43-4	p-Chlorotoluene	ND		250	259	104	261	104	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	197	79	203	81	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	252	101	256	102	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	249	100	252	101	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	231	92	233	93	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	298	119	292	117	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	246	98	248	99	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	229	92	232	93	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	291	116	293	117	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	247	99	250	100	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	255	102	257	103	1	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	233	93	238	95	2	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	225	90	229	92	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	232	93	249	100	7	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	260	104	265	106	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

6.3.1

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12833-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	189	76	196	78	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	186	74	194	78	4	70-130/30
123-91-1	1,4-Dioxane	ND		1250	986	79	989	79	0	70-130/30
97-63-2	Ethyl methacrylate	ND		250	198	79	206	82	4	72-139/30
100-41-4	Ethylbenzene	ND		250	249	100	251	100	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	213	85	224	90	5	70-130/30
591-78-6	2-Hexanone	ND		250	202	81	207	83	2	70-130/30
98-82-8	Isopropylbenzene	ND		250	270	108	271	108	0	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	257	103	260	104	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	220	88	225	90	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	205	82	211	84	3	70-130/30
74-95-3	Methylene bromide	ND		250	241	96	246	98	2	70-130/30
75-09-2	Methylene chloride	ND		250	244	98	244	98	0	70-130/30
103-65-1	n-Propylbenzene	ND		250	273	109	275	110	1	70-130/30
100-42-5	Styrene	ND		250	247	99	250	100	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	211	84	216	86	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	212	85	217	87	2	70-130/30
127-18-4	Tetrachloroethene	ND		250	232	93	236	94	2	70-130/30
108-88-3	Toluene	ND		250	235	94	241	96	3	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	183	73	224	90	20	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	210	84	230	92	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	243	97	253	101	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	231	92	237	95	3	70-130/30
79-01-6	Trichloroethene	ND		250	238	95	244	98	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	277	111	288	115	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	194	78	199	80	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	236	94	237	95	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	240	96	243	97	1	70-130/30
108-05-4	Vinyl Acetate	ND		250	229	92	237	95	3	70-130/30
75-01-4	Vinyl chloride	ND		250	266	106	270	108	1	70-130/30
	m,p-Xylene	ND		500	499	100	505	101	1	70-130/30
95-47-6	o-Xylene	ND		250	255	102	259	104	2	70-130/30
1330-20-7	Xylene (total)	ND		750	754	101	764	102	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries	MS	MSD	MC12833-8	Limits
1868-53-7	Dibromofluoromethane	103%	102%	98%	70-130%
2037-26-5	Toluene-D8	99%	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	96%	94%	96%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD dne to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSV439-CC436	Injection Date:	08/16/12
Lab File ID:	V10551.D	Injection Time:	06:59
Instrument ID:	GCMSV	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	408954	6.54	705124	7.73	391660	11.08	311178	13.31	138391	3.51
Upper Limit [a]	817908	7.04	1410248	8.23	783320	11.58	622356	13.81	276782	4.01
Lower Limit [b]	204477	6.04	352562	7.23	195830	10.58	155589	12.81	69196	3.01
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV439-BS	410424	6.54	712702	7.73	395321	11.08	315024	13.31	135294	3.51
MSV439-MB	401786	6.54	704426	7.73	383723	11.08	295772	13.31	124143	3.51
MC12833-2	399862	6.55	701506	7.73	382828	11.08	291610	13.31	116717	3.52
MC12833-6	386965	6.55	684335	7.73	374633	11.08	287445	13.31	119305	3.52
MC12833-9	394129	6.54	697207	7.73	381299	11.08	294155	13.31	126421	3.51
MC12833-4	388324	6.54	684154	7.73	375300	11.08	286638	13.31	135089	3.51
MC12833-7	415912	6.55	736109	7.73	404357	11.08	308011	13.31	119720	3.51
MC12833-8	384961	6.54	679901	7.73	371336	11.08	283822	13.32	108838	3.51
MC12833-3	388380	6.54	683536	7.73	375124	11.08	292277	13.32	118539	3.51
MC12833-4	390609	6.55	686469	7.73	376709	11.08	293120	13.32	108940	3.52
MC12833-8MS	394025	6.54	690807	7.73	381670	11.08	301617	13.32	108959	3.51
MC12833-8MSD	401187	6.54	694747	7.73	388059	11.08	309010	13.32	121369	3.51
ZZZZZZ	388563	6.55	686005	7.73	373988	11.08	290628	13.32	108391	3.51
ZZZZZZ	388441	6.54	686304	7.73	375924	11.08	286569	13.32	102120	3.50
ZZZZZZ	388355	6.54	684463	7.73	374828	11.08	291186	13.32	104195	3.50
ZZZZZZ	393388	6.55	691655	7.74	382467	11.08	305048	13.32	135527	3.52

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

(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.

6.4.1

Volatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12833-2	V10555.D	97.0	97.0	97.0
MC12833-3	V10562.D	97.0	98.0	96.0
MC12833-4	V10563.D	97.0	98.0	96.0
MC12833-4	V10559.D	98.0	99.0	97.0
MC12833-6	V10556.D	99.0	99.0	97.0
MC12833-7	V10560.D	99.0	99.0	98.0
MC12833-8	V10561.D	98.0	98.0	96.0
MC12833-9	V10557.D	98.0	98.0	95.0
MC12833-8MS	V10564.D	103.0	99.0	96.0
MC12833-8MSD	V10565.D	102.0	99.0	94.0
MSV439-BS	V10552.D	102.0	98.0	94.0
MSV439-MB	V10554.D	97.0	98.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MB	W3783.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chlorunaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MB	W3783.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Flnorophenol	48%	15-110%
4165-62-2	Phenol-d5	31%	15-110%
118-79-6	2,4,6-Tribromophenol	74%	15-110%
4165-60-0	Nitrobenzene-d5	74%	30-130%
321-60-8	2-Fluorobiphenyl	66%	30-130%
1718-51-0	Terphenyl-d14	113%	30-130%

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

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-MB	U9081.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	63%	30-130%
1718-51-0	Terphenyl-d14	107%	30-130%

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-BS	W3784.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	35.0	35	30-130
95-57-8	2-Chlorophenol	100	74.5	75	30-130
59-50-7	4-Chloro-3-methyl phenol	100	77.7	78	30-130
120-83-2	2,4-Dichlorophenol	100	73.9	74	30-130
105-67-9	2,4-Dimethylphenol	100	70.8	71	30-130
51-28-5	2,4-Dinitrophenol	100	69.7	70	30-130
534-52-1	4,6-Dinitro-o-cresol	100	93.3	93	30-130
95-48-7	2-Methylphenol	100	68.5	69	30-130
	3&4-Methylphenol	200	138	69	30-130
88-75-5	2-Nitrophenol	100	75.7	76	30-130
100-02-7	4-Nitrophenol	100	49.9	50	30-130
87-86-5	Pentachlorophenol	100	77.9	78	30-130
108-95-2	Phenol	100	39.9	40	30-130
95-95-4	2,4,5-Trichlorophenol	100	79.1	79	30-130
88-06-2	2,4,6-Trichlorophenol	100	78.3	78	30-130
62-53-3	Aniline	50	16.5	33* [a]	40-140
101-55-3	4-Bromophenyl phenyl ether	50	41.1	82	40-140
85-68-7	Butyl benzyl phthalate	50	48.4	97	40-140
100-51-6	Benzyl Alcohol	50	33.8	68	40-140
91-58-7	2-Chloronaphthalene	50	39.6	79	40-140
106-47-8	4-Chloroaniline	50	29.2	58	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	40.5	81	40-140
111-44-4	bis(2-Chloroethyl)ether	50	40.7	81	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	47.6	95	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	42.9	86	40-140
122-66-7	1,2-Diphenylhydrazine	50	46.8	94	40-140
121-14-2	2,4-Dinitrotoluene	50	43.1	86	40-140
606-20-2	2,6-Dinitrotoluene	50	41.7	83	40-140
91-94-1	3,3'-Dichlorobenzidine	50	46.3	93	40-140
132-64-9	Dibenzofuran	50	38.6	77	40-140
84-74-2	Di-n-butyl phthalate	50	45.5	91	40-140
117-84-0	Di-n-octyl phthalate	50	64.8	130	40-140
84-66-2	Diethyl phthalate	50	43.4	87	40-140
131-11-3	Dimethyl phthalate	50	41.3	83	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.2	98	40-140
118-74-1	Hexachlorobenzene	50	42.4	85	40-140

* = Outside of Control Limits.

7.2.1

7

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-BS	W3784.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	12.3	25* [a]	40-140
67-72-1	Hexachloroethane	50	31.0	62	40-140
78-59-1	Isophorone	50	38.8	78	40-140
88-74-4	2-Nitroaniline	50	41.0	82	40-140
99-09-2	3-Nitroaniline	50	33.4	67	40-140
100-01-6	4-Nitroaniline	50	34.1	68	40-140
98-95-3	Nitrobenzene	50	40.3	81	40-140
62-75-9	n-Nitrosodimethylamine	50	27.0	54	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	44.1	88	40-140
86-30-6	N-Nitrosodiphenylamine	50	42.5	85	40-140
110-86-1	Pyridine	50	22.5	45	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	55%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	85%	15-110%
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	104%	30-130%

(a) Outside control limits. Blauk Spike meets program technical requirements.

* = Outside of Control Limits.

7.2.1

7

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-BS	U9082.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	36.4	73	40-140
208-96-8	Acenaphthylene	50	26.6	53	40-140
120-12-7	Anthracene	50	38.1	76	40-140
56-55-3	Benzo(a)anthracene	50	46.5	93	40-140
50-32-8	Benzo(a)pyrene	50	52.5	105	40-140
205-99-2	Benzo(b)fluoranthene	50	59.4	119	40-140
191-24-2	Benzo(g,h,i)perylene	50	53.0	106	40-140
207-08-9	Benzo(k)fluoranthene	50	65.0	130	40-140
218-01-9	Chrysene	50	42.1	84	40-140
53-70-3	Dibenzo(a,h)anthraceue	50	52.7	105	40-140
206-44-0	Fluoranthene	50	47.0	94	40-140
86-73-7	Fluorene	50	36.4	73	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	53.9	108	40-140
90-12-0	1-Methylnaphthalene	50	32.2	64	40-140
91-57-6	2-Methylnaphthalene	50	32.2	64	40-140
91-20-3	Naphthalene	50	32.8	66	40-140
85-01-8	Phenanthrene	50	38.5	77	40-140
129-00-0	Pyrene	50	45.1	90	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	66%	30-130%
1718-51-0	Terphenyl-d14	111%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MS	W3785.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
OP29949-MSD	W3786.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
MC12879-4	W3787.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	36.7	37	36.2	36	1	30-130/20
95-57-8	2-Chlorophenol	ND		100	76.0	76	63.7	64	18	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	81.2	81	72.5	73	11	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	76.5	77	63.9	64	18	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	72.9	73	63.0	63	15	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	75.8	76	69.3	69	9	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	102	102	88.2	88	15	30-130/20
95-48-7	2-Methylphenol	ND		100	70.0	70	61.2	61	13	30-130/20
	3&4-Methylphenol	ND		200	139	70	126	63	10	30-130/20
88-75-5	2-Nitrophenol	ND		100	79.2	79	65.1	65	20	30-130/20
100-02-7	4-Nitrophenol	ND		100	52.1	52	53.0	53	2	30-130/20
87-86-5	Pentachlorophenol	ND		100	85.2	85	71.2	71	18	30-130/20
108-95-2	Phenol	ND		100	39.9	40	38.4	38	4	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	81.7	82	72.3	72	12	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	80.5	81	70.4	70	13	30-130/20
62-53-3	Aniline	ND		50	17.0	34* [a]	15.5	31* [a]	9	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	44.2	88	37.5	75	16	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	52.2	104	44.2	88	17	40-140/20
100-51-6	Benzyl Alcohol	ND		50	34.1	68	31.1	62	9	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	40.9	82	35.7	71	14	40-140/20
106-47-8	4-Chloroaniline	ND		50	30.9	62	29.2	58	6	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	42.5	85	35.3	71	19	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	42.3	85	35.1	70	19	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	50.0	100	40.8	82	20	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	45.6	91	40.2	80	13	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	50.2	100	43.8	88	14	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	46.2	92	40.4	81	13	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	44.1	88	39.6	79	11	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	46.9	94	40.3	81	15	40-140/20
132-64-9	Dibenzofnran	ND		50	40.2	80	35.3	71	13	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	48.3	97	41.8	84	14	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	67.6	135	57.1	114	17	40-140/20
84-66-2	Diethyl phthalate	ND		50	46.2	92	40.9	82	12	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.4	89	39.8	80	11	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	8.7		50	52.4	87	46.1	75	13	40-140/20
118-74-1	Hexachlorobenzene	ND		50	46.3	93	39.4	79	16	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MS	W3785.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
OP29949-MSD	W3786.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
MC12879-4	W3787.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	12.8	26* [a]	9.8	20* [a]	27* [a]	40-140/20
67-72-1	Hexachloroethane	ND		50	32.1	64	25.4	51	23* [b]	40-140/20
78-59-1	Isophorone	ND		50	40.4	81	34.6	69	15	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.4	87	38.8	78	11	40-140/20
99-09-2	3-Nitroaniline	ND		50	35.8	72	34.8	70	3	40-140/20
100-01-6	4-Nitroaniline	ND		50	39.3	79	33.8	68	15	40-140/20
98-95-3	Nitrobenzene	ND		50	42.2	84	34.5	69	20	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	27.2	54	24.4	49	11	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	45.7	91	38.8	78	16	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	46.2	92	39.2	78	16	40-140/20
110-86-1	Pyridine	ND		50	23.1	46	20.5	41	12	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-4	Limits
367-12-4	2-Fluorophenol	55%	50%	50%	15-110%
4165-62-2	Phenol-d5	37%	36%	34%	15-110%
118-79-6	2,4,6-Tribromophenol	92%	77%	69%	15-110%
4165-60-0	Nitrobenzene-d5	82%	67%	71%	30-130%
321-60-8	2-Fluorobiphenyl	74%	63%	61%	30-130%
1718-51-0	Terphenyl-d14	110%	96%	107%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-MS	U9083.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
OP29950-MSD	U9084.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
MC12879-5	U9085.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	38.7	77	32.7	65	17	40-140/20
208-96-8	Acenaphthylene	ND		50	28.1	56	24.3	49	15	40-140/20
120-12-7	Anthracene	ND		50	40.1	80	35.5	71	12	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	50.4	101	43.3	87	15	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	53.8	108	45.9	92	16	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	60.2	120	51.2	102	16	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	53.9	108	45.9	92	16	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	66.2	132	56.1	112	17	40-140/20
218-01-9	Chrysene	ND		50	45.6	91	39.5	79	14	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	54.0	108	46.7	93	14	40-140/20
206-44-0	Fluoranthene	ND		50	50.3	101	43.8	88	14	40-140/20
86-73-7	Fluorene	ND		50	38.9	78	34.1	68	13	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	54.9	110	47.3	95	15	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	33.0	66	26.5	53	22* [a]	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	34.1	68	28.2	56	19	40-140/20
91-20-3	Naphthalene	ND		50	34.4	69	28.6	57	18	40-140/20
85-01-8	Phenanthrene	ND		50	41.3	83	35.5	71	15	40-140/20
129-00-0	Pyrene	ND		50	48.3	97	42.4	85	13	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-5	Limits
4165-60-0	Nitrobenzene-d5	84%	69%	74%	30-130%
321-60-8	2-Fluorobiphenyl	68%	58%	59%	30-130%
1718-51-0	Terphenyl-d14	115%	104%	103%	30-130%

(a) High RPD due to possihle matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU505-CC486	Injection Date:	08/08/12
Lab File ID:	U9078.D	Injection Time:	14:16
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	139820	3.76	425573	4.74	234784	6.16	426975	7.48	250048	10.25	442475	11.70
Upper Limit [a]	279640	4.26	851146	5.24	469568	6.66	853950	7.98	500096	10.75	884950	12.20
Lower Limit [b]	69910	3.26	212787	4.24	117392	5.66	213488	6.98	125024	9.75	221238	11.20
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
ZZZZZZ	100686	3.76	303498	4.74	166796	6.16	296863	7.47	174965	10.25	317961	11.69
ZZZZZZ	96351	3.76	288817	4.74	159486	6.16	286700	7.47	171214	10.25	312107	11.69
OP29950-MB	101807	3.77	307406	4.74	168613	6.16	302479	7.47	165240	10.25	229703	11.69
OP29950-BS	102537	3.77	309028	4.74	167468	6.16	293160	7.48	154996	10.25	218868[c]	11.69
OP29950-MS	99991	3.77	296243	4.74	162595	6.16	292174	7.48	154322	10.25	228858	11.69
OP29950-MSD	99331	3.77	297807	4.74	162105	6.16	288422	7.48	152062	10.25	230334	11.69
MC12879-5	91604	3.77	278815	4.74	154351	6.16	279105	7.47	161564	10.25	242832	11.69
MC12833-3	92690	3.77	273860	4.74	154271	6.16	278905	7.47	160045	10.25	250744	11.69
MC12833-4	91703	3.77	275204	4.74	153200	6.16	275947	7.48	165801	10.25	260117	11.69
MC12833-7	95051	3.76	284456	4.74	154723	6.16	279818	7.47	161828	10.25	255907	11.69
MC12833-8	97582	3.76	293148	4.74	157406	6.16	282265	7.47	164632	10.25	270250	11.69
MC12833-9	90628	3.76	273941	4.74	149274	6.16	270661	7.47	162389	10.25	265681	11.69
ZZZZZZ	125506	3.76	370391	4.74	200882	6.16	358697	7.48	213974	10.25	378873	11.69
ZZZZZZ	120105	3.76	351006	4.74	194091	6.16	345520	7.48	207644	10.25	365446	11.69

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; Reteution time -0.5 minutes.
(c) Outside control limits. Individual spike recoveries within acceptance limits.

7.4.1

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW174-CC129	Injection Date:	08/09/12
Lab File ID:	W3782.D	Injection Time:	08:18
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	409301	3.79	1559438	4.78	964136	6.21	1800753	7.54	2203960	10.43	1940500	12.00
Upper Limit [a]	818602	4.29	3118876	5.28	1928272	6.71	3601506	8.04	4407920	10.93	3881000	12.50
Lower Limit [b]	204651	3.29	779719	4.28	482068	5.71	900377	7.04	1101980	9.93	970250	11.50
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
OP29949-MB	447508	3.79	1649294	4.78	990696	6.20	1770152	7.53	1874126	10.42	1430423	11.99
OP29949-BS	444713	3.79	1674225	4.78	995596	6.20	1752861	7.53	1984520	10.42	1467259	12.00
OP29949-MS	436578	3.79	1628079	4.78	985753	6.20	1719920	7.53	1941356	10.42	1490687	12.00
OP29949-MSD	436752	3.79	1625030	4.78	960805	6.20	1720332	7.53	1950899	10.42	1524773	12.00
MC12879-4	413869	3.79	1549917	4.78	927658	6.20	1672557	7.53	1858389	10.42	1558360	11.99
ZZZZZZ	653606	3.80	2516432	4.78	1404445	6.21	2343877	7.53	2357188	10.31	2984989	11.76
ZZZZZZ	415679	3.79	1568004	4.78	932119	6.20	1666646	7.53	2014655	10.42	2681368	12.00
ZZZZZZ	393043	3.79	1462693	4.78	892329	6.20	1584924	7.53	1926842	10.42	2623590	12.00
ZZZZZZ	360256	3.79	1345857	4.78	808039	6.20	1441202	7.53	1755291	10.42	2466952	12.00
ZZZZZZ	370294	3.79	1367830	4.78	826715	6.20	1475549	7.53	1302511	10.42	984019	12.00
ZZZZZZ	382677	3.79	1410740	4.78	843575	6.20	1479533	7.53	1305737	10.42	1002151	11.99
MC12833-3	451894	3.79	1684689	4.78	1027769	6.20	1813596	7.53	2032364	10.42	1765864	12.00
MC12833-4	432651	3.79	1593700	4.78	971077	6.20	1733179	7.53	2003842	10.42	1752799	12.00
MC12833-7	400066	3.79	1513849	4.78	904452	6.20	1609683	7.53	1904513	10.42	1676885	12.00
MC12833-8	413011	3.79	1526167	4.78	918233	6.20	1636702	7.53	1910867	10.42	1755122	12.00
MC12833-9	401086	3.79	1507677	4.78	901466	6.20	1604391	7.53	1938273	10.42	1802940	12.00
ZZZZZZ	410641	3.79	1554422	4.78	994774	6.21	1693979	7.54	1606255	10.42	1185757	12.00
ZZZZZZ	427084	3.79	1585490	4.78	970706	6.20	1707807	7.53	1684582	10.42	1391041	12.00
ZZZZZZ	509820	3.79	1840615	4.78	1066831	6.20	1739361	7.53	1353642	10.42	983958	11.99
ZZZZZZ	495802	3.79	1773944	4.78	1020864	6.20	1671435	7.53	1329778	10.42	1064630	11.99
ZZZZZZ	411115	3.79	1471833	4.78	845897	6.20	1476628	7.53	1574395	10.44	1345633	12.03
ZZZZZZ	498858	3.80	1966693	4.79	1218259	6.21	2169713	7.54	2146198	10.43	1564890	12.01
ZZZZZZ	444082	3.79	1707278	4.78	1081639	6.21	1980718	7.53	1662710	10.42	1140800	12.00
ZZZZZZ	460924	3.79	1684585	4.78	981393	6.21	1617635	7.53	1237332	10.42	929847[c]	12.00
ZZZZZZ	474897	3.79	1825142	4.78	1149249	6.21	2072740	7.53	2013234	10.42	1418783	12.00
ZZZZZZ	478795	3.79	1724053	4.78	1017891	6.20	1686381	7.53	1278324	10.42	974151	12.00
ZZZZZZ	459280	3.79	1709747	4.78	1039041	6.21	1782970	7.53	1446804	10.42	1055860	12.00
ZZZZZZ	496844	3.79	1811939	4.78	1051346	6.21	1727439	7.53	1371984	10.42	1071589	12.00
ZZZZZZ	439957	3.79	1596945	4.78	941655	6.20	1630553	7.53	1529418	10.42	1169682	12.00
ZZZZZZ	416089	3.79	1551191	4.78	906978	6.20	1568670	7.53	1223659	10.42	898736[c]	12.00
ZZZZZZ	522175	3.79	1936798	4.78	1217934	6.21	2208566	7.54	1728319	10.48	1521925	12.08
ZZZZZZ	476691	3.80	1719541	4.78	1014197	6.21	1705560	7.53	1237301	10.42	974401	12.00

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW174-CC129	Injection Date:	08/09/12
Lab File ID:	W3782.D	Injection Time:	08:18
Instrument ID:	GCMSW	Method:	SW846 8270C

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT	IS 6 AREA	IS 6 RT

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.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12833-3	W3794.D	42.0	36.0	86.0	81.0	72.0	105.0
MC12833-4	W3795.D	24.0	30.0	75.0	66.0	62.0	90.0
MC12833-7	W3796.D	47.0	31.0	79.0	73.0	68.0	97.0
MC12833-8	W3797.D	40.0	27.0	68.0	59.0	53.0	94.0
MC12833-9	W3798.D	51.0	34.0	84.0	81.0	73.0	106.0
OP29949-BS	W3784.D	55.0	38.0	85.0	79.0	72.0	104.0
OP29949-MB	W3783.D	48.0	31.0	74.0	74.0	66.0	113.0
OP29949-MS	W3785.D	55.0	37.0	92.0	82.0	74.0	110.0
OP29949-MSD	W3786.D	50.0	36.0	77.0	67.0	63.0	96.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12833-3	U9086.D	84.0	67.0	99.0
MC12833-4	U9087.D	69.0	59.0	88.0
MC12833-7	U9088.D	76.0	66.0	96.0
MC12833-8	U9089.D	63.0	53.0	93.0
MC12833-9	U9090.D	84.0	69.0	102.0
OP29950-BS	U9082.D	82.0	66.0	111.0
OP29950-MB	U9081.D	76.0	63.0	107.0
OP29950-MS	U9083.D	84.0	68.0	115.0
OP29950-MSD	U9084.D	69.0	58.0	104.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Dnplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MB	BK15933.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropaue	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	113%	36-173%
460-00-4	Bromofluorobenzene (S)	94%	36-173%

8.1.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-BS	BK15934.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.077	108	60-140
106-93-4	1,2-Dibromoethane	0.071	0.072	101	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	85%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MS	BK15935.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
OP29955-MSD	BK15936.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
MC12879-7	BK15938.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.070	99	0.072	101	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.069	97	0.070	99	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-7	Limits
460-00-4	Bromofluorobenzene (S)	97%	101%	113%	36-173%
460-00-4	Bromofluorobenzene (S)	86%	86%	95%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	SI [a]	S1 [b]
MC12833-1	BK15944.D	91.0	109.0
MC12833-3	BK15945.D	127.0	89.0
MC12833-4	BK15946.D	143.0	100.0
MC12833-5	BK15947.D	117.0	95.0
MC12833-7	BK15949.D	104.0	87.0
MC12833-8	BK15950.D	107.0	93.0
MC12833-9	BK15951.D	116.0	100.0
OP29955-BS	BK15934.D	85.0	75.0
OP29955-MB	BK15933.D	113.0	94.0
OP29955-MS	BK15935.D	97.0	86.0
OP29955-MSD	BK15936.D	101.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15927.D	08/10/12	04:10	4.40	5.28
ZZZZZZ	BK15928.D	08/10/12	04:34	4.40	5.28
ZZZZZZ	BK15929.D	08/10/12	04:59	4.40	5.28
ZZZZZZ	BK15930.D	08/10/12	05:23	4.40	5.28
ZZZZZZ	BK15931.D	08/10/12	05:48	4.40	5.28
ZZZZZZ	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15937.D	Injection Time:	08:15
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12879-7	BK15938.D	08/10/12	08:39	4.40	5.28
ZZZZZZ	BK15939.D	08/10/12	09:03	4.40	5.28
ZZZZZZ	BK15940.D	08/10/12	09:27	4.40	5.28
ZZZZZZ	BK15941.D	08/10/12	09:52	4.40	5.28
ZZZZZZ	BK15942.D	08/10/12	10:16	4.40	5.28
ZZZZZZ	BK15943.D	08/10/12	10:40	4.40	5.28
MC12833-1	BK15944.D	08/10/12	11:04	4.40	5.28
MC12833-3	BK15945.D	08/10/12	11:29	4.40	5.28
MC12833-4	BK15946.D	08/10/12	11:53	4.40	5.28
MC12833-5	BK15947.D	08/10/12	12:17	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15948.D	Injection Time:	12:42
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12833-7	BK15949.D	08/10/12	13:06	4.40	5.28
MC12833-8	BK15950.D	08/10/12	13:30	4.40	5.28
MC12833-9	BK15951.D	08/10/12	13:54	4.40	5.28
ZZZZZZ	BK15952.D	08/10/12	14:24	4.40	5.28
ZZZZZZ	BK15953.D	08/10/12	14:48	4.40	5.28
ZZZZZZ	BK15954.D	08/10/12	15:12	4.40	5.28
ZZZZZZ	BK15955.D	08/10/12	15:37	4.40	5.28
ZZZZZZ	BK15956.D	08/10/12	16:01	4.40	5.28
ZZZZZZ	BK15957.D	08/10/12	16:25	4.40	5.28
ZZZZZZ	BK15958.D	08/10/12	16:49	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.3

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12870

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/5/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-080312-HCL-W	TB-080312-ST-W
P66-ROX-080312	MW14-ROX-080312

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries were outside evaluation criteria. VOC MS/MSD recoveries were outside evaluation criteria. PAH LCS internal standard area recovery for perylene-d12 was outside evaluation criteria in samples P66-ROX-080312 and MW14-ROX-080312. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, the initial calibration verification for acetone and aniline exceeded fifty percent (50%) difference. The continuing calibration for acrolein exceeded 50 percent difference (% D).

The cooler receipt form indicated samples were received by the laboratory at a temperature of 1.7ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required. Additionally, the laboratory report was revised to correct laboratory transcription errors in sample ID for sample MW14-ROX-080312.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2512-BS/BSD	VOCs	Acrolein	**148/164**	10	70-130/25
MSN2512-BS/BSD	VOCs	Acrylonitrile	**446/442**	1	70-130/25
MSN2512-BS/BSD	VOCs	Dichlorodifluoromethane	118/**131**	11	70-130/25
OP29949-BS	SVOCs	Aniline	**33**	NA	40-140
OP29949-BS	SVOCs	Hexachlorocyclopentadiene	**25**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
P66-ROX-080312	SVOCs	Aniline	**UJ**
P66-ROX-080312	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW14-ROX-080312	SVOCs	Aniline	**UJ**
MW14-ROX-080312	SVOCs	Hexachlorocyclopentadiene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, although not requested, sample MW14-ROX-080312 was spiked and analyzed for VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW14-ROX-080312	VOCs	Acetone	**155/163**	5	70-130/30
MW14-ROX-080312	VOCs	Acrolein	**157/158**	1	70-130/30
MW14-ROX-080312	VOCs	Acrylonitrile	**462/432**	7	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as

appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, PAH LCS internal standard area recovery for perylene-d_{12} was outside evaluation criteria for samples P66-ROX-080312 and MW14-ROX-080312.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
OP29950-BS	PAHs	Perylene-d_{12}	**218868**	221238-884950

LCS/LCSDs are quality control samples and are not qualified. No qualification of data was required.

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

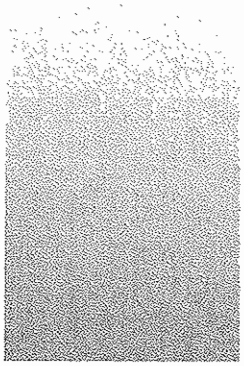
12.0 Additional Qualifications

Were additional qualifications applied?

No

New England
ACCUTEST
LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12833

Sampling Date: 08/02/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **93**

Reviewed on 9/4/12

Reza Pand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

ccutest Laboratories is the sole authority for authorizing edits or modifications to this cument. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

-1-

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **8**
4.1: MC12833-1: TB-080212-ST-W 9
4.2: MC12833-2: TB-080212-HCL-W 10
4.3: MC12833-3: T12-ROX-080212 13
4.4: MC12833-4: P59-ROX-080212 20
4.5: MC12833-5: TB-080212-ST-R 27
4.6: MC12833-6: TB-080212-HCL-R 28
4.7: MC12833-7: MW6D-ROX-080212 31
4.8: MC12833-8: P54-ROX-080212 38
4.9: MC12833-9: P54-ROX-080212-EB 45
Section 5: Misc. Forms **52**
5.1: Chain of Custody 53
5.2: Sample Tracking Chronicle 55
5.3: Internal Chain of Custody 57
Section 6: GC/MS Volatiles - QC Data Summaries **59**
6.1: Method Blank Summary 60
6.2: Blank Spike Summary 63
6.3: Matrix Spike/Matrix Spike Duplicate Summary 66
6.4: Internal Standard Area Summaries 69
6.5: Surrogate Recovery Summaries 70
Section 7: GC/MS Semi-volatiles - QC Data Summaries **71**
7.1: Method Blank Summary 72
7.2: Blank Spike Summary 75
7.3: Matrix Spike/Matrix Spike Duplicate Summary 78
7.4: Internal Standard Area Summaries 81
7.5: Surrogate Recovery Summaries 84
Section 8: GC Volatiles - QC Data Summaries **86**
8.1: Method Blank Summary 87
8.2: Blank Spike Summary 88
8.3: Matrix Spike/Matrix Spike Duplicate Summary 89
8.4: Surrogate Recovery Summaries 90
8.5: GC Surrogate Retention Time Summaries 91

Sample Summary

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12833-1	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-ST-W
MC12833-2	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-HCL-W
MC12833-3	08/02/12	14:15 LRSJ	08/03/12	AQ	Ground Water	T12-ROX-080212
MC12833-4	08/02/12	16:20 LRSJ	08/03/12	AQ	Ground Water	P59-ROX-080212
MC12833-5	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-ST-R
MC12833-6	08/02/12	00:00 LRSJ	08/03/12	AQ	Trip Blank Water	TB-080212-HCL-R
MC12833-7	08/02/12	12:35 LRSJ	08/03/12	AQ	Ground Water	MW6D-ROX-080212
MC12833-8	08/02/12	14:30 LRSJ	08/03/12	AQ	Ground Water	P54-ROX-080212
MC12833-9	08/02/12	14:50 LRSJ	08/03/12	AQ	Equipment Blank	P54-ROX-080212-EB

ACCUTEST LABORATORIES

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12833
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	**Report Date**	8/20/2012 9:39:00 AM

5 Sample(s), 4 Trip Blank(s) were collected on 08/02/2012 and were received at Accutest on 08/03/2012 properly preserved, at 2.7 Deg. C and intact. These Samples received an Accutest job number of MC12833. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** MSV439

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12833-8MS, MC12833-8MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 2,2-Dichloropropane are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Chloroethyl vinyl ether are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- RPD(s) for MSD for 2-Chloroethyl vinyl ether are outside control limits for sample MC12833-8MSD. High RPD due to possible matrix interferenee and/or sample non-homogeneity.
- MSV439-BS for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC12833-8MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ **Batch ID:** OP29949

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12879-4MS, MC12879-4MSD were used as the QC samples indicated.
- BS/MS/MSD Recovery(s) for Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- RPD(s) for MSD for Hexachlorothane are outside control limits for sample OP29949-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD of OP29949-MSD for Hexachlorocyclopentadiene: Outside control limits. Blank Spike meets program technical requirements.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP29950

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12879-5MS, MC12879-5MSD were used as the QC samples indicated.
- RPD(s) for MSD for 1-Methylnaphthalene are outside control limits for sample OP29950-MSD. High RPD due to possible matrix interferenee and/or sample non-homogeneity.
- OP29950-BS has internal standard outside control limits. Individual spike recoveries within acceptanee limits.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP29955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-7MS, MC12879-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12833).

Summary of Hits

Job Number: MC12833
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/02/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12833-1	TB-080212-ST-W					
No hits reported in this sample.						
MC12833-2	TB-080212-HCL-W					
No hits reported in this sample.						
MC12833-3	T12-ROX-080212					
Benzene		1640	5.0	2.4	ug/l	SW846 8260B
Ethylbenzene		573	10	5.1	ug/l	SW846 8260B
Isopropylbenzene		29.7 J	50	5.0	ug/l	SW846 8260B
n-Propylbenzene		48.6 J	50	5.8	ug/l	SW846 8260B
Toluene		197	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		403	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		47.4 J	50	4.7	ug/l	SW846 8260B
m,p-Xylene		1320	10	7.3	ug/l	SW846 8260B
o-Xylene		70.9	10	5.8	ug/l	SW846 8260B
Xylene (total)		1390	10	5.8	ug/l	SW846 8260B
2,4-Dimethylphenol		15.3	11	3.0	ug/l	SW846 8270C
2-Methylphenol		2.I J	11	0.66	ug/l	SW846 8270C
3&4-Methylphenol		2.7 J	11	0.82	ug/l	SW846 8270C
Phenol		42.0	5.4	1.0	ug/l	SW846 8270C
Dibenzofuran		0.30 J	2.2	0.23	ug/l	SW846 8270C
Acenaphtheue		0.44	0.11	0.0I5	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.082 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.10 J	0.11	0.019	ug/l	SW846 8270C BY SIM
Fluoranthene		0.046 J	0.11	0.035	ug/l	SW846 8270C BY SIM
Fluorene		0.29	0.11	0.050	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		19.9	0.22	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		29.4	0.22	0.056	ug/l	SW846 8270C BY SIM
Naphthalene		62.5	0.11	0.039	ug/l	SW846 8270C BY SIM
Phenanthrene		0.89	0.054	0.014	ug/l	SW846 8270C BY SIM
Pyrene		0.062 J	0.11	0.039	ug/l	SW846 8270C BY SIM
MC12833-4	P59-ROX-080212					
Benzene		11000	500	240	ug/l	SW846 8260B
Ethylbenzene		1740	20	10	ug/l	SW846 8260B
Isopropylbenzene		45.2 J	100	10	ug/l	SW846 8260B
n-Propylbenzene		97.4 J	100	12	ug/l	SW846 8260B
Toluene		506	20	10	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		563	100	6.9	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		158	100	9.3	ug/l	SW846 8260B

Summary of Hits

Job Number: MC12833
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/02/12

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
m,p-Xylene	4350	20	15	ug/l	SW846 8260B
o-Xylene	376	20	12	ug/l	SW846 8260B
Xylene (total)	4730	20	12	ug/l	SW846 8260B
2,4-Dimethylphenol	8.8 J	11	2.9	ug/l	SW846 8270C
2-Methylphenol	1.8 J	11	0.64	ug/l	SW846 8270C
3&4-Methylphenol	3.2 J	11	0.79	ug/l	SW846 8270C
Phenol	41.9	5.3	0.98	ug/l	SW846 8270C
Dibenzofuran	0.36 J	2.1	0.23	ug/l	SW846 8270C
Acenaphthene	0.42	0.11	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.10 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene	0.14	0.11	0.019	ug/l	SW846 8270C BY SIM
Benzo(a)anthracene	0.21	0.053	0.032	ug/l	SW846 8270C BY SIM
Benzo(a)pyrene	0.036 J	0.11	0.018	ug/l	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.047 J	0.053	0.025	ug/l	SW846 8270C BY SIM
Fluoranthene	0.15	0.11	0.034	ug/l	SW846 8270C BY SIM
Fluorene	0.48	0.11	0.049	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	13.6	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphtbalene	20.7	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene	88.6	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene	1.0	0.053	0.013	ug/l	SW846 8270C BY SIM
Pyrene	0.21	0.11	0.037	ug/l	SW846 8270C BY SIM
MC12833-5 TB-080212-ST-R					
No hits reported iu this saruple.					
MC12833-6 TB-080212-HCL-R					
No hits reported in this sample.					
MC12833-7 MW6D-ROX-080212					
Benzene	0.68	0.50	0.24	ug/l	SW846 8260B
Diethyl phthalate	0.22 J	5.1	0.19	ug/l	SW846 8270C
MC12833-8 P54-ROX-080212					
No hits reported in this sample.					
MC12833-9 P54-ROX-080212-EB					
Acetone	7.7	5.0	3.0	ug/l	SW846 8260B
Benzyl Alcohol	0.43 J	10	0.26	ug/l	SW846 8270C
Naphthalene	0.048 J	0.10	0.036	ug/l	SW846 8270C BY SIM

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-080212-ST-W		
Lab Sample ID:	MC12833-1	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15944.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	91%		36-173%
460-00-4	Bromofluorobenzene (S)	109%		36-173%

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:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10555.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ng/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ng/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzeue	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

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

Report of Analysis

Client Sample ID:	TB-080212-HCL-W		
Lab Sample ID:	MC12833-2	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10562.D	10	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	30	ug/l	UJ
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	1640	5.0	2.4	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ug/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	50	16	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	R
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	573	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	29.7	50	5.0	ug/l	J
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	48.6	50	5.8	ug/l	J
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	197	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	403	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	47.4	50	4.7	ug/l	J
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	1320	10	7.3	ug/l	
95-47-6	o-Xylene	70.9	10	5.8	ug/l	
1330-20-7	Xylene (total)	1390	10	5.8	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Grouud Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Grouud Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3794.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.3	ug/l	
95-57-8	2-Chloropheuol	ND	5.4	0.44	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.41	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.41	ug/l	
105-67-9	2,4-Dimethylphenol	15.3	11	3.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	2.1	11	0.66	ug/l	J
	3&4-Methylphenol	2.7	11	0.82	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND	22	3.0	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.69	ug/l	
108-95-2	Phenol	42.0	5.4	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.2	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.29	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.69	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.24	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.41	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.32	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.23	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.97	ug/l	
132-64-9	Dibenzofuran	0.30	2.2	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.4	0.39	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.4	0.26	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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.4	0.21	ug/l	
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	0.41	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.4	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.35	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.25	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.28	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		15-110%
4165-62-2	Phenol-d5	36%		15-110%
118-79-6	2,4,6-Tribromophenol	86%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terpheuyl-d14	105%		30-130%

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

Report of Analysis

Client Sample ID:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9086.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.44	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	0.082	0.11	0.014	ug/l	J
120-12-7	Anthracene	0.10	0.11	0.019	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.054	0.033	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ng/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.064	ng/l	
218-01-9	Chrysene	ND	0.11	0.079	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ug/l	
206-44-0	Fluoranthene	0.046	0.11	0.035	ug/l	J
86-73-7	Fluorene	0.29	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.050	ug/l	
90-12-0	1-Methylnaphthalene	19.9	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	29.4	0.22	0.056	ug/l	
91-20-3	Naphthalene	62.5	0.11	0.039	ug/l	
85-01-8	Phenanthrene	0.89	0.054	0.014	ug/l	
129-00-0	Pyrene	0.062	0.11	0.039	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	99%		30-130%

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:	T12-ROX-080212		
Lab Sample ID:	MC12833-3	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15945.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	33.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.016	0.014	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.016	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	127%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10563.D	20	08/16/12	AMY	n/a	n/a	MSV439
Run #2	V10559.D	1000	08/16/12	AMY	n/a	n/a	MSV439

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	100	60	ug/l	UJ
107-02-8	Acrolein	ND	500	200	ug/l	
107-13-1	Acrylonitrile	ND	100	65	ng/l	
71-43-2	Benzene	11000 [a]	500	240	ug/l	
108-86-1	Bromobenzene	ND	100	12	ug/l	
74-97-5	Bromochloromethane	ND	100	24	ug/l	
75-27-4	Bromodichloromethane	ND	20	12	ug/l	
75-25-2	Bromoform	ND	20	16	ug/l	
74-83-9	Bromomethane	ND	40	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	48	ug/l	
104-51-8	n-Butylbenzene	ND	100	14	ug/l	
135-98-8	sec-Butylbenzene	ND	100	11	ug/l	
98-06-6	tert-Butylbenzene	ND	100	13	ug/l	
75-15-0	Carbon disulfide	ND	100	12	ug/l	
56-23-5	Carbon tetrachloride	ND	20	17	ug/l	
108-90-7	Chlorobenzene	ND	20	9.4	ng/l	
75-00-3	Chloroethane	ND	40	10	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	100	16	ug/l	
67-66-3	Chloroform	ND	20	9.9	ug/l	
74-87-3	Chloromethane	ND	40	15	ug/l	
95-49-8	o-Chlorotoluene	ND	100	13	ug/l	
106-43-4	p-Chlorotoluene	ND	100	9.7	ug/l	
124-48-1	Dibromochloromethane	ND	20	11	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20	19	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20	9.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	13	ug/l	
75-71-8	Dichlorodifluoromethaue	ND	40	35	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	20	12	ug/l	
107-06-2	1,2-Dichloroethane	ND	20	13	ug/l	
75-35-4	1,1-Dichloroethene	ND	20	8.2	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	20	13	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	20	19	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	40	14	ug/l	
142-28-9	1,3-Dichloropropane	ND	100	13	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	100	31	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	100	18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	9.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	3.9	ug/l	
123-91-1	1,4-Dioxane	ND	500	300	ug/l	R
97-63-2	Ethyl methacrylate	ND	100	16	ug/l	
100-41-4	Ethylbenzene	1740	20	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	100	41	ug/l	
591-78-6	2-Hexanone	ND	100	39	ug/l	
98-82-8	Isopropylbenzene	45.2	100	10	ug/l	J
99-87-6	p-Isopropyltoluene	ND	100	11	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20	8.2	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	100	58	ug/l	
74-95-3	Methylene bromide	ND	100	22	ug/l	
75-09-2	Methylene chloride	ND	40	17	ug/l	
103-65-1	n-Propylbenzene	97.4	100	12	ug/l	J
100-42-5	Styrene	ND	100	9.1	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	12	ug/l	
127-18-4	Tetrachloroethene	ND	20	8.4	ug/l	
108-88-3	Toluene	506	20	10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	21	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	26	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20	17	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20	10	ug/l	
79-01-6	Trichloroethene	ND	20	16	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	5.7	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	100	17	ug/l	
95-63-6	1,2,4-Trimethylbenzene	563	100	6.9	ug/l	
108-67-8	1,3,5-Trimethylbenzene	158	100	9.3	ug/l	
108-05-4	Vinyl Acetate	ND	100	20	ug/l	
75-01-4	Vinyl chloride	ND	20	13	ug/l	
	m,p-Xylene	4350	20	15	ug/l	
95-47-6	o-Xylene	376	20	12	ug/l	
1330-20-7	Xylene (total)	4730	20	12	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	98%	70-130%
2037-26-5	Toluene-D8	98%	99%	70-130%
460-00-4	4-Bromofluorobenzene	96%	97%	70-130%

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

(a) Result is from Run# 2

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 presmmptive evidence of a compound

Report of Analysis

Client Sample ID:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3795.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	8.8	11	2.9	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	1.8	11	0.64	ug/l	J
	3&4-Methylphenol	3.2	11	0.79	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.67	ug/l	
108-95-2	Phenol	41.9	5.3	0.98	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.37	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.94	ug/l	
132-64-9	Dibenzofuran	0.36	2.1	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

4.4

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.39	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.3	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	62%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

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

Report of Analysis

Client Sample ID:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9087.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.42	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	0.10	0.11	0.014	ug/l	J
120-12-7	Anthracene	0.14	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	0.21	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	0.036	0.11	0.018	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.047	0.053	0.025	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluorantbene	0.15	0.11	0.034	ug/l	
86-73-7	Fluorene	0.48	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.048	ug/l	
90-12-0	1-Methylnaphthalene	13.6	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	20.7	0.21	0.055	ug/l	
91-20-3	Naphthalene	88.6	0.11	0.038	ug/l	
85-01-8	Phenanthrene	1.0	0.053	0.013	ng/l	
129-00-0	Pyrene	0.21	0.11	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		30-130%
321-60-8	2-Fluorobiphenyl	59%		30-130%
1718-51-0	Terphenyl-d14	88%		30-130%

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:	P59-ROX-080212		
Lab Sample ID:	MC12833-4	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15946.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.0 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	143%		36-173%
460-00-4	Bromofluorobenzene (S)	100%		36-173%

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:	TB-080212-ST-R		
Lab Sample ID:	MC12833-5	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15947.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ng/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	117%		36-173%
460-00-4	Bromofluorobenzene (S)	95%		36-173%

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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10556.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ng/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Bntyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Tricblorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080212-HCL-R		
Lab Sample ID:	MC12833-6	Date Sampled:	08/02/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, 1L		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10560.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	0.68	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ng/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ng/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ng/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

4.7 4

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	5.0	1.6	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorohntadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylhenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3796.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ng/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.61	ug/l	
	3&4-Methylphenol	ND	10	0.76	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.1	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.90	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.22	5.1	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.1	ug/l	
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Flnorophenol	47%		15-110%
4165-62-2	Phenol-d5	31%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrohenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	97%		30-130%

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

Report of Analysis

Client Sample ID:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9088.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ng/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.051	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	96%		30-130%

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:	MW6D-ROX-080212		
Lab Sample ID:	MC12833-7	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15949.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	104%		36-173%
460-00-4	Bromofluorobenzene (S)	87%		36-173%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	UJ
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ng/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND UJ	5.0	1.6	ug/l	UJ
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	R
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanoue (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ng/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichloroflnoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ng/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ng/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3797.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND	11	0.80	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ng/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotolnene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.3	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophoroue	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ng/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	68%		15-110%
4165-60-0	Nitrobenzene-d5	59%		30-130%
321-60-8	2-Fluorobiphenyl	53%		30-130%
1718-51-0	Terphenyl-d14	94%		30-130%

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

Report of Analysis

Client Sample ID:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9089.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluorauthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.055	ug/l	
91-20-3	Naphthalene	ND	0.11	0.038	ug/l	
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	53%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P54-ROX-080212		
Lab Sample ID:	MC12833-8	Date Sampled:	08/02/12
Matrix:	AQ - Ground Water	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Bateh
Run #1	BK15950.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	107%		36-173%
460-00-4	Bromofluorobenzene (S)	93%		36-173%

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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10557.D	1	08/16/12	AMY	n/a	n/a	MSV439
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	7.7	5.0	3.0	ug/l	
107-02-8	Acroleiu	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ng/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroetheue	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Tolnene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

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 compnund

Report of Analysis

Client Sample ID:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3798.D	1	08/09/12	KR	08/07/12	OP29949	MSWI74
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ng/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ng/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ng/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	0.43	10	0.26	ug/l	J
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroetbyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniliue	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodipbenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	84%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	106%		30-130%

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 presomptive evidence of a compound

Report of Analysis

Client Sample ID:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Soutb Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9090.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	0.048	0.10	0.036	ug/l	J
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	102%		30-130%

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:	P54-ROX-080212-EB		
Lab Sample ID:	MC12833-9	Date Sampled:	08/02/12
Matrix:	AQ - Equipment Blank	Date Received:	08/03/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15951.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	116%		36-173%
460-00-4	Bromofluorobenzene (S)	100%		36-173%

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 compouud

New England ACCUTEST LABORATORIES

Misc. Forms

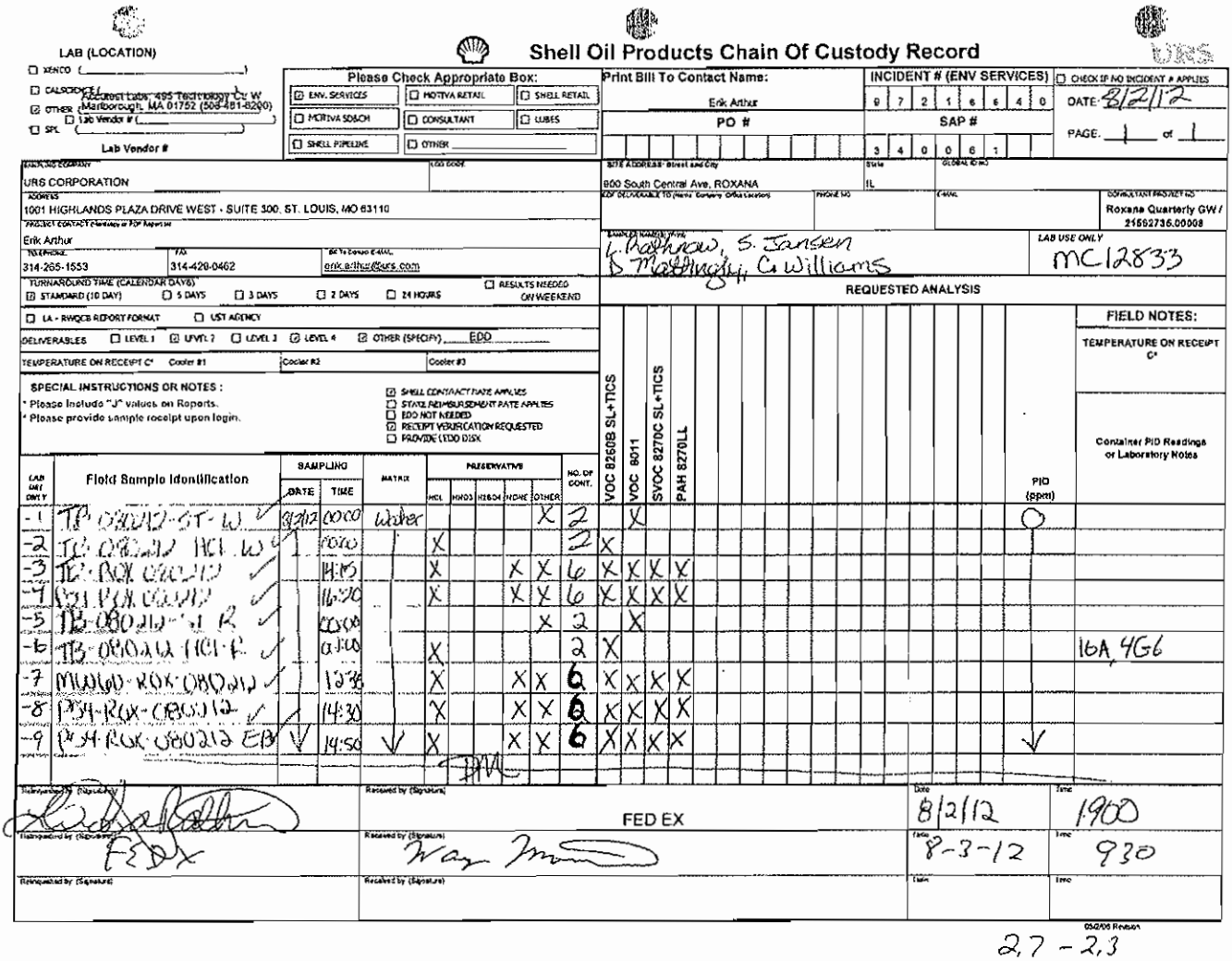
Custody Documents and Other Forms

Includes the following where applicable:

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

Shell Oil Products Chain Of Custody Record

URS



LAB (LOCATION)
☐ XENCO ( )
☐ CALSCIENCE ( )
☑ OTHER (Accutest Labs, 495 Technology Ct W Marlborough, MA 01752 (508-481-6200))
☐ SPL (Lab Vendor # ( ))
Lab Vendor #

Please Check Appropriate Box:
☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name: Erik Arthur
PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0
SAP #: 3 4 0 0 6 1
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 8/2/12
PAGE: 1 of 1

BILLING COMPANY: URS CORPORATION
LOG CODE:
ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110
PROJECT CONTACT (Hardcopy or PDF Report): Erik Arthur
TELEPHONE: 314-265-1553
FAX: 314-429-0462
BC To Consult E-MAIL: erik.arthur@urs.com

SITE ADDRESS: Street and City: 900 South Central Ave, ROXANA
State: IL
GLOBAL ID NO:
EDF DELIVERABLE TO (Name, Company, Office Location):
PHONE NO:
E-MAIL:
CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562736.00008

SAMPLER NAME(S) PRINT: L. Rathnow, S. Jansen, D. Mattingly, C. Williams
LAB USE ONLY: MC12833

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login.

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:
TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	TB-080212-ST-W	8/2/12	00:00	Water					X	2		X			0	
-2	TB-080212-HCL-W		00:00		X					2	X					
-3	TB-ROX-080212		14:15		X			X	X	6	X	X	X	X		
-4	P54-ROX-080212		16:20		X			X	X	6	X	X	X	X		
-5	TB-080212-ST-R		00:00						X	2		X				
-6	TB-080212-HCL-R		00:00		X					2	X					16A, 4G6
-7	MW60-ROX-080212		12:35		X			X	X	6	X	X	X	X		
-8	P54-ROX-080212		14:30		X			X	X	6	X	X	X	X		
-9	P54-ROX-080212-EB		14:50		X			X	X	6	X	X	X	X		

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	8/2/12	1900
FEDX	[signature]	8-3-12	930

05/2/06 Revision

2,7 - 2,3

5.1

5

MC12833: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12833 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/3/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL ROX No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservation	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3 Sample container label / COC agree.	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

Accutest Laboratories
V 508.481.6200

495 Technology Center West, Bldg One
F 508 481 7753

Marlborough, MA
www.accutest.com

MC12833: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12833-1 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-ST-W						
MC12833-1	SW846 8011	10-AUG-12 11:04	AP	08-AUG-12	SC	V8011SL
MC12833-2 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-HCL-W						
MC12833-2	SW846 8260B	16-AUG-12 08:58	AMY			V8260SL+
MC12833-3 Collected: 02-AUG-12 14:15 By: LRSJ Received: 03-AUG-12 By: T12-ROX-080212						
MC12833-3	SW846 8270C BY SIM	08-AUG-12 17:18	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-3	SW846 8270C	09-AUG-12 12:46	KR	07-AUG-12	SC	AB8270SL+
MC12833-3	SW846 8011	10-AUG-12 11:29	AP	08-AUG-12	SC	V8011SL
MC12833-3	SW846 8260B	16-AUG-12 12:23	AMY			V8260SL+
MC12833-4 Collected: 02-AUG-12 16:20 By: LRSJ Received: 03-AUG-12 By: P59-ROX-080212						
MC12833-4	SW846 8270C BY SIM	08-AUG-12 17:41	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-4	SW846 8270C	09-AUG-12 13:08	KR	07-AUG-12	SC	AB8270SL+
MC12833-4	SW846 8011	10-AUG-12 11:53	AP	08-AUG-12	SC	V8011SL
MC12833-4	SW846 8260B	16-AUG-12 10:56	AMY			V8260SL+
MC12833-4	SW846 8260B	16-AUG-12 12:52	AMY			V8260SL+
MC12833-5 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-ST-R						
MC12833-5	SW846 8011	10-AUG-12 12:17	AP	08-AUG-12	SC	V8011SL
MC12833-6 Collected: 02-AUG-12 00:00 By: LRSJ Received: 03-AUG-12 By: TB-080212-HCL-R						
MC12833-6	SW846 8260B	16-AUG-12 09:27	AMY			V8260SL+
MC12833-7 Collected: 02-AUG-12 12:35 By: LRSJ Received: 03-AUG-12 By: MW6D-ROX-080212						

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12833

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12833-7	SW846 8270C BY SIM	08-AUG-12 18:04	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-7	SW846 8270C	09-AUG-12 13:30	KR	07-AUG-12	SC	AB8270SL+
MC12833-7	SW846 8011	10-AUG-12 13:06	AP	08-AUG-12	SC	V8011SL
MC12833-7	SW846 8260B	16-AUG-12 11:25	AMY			V8260SL+
MC12833-8 Collected: 02-AUG-12 14:30 By: LRSJ Received: 03-AUG-12 By: P54-ROX-080212						
MC12833-8	SW846 8270C BY SIM	08-AUG-12 18:26	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-8	SW846 8270C	09-AUG-12 13:53	KR	07-AUG-12	SC	AB8270SL+
MC12833-8	SW846 8011	10-AUG-12 13:30	AP	08-AUG-12	SC	V8011SL
MC12833-8	SW846 8260B	16-AUG-12 11:54	AMY			V8260SL+
MC12833-9 Collected: 02-AUG-12 14:50 By: LRSJ Received: 03-AUG-12 By: P54-ROX-080212-EB						
MC12833-9	SW846 8270C BY SIM	08-AUG-12 18:49	NS	07-AUG-12	SC	B8270SIMPAH
MC12833-9	SW846 8270C	09-AUG-12 14:15	KR	07-AUG-12	SC	AB8270SL+
MC12833-9	SW846 8011	10-AUG-12 13:54	AP	08-AUG-12	SC	V8011SL
MC12833-9	SW846 8260B	16-AUG-12 09:57	AMY			V8260SL+

Accutest Internal Chain of Custody

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL
Received: 08/03/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12833-1.1	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-1.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-2.2	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-2.2	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-2.2	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-2.2	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-3.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-3.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-3.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-3.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-3.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-3.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-3.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-3.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-4.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-4.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-4.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-4.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-4.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-4.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-4.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-4.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-5.1	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-5.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-6.1	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-6.1	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-6.1	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-6.1	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-7.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-7.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-7.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-7.4	Nick Krasinski		08/08/12 23:10	Depleted

5.3

Accutest Internal Chain of Custody

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/03/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12833-7.5	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-7.5	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-7.5	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-7.5	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-8.1	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-8.1	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-8.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-8.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-8.6	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-8.6	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrnment
MC12833-8.6	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-8.6	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage
MC12833-9.2	Walk In Ref #22	Nick Krasinski	08/07/12 14:35	Retrieve from Storage
MC12833-9.2	Nick Krasinski		08/07/12 22:07	Depleted
MC12833-9.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12833-9.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-9.4	VOC Ref #4	Nick Krasinski	08/08/12 21:36	Retrieve from Storage
MC12833-9.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12833-9.5	VOC Ref #4	Amy Min Yang	08/16/12 08:06	Retrieve from Storage
MC12833-9.5	Amy Min Yang	GCMSV	08/16/12 08:06	Load on Instrument
MC12833-9.5	GCMSV	Amy Min Yang	08/16/12 11:39	Unload from Instrument
MC12833-9.5	Amy Min Yang	VOC Ref #4	08/16/12 11:39	Return to Storage

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acroleiu	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzeue	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethaue	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dicblorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-MB	V10554.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromoflnorobenzene	96%	70-130%

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

6.1.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	56.7	113	70-130
107-02-8	Acrolein	250	175	70	70-130
107-13-1	Acrylonitrile	50	248	496* a	70-130
71-43-2	Benzene	50	46.1	92	70-130
108-86-1	Bromobenzene	50	48.1	96	70-130
74-97-5	Bromochloromethane	50	47.4	95	70-130
75-27-4	Bromodichloromethane	50	45.5	91	70-130
75-25-2	Bromoform	50	43.0	86	70-130
74-83-9	Bromomethane	50	52.6	105	70-130
78-93-3	2-Butanone (MEK)	50	46.7	93	70-130
104-51-8	n-Butylbenzene	50	49.0	98	70-130
135-98-8	sec-Butylbenzene	50	52.5	105	70-130
98-06-6	tert-Butylbenzene	50	51.8	104	70-130
75-15-0	Carbon disulfide	50	56.2	112	70-130
56-23-5	Carbon tetrachloride	50	44.7	89	70-130
108-90-7	Chlorobenzene	50	49.2	98	70-130
75-00-3	Chloroethane	50	53.2	106	70-130
110-75-8	2-Chloroethyl vinyl ether	50	48.4	97	70-130
67-66-3	Chloroform	50	49.2	98	70-130
74-87-3	Chloromethane	50	50.6	101	70-130
95-49-8	o-Chlorotoluene	50	48.5	97	70-130
106-43-4	p-Chlorotoluene	50	50.1	100	70-130
124-48-1	Dibromochloromethane	50	40.6	81	70-130
95-50-1	1,2-Dichlorobenzene	50	49.9	100	70-130
541-73-1	1,3-Dichlorobenzene	50	48.7	97	70-130
106-46-7	1,4-Dichlorobenzene	50	45.2	90	70-130
75-71-8	Dichlorodifluoromethane	50	54.2	108	70-130
75-34-3	1,1-Dichloroethane	50	47.6	95	70-130
107-06-2	1,2-Dichloroethane	50	45.3	91	70-130
75-35-4	1,1-Dichloroethene	50	55.3	111	70-130
156-59-2	cis-1,2-Dichloroethene	50	48.0	96	70-130
156-60-5	trans-1,2-Dichloroethene	50	48.9	98	70-130
78-87-5	1,2-Dichloropropane	50	46.2	92	70-130
142-28-9	1,3-Dichloropropane	50	45.3	91	70-130
594-20-7	2,2-Dichloropropane	50	28.7	57* b	70-130
563-58-6	1,1-Dichloropropene	50	49.9	100	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	36.1	72	70-130
10061-02-6	trans-1,3-Dichloropropene	50	36.2	72	70-130
123-91-1	1,4-Dioxane	250	214	86	70-130
97-63-2	Ethyl methacrylate	50	41.7	83	77-137
100-41-4	Ethylbenzene	50	48.2	96	70-130
87-68-3	Hexachlorobutadiene	50	42.3	85	70-130
591-78-6	2-Hexanone	50	46.5	93	70-130
98-82-8	Isopropylbenzene	50	52.0	104	70-130
99-87-6	p-Isopropyltoluene	50	49.2	98	70-130
1634-04-4	Methyl Tert Butyl Ether	50	45.2	90	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	44.1	88	70-130
74-95-3	Methylene bromide	50	48.7	97	70-130
75-09-2	Methylene chloride	50	47.5	95	70-130
103-65-1	n-Propylbeuzene	50	52.0	104	70-130
100-42-5	Styrene	50	48.7	97	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	42.1	84	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	39.6	79	70-130
127-18-4	Tetrachloroethene	50	44.8	90	70-130
108-88-3	Toluene	50	46.4	93	70-130
87-61-6	1,2,3-Trichlorobenzene	50	45.6	91	70-130
120-82-1	1,2,4-Trichlorobenzene	50	44.8	90	70-130
71-55-6	1,1,1-Trichloroethane	50	47.9	96	70-130
79-00-5	1,1,2-Trichloroethane	50	46.9	94	70-130
79-01-6	Trichloroethene	50	51.0	102	70-130
75-69-4	Trichlorofluoromethane	50	51.9	104	70-130
96-18-4	1,2,3-Trichloropropane	50	39.9	80	70-130
95-63-6	1,2,4-Trimethylbenzene	50	45.7	91	70-130
108-67-8	1,3,5-Trimethylbenzene	50	46.3	93	70-130
108-05-4	Vinyl Acetate	50	35.5	71	70-130
75-01-4	Vinyl chloride	50	48.3	97	70-130
	m,p-Xylene	100	96.3	96	70-130
95-47-6	o-Xylene	50	50.0	100	70-130
1330-20-7	Xylene (total)	150	146	97	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV439-BS	V10552.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

6.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

6.3.1

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12833-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	197	79	201	80	2	70-130/30
107-02-8	Acrolein	ND		1250	1090	87	1100	88	1	70-130/30
107-13-1	Acrylonitrile	ND		250	1310	524* a	1320	528* a	1	70-130/30
71-43-2	Benzene	ND		250	237	95	241	96	2	70-130/30
108-86-1	Bromobenzene	ND		250	244	98	244	98	0	70-130/30
74-97-5	Bromochloromethane	ND		250	243	97	243	97	0	70-130/30
75-27-4	Bromodichloromethane	ND		250	224	90	232	93	4	70-130/30
75-25-2	Bromoform	ND		250	205	82	209	84	2	70-130/30
74-83-9	Bromomethane	ND		250	292	117	294	118	1	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	206	82	214	86	4	70-130/30
104-51-8	n-Butylbenzene	ND		250	261	104	264	106	1	70-130/30
135-98-8	sec-Butylbenzene	ND		250	273	109	276	110	1	70-130/30
98-06-6	tert-Butylbenzene	ND		250	267	107	269	108	1	70-130/30
75-15-0	Carbon disulfide	ND		250	277	111	296	118	7	70-130/30
56-23-5	Carbon tetrachloride	ND		250	224	90	236	94	5	70-130/30
108-90-7	Chlorobenzene	ND		250	251	100	254	102	1	70-130/30
75-00-3	Chloroethane	ND		250	296	118	299	120	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	51.8	21* b	24.6	10* b	71* c	70-130/30
67-66-3	Chloroform	ND		250	253	101	255	102	1	70-130/30
74-87-3	Chloromethane	ND		250	281	112	286	114	2	70-130/30
95-49-8	o-Chlorotoluene	ND		250	251	100	252	101	0	70-130/30
106-43-4	p-Chlorotoluene	ND		250	259	104	261	104	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	197	79	203	81	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	252	101	256	102	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	249	100	252	101	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	231	92	233	93	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	298	119	292	117	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	246	98	248	99	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	229	92	232	93	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	291	116	293	117	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	247	99	250	100	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	255	102	257	103	1	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	233	93	238	95	2	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	225	90	229	92	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	232	93	249	100	7	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	260	104	265	106	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

6.3.1

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12833-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	189	76	196	78	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	186	74	194	78	4	70-130/30
123-91-1	1,4-Dioxane	ND		1250	986	79	989	79	0	70-130/30
97-63-2	Ethyl methacrylate	ND		250	198	79	206	82	4	72-139/30
100-41-4	Ethylbenzene	ND		250	249	100	251	100	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	213	85	224	90	5	70-130/30
591-78-6	2-Hexanone	ND		250	202	81	207	83	2	70-130/30
98-82-8	Isopropylbenzene	ND		250	270	108	271	108	0	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	257	103	260	104	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	220	88	225	90	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	205	82	211	84	3	70-130/30
74-95-3	Methylene bromide	ND		250	241	96	246	98	2	70-130/30
75-09-2	Methylene chloride	ND		250	244	98	244	98	0	70-130/30
103-65-1	n-Propylbenzene	ND		250	273	109	275	110	1	70-130/30
100-42-5	Styrene	ND		250	247	99	250	100	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	211	84	216	86	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	212	85	217	87	2	70-130/30
127-18-4	Tetrachloroethene	ND		250	232	93	236	94	2	70-130/30
108-88-3	Toluene	ND		250	235	94	241	96	3	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	183	73	224	90	20	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	210	84	230	92	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	243	97	253	101	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	231	92	237	95	3	70-130/30
79-01-6	Trichloroethene	ND		250	238	95	244	98	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	277	111	288	115	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	194	78	199	80	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	236	94	237	95	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	240	96	243	97	1	70-130/30
108-05-4	Vinyl Acetate	ND		250	229	92	237	95	3	70-130/30
75-01-4	Vinyl chloride	ND		250	266	106	270	108	1	70-130/30
	m,p-Xylene	ND		500	499	100	505	101	1	70-130/30
95-47-6	o-Xylene	ND		250	255	102	259	104	2	70-130/30
1330-20-7	Xylene (total)	ND		750	754	101	764	102	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12833-8MS	V10564.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8MSD	V10565.D	5	08/16/12	AMY	n/a	n/a	MSV439
MC12833-8	V10561.D	1	08/16/12	AMY	n/a	n/a	MSV439

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

MC12833-2, MC12833-3, MC12833-4, MC12833-6, MC12833-7, MC12833-8, MC12833-9

CAS No.	Surrogate Recoveries	MS	MSD	MC12833-8	Limits
1868-53-7	Dibromofluoromethane	103%	102%	98%	70-130%
2037-26-5	Toluene-D8	99%	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	96%	94%	96%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD dne to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSV439-CC436	Injection Date:	08/16/12
Lab File ID:	V10551.D	Injection Time:	06:59
Instrument ID:	GCMSV	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	408954	6.54	705124	7.73	391660	11.08	311178	13.31	138391	3.51
Upper Limit [a]	817908	7.04	1410248	8.23	783320	11.58	622356	13.81	276782	4.01
Lower Limit [b]	204477	6.04	352562	7.23	195830	10.58	155589	12.81	69196	3.01
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV439-BS	410424	6.54	712702	7.73	395321	11.08	315024	13.31	135294	3.51
MSV439-MB	401786	6.54	704426	7.73	383723	11.08	295772	13.31	124143	3.51
MC12833-2	399862	6.55	701506	7.73	382828	11.08	291610	13.31	116717	3.52
MC12833-6	386965	6.55	684335	7.73	374633	11.08	287445	13.31	119305	3.52
MC12833-9	394129	6.54	697207	7.73	381299	11.08	294155	13.31	126421	3.51
MC12833-4	388324	6.54	684154	7.73	375300	11.08	286638	13.31	135089	3.51
MC12833-7	415912	6.55	736109	7.73	404357	11.08	308011	13.31	119720	3.51
MC12833-8	384961	6.54	679901	7.73	371336	11.08	283822	13.32	108838	3.51
MC12833-3	388380	6.54	683536	7.73	375124	11.08	292277	13.32	118539	3.51
MC12833-4	390609	6.55	686469	7.73	376709	11.08	293120	13.32	108940	3.52
MC12833-8MS	394025	6.54	690807	7.73	381670	11.08	301617	13.32	108959	3.51
MC12833-8MSD	401187	6.54	694747	7.73	388059	11.08	309010	13.32	121369	3.51
ZZZZZZ	388563	6.55	686005	7.73	373988	11.08	290628	13.32	108391	3.51
ZZZZZZ	388441	6.54	686304	7.73	375924	11.08	286569	13.32	102120	3.50
ZZZZZZ	388355	6.54	684463	7.73	374828	11.08	291186	13.32	104195	3.50
ZZZZZZ	393388	6.55	691655	7.74	382467	11.08	305048	13.32	135527	3.52

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

(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.

6.4.1

Volatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12833-2	V10555.D	97.0	97.0	97.0
MC12833-3	V10562.D	97.0	98.0	96.0
MC12833-4	V10563.D	97.0	98.0	96.0
MC12833-4	V10559.D	98.0	99.0	97.0
MC12833-6	V10556.D	99.0	99.0	97.0
MC12833-7	V10560.D	99.0	99.0	98.0
MC12833-8	V10561.D	98.0	98.0	96.0
MC12833-9	V10557.D	98.0	98.0	95.0
MC12833-8MS	V10564.D	103.0	99.0	96.0
MC12833-8MSD	V10565.D	102.0	99.0	94.0
MSV439-BS	V10552.D	102.0	98.0	94.0
MSV439-MB	V10554.D	97.0	98.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MB	W3783.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chlorunaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MB	W3783.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Flnorophenol	48%	15-110%
4165-62-2	Phenol-d5	31%	15-110%
118-79-6	2,4,6-Tribromophenol	74%	15-110%
4165-60-0	Nitrobenzene-d5	74%	30-130%
321-60-8	2-Fluorobiphenyl	66%	30-130%
1718-51-0	Terphenyl-d14	113%	30-130%

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

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-MB	U9081.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	63%	30-130%
1718-51-0	Terphenyl-d14	107%	30-130%

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-BS	W3784.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	35.0	35	30-130
95-57-8	2-Chlorophenol	100	74.5	75	30-130
59-50-7	4-Chloro-3-methyl phenol	100	77.7	78	30-130
120-83-2	2,4-Dichlorophenol	100	73.9	74	30-130
105-67-9	2,4-Dimethylphenol	100	70.8	71	30-130
51-28-5	2,4-Dinitrophenol	100	69.7	70	30-130
534-52-1	4,6-Dinitro-o-cresol	100	93.3	93	30-130
95-48-7	2-Methylphenol	100	68.5	69	30-130
	3&4-Methylphenol	200	138	69	30-130
88-75-5	2-Nitrophenol	100	75.7	76	30-130
100-02-7	4-Nitrophenol	100	49.9	50	30-130
87-86-5	Pentachlorophenol	100	77.9	78	30-130
108-95-2	Phenol	100	39.9	40	30-130
95-95-4	2,4,5-Trichlorophenol	100	79.1	79	30-130
88-06-2	2,4,6-Trichlorophenol	100	78.3	78	30-130
62-53-3	Aniline	50	16.5	33* [a]	40-140
101-55-3	4-Bromophenyl phenyl ether	50	41.1	82	40-140
85-68-7	Butyl benzyl phthalate	50	48.4	97	40-140
100-51-6	Benzyl Alcohol	50	33.8	68	40-140
91-58-7	2-Chloronaphthalene	50	39.6	79	40-140
106-47-8	4-Chloroaniline	50	29.2	58	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	40.5	81	40-140
111-44-4	bis(2-Chloroethyl)ether	50	40.7	81	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	47.6	95	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	42.9	86	40-140
122-66-7	1,2-Diphenylhydrazine	50	46.8	94	40-140
121-14-2	2,4-Dinitrotoluene	50	43.1	86	40-140
606-20-2	2,6-Dinitrotoluene	50	41.7	83	40-140
91-94-1	3,3'-Dichlorobenzidine	50	46.3	93	40-140
132-64-9	Dibenzofuran	50	38.6	77	40-140
84-74-2	Di-n-butyl phthalate	50	45.5	91	40-140
117-84-0	Di-n-octyl phthalate	50	64.8	130	40-140
84-66-2	Diethyl phthalate	50	43.4	87	40-140
131-11-3	Dimethyl phthalate	50	41.3	83	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.2	98	40-140
118-74-1	Hexachlorobenzene	50	42.4	85	40-140

* = Outside of Control Limits.

7.2.1

7

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-BS	W3784.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	12.3	25* [a]	40-140
67-72-1	Hexachloroethane	50	31.0	62	40-140
78-59-1	Isophorone	50	38.8	78	40-140
88-74-4	2-Nitroaniline	50	41.0	82	40-140
99-09-2	3-Nitroaniline	50	33.4	67	40-140
100-01-6	4-Nitroaniline	50	34.1	68	40-140
98-95-3	Nitrobenzene	50	40.3	81	40-140
62-75-9	n-Nitrosodimethylamine	50	27.0	54	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	44.1	88	40-140
86-30-6	N-Nitrosodiphenylamine	50	42.5	85	40-140
110-86-1	Pyridine	50	22.5	45	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	55%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	85%	15-110%
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	104%	30-130%

(a) Outside control limits. Blauk Spike meets program technical requirements.

* = Outside of Control Limits.

7.2.1

7

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-BS	U9082.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	36.4	73	40-140
208-96-8	Acenaphthylene	50	26.6	53	40-140
120-12-7	Anthracene	50	38.1	76	40-140
56-55-3	Benzo(a)anthracene	50	46.5	93	40-140
50-32-8	Benzo(a)pyrene	50	52.5	105	40-140
205-99-2	Benzo(b)fluoranthene	50	59.4	119	40-140
191-24-2	Benzo(g,h,i)perylene	50	53.0	106	40-140
207-08-9	Benzo(k)fluoranthene	50	65.0	130	40-140
218-01-9	Chrysene	50	42.1	84	40-140
53-70-3	Dibenzo(a,h)anthraceue	50	52.7	105	40-140
206-44-0	Fluoranthene	50	47.0	94	40-140
86-73-7	Fluorene	50	36.4	73	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	53.9	108	40-140
90-12-0	1-Methylnaphthalene	50	32.2	64	40-140
91-57-6	2-Methylnaphthalene	50	32.2	64	40-140
91-20-3	Naphthalene	50	32.8	66	40-140
85-01-8	Phenanthrene	50	38.5	77	40-140
129-00-0	Pyrene	50	45.1	90	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	66%	30-130%
1718-51-0	Terphenyl-d14	111%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MS	W3785.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
OP29949-MSD	W3786.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
MC12879-4	W3787.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	36.7	37	36.2	36	1	30-130/20
95-57-8	2-Chlorophenol	ND		100	76.0	76	63.7	64	18	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	81.2	81	72.5	73	11	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	76.5	77	63.9	64	18	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	72.9	73	63.0	63	15	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	75.8	76	69.3	69	9	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	102	102	88.2	88	15	30-130/20
95-48-7	2-Methylphenol	ND		100	70.0	70	61.2	61	13	30-130/20
	3&4-Methylphenol	ND		200	139	70	126	63	10	30-130/20
88-75-5	2-Nitrophenol	ND		100	79.2	79	65.1	65	20	30-130/20
100-02-7	4-Nitrophenol	ND		100	52.1	52	53.0	53	2	30-130/20
87-86-5	Pentachlorophenol	ND		100	85.2	85	71.2	71	18	30-130/20
108-95-2	Phenol	ND		100	39.9	40	38.4	38	4	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	81.7	82	72.3	72	12	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	80.5	81	70.4	70	13	30-130/20
62-53-3	Aniline	ND		50	17.0	34* [a]	15.5	31* [a]	9	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	44.2	88	37.5	75	16	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	52.2	104	44.2	88	17	40-140/20
100-51-6	Benzyl Alcohol	ND		50	34.1	68	31.1	62	9	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	40.9	82	35.7	71	14	40-140/20
106-47-8	4-Chloroaniline	ND		50	30.9	62	29.2	58	6	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	42.5	85	35.3	71	19	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	42.3	85	35.1	70	19	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	50.0	100	40.8	82	20	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	45.6	91	40.2	80	13	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	50.2	100	43.8	88	14	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	46.2	92	40.4	81	13	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	44.1	88	39.6	79	11	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	46.9	94	40.3	81	15	40-140/20
132-64-9	Dibenzofnran	ND		50	40.2	80	35.3	71	13	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	48.3	97	41.8	84	14	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	67.6	135	57.1	114	17	40-140/20
84-66-2	Diethyl phthalate	ND		50	46.2	92	40.9	82	12	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.4	89	39.8	80	11	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	8.7		50	52.4	87	46.1	75	13	40-140/20
118-74-1	Hexachlorobenzene	ND		50	46.3	93	39.4	79	16	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29949-MS	W3785.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
OP29949-MSD	W3786.D	1	08/09/12	KR	08/07/12	OP29949	MSW174
MC12879-4	W3787.D	1	08/09/12	KR	08/07/12	OP29949	MSW174

The QC reported here applies to the following samples: Method: SW846 8270C

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	12.8	26* [a]	9.8	20* [a]	27* [a]	40-140/20
67-72-1	Hexachloroethane	ND		50	32.1	64	25.4	51	23* [b]	40-140/20
78-59-1	Isophorone	ND		50	40.4	81	34.6	69	15	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.4	87	38.8	78	11	40-140/20
99-09-2	3-Nitroaniline	ND		50	35.8	72	34.8	70	3	40-140/20
100-01-6	4-Nitroaniline	ND		50	39.3	79	33.8	68	15	40-140/20
98-95-3	Nitrobenzene	ND		50	42.2	84	34.5	69	20	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	27.2	54	24.4	49	11	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	45.7	91	38.8	78	16	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	46.2	92	39.2	78	16	40-140/20
110-86-1	Pyridine	ND		50	23.1	46	20.5	41	12	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-4	Limits
367-12-4	2-Fluorophenol	55%	50%	50%	15-110%
4165-62-2	Phenol-d5	37%	36%	34%	15-110%
118-79-6	2,4,6-Tribromophenol	92%	77%	69%	15-110%
4165-60-0	Nitrobenzene-d5	82%	67%	71%	30-130%
321-60-8	2-Fluorobiphenyl	74%	63%	61%	30-130%
1718-51-0	Terphenyl-d14	110%	96%	107%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29950-MS	U9083.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
OP29950-MSD	U9084.D	1	08/08/12	NS	08/07/12	OP29950	MSU505
MC12879-5	U9085.D	1	08/08/12	NS	08/07/12	OP29950	MSU505

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12833-3, MC12833-4, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	38.7	77	32.7	65	17	40-140/20
208-96-8	Acenaphthylene	ND		50	28.1	56	24.3	49	15	40-140/20
120-12-7	Anthracene	ND		50	40.1	80	35.5	71	12	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	50.4	101	43.3	87	15	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	53.8	108	45.9	92	16	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	60.2	120	51.2	102	16	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	53.9	108	45.9	92	16	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	66.2	132	56.1	112	17	40-140/20
218-01-9	Chrysene	ND		50	45.6	91	39.5	79	14	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	54.0	108	46.7	93	14	40-140/20
206-44-0	Fluoranthene	ND		50	50.3	101	43.8	88	14	40-140/20
86-73-7	Fluorene	ND		50	38.9	78	34.1	68	13	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	54.9	110	47.3	95	15	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	33.0	66	26.5	53	22* [a]	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	34.1	68	28.2	56	19	40-140/20
91-20-3	Naphthalene	ND		50	34.4	69	28.6	57	18	40-140/20
85-01-8	Phenanthrene	ND		50	41.3	83	35.5	71	15	40-140/20
129-00-0	Pyrene	ND		50	48.3	97	42.4	85	13	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-5	Limits
4165-60-0	Nitrobenzene-d5	84%	69%	74%	30-130%
321-60-8	2-Fluorobiphenyl	68%	58%	59%	30-130%
1718-51-0	Terphenyl-d14	115%	104%	103%	30-130%

(a) High RPD due to possihle matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU505-CC486	Injection Date:	08/08/12
Lab File ID:	U9078.D	Injection Time:	14:16
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	139820	3.76	425573	4.74	234784	6.16	426975	7.48	250048	10.25	442475	11.70
Upper Limit [a]	279640	4.26	851146	5.24	469568	6.66	853950	7.98	500096	10.75	884950	12.20
Lower Limit [b]	69910	3.26	212787	4.24	117392	5.66	213488	6.98	125024	9.75	221238	11.20
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
ZZZZZZ	100686	3.76	303498	4.74	166796	6.16	296863	7.47	174965	10.25	317961	11.69
ZZZZZZ	96351	3.76	288817	4.74	159486	6.16	286700	7.47	171214	10.25	312107	11.69
OP29950-MB	101807	3.77	307406	4.74	168613	6.16	302479	7.47	165240	10.25	229703	11.69
OP29950-BS	102537	3.77	309028	4.74	167468	6.16	293160	7.48	154996	10.25	218868[c]	11.69
OP29950-MS	99991	3.77	296243	4.74	162595	6.16	292174	7.48	154322	10.25	228858	11.69
OP29950-MSD	99331	3.77	297807	4.74	162105	6.16	288422	7.48	152062	10.25	230334	11.69
MC12879-5	91604	3.77	278815	4.74	154351	6.16	279105	7.47	161564	10.25	242832	11.69
MC12833-3	92690	3.77	273860	4.74	154271	6.16	278905	7.47	160045	10.25	250744	11.69
MC12833-4	91703	3.77	275204	4.74	153200	6.16	275947	7.48	165801	10.25	260117	11.69
MC12833-7	95051	3.76	284456	4.74	154723	6.16	279818	7.47	161828	10.25	255907	11.69
MC12833-8	97582	3.76	293148	4.74	157406	6.16	282265	7.47	164632	10.25	270250	11.69
MC12833-9	90628	3.76	273941	4.74	149274	6.16	270661	7.47	162389	10.25	265681	11.69
ZZZZZZ	125506	3.76	370391	4.74	200882	6.16	358697	7.48	213974	10.25	378873	11.69
ZZZZZZ	120105	3.76	351006	4.74	194091	6.16	345520	7.48	207644	10.25	365446	11.69

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; Reteution time -0.5 minutes.
(c) Outside control limits. Individual spike recoveries within acceptance limits.

7.4.1

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW174-CC129	Injection Date:	08/09/12
Lab File ID:	W3782.D	Injection Time:	08:18
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	409301	3.79	1559438	4.78	964136	6.21	1800753	7.54	2203960	10.43	1940500	12.00
Upper Limit [a]	818602	4.29	3118876	5.28	1928272	6.71	3601506	8.04	4407920	10.93	3881000	12.50
Lower Limit [b]	204651	3.29	779719	4.28	482068	5.71	900377	7.04	1101980	9.93	970250	11.50
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
OP29949-MB	447508	3.79	1649294	4.78	990696	6.20	1770152	7.53	1874126	10.42	1430423	11.99
OP29949-BS	444713	3.79	1674225	4.78	995596	6.20	1752861	7.53	1984520	10.42	1467259	12.00
OP29949-MS	436578	3.79	1628079	4.78	985753	6.20	1719920	7.53	1941356	10.42	1490687	12.00
OP29949-MSD	436752	3.79	1625030	4.78	960805	6.20	1720332	7.53	1950899	10.42	1524773	12.00
MC12879-4	413869	3.79	1549917	4.78	927658	6.20	1672557	7.53	1858389	10.42	1558360	11.99
ZZZZZZ	653606	3.80	2516432	4.78	1404445	6.21	2343877	7.53	2357188	10.31	2984989	11.76
ZZZZZZ	415679	3.79	1568004	4.78	932119	6.20	1666646	7.53	2014655	10.42	2681368	12.00
ZZZZZZ	393043	3.79	1462693	4.78	892329	6.20	1584924	7.53	1926842	10.42	2623590	12.00
ZZZZZZ	360256	3.79	1345857	4.78	808039	6.20	1441202	7.53	1755291	10.42	2466952	12.00
ZZZZZZ	370294	3.79	1367830	4.78	826715	6.20	1475549	7.53	1302511	10.42	984019	12.00
ZZZZZZ	382677	3.79	1410740	4.78	843575	6.20	1479533	7.53	1305737	10.42	1002151	11.99
MC12833-3	451894	3.79	1684689	4.78	1027769	6.20	1813596	7.53	2032364	10.42	1765864	12.00
MC12833-4	432651	3.79	1593700	4.78	971077	6.20	1733179	7.53	2003842	10.42	1752799	12.00
MC12833-7	400066	3.79	1513849	4.78	904452	6.20	1609683	7.53	1904513	10.42	1676885	12.00
MC12833-8	413011	3.79	1526167	4.78	918233	6.20	1636702	7.53	1910867	10.42	1755122	12.00
MC12833-9	401086	3.79	1507677	4.78	901466	6.20	1604391	7.53	1938273	10.42	1802940	12.00
ZZZZZZ	410641	3.79	1554422	4.78	994774	6.21	1693979	7.54	1606255	10.42	1185757	12.00
ZZZZZZ	427084	3.79	1585490	4.78	970706	6.20	1707807	7.53	1684582	10.42	1391041	12.00
ZZZZZZ	509820	3.79	1840615	4.78	1066831	6.20	1739361	7.53	1353642	10.42	983958	11.99
ZZZZZZ	495802	3.79	1773944	4.78	1020864	6.20	1671435	7.53	1329778	10.42	1064630	11.99
ZZZZZZ	411115	3.79	1471833	4.78	845897	6.20	1476628	7.53	1574395	10.44	1345633	12.03
ZZZZZZ	498858	3.80	1966693	4.79	1218259	6.21	2169713	7.54	2146198	10.43	1564890	12.01
ZZZZZZ	444082	3.79	1707278	4.78	1081639	6.21	1980718	7.53	1662710	10.42	1140800	12.00
ZZZZZZ	460924	3.79	1684585	4.78	981393	6.21	1617635	7.53	1237332	10.42	929847[c]	12.00
ZZZZZZ	474897	3.79	1825142	4.78	1149249	6.21	2072740	7.53	2013234	10.42	1418783	12.00
ZZZZZZ	478795	3.79	1724053	4.78	1017891	6.20	1686381	7.53	1278324	10.42	974151	12.00
ZZZZZZ	459280	3.79	1709747	4.78	1039041	6.21	1782970	7.53	1446804	10.42	1055860	12.00
ZZZZZZ	496844	3.79	1811939	4.78	1051346	6.21	1727439	7.53	1371984	10.42	1071589	12.00
ZZZZZZ	439957	3.79	1596945	4.78	941655	6.20	1630553	7.53	1529418	10.42	1169682	12.00
ZZZZZZ	416089	3.79	1551191	4.78	906978	6.20	1568670	7.53	1223659	10.42	898736[c]	12.00
ZZZZZZ	522175	3.79	1936798	4.78	1217934	6.21	2208566	7.54	1728319	10.48	1521925	12.08
ZZZZZZ	476691	3.80	1719541	4.78	1014197	6.21	1705560	7.53	1237301	10.42	974401	12.00

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8

Semivolatile Internal Standard Area Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW174-CC129	Injection Date:	08/09/12
Lab File ID:	W3782.D	Injection Time:	08:18
Instrument ID:	GCMSW	Method:	SW846 8270C

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT	IS 6 AREA	IS 6 RT

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.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12833-3	W3794.D	42.0	36.0	86.0	81.0	72.0	105.0
MC12833-4	W3795.D	24.0	30.0	75.0	66.0	62.0	90.0
MC12833-7	W3796.D	47.0	31.0	79.0	73.0	68.0	97.0
MC12833-8	W3797.D	40.0	27.0	68.0	59.0	53.0	94.0
MC12833-9	W3798.D	51.0	34.0	84.0	81.0	73.0	106.0
OP29949-BS	W3784.D	55.0	38.0	85.0	79.0	72.0	104.0
OP29949-MB	W3783.D	48.0	31.0	74.0	74.0	66.0	113.0
OP29949-MS	W3785.D	55.0	37.0	92.0	82.0	74.0	110.0
OP29949-MSD	W3786.D	50.0	36.0	77.0	67.0	63.0	96.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12833-3	U9086.D	84.0	67.0	99.0
MC12833-4	U9087.D	69.0	59.0	88.0
MC12833-7	U9088.D	76.0	66.0	96.0
MC12833-8	U9089.D	63.0	53.0	93.0
MC12833-9	U9090.D	84.0	69.0	102.0
OP29950-BS	U9082.D	82.0	66.0	111.0
OP29950-MB	U9081.D	76.0	63.0	107.0
OP29950-MS	U9083.D	84.0	68.0	115.0
OP29950-MSD	U9084.D	69.0	58.0	104.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Dnplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MB	BK15933.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropaue	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	113%	36-173%
460-00-4	Bromofluorobenzene (S)	94%	36-173%

8.1.1

Blank Spike Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-BS	BK15934.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.077	108	60-140
106-93-4	1,2-Dibromoethane	0.071	0.072	101	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	85%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MS	BK15935.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
OP29955-MSD	BK15936.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
MC12879-7	BK15938.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12833-1, MC12833-3, MC12833-4, MC12833-5, MC12833-7, MC12833-8, MC12833-9

CAS No.	Compound	MC12879-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.070	99	0.072	101	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.069	97	0.070	99	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-7	Limits
460-00-4	Bromofluorobenzene (S)	97%	101%	113%	36-173%
460-00-4	Bromofluorobenzene (S)	86%	86%	95%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	SI [a]	S1 [b]
MC12833-1	BK15944.D	91.0	109.0
MC12833-3	BK15945.D	127.0	89.0
MC12833-4	BK15946.D	143.0	100.0
MC12833-5	BK15947.D	117.0	95.0
MC12833-7	BK15949.D	104.0	87.0
MC12833-8	BK15950.D	107.0	93.0
MC12833-9	BK15951.D	116.0	100.0
OP29955-BS	BK15934.D	85.0	75.0
OP29955-MB	BK15933.D	113.0	94.0
OP29955-MS	BK15935.D	97.0	86.0
OP29955-MSD	BK15936.D	101.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15927.D	08/10/12	04:10	4.40	5.28
ZZZZZZ	BK15928.D	08/10/12	04:34	4.40	5.28
ZZZZZZ	BK15929.D	08/10/12	04:59	4.40	5.28
ZZZZZZ	BK15930.D	08/10/12	05:23	4.40	5.28
ZZZZZZ	BK15931.D	08/10/12	05:48	4.40	5.28
ZZZZZZ	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15937.D	Injection Time:	08:15
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12879-7	BK15938.D	08/10/12	08:39	4.40	5.28
ZZZZZZ	BK15939.D	08/10/12	09:03	4.40	5.28
ZZZZZZ	BK15940.D	08/10/12	09:27	4.40	5.28
ZZZZZZ	BK15941.D	08/10/12	09:52	4.40	5.28
ZZZZZZ	BK15942.D	08/10/12	10:16	4.40	5.28
ZZZZZZ	BK15943.D	08/10/12	10:40	4.40	5.28
MC12833-1	BK15944.D	08/10/12	11:04	4.40	5.28
MC12833-3	BK15945.D	08/10/12	11:29	4.40	5.28
MC12833-4	BK15946.D	08/10/12	11:53	4.40	5.28
MC12833-5	BK15947.D	08/10/12	12:17	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

GC Surrogate Retention Time Summary

Job Number: MC12833
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15948.D	Injection Time:	12:42
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12833-7	BK15949.D	08/10/12	13:06	4.40	5.28
MC12833-8	BK15950.D	08/10/12	13:30	4.40	5.28
MC12833-9	BK15951.D	08/10/12	13:54	4.40	5.28
ZZZZZZ	BK15952.D	08/10/12	14:24	4.40	5.28
ZZZZZZ	BK15953.D	08/10/12	14:48	4.40	5.28
ZZZZZZ	BK15954.D	08/10/12	15:12	4.40	5.28
ZZZZZZ	BK15955.D	08/10/12	15:37	4.40	5.28
ZZZZZZ	BK15956.D	08/10/12	16:01	4.40	5.28
ZZZZZZ	BK15957.D	08/10/12	16:25	4.40	5.28
ZZZZZZ	BK15958.D	08/10/12	16:49	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.3

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12905

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/4/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-080612-HCL-W	TB-080612-ST-W
P56-ROX-080612	P74-ROX-080612
P57-ROX-080612	P57-ROX-080612-Dup
P58-ROX-080612	P58-ROX-080612-Dup

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries were outside evaluation criteria. Although not indicated in the laboratory case narrative, SVOCs and PAHs were detected in the method blank. Phenol was qualified due to field duplicate RPD outside evaluation criteria in field duplicate pair P57-ROX-080612/P57-ROX-080612-Dup, and pyrene was qualified due to a greater than two times (2X) the reporting level difference in field duplicate pair P58-ROX-080612/P58-ROX-080612-Dup. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, certain calibration verifications were outside evaluation criteria. The initial calibration verification for acetone exceeded 50 percent difference (%D). The continuing calibration verification for acrolein exceeded 50% D. The initial calibration verification for aniline exceeded 50% D.

The cooler receipt form indicated samples were received by the laboratory at temperatures of 0.8ºC and 1.0 ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29961-MB	SVOCs	Di-n-butyl phthalate	1.7 ug/L
OP29961-MB	SVOCs	Diethyl phthalate	2.8 ug/L
OP29962-MB	PAHs	Naphthalene	0.058 ug/L
OP29962-MB	PAHs	Phananthrene	0.052 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P56-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P56-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P74-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P74-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P74-ROX-080612	PAHs	Phenanthrene	0.12 ug/L	**U**
P57-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P57-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P57-ROX-080612-Dup	SVOCs	Di-n-butyl phthalate	-	**U**
P57-ROX-080612-Dup	SVOCs	Diethyl phthalate	-	**U**
P58-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P58-ROX-080612-Dup	SVOCs	Di-n-butyl phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSP2072-BS	VOCs	Vinyl acetate	**63**	NA	70-130
MSN2512-BS/BSD	VOCs	Acrolein	**148/164**	10	70-130/25
MSN2512-BS/BSD	VOCs	Acrylonitrile	**446/442**	1	70-130/25
MSN2512-BS/BSD	VOCs	Dichlorodifluoromethane	118/**131**	11	70-130/25
OP29961-BS	SVOCs	Aniline	**10**	NA	40-140
OP29961-BS	SVOCs	4-Chloroaniline	**32**	NA	40-140
OP29961-BS	SVOCs	3,3'-Dichlorobenzidine	**6**	NA	40-140
OP29961-BS	SVOCs	Pyridine	**11**	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
P56-ROX-080612	VOCs	Vinyl acetate	**UJ**
P56-ROX-080612	SVOCs	Aniline	**R**
P56-ROX-080612	SVOCs	4-Chloroaniline	**UJ**
P56-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	**R**
P56-ROX-080612	SVOCs	Pyridine	**R**
P74-ROX-080612	SVOCs	Aniline	**R**
P74-ROX-080612	SVOCs	4-Chloroaniline	**UJ**
P74-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	**R**
P74-ROX-080612	SVOCs	Pyridine	**R**
P57-ROX-080612	SVOCs	Aniline	**R**
P57-ROX-080612	SVOCs	4-Chloroaniline	**UJ**
P57-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	**R**
P57-ROX-080612	SVOCs	Pyridine	**R**
P57-ROX-080612-Dup	SVOCs	Aniline	**R**
P57-ROX-080612-Dup	SVOCs	4-Chloroaniline	**UJ**
P57-ROX-080612-Dup	SVOCs	3,3'-Dichlorobenzidine	**R**
P57-ROX-080612-Dup	SVOCs	Pyridine	**R**
P58-ROX-080612	SVOCs	Aniline	**R**
P58-ROX-080612	SVOCs	4-Chloroaniline	**UJ**
P58-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	**R**
P58-ROX-080612	SVOCs	Pyridine	**R**
P58-ROX-080612-Dup	SVOCs	Aniline	**R**
P58-ROX-080612-Dup	SVOCs	4-Chloroaniline	**UJ**
P58-ROX-080612-Dup	SVOCs	3,3'-Dichlorobenzidine	**R**
P58-ROX-080612-Dup	SVOCs	Pyridine	**R**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
P57-ROX-080612	P57-ROX-080612-Dup
P58-ROX-080612	P58-ROX-080612-Dup

Were field duplicates within evaluation criteria?

No

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
P57-ROX-080612	P57-ROX-080612-Dup	SVOCs	Phenol	**28**	**J/J**
P58-ROX-080612	P58-ROX-080612-Dup	PAHs	Pyrene	**>2X RL**	**UJ/J**

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

No

1.0 VALIDATION OF VOC DATA – SDG MC12905

This section describes the validation for four investigative groundwater samples and one field duplicate which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12905. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
P56-ROX-080612	P74-ROX-080612
P57-ROX-080612	P57-ROX-080612-Dup
P58-ROX-080612	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that VOC LCS/LCSD recoveries were outside evaluation criteria. The initial calibration verification response factors were outside

evaluation criteria, including one for acetone which exceeded 50 percent difference (%D). Additionally, the continuing calibration verification %Ds were outside evaluation criteria, including one for acrolein which exceeded 50% D. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at temperatures of 0.8ºC and 1.0 ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately $4^{o}C \pm 2^{o}$ C. In addition, the samples were analyzed within 14 days of collection at a pH < 2. No qualifications to the data were required based on holding times and sample preservation.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the summary forms, the ion abundance criteria were within evaluation criteria for all masses. No qualifications to the data were required based on instrument performance criteria.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatiles analyses. Validated samples included in this SDG were analyzed using instrument MAMSN and MAMSP. The ICAL for instrument MAMSN was established on 7/17/2012; the ICAL for instrument MAMSP was established on 8/20/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8260B. For the ICAL established on 7/17/2012, the response factors (RFs) were reviewed and were greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, greater than 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane, and greater than 0.05 for all other target analytes with the exceptions of acrolein (0.043), acrylonitrile (0.026), and 1,4-dioxane (0.003) analyzed using instrument MAMSN. For the ICAL established on 8/20/2012, the response factors (RFs) were reviewed and were greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, greater than 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane, and greater than 0.05 for all other target analytes with the exceptions of 2-butanone (0.031), 2-chloroethyl vinyl ether (0.004), and 1,4-dioxane (0.002) analyzed using instrument MAMSP. The compound 2-butanone is a poor performer and was associated with a response factor greater than 0.01; therefore, 2-butanone did not require qualification.

Qualifications of data due to ICAL RRF are summarized in the following table.

Sample ID	Analyte	Qualification
P56-ROX-080612	2-chloroethyl vinyl ether	R
P56-ROX-080612	1,4-dioxane	R
P74-ROX-080612	Acrolein	R
P74-ROX-080612	Acrylonitrile	R
P74-ROX-080612	1,4-Dioxane	R
P57-ROX-080612	Acrolein	R
P57-ROX-080612	Acrylonitrile	R
P57-ROX-080612	1,4-Dioxane	R
P57-ROX-080612-Dup	Acrolein	R
P57-ROX-080612-Dup	Acrylonitrile	R
P57-ROX-080612-Dup	1,4-Dioxane	R
P58-ROX-080612	Acrolein	R
P58-ROX-080612	Acrylonitrile	R
P58-ROX-080612	1,4-Dioxane	R

Review of the initial calibration summary forms for instruments MAMSN and MAMSP indicated %RSDs were $\leq$ 30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and $\leq$ 15% for non-CCCs with some exceptions. The initial calibration for compounds with %RSD values outside evaluation criteria was determined using least square linear regression: correlation coefficients (r) were greater than 0.990.

Initial calibration verification (ICV) was analyzed following the initial calibrations. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs for instrument MAMSN were less than 20% for target compounds with the exceptions of dichlorodifluoromethane (-40.1%), acrolein (32.6%), acetone (-55.0%), vinyl acetate (-34.3%), 2-butanone (-45.1%), and 2-hexanaone (-22.8%). Percent difference (%D) values from comparing ICV RF to the average ICAL RFs for instrument MAMSP were less than 20% for target compounds with the exceptions of chloromethane 21.7 %), 2-2-dichloropropane (22.7%), and 2-chloroethyl vinyl ether (29.0%).

Qualifications of data due to ICV %D are summarized in the following table. The compounds with marginal increases in response, indicating potential high bias, and which were non-detect in the validated samples were not qualified. The results for the compound acrolein were rejected based on ICAL RRF <0.05 and do not require further qualification.

Sample ID	Analyte	Qualifications
P56-ROX-080612	Dichlorodifluoromethane	UJ
P56-ROX-080612	Acetone	UJ
P56-ROX-080612	Vinyl acetate	UJ
P56-ROX-080612	2-Butanone	UJ
P56-ROX-080612	2-Hexanone	UJ
P74-ROX-080612	Dichlorodifluoromethane	UJ
P74-ROX-080612	Acetone	UJ
P74-ROX-080612	Vinyl acetate	UJ

Sample ID	Analyte	Qualifications
P74-ROX-080612	2-Butanone	UJ
P74-ROX-080612	2-Hexanone	UJ
P57-ROX-080612	Dichlorodifluoromethane	UJ
P57-ROX-080612	Acetone	UJ
P57-ROX-080612	Vinyl acetate	UJ
P57-ROX-080612	2-Butanone	UJ
P57-ROX-080612	2-Hexanone	UJ
P57-ROX-080612-Dup	Dichlorodifluoromethane	UJ
P57-ROX-080612-Dup	Acetone	UJ
P57-ROX-080612-Dup	Vinyl acetate	UJ
P57-ROX-080612-Dup	2-Butanone	UJ
P57-ROX-080612-Dup	2-Hexanone	UJ
P58-ROX-080612	Dichlorodifluoromethane	UJ
P58-ROX-080612	Acetone	UJ
P58-ROX-080612	Vinyl acetate	UJ
P58-ROX-080612	2-Butanone	UJ
P58-ROX-080612	2-Hexanone	UJ

Recalculation of the %RSDs and RFs for a compound associated with each internal standard was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

1.6 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Review of CV summary forms indicated RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other target analytes.

In addition, percent differences (%Ds) met the evaluation criteria of $\leq$ 30% for CCCs and < 20% for all other target analytes with exceptions summarized in the following table.

CV (Date/Time)	Analyte	%D
8/17/2012 13:54	Trichlorofluoromethane	30.0
8/17/2012 13:54	Acrolein	-53.5
8/17/2012 13:54	Carbon disulfide	35.6
8/20/2012 8:49	Vinyl chloride	27.8
8/20/2012 8:49	Chloroethane	24.8
8/20/2012 8:49	Trichlorofluoromethane	22.5
8/20/2012 8:49	Acrolein	-46.5
8/20/2012 8:49	Dibromochloromethane	-25.4
8/20/2012 8:49	1,2,4-Trichlorobenzene	-20.4
8/20/2012 8:49	1,2,3-Trichlorbenzene	-21.0

Analytical data that required qualification based on calibration verification data are included in the table below. The compounds with marginal increases in response, indicating potential high bias, and which were non-detect in the validated samples were not qualified.

Acrolein results were previously rejected in section 1.5 due to low ICAL RFs and do not require further qualification.

Sample ID	Analyte	Qualifications
P56-ROX-080612	Acrolein	**UJ**
P56-ROX-080612	Dibromochloromethane	**UJ**
P56-ROX-080612	1,2,4-Trichlorobenzene	**UJ**
P56-ROX-080612	1,2,3-Trichlorbenzene	**UJ**

Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B. Target compounds were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. All surrogate recoveries were within the method acceptance criteria for the validated samples. Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. The validated samples were not chosen for MS/MSD analysis.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted. No qualifications to the data were required based on internal standard areas or retention times.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS data were within evaluation criteria, with the exception of those summarized in the following table.

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSP2072-BS	VOCs	Vinyl acetate	**63**	NA	70-130
MSN2512-BS/BSD	VOCs	Acrolein	**148**/**164**	10	70-130/25
MSN2512-BS/BSD	VOCs	Acrylonitrile	**446**/**442**	1	70-130/25
MSN2512-BS/BSD	VOCs	Dichlorodifluoromethane	118/**131**	11	70-130/25

Analytical data that required qualification based on LCS data are included in the following table. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
P56-ROX-080612	VOCs	Vinyl acetate	**UJ**

Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately 10% of the detected target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results, other than those rejected, for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG.

1.0 VALIDATION OF SVOC DATA – SDG MC12905

This section describes the validation for four investigative groundwater samples and one field duplicate which were prepared by USEPA SW-846 Method 3520C and analyzed for semi-volatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C and for polycyclic aromatic hydrocarbons (PAHs) by USEPA SW-846 Method 8270C SIM. Samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts, and submitted as part of sample delivery group (SDG) MC12905. Samples included as part of this validation are listed below.

Sample Identification	Sample Identification
P56-ROX-080612	P74-ROX-080612
P57-ROX-080612	P57-ROX-080612-Dup
P58-ROX-080612	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standard areas
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.0 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that SVOC LCS recoveries were outside evaluation criteria. Although not indicated in the laboratory case narrative, SVOCs and PAHs were detected in the method blank. Initial calibration verification percent differences were outside

evaluation criteria. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at temperatures of 0.8ºC and 1.0 ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were extracted within 7 days of collection and analyzed within 40 days of extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. SVOC samples as part of SDG MC12905 were analyzed using instrument MAMSF, and PAH samples were analyzed using instrument MAMSU. The ICAL for instrument MAMSF was established on 7/31/2012, and the ICAL for instrument MAMSU was established on 7/16/2012 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15%.

Initial calibration verifications (ICVs) for SVOCs and PAHs were analyzed following the initial calibrations. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exceptions of aniline (64.9%) and 4-chloroaniline (42.2%).

Qualifications of SVOC data due to ICV %D are summarized in the following table. Results for the compound, 4-chloroaniline in the validated samples associated with marginal increases in %D, indicating a potential high bias, were non-detect and did not require qualification.

Sample ID	Analyte	Qualifications
P56-ROX-080612	Aniline	**UJ**
P74-ROX-080612	Aniline	**UJ**
P57-ROX-080612	Aniline	**UJ**
P57-ROX-080612-Dup	Aniline	**UJ**
P58-ROX-080612	Aniline	**UJ**

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed prior to sample analysis. Review of continuing calibration summary forms for SVOCs and PAHs indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 20% for CCCs and target analytes that were quantitated using linear calibration (response factor).

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. Target compounds in the blank samples were reported as non-detect with exceptions summarized in the following table.

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29961-MB	SVOCs	Di-n-butyl phthalate	1.7 ug/L
OP29961-MB	SVOCs	Diethyl phthalate	2.8 ug/L
OP29962-MB	PAHs	Naphthalene	0.058 ug/L
OP29962-MB	PAHs	Phananthrene	0.052 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P56-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P56-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P74-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P74-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P74-ROX-080612	PAHs	Phenanthrene	0.12 ug/L	**U**

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P57-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**
P57-ROX-080612	SVOCs	Diethyl phthalate	-	**U**
P57-ROX-080612-Dup	SVOCs	Di-n-butyl phthalate	-	**U**
P57-ROX-080612-Dup	SVOCs	Diethyl phthalate	-	**U**
P58-ROX-080612	SVOCs	Di-n-butyl phthalate	-	**U**

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples.

Approximately 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. The validated samples were not chosen for MS/MSD analysis.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted. No qualifications to the data were required based on internal standard areas or retention times.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria with the exceptions summarized in the following table.

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
OP29961-BS	SVOCs	Aniline	**10**	NA	40-140
OP29961-BS	SVOCs	4-Chloroaniline	**32**	NA	40-140
OP29961-BS	SVOCs	3,3'-Dichlorobenzidine	**6**	NA	40-140
OP29961-BS	SVOCs	Pyridine	**11**	NA	40-140

Analytical data that required qualification based on LCS data are included in the following table.

Sample ID	Parameter	Analyte	Qualification
P56-ROX-080612	SVOCs	Aniline	R
P56-ROX-080612	SVOCs	4-Chloroaniline	UJ
P56-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	R
P56-ROX-080612	SVOCs	Pyridine	R
P74-ROX-080612	SVOCs	Aniline	R
P74-ROX-080612	SVOCs	4-Chloroaniline	UJ
P74-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	R
P74-ROX-080612	SVOCs	Pyridine	R
P57-ROX-080612	SVOCs	Aniline	R
P57-ROX-080612	SVOCs	4-Chloroaniline	UJ
P57-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	R
P57-ROX-080612	SVOCs	Pyridine	R
P57-ROX-080612-Dup	SVOCs	Aniline	R
P57-ROX-080612-Dup	SVOCs	4-Chloroaniline	UJ
P57-ROX-080612-Dup	SVOCs	3,3'-Dichlorobenzidine	R
P57-ROX-080612-Dup	SVOCs	Pyridine	R
P58-ROX-080612	SVOCs	Aniline	R
P58-ROX-080612	SVOCs	4-Chloroaniline	UJ
P58-ROX-080612	SVOCs	3,3'-Dichlorobenzidine	R
P58-ROX-080612	SVOCs	Pyridine	R

Approximately 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results, other than those rejected, for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG.

1.0 VALIDATION OF EDB/DBCP DATA – SDG MC12905

This section describes the validation for four investigative groundwater samples and one field duplicate which were prepared and analyzed for 1,2-dibromoethane (EDB) and 1,2-dibromo-3-chloropropane (DBCP) by USEPA SW-846 Method 8011. The samples were analyzed by Accutest Laboratories of Marlborough, Massachusetts and submitted as part of the sample delivery group (SDG) MC12905. The samples included as part of this validation are listed below.

Sample Identification	Sample Identification
P56-ROX-080612	P74-ROX-080612
P57-ROX-080612	P57-ROX-080612-Dup
P58-ROX-080612	

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008).

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control spike (LCS) samples
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

1.2 Laboratory Case Narrative/Cooler Receipt Form

No problems were indicated in the laboratory case narrative for the validated samples.

The cooler receipt form indicated samples were received by the laboratory at a temperatures of 0.8ºC and 1.0ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the sample chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ± 2°C. In addition, the samples were analyzed within 14 days of collection. No qualifications to the data were required based on holding times and sample preservation.

1.4 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for EDB/DBCP analyses. Validated samples included in this SDG were analyzed using instrument GCBB-gc23. The ICAL for instrument was established on 8/3/2012. At least five standard concentrations were used to establish the ICAL curve as required by Method 8011.

Review of the initial calibration summary forms indicated percent relative standard deviations (%RSDs) were ≤ 15% for target analytes. A recalculation of the %RSDs was performed from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

Review of the sample chromatograms indicated that a second source calibration was performed immediately following the initial calibration. Review of ICV summary forms indicated percent differences (%D) ≤15% for target analytes. Recalculation of the percent recoveries was completed and no errors in calculation were noted.

1.5 Calibration Verification

Review of the sample chromatograms indicated that all calibration verifications (CVs) were performed before the start of sample analysis. Percent differences (%Ds) met the evaluation criteria of ≤ 15% for target analytes. Recalculations of the %Ds for target compounds were completed for each CV, and no errors in calculation were noted; therefore, no qualifications of data were required.

1.6 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8011. Also, trip blanks were analyzed to evaluate the existence and magnitude of contamination problems emanating during sample shipment to the laboratory. All target compounds were reported as non-detect. No qualification of data was required.

1.7 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. Surrogate recoveries were within the method acceptance criteria for the validated samples. No qualification of data was required.

Approximately 10% of the recoveries were recalculated and no calculation or transcription errors were noted.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. The validated samples were not chosen for MS/MSD analysis.

1.9 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. All LCS data were within evaluation criteria. Approximately 10% of spiking compound recoveries for the LCS were recalculated and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.10 Target Compound Identification and Quantification

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, and the relative retention time was no greater than 0.06 different from the associated CV retention times. Approximately 10% of the detected target analytes were verified. No anomalies were noted with the identification of the target compounds in the samples.

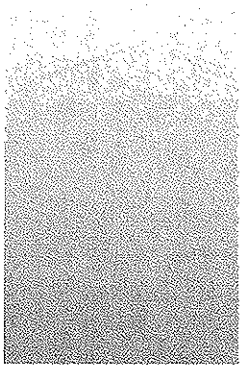
For the validation of compound quantitation, the matrix spike results were recalculated from the raw data since all target analytes were non-detect, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, surrogate and MS/MSD data were achieved for this SDG.

New England ACCUTEST LABORATORIES

09/10/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12905

Sampling Date: 08/06/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **116**

Reviewed on 9/4/2012

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Table of Contents

Sections: 1 2 3 4 5 6 7 8

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **11**
4.1: MC12905-1: TB-080612-HCL-W 12
4.2: MC12905-2: TB-080612-ST-W 15
4.3: MC12905-3: P56-ROX-080612 16
4.4: MC12905-4: P74-ROX-080612 23
4.5: MC12905-5: P57-ROX-080612 30
4.6: MC12905-6: P57-ROX-080612-DUP 37
4.7: MC12905-7: P58-ROX-080612 44
4.8: MC12905-8: P58-ROX-080612-DUP 51
Section 5: Misc. Forms **58**
5.1: Chain of Custody 59
5.2: Sample Tracking Chronicle 61
5.3: Internal Chain of Custody 63
Section 6: GC/MS Volatiles - QC Data Summaries **66**
6.1: Method Blank Summary 67
6.2: Blank Spike Summary 74
6.3: Blank Spike/Blank Spike Duplicate Summary 77
6.4: Matrix Spike/Matrix Spike Duplicate Summary 81
6.5: Internal Standard Area Summaries 88
6.6: Surrogate Recovery Summaries 91
Section 7: GC/MS Semi-volatiles - QC Data Summaries **92**
7.1: Method Blank Summary 93
7.2: Blank Spike Summary 96
7.3: Matrix Spike/Matrix Spike Duplicate Summary 99
7.4: Internal Standard Area Summaries 102
7.5: Surrogate Recovery Summaries 107
Section 8: GC Volatiles - QC Data Summaries **109**
8.1: Method Blank Summary 110
8.2: Blank Spike/Blank Spike Duplicate Summary 111
8.3: Matrix Spike/Matrix Spike Duplicate Summary 112
8.4: Surrogate Recovery Summaries 113
8.5: GC Surrogate Retention Time Summaries 114

Sample Summary

Shell Oil

Job No: MC12905

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12905-1	08/06/12	00:00	DMCW	08/07/12	AQ	Trip Blank Water	TB-080612-HCL-W
MC12905-2	08/06/12	00:00	DMCW	08/07/12	AQ	Trip Blank Water	TB-080612-ST-W
MC12905-3	08/06/12	10:15	DMCW	08/07/12	AQ	Ground Water	P56-ROX-080612
MC12905-4	08/06/12	13:10	DMCW	08/07/12	AQ	Ground Water	P74-ROX-080612
MC12905-5	08/06/12	14:00	DMCW	08/07/12	AQ	Ground Water	P57-ROX-080612
MC12905-6	08/06/12	14:00	DMCW	08/07/12	AQ	Ground Water	P57-ROX-080612-DUP
MC12905-7	08/06/12	15:15	DMCW	08/07/12	AQ	Ground Water	P58-ROX-080612
MC12905-8	08/06/12	15:15	DMCW	08/07/12	AQ	Ground Water	P58-ROX-080612-DUP

ACCUTEST Laboratories

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	Job No	MC12905
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	Report Date	8/22/2012 12:33:08 PM

6 Sample(s), 2 Trip Blank(s) and 0 Field Blank(s) were collected on 08/06/2012 and were received at Accutest on 08/07/2012 properly preserved, at 1 Deg. C and intact. These Samples received an Accutest job number of MC12905. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ	Batch ID: MSN2512

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12870-4MS, MC12870-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12905-6 have compounds reported with "E" qualifiers indicating estimated value exceeding calibration range.
- MSN2512-BS/BSD for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- MC12870-4MS/MSD for Acetone, Acrolein are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12870-4MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MSN2512-BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Continuing calibration check standard MSN2512-CC2468 for acrolein exceeds 50% Difference (results biased high). Associated samples are non-detect for these compounds.
- MSN2512-BSD for Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.
- Initial calibration verification standard MSN2468-ICV2468 for acetone exceed 50% Difference. (Results biased high). Associated samples are non-detect for these compounds.

Matrix: AQ	Batch ID: MSN2514

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12944-15MS, MC12944-15MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: MSP2072

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13089-8MS, MC13089-8MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSP2072-BS for Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- MC13089-8MS for Bromomethane are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC13089-8MS/MSD for 2-Chloroethyl vinyl ether are outside control limits due to possible matrix interference. Refer to Blank Spike.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29961

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-6MS, MC12879-6MSD were used as the QC samples indicated.
- Sample(s) MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- OP29961-BS for 3,3'-Dichlorobenzidine, 4-Chloroaniline, Aniline, Pyridine are outside control limits. Blank Spike meets program technical requirements.
- OP29961-MS/MSD for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, Aniline, Pyridine are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for OP29961-MSD for 3-Nitroaniline, 4-Nitroaniline, Aniline are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Initial calibration verification MSF2682-ICV2682 for Aniline exceeds 50% Difference. Aniline is within criteria in continuing calibration check MSF2695-CC2682, MSF2704-CC2682.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29962

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12879-11MS, MC12879-11MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery(s) for Benzo(k)fluoranthene are outside control limits. Probable cause due to matrix interference.
- OP29962-MSD for Benzo(k)fluoranthene: Ontside control limits due to possible matrix interference. Refer to Blank Spike.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29956

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-8MS, MC12879-8MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12905).

Summary of Hits

Job Number: MC12905
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/06/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12905-1	TB-080612-HCL-W					
No hits reported in this sample.						
MC12905-2	TB-080612-ST-W					
No hits reported in this sample.						
MC12905-3	P56-ROX-080612					
Benzene		164	2.5	1.2	ug/l	SW846 8260B
Ethylbenzene		101	5.0	2.5	ug/l	SW846 8260B
Isopropylbenzene		44.2	25	2.5	ug/l	SW846 8260B
n-Propylbenzene		43.9	25	2.9	ug/l	SW846 8260B
Toluene		10.9	5.0	2.5	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		13.1 J	25	1.7	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		5.0 J	25	2.3	ug/l	SW846 8260B
m,p-Xylene		110	5.0	3.7	ug/l	SW846 8260B
o-Xylene		8.3	5.0	2.9	ug/l	SW846 8260B
Xylene (total)		118	5.0	2.9	ug/l	SW846 8260B
Dibenzofuran		0.51 J	2.0	0.22	ug/l	SW846 8270C
Di-n-butyl phthalate		0.75 JB	5.1	0.37	ug/l	SW846 8270C
Diethyl phthalate		1.4 JB	5.1	0.19	ug/l	SW846 8270C
Acenaphthene		0.58	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.087 J	0.10	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.13	0.10	0.018	ug/l	SW846 8270C BY SIM
Fluorene		0.30	0.10	0.047	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		14.1	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		17.3	0.20	0.053	ug/l	SW846 8270C BY SIM
Naphthalene		19.7	0.10	0.037	ug/l	SW846 8270C BY SIM
Phenanthrene		1.3	0.051	0.013	ug/l	SW846 8270C BY SIM
MC12905-4	P74-ROX-080612					
Benzene		2460	5.0	2.4	ug/l	SW846 8260B
Ethylbenzene		78.2	10	5.1	ug/l	SW846 8260B
Toluene		159	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		187	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		66.3	50	4.7	ug/l	SW846 8260B
m,p-Xylene		388	10	7.3	ug/l	SW846 8260B
o-Xylene		125	10	5.8	ug/l	SW846 8260B
Xylene (total)		512	10	5.8	ug/l	SW846 8260B
2,4-Dimethylphenol		3.9 J	10	2.7	ug/l	SW846 8270C
2-Methylphenol		1.4 J	10	0.60	ug/l	SW846 8270C
3&4-Methylphenol		1.0 J	10	0.75	ug/l	SW846 8270C

Summary of Hits

Job Number: MC12905
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/06/12

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Phenol	15.8	5.0	0.93	ng/l	SW846 8270C
Di-n-butyl phthalate	0.82 JB	5.0	0.36	ug/l	SW846 8270C
Diethyl phthalate	1.2 JB	5.0	0.19	ng/l	SW846 8270C
Acenaphthene	0.16	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.056 J	0.10	0.013	ng/l	SW846 8270C BY SIM
Anthracene	0.041 J	0.10	0.018	ug/l	SW846 8270C BY SIM
Fluorene	0.21	0.10	0.046	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	9.0	0.20	0.14	ng/l	SW846 8270C BY SIM
2-Methylnaphthalene	10.2	0.20	0.052	ng/l	SW846 8270C BY SIM
Naphthalene	17.7	0.10	0.036	ng/l	SW846 8270C BY SIM
Phenanthrene	0.12	0.050	0.013	ug/l	SW846 8270C BY SIM
MC12905-5 P57-ROX-080612					
Benzene	99400	250	120	ug/l	SW846 8260B
Ethylbenzene	795	50	25	ug/l	SW846 8260B
Methyl Tert Butyl Ether	238	50	21	ug/l	SW846 8260B
Toluene	57.7	50	25	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	506	250	17	ug/l	SW846 8260B
1,3,5-Trimethylbenzene	123 J	250	23	ug/l	SW846 8260B
m,p-Xylene	740	50	37	ug/l	SW846 8260B
o-Xylene	32.8 J	50	29	ug/l	SW846 8260B
Xylene (total)	773	50	29	ug/l	SW846 8260B
2,4-Dimethylphenol	2.9 J	10	2.7	ug/l	SW846 8270C
3&4-Methylphenol	1.3 J	10	0.75	ug/l	SW846 8270C
Phenol	69.7	5.0	0.93	ug/l	SW846 8270C
Dibenzofuran	0.79 J	2.0	0.21	ug/l	SW846 8270C
Di-n-bntyl phthalate	0.87 JB	5.0	0.36	ug/l	SW846 8270C
Diethyl phthalate	0.96 JB	5.0	0.19	ug/l	SW846 8270C
Acenaphthene	0.56	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.10	0.10	0.013	ug/l	SW846 8270C BY SIM
Anthracene	0.073 J	0.10	0.018	ug/l	SW846 8270C BY SIM
Fluorene	0.60	0.10	0.046	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	24.4	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene	32.3	0.20	0.052	ug/l	SW846 8270C BY SIM
Naphthalene	119	0.10	0.036	ug/l	SW846 8270C BY SIM
Phenanthrene	0.53	0.050	0.013	ug/l	SW846 8270C BY SIM
MC12905-6 P57-ROX-080612-DUP					
Benzene	106000	250	120	ug/l	SW846 8260B
sec-Butylbenzene	10.7	5.0	0.55	ug/l	SW846 8260B
tert-Butylbenzene	12.4	5.0	0.64	ug/l	SW846 8260B
Ethylbenzene	759 E	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene	43.2	5.0	0.50	ug/l	SW846 8260B

Summary of Hits

Job Number: MC12905
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/06/12

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
p-Isopropyltoluene	10.9	5.0	0.57	ug/l	SW846 8260B
Methyl Tert Butyl Ether	212	1.0	0.41	ug/l	SW846 8260B
n-Propylbenzene	51.9	5.0	0.58	ug/l	SW846 8260B
Toluene	55.8	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	505 E	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene	137	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene	692	1.0	0.73	ug/l	SW846 8260B
o-Xylene	34.8	1.0	0.58	ug/l	SW846 8260B
Xylene (total)	727	1.0	0.58	ug/l	SW846 8260B
2,4-Dimethylphenol	2.9 J	10	2.7	ug/l	SW846 8270C
3&4-Methylphenol	1.3 J	10	0.75	ug/l	SW846 8270C
Phenol	92.1	5.0	0.93	ug/l	SW846 8270C
Dibenzofuran	0.73 J	2.0	0.21	ug/l	SW846 8270C
Di-n-butyl phthalate	0.89 JB	5.0	0.36	ug/l	SW846 8270C
Diethyl phthalate	1.0 JB	5.0	0.19	ug/l	SW846 8270C
Acenaphthene	0.51	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.10	0.10	0.013	ug/l	SW846 8270C BY SIM
Anthracene	0.064 J	0.10	0.018	ug/l	SW846 8270C BY SIM
Fluorene	0.63	0.10	0.046	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	24.2	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene	31.1	0.20	0.052	ug/l	SW846 8270C BY SIM
Naphthalene	115	0.10	0.036	ug/l	SW846 8270C BY SIM
Phenanthrene	0.54	0.050	0.013	ug/l	SW846 8270C BY SIM
MC12905-7 P58-ROX-080612					
Benzene	313000	500	240	ug/l	SW846 8260B
tert-Butylbenzene	31.7 J	100	13	ug/l	SW846 8260B
Ethylbenzene	889	20	10	ug/l	SW846 8260B
Isopropylbenzene	64.9 J	100	10	ug/l	SW846 8260B
n-Propylbenzene	90.9 J	100	12	ug/l	SW846 8260B
Toluene	117	20	10	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	705	100	6.9	ug/l	SW846 8260B
1,3,5-Trimethylbenzene	95.5 J	100	9.3	ug/l	SW846 8260B
m,p-Xylene	652	20	15	ug/l	SW846 8260B
o-Xylene	97.6	20	12	ug/l	SW846 8260B
Xylene (total)	749	20	12	ug/l	SW846 8260B
3&4-Methylphenol	14.6	10	0.75	ug/l	SW846 8270C
Phenol	150	5.0	0.93	ug/l	SW846 8270C
Dibenzofuran	2.2	2.0	0.21	ug/l	SW846 8270C
Di-n-butyl phthalate	0.53 JB	5.0	0.36	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate	0.43 J	2.0	0.38	ug/l	SW846 8270C
Acenaphthene	0.86	0.10	0.014	ng/l	SW846 8270C BY SIM
Acenaphthylene	0.29	0.10	0.013	ng/l	SW846 8270C BY SIM
Anthracene	0.094 J	0.10	0.018	ug/l	SW846 8270C BY SIM

Summary of Hits

Job Number: MC12905
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL
Collected: 08/06/12

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Benzo(a)anthracene	0.24	0.050	0.030	ug/l	SW846 8270C BY SIM
Benzo(a)pyrene	0.11	0.10	0.017	ng/l	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.064	0.050	0.024	ug/l	SW846 8270C BY SIM
Benzo(g,h,i)perylene	0.043 J	0.10	0.038	ug/l	SW846 8270C BY SIM
Chrysene	0.10	0.10	0.073	ug/l	SW846 8270C BY SIM
Fluoranthene	0.068 J	0.10	0.033	ug/l	SW846 8270C BY SIM
Fluorene	1.4	0.10	0.046	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	52.4	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene	69.1	0.20	0.052	ug/l	SW846 8270C BY SIM
Naphthalene	142	1.0	0.36	ug/l	SW846 8270C BY SIM
Phenanthrene	1.0	0.050	0.013	ug/l	SW846 8270C BY SIM
MC12905-8 P58-ROX-080612-DUP					
Benzene	308000	500	240	ug/l	SW846 8260B
sec-Butylbenzene	17.6 J	50	5.5	ug/l	SW846 8260B
tert-Butylbenzene	33.9 J	50	6.4	ug/l	SW846 8260B
Ethylbenzene	931	10	5.1	ug/l	SW846 8260B
Isopropylbenzene	71.8	50	5.0	ug/l	SW846 8260B
p-Isopropyltoluene	11.8 J	50	5.7	ug/l	SW846 8260B
n-Propylbenzene	99.6	50	5.8	ug/l	SW846 8260B
Toluene	128	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	737	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene	102	50	4.7	ug/l	SW846 8260B
m,p-Xylene	656	10	7.3	ug/l	SW846 8260B
o-Xylene	104	10	5.8	ug/l	SW846 8260B
Xylene (total)	759	10	5.8	ug/l	SW846 8260B
3&4-Methylphenol	19.5	10	0.75	ug/l	SW846 8270C
Phenol	190	25	4.6	ug/l	SW846 8270C
Dibenzofuran	2.5	2.0	0.21	ug/l	SW846 8270C
Di-n-butyl phthalate	0.63 JB	5.0	0.36	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate	0.42 J	2.0	0.38	ug/l	SW846 8270C
Acenaphthene	0.98	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.30	0.10	0.013	ug/l	SW846 8270C BY SIM
Anthracene	0.11	0.10	0.018	ug/l	SW846 8270C BY SIM
Benzo(a)anthracene	0.21	0.050	0.030	ug/l	SW846 8270C BY SIM
Benzo(a)pyrene	0.098 J	0.10	0.017	ug/l	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.050	0.050	0.024	ug/l	SW846 8270C BY SIM
Chrysene	0.099 J	0.10	0.073	ug/l	SW846 8270C BY SIM
Fluoranthene	0.066 J	0.10	0.033	ug/l	SW846 8270C BY SIM
Fluorene	1.5	0.10	0.046	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene	59.6	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene	79.0	0.20	0.052	ug/l	SW846 8270C BY SIM
Naphthalene	150	1.0	0.36	ug/l	SW846 8270C BY SIM
Phenanthrene	1.1	0.050	0.013	ug/l	SW846 8270C BY SIM

Summary of Hits

Job Number: MC12905
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/06/12

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Pyrene		0.21	0.10	0.036	ug/l	SW846 8270C BY SIM

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-080612-HCL-W		
Lab Sample ID:	MC12905-1	Date Sampled:	08/06/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66795.D	1	08/17/12	JP	n/a	n/a	MSN2512
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ng/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080612-HCL-W		
Lab Sample ID:	MC12905-1	Date Sampled:	08/06/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ng/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080612-HCL-W		
Lab Sample ID:	MC12905-1	Date Sampled:	08/06/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	81%		70-130%
2037-26-5	Toluene-D8	94%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080612-ST-W		
Lab Sample ID:	MC12905-2	Date Sampled:	08/06/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15923.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	33.7 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.016	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.016	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	110%		36-173%
460-00-4	Bromofluorobenzene (S)	92%		36-173%

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:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P63637.D	5	08/20/12	TT	n/a	n/a	MSP2072
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	15	ug/l	UJ
107-02-8	Acrolein	ND	130	51	ug/l	UJ
107-13-1	Acrylonitrile	ND	25	16	ug/l	
71-43-2	Benzene	164	2.5	1.2	ug/l	
108-86-1	Bromobenzene	ND	25	3.1	ug/l	
74-97-5	Bromochloromethane	ND	25	6.1	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	2.9	ug/l	
75-25-2	Bromoform	ND	5.0	3.9	ug/l	
74-83-9	Bromomethane	ND	10	5.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	25	12	ng/l	UJ
104-51-8	n-Butylbenzene	ND	25	3.4	ug/l	
135-98-8	sec-Butylbenzene	ND	25	2.8	ug/l	
98-06-6	tert-Butylbenzene	ND	25	3.2	ug/l	
75-15-0	Carbon disulfide	ND	25	3.1	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	4.3	ug/l	
108-90-7	Chlorobenzene	ND	5.0	2.3	ug/l	
75-00-3	Chloroethane	ND	10	2.5	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	25	3.9	ng/l	R
67-66-3	Chloroform	ND	5.0	2.5	ug/l	
74-87-3	Chloromethane	ND	10	3.7	ug/l	
95-49-8	o-Chlorotoluene	ND	25	3.2	ug/l	
106-43-4	p-Chlorotoluene	ND	25	2.4	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	2.6	ug/l	UJ
95-50-1	1,2-Dichlorobenzene	ND	5.0	4.6	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	2.3	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	3.2	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	8.6	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	5.0	3.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.2	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	2.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	5.0	3.2	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	4.7	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:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	10	3.6	ug/l	
142-28-9	1,3-Dichloropropane	ND	25	3.2	ug/l	
594-20-7	2,2-Dichloropropane	ND	25	7.9	ug/l	
563-58-6	1,1-Dichloropropene	ND	25	4.6	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	2.2	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	0.98	ug/l	
123-91-1	1,4-Dioxane	ND	130	74	ug/l	UJ
97-63-2	Ethyl methacrylate	ND	25	4.1	ug/l	
100-41-4	Ethylbenzeue	101	5.0	2.5	ug/l	
87-68-3	Hexachlorobutadiene	ND	25	10	ug/l	
591-78-6	2-Hexanone	ND	25	9.8	ug/l	UJ
98-82-8	Isopropylbenzene	44.2	25	2.5	ug/l	
99-87-6	p-Isopropyltoluene	ND	25	2.9	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	2.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	15	ug/l	
74-95-3	Methylene bromide	ND	25	5.5	ug/l	
75-09-2	Methylene chloride	ND	10	4.2	ug/l	
103-65-1	n-Propylbenzene	43.9	25	2.9	ug/l	
100-42-5	Styrene	ND	25	2.3	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	25	2.9	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	3.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	2.1	ug/l	
108-88-3	Toluene	10.9	5.0	2.5	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	25	5.3	ug/l	UJ
120-82-1	1,2,4-Trichlorobenzene	ND	25	6.4	ug/l	UJ
71-55-6	1,1,1-Trichloroethane	ND	5.0	4.2	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	2.5	ug/l	
79-01-6	Trichloroethene	ND	5.0	3.9	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	1.4	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	25	4.2	ug/l	
95-63-6	1,2,4-Trimethylbenzene	13.1	25	1.7	ng/l	J
108-67-8	1,3,5-Trimethylbenzene	5.0	25	2.3	ug/l	J
108-05-4	Vinyl Acetate	ND UJ	25	5.0	ug/l	UJ
75-01-4	Vinyl chloride	ND	5.0	3.1	ug/l	
	m,p-Xylene	110	5.0	3.7	ug/l	
95-47-6	o-Xylene	8.3	5.0	2.9	ug/l	
1330-20-7	Xylene (total)	118	5.0	2.9	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:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		70-130%
2037-26-5	Toluene-D8	93%		70-130%
460-00-4	4-Bromofluorobenzene	108%		70-130%

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

Report of Analysis

Client Sample ID:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56732.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.62	ug/l	
	3&4-Methylphenol	ND	10	0.77	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ng/l	
87-86-5	Pentachlorophenol	ND	10	0.65	ug/l	
108-95-2	Phenol	ND	5.1	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ng/l	
62-53-3	Aniline	ND	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ng/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ng/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ng/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ng/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ng/l	
606-20-2	2,6-Dinitrotolnene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.91	ng/l	R
132-64-9	Dibenzofuran	0.51	2.0	0.22	ng/l	J
84-74-2	Di-n-butyl phthalate	~~0.75~~ U	5.1	0.37	ug/l	JB U
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	ng/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:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Speeial List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~1.4~~ U	5.1	0.19	ug/l	JB U
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadieue	ND	10	5.1	ug/l	
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroauiline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND Q	10	5.1	ug/l	Q

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		15-110%
4165-62-2	Phenol-d5	23%		15-110%
118-79-6	2,4,6-Tribromophenol	77%		15-110%
4165-60-0	Nitrobenzene-d5	61%		30-130%
321-60-8	2-Fluorobiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	73%		30-130%

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

Report of Analysis

Client Sample ID:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9133.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.58	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.087	0.10	0.014	ug/l	J
120-12-7	Anthracene	0.13	0.10	0.018	ng/l	
56-55-3	Benzo(a)anthracene	ND	0.051	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.060	ug/l	
218-01-9	Chrysene	ND	0.10	0.074	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	0.30	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.047	ug/l	
90-12-0	1-Methylnaphthalene	14.1	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	17.3	0.20	0.053	ug/l	
91-20-3	Naphthalene	19.7	0.10	0.037	ug/l	
85-01-8	Phenanthrene	1.3	0.051	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	77%		30-130%

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:	P56-ROX-080612		
Lab Sample ID:	MC12905-3	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15924.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	129%		36-173%
460-00-4	Bromofluorobenzene (S)	97%		36-173%

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:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66799.D	10	08/17/12	JP	n/a	n/a	MSN2512
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	30	ug/l	UJ
107-02-8	Acrolein	ND	250	100	ug/l	R
107-13-1	Acrylonitrile	ND	50	32	ug/l	R
71-43-2	Benzene	2460	5.0	2.4	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	UJ
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ug/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND	50	16	ug/l	
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	Q
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	78.2	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	UJ
98-82-8	Isopropylbenzene	ND	50	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	ND	50	5.8	ug/l	
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	159	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	187	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	66.3	50	4.7	ug/l	
108-05-4	Vinyl Acetate	ND	50	10	ug/l	UJ
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	388	10	7.3	ug/l	
95-47-6	o-Xylene	125	10	5.8	ug/l	
1330-20-7	Xylene (total)	512	10	5.8	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	76%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

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

Report of Analysis

Client Sample ID:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56733.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylpheuol	3.9	10	2.7	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	1.4	10	0.60	ug/l	J
	3&4-Methylphenol	1.0	10	0.75	ug/l	J
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	15.8	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobeuzidine	ND	5.0	0.89	ug/l	R
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.82~~ U	5.0	0.36	ug/l	JB U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~1.2~~ U	5.0	0.19	ug/l	JB U
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzeue	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND R	10	5.0	ug/l	R

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	33%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	78%		15-110%
4165-60-0	Nitrobenzene-d5	64%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	65%		30-130%

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

Report of Analysis

Client Sample ID:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9134.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.16	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.056	0.10	0.013	ug/l	J
120-12-7	Anthracene	0.041	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	0.21	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	9.0	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	10.2	0.20	0.052	ug/l	
91-20-3	Naphthalene	17.7	0.10	0.036	ug/l	
85-01-8	Phenanthrene	~~0.12~~	~~0.050~~	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		30-130%
321-60-8	2-Fluorobipbenyl	71%		30-130%
1718-51-0	Terphenyl-d14	68%		30-130%

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:	P74-ROX-080612		
Lab Sample ID:	MC12905-4	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15925.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	94%		36-173%
460-00-4	Bromofluorobenzene (S)	99%		36-173%

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:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66800.D	50	08/17/12	JP	n/a	n/a	MSN2512
Run #2	N66843.D	500	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	250	150	ug/l	UJ
107-02-8	Acrolein	ND	1300	510	ug/l	R
107-13-1	Acrylonitrile	ND	250	160	ug/l	R
71-43-2	Benzene	99400 [a]	250	120	ug/l	
108-86-1	Bromobenzene	ND	250	31	ug/l	
74-97-5	Bromochloromethane	ND	250	61	ug/l	
75-27-4	Bromodichloromethane	ND	50	29	ug/l	
75-25-2	Bromoform	ND	50	39	ug/l	
74-83-9	Bromomethane	ND	100	51	ug/l	
78-93-3	2-Butanone (MEK)	ND	250	120	ug/l	UJ
104-51-8	n-Butylbenzene	ND	250	34	ug/l	
135-98-8	sec-Butylbenzene	ND	250	28	ug/l	
98-06-6	tert-Butylbenzene	ND	250	32	ng/l	
75-15-0	Carbon disulfide	ND	250	31	ug/l	
56-23-5	Carbon tetrachloride	ND	50	43	ug/l	
108-90-7	Chlorobenzene	ND	50	23	ug/l	
75-00-3	Chloroethane	ND	100	25	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	250	39	ug/l	
67-66-3	Chloroform	ND	50	25	ug/l	
74-87-3	Chloromethane	ND	100	37	ug/l	
95-49-8	o-Chlorotoluene	ND	250	32	ug/l	
106-43-4	p-Chlorotoluene	ND	250	24	ug/l	
124-48-1	Dibromochloromethane	ND	50	26	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50	46	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50	23	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	32	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	86	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	50	31	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	32	ug/l	
75-35-4	1,1-Dichloroethene	ND	50	21	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	50	32	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	50	47	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:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	100	36	ug/l	
142-28-9	1,3-Dichloropropane	ND	250	32	ug/l	
594-20-7	2,2-Dichloropropane	ND	250	79	ug/l	
563-58-6	1,1-Dichloropropene	ND	250	46	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	25	22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	25	9.8	ug/l	
123-91-1	1,4-Dioxane	ND	1300	740	ug/l	
97-63-2	Ethyl methacrylate	ND	250	41	ug/l	
100-41-4	Ethylbenzene	795	50	25	ug/l	
87-68-3	Hexachlorohutadiene	ND	250	100	ug/l	
591-78-6	2-Hexanone	ND	250	98	ug/l	
98-82-8	Isopropylbenzene	ND	250	25	ug/l	
99-87-6	p-Isopropyltoluene	ND	250	29	ug/l	
1634-04-4	Methyl Tert Butyl Ether	238	50	21	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	150	ug/l	
74-95-3	Methylene bromide	ND	250	55	ug/l	
75-09-2	Methylene chloride	ND	100	42	ug/l	
103-65-1	n-Propylbenzene	ND	250	29	ug/l	
100-42-5	Styrene	ND	250	23	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	29	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	30	ug/l	
127-18-4	Tetrachloroethene	ND	50	21	ug/l	
108-88-3	Toluene	57.7	50	25	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	250	53	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	250	64	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50	42	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	25	ug/l	
79-01-6	Trichloroethene	ND	50	39	ug/l	
75-69-4	Trichlorofluoromethane	ND	50	14	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	250	42	ug/l	
95-63-6	1,2,4-Trimethylbenzene	506	250	17	ug/l	
108-67-8	1,3,5-Trimethylbenzene	123	250	23	ug/l	J
108-05-4	Vinyl Acetate	ND	250	50	ug/l	
75-01-4	Vinyl chloride	ND	50	31	ug/l	
	m,p-Xylene	740	50	37	ug/l	
95-47-6	o-Xylene	32.8	50	29	ug/l	J
1330-20-7	Xylene (total)	773	50	29	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:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	78%	90%	70-130%
2037-26-5	Toluene-D8	95%	95%	70-130%
460-00-4	4-Bromofluorobenzene	92%	102%	70-130%

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

(a) Result is from Run# 2

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:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56734.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	2.9	10	2.7	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ng/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	1.3	10	0.75	ug/l	J
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	69.7	5.0	0.93	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	R
132-64-9	Dibenzofuran	0.79	2.0	0.21	ng/l	J
84-74-2	Di-n-butyl phthalate	~~0.87~~ U	5.0	0.36	ug/l	JB U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~0.96~~	5.0	0.19	ug/l	JB
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND R	10	5.0	ug/l	R

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	83%		15-110%
4165-60-0	Nitrobenzene-d5	64%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	71%		30-130%

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 fonnd in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9135.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.56	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.10	0.10	0.013	ug/l	
120-12-7	Anthracene	0.073	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	0.60	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	24.4	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	32.3	0.20	0.052	ug/l	
91-20-3	Naphthalene	119	0.10	0.036	ug/l	
85-01-8	Phenanthrene	0.53	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	75%		30-130%

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

Report of Analysis

Client Sample ID:	P57-ROX-080612		
Lab Sample ID:	MC12905-5	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15927.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.3 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	125%		36-173%
460-00-4	Bromofluorobenzene (S)	92%		36-173%

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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66797.D	1	08/17/12	JP	n/a	n/a	MSN2512
Run #2	N66844.D	500	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	106000 [a]	250	120	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	10.7	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	12.4	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	759	1.0	0.51	ug/l	E
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	43.2	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	10.9	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	212	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	51.9	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ng/l	
108-88-3	Toluene	55.8	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	505	5.0	0.35	ug/l	E
108-67-8	1,3,5-Trimethylbenzene	137	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	692	1.0	0.73	ug/l	
95-47-6	o-Xylene	34.8	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	727	1.0	0.58	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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethaue	81%	92%	70-130%
2037-26-5	Toluene-D8	93%	96%	70-130%
460-00-4	4-Bromofluorobenzene	88%	100%	70-130%

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

(a) Result is from Run# 2

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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56735.D	1	08/10/12	KR	08/08/12	OP2996I	MSF2695
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	2.9	10	2.7	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	1.3	10	0.75	ug/l	J
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	92.1	5.0	0.93	ug/l	J
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ng/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ng/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	R
132-64-9	Dibenzofuran	0.73	2.0	0.21	ug/l	J
84-74-2	Di-n-bntyl phthalate	~~0.89~~ 4	5.0	0.36	ug/l	JB 4
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~1.0~~ U	5.0	0.19	ug/l	JB
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND R	10	5.0	ug/l	R

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	33%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	81%		15-110%
4165-60-0	Nitrobenzene-d5	64%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

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

Report of Analysis

Client Sample ID:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9136.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.51	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.10	0.10	0.013	ug/l	
120-12-7	Anthracene	0.064	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ng/l	
218-01-9	Chrysene	ND	0.10	0.073	ng/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ng/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	0.63	0.10	0.046	ng/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	24.2	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	31.1	0.20	0.052	ng/l	
91-20-3	Naphthalene	115	0.10	0.036	ug/l	
85-01-8	Phenanthrene	0.54	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	98%		30-130%

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:	P57-ROX-080612-DUP		
Lab Sample ID:	MC12905-6	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15928.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	129%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxaua 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66801.D	20	08/17/12	JP	n/a	n/a	MSN2512
Run #2	N66845.D	1000	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	100	60	ug/l	UJ
107-02-8	Acrolein	ND	500	200	ug/l	R
107-13-1	Acrylonitrile	ND	100	65	ug/l	R
71-43-2	Benzene	313000 [a]	500	240	ug/l	
108-86-1	Bromobenzene	ND	100	12	ug/l	
74-97-5	Bromochloromethane	ND	100	24	ug/l	
75-27-4	Bromodichloromethane	ND	20	12	ug/l	
75-25-2	Bromoform	ND	20	16	ug/l	
74-83-9	Bromomethane	ND	40	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	48	ug/l	UJ
104-51-8	n-Butylbenzene	ND	100	14	ug/l	
135-98-8	sec-Butylbenzene	ND	100	11	ug/l	
98-06-6	tert-Butylbenzene	31.7	100	13	ug/l	J
75-15-0	Carbon disulfide	ND	100	12	ug/l	
56-23-5	Carbon tetrachloride	ND	20	17	ug/l	
108-90-7	Chlorobenzene	ND	20	9.4	ug/l	
75-00-3	Chloroethane	ND	40	10	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	100	16	ug/l	
67-66-3	Chloroform	ND	20	9.9	ug/l	
74-87-3	Chloromethane	ND	40	15	ug/l	
95-49-8	o-Chlorotoluene	ND	100	13	ug/l	
106-43-4	p-Chlorotoluene	ND	100	9.7	ug/l	
124-48-1	Dibromochloromethane	ND	20	11	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20	19	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20	9.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	13	ug/l	
75-71-8	Dichlorodifluoromethane	ND	40	35	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	20	12	ug/l	
107-06-2	1,2-Dichloroethane	ND	20	13	ug/l	
75-35-4	1,1-Dichloroethene	ND	20	8.2	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	20	13	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	20	19	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:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	40	14	ug/l	
142-28-9	1,3-Dichloropropane	ND	100	13	ug/l	
594-20-7	2,2-Dichloropropane	ND	100	31	ug/l	
563-58-6	1,1-Dichloropropene	ND	100	18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	9.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	3.9	ug/l	
123-91-1	1,4-Dioxane	ND	500	300	ug/l	UJ
97-63-2	Ethyl methacrylate	ND	100	16	ug/l	
100-41-4	Ethylbenzene	889	20	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	100	41	ug/l	
591-78-6	2-Hexanone	ND	100	39	ug/l	UJ
98-82-8	Isopropylbenzene	64.9	100	10	ug/l	J
99-87-6	p-Isopropyltoluene	ND	100	11	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20	8.2	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	100	58	ug/l	
74-95-3	Methylene bromide	ND	100	22	ug/l	
75-09-2	Methylene chloride	ND	40	17	ug/l	
103-65-1	n-Propylbenzene	90.9	100	12	ug/l	J
100-42-5	Styrene	ND	100	9.1	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	12	ug/l	
127-18-4	Tetrachloroethene	ND	20	8.4	ug/l	
108-88-3	Toluene	117	20	10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	21	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	26	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20	17	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20	10	ug/l	
79-01-6	Trichloroethene	ND	20	16	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	5.7	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	100	17	ug/l	
95-63-6	1,2,4-Trimethylbenzene	705	100	6.9	ug/l	
108-67-8	1,3,5-Trimethylbenzene	95.5	100	9.3	ug/l	J
108-05-4	Vinyl Acetate	ND	100	20	ug/l	UJ
75-01-4	Vinyl chloride	ND	20	13	ug/l	
	m,p-Xylene	652	20	15	ug/l	
95-47-6	o-Xylene	97.6	20	12	ug/l	
1330-20-7	Xylene (total)	749	20	12	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 evideuce of a compound

Report of Analysis

Client Sample ID:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	78%	91%	70-130%
2037-26-5	Toluene-D8	93%	97%	70-130%
460-00-4	4-Bromofluorobenzene	95%	100%	70-130%

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

(a) Result is from Run# 2

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:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56737.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	14.6	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	150	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND R	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND UJ	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND R	5.0	0.89	ug/l	R
132-64-9	Dibenzofuran	2.2	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.53~~ U	5.0	0.36	ug/l	JB U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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 iu associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.43	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND R	10	5.0	ug/l	R

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	86%		15-110%
4165-60-0	Nitrobenzene-d5	76%		30-130%
321-60-8	2-Fluorobiphenyl	71%		30-130%
1718-51-0	Terphenyl-d14	91%		30-130%

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

Report of Analysis

Client Sample ID:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9147.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2	U9174.D	10	08/13/12	NS	08/08/12	OP29962	MSU508

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.86	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.29	0.10	0.013	ug/l	
120-12-7	Anthracene	0.094	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	0.24	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	0.11	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	0.064	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.043	0.10	0.038	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	0.10	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	0.068	0.10	0.033	ug/l	J
86-73-7	Fluorene	1.4	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	52.4	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	69.1	0.20	0.052	ug/l	
91-20-3	Naphthalene	142 [a]	1.0	0.36	ug/l	
85-01-8	Phenanthrene	1.0	0.050	0.013	ug/l	
129-00-0	Pyrene	ND UJ	0.10	0.036	ug/l	UJ

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	77%	80%	30-130%
321-60-8	2-Fluorobiphenyl	79%	84%	30-130%
1718-51-0	Terphenyl-d14	95%	111%	30-130%

(a) Result is from Run# 2

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 componnd

Report of Analysis

Client Sample ID:	P58-ROX-080612		
Lab Sample ID:	MC12905-7	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15929.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	116%		36-173%
460-00-4	Bromofluorobenzene (S)	99%		36-173%

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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66802.D	10	08/17/12	JP	n/a	n/a	MSN2512
Run #2	N66846.D	1000	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	30	ug/l	
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	308000 [a]	500	240	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	17.6	50	5.5	ug/l	J
98-06-6	tert-Butylbenzene	33.9	50	6.4	ug/l	J
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND	50	16	ug/l	
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	931	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	71.8	50	5.0	ug/l	
99-87-6	p-Isopropyltoluene	11.8	50	5.7	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	99.6	50	5.8	ug/l	
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	128	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	737	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	102	50	4.7	ug/l	
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	656	10	7.3	ug/l	
95-47-6	o-Xylene	104	10	5.8	ug/l	
1330-20-7	Xylene (total)	759	10	5.8	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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	75%	92%	70-130%
2037-26-5	Toluene-D8	92%	97%	70-130%
460-00-4	4-Bromofluorobenzene	92%	98%	70-130%

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

(a) Result is from Run# 2

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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F56738.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
Run #2	F56977.D	5	08/21/12	KR	08/08/12	OP29961	MSF2704

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylpbenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	19.5	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	190 [a]	25	4.6	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND R	10	2.0	ug/l	R
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND UJ	10	0.63	ug/l	UJ
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND R	5.0	0.89	ug/l	R
132-64-9	Dibenzofuran	2.5	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	~~0.63~~ U	5.0	0.36	ug/l	JB U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.42	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND (a)	10	5.0	ug/l	(a)

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%	34%	15-110%
4165-62-2	Phenol-d5	43%	37%	15-110%
118-79-6	2,4,6-Tribromophenol	88%	80%	15-110%
4165-60-0	Nitrobenzene-d5	76%	68%	30-130%
321-60-8	2-Fluorobiphenyl	74%	70%	30-130%
1718-51-0	Terphenyl-d14	88%	80%	30-130%

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

(a) Result is from Run# 2

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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9148.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
Run #2	U9175.D	10	08/13/12	NS	08/08/12	OP29962	MSU508

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.98	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.30	0.10	0.013	ug/l	
120-12-7	Anthracene	0.11	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	0.21	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	0.098	0.10	0.017	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.050	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	0.099	0.10	0.073	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	0.066	0.10	0.033	ug/l	J
86-73-7	Fluorene	1.5	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	59.6	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	79.0	0.20	0.052	ug/l	
91-20-3	Naphthalene	150 [a]	1.0	0.36	ug/l	
85-01-8	Phenantbrene	1.1	0.050	0.013	ug/l	
129-00-0	Pyrene	0.21 J	0.10	0.036	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%	82%	30-130%
321-60-8	2-Fluorobiphenyl	80%	81%	30-130%
1718-51-0	Terphenyl-d14	96%	103%	30-130%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P58-ROX-080612-DUP		
Lab Sample ID:	MC12905-8	Date Sampled:	08/06/12
Matrix:	AQ - Ground Water	Date Received:	08/07/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15930.D	1	08/10/12	AP	08/08/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.0 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ng/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	105%		36-173%
460-00-4	Bromofluorobenzene (S)	101%		36-173%

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 England ACCUTEST LABORATORIES

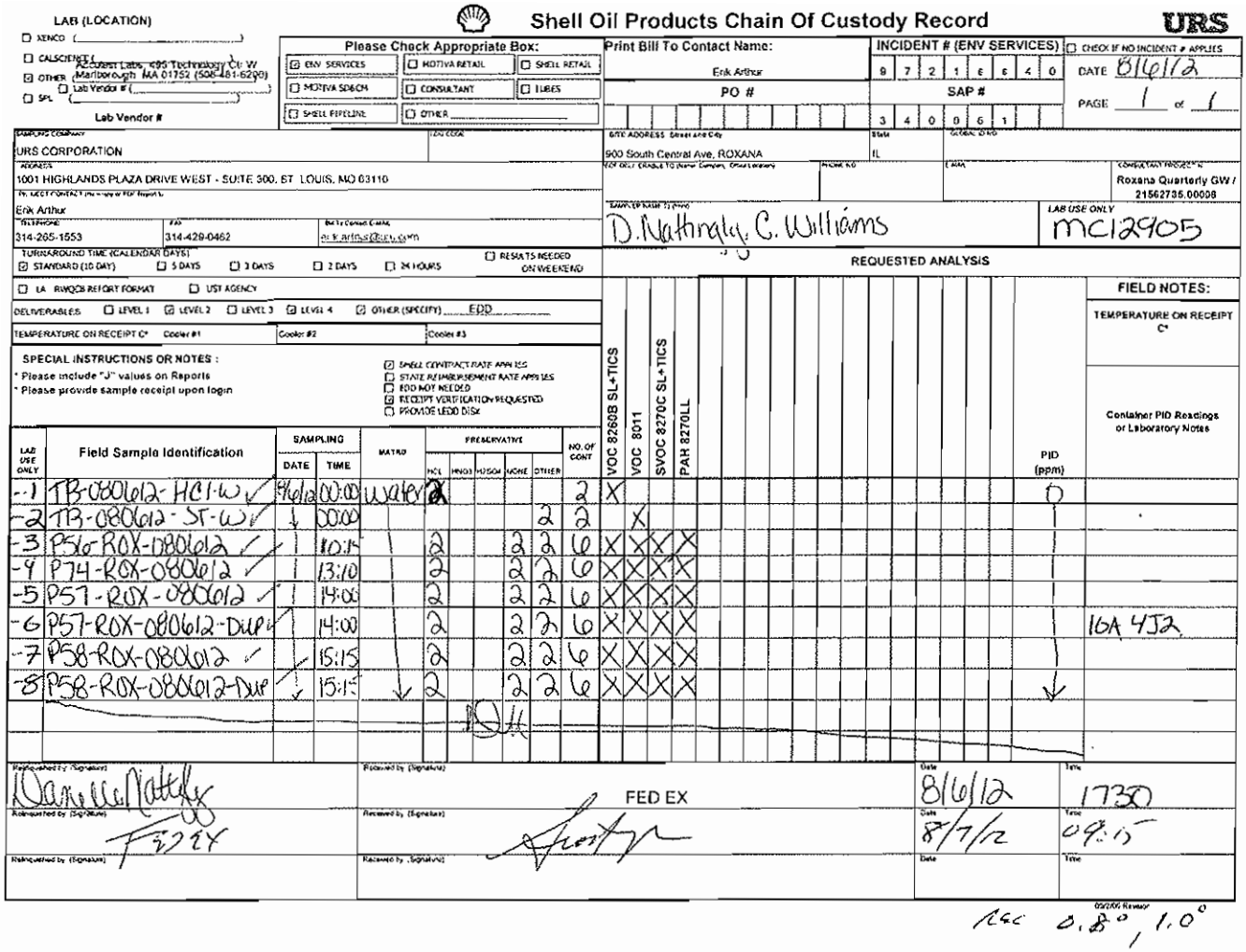
Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

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



Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER Accutest Labs, 495 Technology Ct W, Marlborough MA 01752 (508-481-6290)
☐ SPL (_____)
☐ Lab Vendor # (_____)
Lab Vendor #

Please Check Appropriate Box:
☑ ENV. SERVICES | ☐ MOTIVA RETAIL | ☐ SHELL RETAIL
☐ MOTIVA S&DCM | ☐ CONSULTANT | ☐ TUBES
☐ SHELL PIPELINE | ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur
PO #
INCIDENT # (ENV SERVICES) 9 7 2 1 6 6 4 0 | ☐ CHECK IF NO INCIDENT # APPLIES
SAP # 3 4 0 0 6 1
DATE 8/6/12
PAGE 1 of 1

SAMPLING COMPANY: URS CORPORATION
ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110
PROJ. MGR. CONTACT (for hardcopy or PDF Report): Erik Arthur
TELEPHONE: 314-265-1553 | FAX: 314-429-0462 | E-MAIL: erik.arthur@urs.com
TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA RWQCB REPORT FORMAT ☐ UST AGENCY
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SITE ADDRESS (Street and City): 900 South Central Ave, ROXANA | State: IL | Global ID No.:
PROJECT MANAGER (for Contractor Company, Consultant, Laboratory): | PHONE NO: | E-MAIL: | CONSULTANT PROJECT #: Roxana Quarterly GW / 21562735.00008
SAMPLER NAME(S) (Print): D. Nathingly, C. Williams
LAB USE ONLY: MC12905

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports
* Please provide sample receipt upon login

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	FIELD NOTES: Container PID Readings or Laboratory Notes
-1	TB-080612-HCl-W	8/6/12	00:00	water	2					2	X				0	
-2	TB-080612-ST-W	↓	0000						2	2		X				
-3	P56-ROX-080612		10:15		2			2	2	6	X	X	X	X		
-4	P74-ROX-080612		13:10		2			2	2	6	X	X	X	X		
-5	P57-ROX-080612		14:00		2			2	2	6	X	X	X	X		
-6	P57-ROX-080612-DUP		14:00		2			2	2	6	X	X	X	X		16A 4J2
-7	P58-ROX-080612		15:15		2			2	2	6	X	X	X	X		
-8	P58-ROX-080612-DUP	↓	15:15	↓	2			2	2	6	X	X	X	X	↓	

Relinquished by (Signature): D. Nathingly | Received by (Signature): FED EX | Date: 8/6/12 | Time: 1730
Relinquished by (Signature): FED EX | Received by (Signature): | Date: 8/7/12 | Time: 09:15
Relinquished by (Signature): | Received by (Signature): | Date: | Time:

05/2006 Revision

Acc 0.8° / 1.0°

5.1 5

MC12905: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12905 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/7/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL ROXANA No. Coolers: 1 Airbill #'s:

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

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

Quality Control Preservatio	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

MC12905: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12905

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12905-1 Collected: 06-AUG-12 00:00 By: DMCW Received: 07-AUG-12 By: TB-080612-HCL-W						
MC12905-1	SW846 8260B	17-AUG-12 20:09	JP			V8260SL+
MC12905-2 Collected: 06-AUG-12 00:00 By: DMCW Received: 07-AUG-12 By: TB-080612-ST-W						
MC12905-2	SW846 8011	10-AUG-12 02:32	AP	08-AUG-12	SC	V8011SL
MC12905-3 Collected: 06-AUG-12 10:15 By: DMCW Received: 07-AUG-12 By: P56-ROX-080612						
MC12905-3	SW846 8011	10-AUG-12 02:57	AP	08-AUG-12	SC	V8011SL
MC12905-3	SW846 8270C	10-AUG-12 12:55	KR	08-AUG-12	AJ	AB8270SL+
MC12905-3	SW846 8270C BY SIM	10-AUG-12 15:51	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-3	SW846 8260B	20-AUG-12 15:21	TT			V8260SL+
MC12905-4 Collected: 06-AUG-12 13:10 By: DMCW Received: 07-AUG-12 By: P74-ROX-080612						
MC12905-4	SW846 8011	10-AUG-12 03:21	AP	08-AUG-12	SC	V8011SL
MC12905-4	SW846 8270C	10-AUG-12 13:17	KR	08-AUG-12	AJ	AB8270SL+
MC12905-4	SW846 8270C BY SIM	10-AUG-12 16:14	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-4	SW846 8260B	17-AUG-12 22:02	JP			V8260SL+
MC12905-5 Collected: 06-AUG-12 14:00 By: DMCW Received: 07-AUG-12 By: P57-ROX-080612						
MC12905-5	SW846 8011	10-AUG-12 04:10	AP	08-AUG-12	SC	V8011SL
MC12905-5	SW846 8270C	10-AUG-12 13:40	KR	08-AUG-12	AJ	AB8270SL+
MC12905-5	SW846 8270C BY SIM	10-AUG-12 16:37	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-5	SW846 8260B	17-AUG-12 22:30	JP			V8260SL+
MC12905-5	SW846 8260B	20-AUG-12 12:39	AMY			V8260SL+
MC12905-6 Collected: 06-AUG-12 14:00 By: DMCW Received: 07-AUG-12 By: P57-ROX-080612-DUP						
MC12905-6	SW846 8011	10-AUG-12 04:34	AP	08-AUG-12	SC	V8011SL
MC12905-6	SW846 8270C	10-AUG-12 14:03	KR	08-AUG-12	AJ	AB8270SL+

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12905

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12905-6	SW846 8270C BY SIM	10-AUG-12 16:59	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-6	SW846 8260B	17-AUG-12 21:06	JP			V8260SL+
MC12905-6	SW846 8260B	20-AUG-12 13:07	AMY			V8260SL+
MC12905-7 Collected: 06-AUG-12 15:15 By: DMCW Received: 07-AUG-12 By: P58-ROX-080612						
MC12905-7	SW846 8011	10-AUG-12 04:59	AP	08-AUG-12	SC	V8011SL
MC12905-7	SW846 8270C	10-AUG-12 14:48	KR	08-AUG-12	AJ	AB8270SL+
MC12905-7	SW846 8270C BY SIM	10-AUG-12 21:11	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-7	SW846 8270C BY SIM	13-AUG-12 14:59	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-7	SW846 8260B	17-AUG-12 22:58	JP			V8260SL+
MC12905-7	SW846 8260B	20-AUG-12 13:35	AMY			V8260SL+
MC12905-8 Collected: 06-AUG-12 15:15 By: DMCW Received: 07-AUG-12 By: P58-ROX-080612-DUP						
MC12905-8	SW846 8011	10-AUG-12 05:23	AP	08-AUG-12	SC	V8011SL
MC12905-8	SW846 8270C	10-AUG-12 15:11	KR	08-AUG-12	AJ	AB8270SL+
MC12905-8	SW846 8270C BY SIM	10-AUG-12 21:34	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-8	SW846 8270C BY SIM	13-AUG-12 15:23	NS	08-AUG-12	AJ	B8270SIMPAH
MC12905-8	SW846 8260B	17-AUG-12 23:27	JP			V8260SL+
MC12905-8	SW846 8260B	20-AUG-12 14:03	AMY			V8260SL+
MC12905-8	SW846 8270C	21-AUG-12 11:55	KR	08-AUG-12	AJ	AB8270SL+

Accutest Internal Chain of Custody

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/07/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12905-1.1	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-1.1	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrnment
MC12905-1.1	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-1.1	Daua Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-2.1	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-2.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-3.1	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-3.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-3.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-3.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-3.5	VOC Ref #4	Amy Min Yang	08/20/12 11:29	Retrieve from Storage
MC12905-3.5	Amy Min Yang	GCMSV	08/20/12 11:29	Load on Instrument
MC12905-3.5	GCMSV	Amy Min Yang	08/22/12 13:24	Unload from Instrnment
MC12905-3.5	Amy Min Yang	VOC Ref #4	08/22/12 13:25	Return to Storage
MC12905-3.6	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-3.6	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-3.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-3.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Retnrn to Storage
MC12905-4.2	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-4.2	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-4.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-4.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-4.5	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12905-4.5	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12905-4.5	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12905-4.5	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrnment
MC12905-4.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-4.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-4.6	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-4.6	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-4.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-4.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-5.2	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-5.2	Nick Krasinski		08/08/12 23:10	Depleted

5.3
5

Accutest Internal Chain of Custody

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/07/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12905-5.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-5.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-5.5	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-5.5	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-5.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-5.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-5.6	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12905-5.6	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12905-5.6	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12905-5.6	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12905-5.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-5.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-6.1	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-6.1	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-6.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-6.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-6.5	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12905-6.5	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12905-6.5	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12905-6.5	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12905-6.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-6.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-6.6	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-6.6	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-6.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-6.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-7.2	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-7.2	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-7.3	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-7.3	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-7.5	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-7.5	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-7.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-7.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage

5.3
5

Accutest Internal Chain of Custody

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/07/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12905-7.6	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12905-7.6	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12905-7.6	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12905-7.6	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12905-7.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-7.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-8.2	Walk In Ref #22	Nick Krasinski	08/08/12 14:48	Retrieve from Storage
MC12905-8.2	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-8.4	VOC Ref #4	Nick Krasinski	08/08/12 14:44	Retrieve from Storage
MC12905-8.4	Nick Krasinski		08/08/12 23:10	Depleted
MC12905-8.5	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12905-8.5	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12905-8.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-8.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12905-8.6	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12905-8.6	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12905-8.6	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12905-8.6	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12905-8.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12905-8.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ng/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	85%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

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

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-MB	P63624.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorohenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-MB	P63624.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanoue	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Tricbloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-MB	P63624.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	119%	70-130%

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

6.1.2

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-MB	N66838.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

6.1.3

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-BS	P63621.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	48.2	96	70-130
107-02-8	Acrolein	250	211	84	70-130
107-13-1	Acrylonitrile	50	50.6	101	70-130
71-43-2	Benzene	50	48.0	96	70-130
108-86-1	Bromobenzene	50	52.8	106	70-130
74-97-5	Bromochloromethane	50	55.2	110	70-130
75-27-4	Bromodichloromethane	50	49.9	100	70-130
75-25-2	Bromoform	50	46.5	93	70-130
74-83-9	Bromomethane	50	49.9	100	70-130
78-93-3	2-Butanone (MEK)	50	49.3	99	70-130
104-51-8	n-Butylbenzene	50	54.4	109	70-130
135-98-8	sec-Butylbenzene	50	58.9	118	70-130
98-06-6	tert-Butylbenzene	50	57.9	116	70-130
75-15-0	Carbon disulfide	50	45.0	90	70-130
56-23-5	Carbon tetrachloride	50	50.1	100	70-130
108-90-7	Chlorobenzene	50	54.8	110	70-130
75-00-3	Chloroethane	50	45.1	90	70-130
110-75-8	2-Chloroethyl vinyl ether	50	37.5	75	70-130
67-66-3	Chloroform	50	49.7	99	70-130
74-87-3	Chloromethane	50	50.3	101	70-130
95-49-8	o-Chlorotoluene	50	55.3	111	70-130
106-43-4	p-Chlorotoluene	50	57.0	114	70-130
124-48-1	Dibromochloromethane	50	52.3	105	70-130
95-50-1	1,2-Dichlorobenzene	50	55.3	111	70-130
541-73-1	1,3-Dichlorobenzene	50	54.3	109	70-130
106-46-7	1,4-Dichlorobenzene	50	52.3	105	70-130
75-71-8	Dichlorodifluoromethane	50	61.6	123	70-130
75-34-3	1,1-Dichloroethane	50	49.5	99	70-130
107-06-2	1,2-Dichloroethane	50	49.1	98	70-130
75-35-4	1,1-Dichloroethene	50	48.7	97	70-130
156-59-2	cis-1,2-Dichloroethene	50	49.4	99	70-130
156-60-5	trans-1,2-Dichloroethene	50	47.9	96	70-130
78-87-5	1,2-Dichloropropane	50	51.1	102	70-130
142-28-9	1,3-Dichloropropane	50	53.1	106	70-130
594-20-7	2,2-Dichloropropane	50	34.9	70	70-130
563-58-6	1,1-Dichloropropene	50	53.4	107	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-BS	P63621.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	43.6	87	70-130
10061-02-6	trans-1,3-Dichloropropene	50	45.2	90	70-130
123-91-1	1,4-Dioxane	250	248	99	70-130
97-63-2	Ethyl methacrylate	50	47.1	94	77-137
100-41-4	Ethylbenzene	50	52.9	106	70-130
87-68-3	Hexachlorobutadiene	50	51.2	102	70-130
591-78-6	2-Hexanone	50	52.3	105	70-130
98-82-8	Isopropylbenzene	50	57.8	116	70-130
99-87-6	p-Isopropyltoluene	50	56.2	112	70-130
1634-04-4	Methyl Tert Butyl Ether	50	47.4	95	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	48.9	98	70-130
74-95-3	Methylene bromide	50	51.0	102	70-130
75-09-2	Methylene chloride	50	46.3	93	70-130
103-65-1	n-Propylbenzene	50	57.6	115	70-130
100-42-5	Styrene	50	55.1	110	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	55.3	111	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.5	101	70-130
127-18-4	Tetrachloroethene	50	54.1	108	70-130
108-88-3	Tolnene	50	51.3	103	70-130
87-61-6	1,2,3-Trichlorobenzene	50	53.0	106	70-130
120-82-1	1,2,4-Trichlorobenzene	50	50.1	100	70-130
71-55-6	1,1,1-Trichloroethane	50	49.0	98	70-130
79-00-5	1,1,2-Trichloroethane	50	53.4	107	70-130
79-01-6	Trichloroethene	50	52.8	106	70-130
75-69-4	Trichlorofluoromethane	50	50.8	102	70-130
96-18-4	1,2,3-Trichloropropane	50	49.7	99	70-130
95-63-6	1,2,4-Trimethylbenzene	50	51.9	104	70-130
108-67-8	1,3,5-Trimethylbenzene	50	51.5	103	70-130
108-05-4	Vinyl Acetate	50	31.6	63* a	70-130
75-01-4	Vinyl chloride	50	47.0	94	70-130
	m,p-Xylene	100	110	110	70-130
95-47-6	o-Xylene	50	57.1	114	70-130
1330-20-7	Xylene (total)	150	167	111	70-130

* = Ontside of Control Limits.

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2072-BS	P63621.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	111%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	46.7	93	50.9	102	9	70-130/25
107-02-8	Acrolein	250	370	148* a	410	164* a	10	70-130/25
107-13-1	Acrylonitrile	50	223	446* b	221	442* b	1	70-130/25
71-43-2	Benzene	50	46.9	94	47.5	95	1	70-130/25
108-86-1	Bromobenzene	50	49.0	98	54.0	108	10	70-130/25
74-97-5	Bromochloromethane	50	47.3	95	46.9	94	1	70-130/25
75-27-4	Bromodichloromethane	50	47.2	94	46.7	93	1	70-130/25
75-25-2	Bromoform	50	53.8	108	53.1	106	1	70-130/25
74-83-9	Bromomethane	50	56.7	113	63.5	127	11	70-130/25
78-93-3	2-Butanone (MEK)	50	44.3	89	43.3	87	2	70-130/25
104-51-8	n-Bntylbenzene	50	47.1	94	48.8	98	4	70-130/25
135-98-8	sec-Butylbenzene	50	53.5	107	55.4	111	3	70-130/25
98-06-6	tert-Butylbenzene	50	50.3	101	53.6	107	6	70-130/25
75-15-0	Carbon disulfide	50	42.5	85	46.3	93	9	70-130/25
56-23-5	Carbon tetrachloride	50	51.1	102	48.9	98	4	70-130/25
108-90-7	Chlorobenzene	50	56.0	112	56.9	114	2	70-130/25
75-00-3	Chloroethane	50	42.2	84	49.1	98	15	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	47.0	94	48.0	96	2	70-130/25
67-66-3	Chloroform	50	41.4	83	42.3	85	2	70-130/25
74-87-3	Chloromethane	50	57.7	115	62.0	124	7	70-130/25
95-49-8	o-Chlorotoluene	50	48.2	96	52.2	104	8	70-130/25
106-43-4	p-Chlorotoluene	50	49.4	99	54.8	110	10	70-130/25
124-48-1	Dibromochloromethane	50	56.4	113	56.9	114	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.4	103	51.8	104	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	51.4	103	53.6	107	4	70-130/25
106-46-7	1,4-Dicblorobenzene	50	49.7	99	51.7	103	4	70-130/25
75-71-8	Dichlorodifluoromethane	50	58.9	118	65.7	131* a	11	70-130/25
75-34-3	1,1-Dichloroethane	50	44.2	88	43.4	87	2	70-130/25
107-06-2	1,2-Dichloroethane	50	44.8	90	42.8	86	5	70-130/25
75-35-4	1,1-Dichloroethene	50	46.0	92	50.9	102	10	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	46.1	92	46.5	93	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	46.3	93	45.8	92	1	70-130/25
78-87-5	1,2-Dichloropropane	50	46.7	93	47.7	95	2	70-130/25
142-28-9	1,3-Dichloropropane	50	47.3	95	48.9	98	3	70-130/25
594-20-7	2,2-Dichloropropane	50	45.2	90	45.6	91	1	70-130/25
563-58-6	1,1-Dichloropropene	50	47.9	96	46.6	93	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	54.2	108	50.2	100	8	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.6	103	48.3	97	7	70-130/25
123-91-1	1,4-Dioxane	250	285	114	241	96	17	70-130/25
97-63-2	Ethyl methacrylate	50	55.4	111	50.7	101	9	77-137/25
100-41-4	Ethylbenzene	50	49.3	99	51.3	103	4	70-130/25
87-68-3	Hexachlorobutadiene	50	50.6	101	55.9	112	10	70-130/25
591-78-6	2-Hexanone	50	52.9	106	51.0	102	4	70-130/25
98-82-8	Isopropylbenzene	50	52.2	104	56.0	112	7	70-130/25
99-87-6	p-Isopropyltoluene	50	54.5	109	56.5	113	4	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	47.0	94	46.5	93	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.1	104	46.1	92	12	70-130/25
74-95-3	Methylene bromide	50	50.2	100	49.6	99	1	70-130/25
75-09-2	Methylene chloride	50	42.4	85	46.7	93	10	70-130/25
103-65-1	n-Propylbenzene	50	51.2	102	56.2	112	9	70-130/25
100-42-5	Styrene	50	55.6	111	57.2	114	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.3	107	53.7	107	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	48.7	97	49.5	99	2	70-130/25
127-18-4	Tetrachloroethene	50	54.2	108	56.6	113	4	70-130/25
108-88-3	Toluene	50	52.4	105	50.1	100	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	48.1	96	52.3	105	8	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	48.5	97	52.4	105	8	70-130/25
71-55-6	1,1,1-Trichloroethane	50	41.0	82	45.0	90	9	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.9	96	45.1	90	6	70-130/25
79-01-6	Trichloroethene	50	45.8	92	46.7	93	2	70-130/25
75-69-4	Trichlorofluoromethane	50	36.8	74	41.6	83	12	70-130/25
96-18-4	1,2,3-Tricbloropropane	50	48.3	97	48.0	96	1	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.8	100	52.7	105	6	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	48.0	96	51.8	104	8	70-130/25
108-05-4	Vinyl Acetate	50	55.2	110	55.8	112	1	70-130/25
75-01-4	Vinyl chloride	50	47.3	95	51.8	104	9	70-130/25
	m,p-Xylene	100	109	109	111	111	2	70-130/25
95-47-6	o-Xylene	50	57.5	115	59.6	119	4	70-130/25
1330-20-7	Xylene (total)	150	166	111	171	114	3	70-130/25

* = Outside of Control Limits.

6.3.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	82%	83%	70-130%
2037-26-5	Toluene-D8	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	87%	96%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

6.3.1

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-BS	N66835.D	1	08/20/12	AMY	n/a	n/a	MSN2514
MSN2514-BSD	N66836.D	1	08/20/12	AMY	n/a	n/a	MSN2514

6.3.2

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

MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	47.4	95	42.2	84	12	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	90%	70-130%
2037-26-5	Toluene-D8	98%	97%	70-130%
460-00-4	4-Bromofluorobenzene	93%	96%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

6.4.1

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		500	777	155* [a]	815	163* [a]	5	70-130/30
107-02-8	Acrolein	ND		2500	3920	157* [a]	3950	158* [a]	1	70-130/30
107-13-1	Acrylonitrile	ND		500	2310	462* [b]	2160	432* [b]	7	70-130/30
71-43-2	Benzene	13.1		500	478	93	477	93	0	70-130/30
108-86-1	Bromobenzene	ND		500	486	97	493	99	1	70-130/30
74-97-5	Bromochloromethane	ND		500	464	93	465	93	0	70-130/30
75-27-4	Bromodichloromethane	ND		500	438	88	445	89	2	70-130/30
75-25-2	Bromoform	ND		500	498	100	503	101	1	70-130/30
74-83-9	Bromomethane	ND		500	541	108	567	113	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		500	433	87	456	91	5	70-130/30
104-51-8	n-Butylbenzene	1.5	J	500	474	95	494	99	4	70-130/30
135-98-8	sec-Butylbenzene	2.7	J	500	533	106	551	110	3	70-130/30
98-06-6	tert-Butylbenzene	ND		500	499	100	507	101	2	70-130/30
75-15-0	Carbon disulfide	ND		500	434	87	435	87	0	70-130/30
56-23-5	Carbon tetrachloride	ND		500	483	97	470	94	3	70-130/30
108-90-7	Chlorobenzene	ND		500	557	111	554	111	1	70-130/30
75-00-3	Chloroethane	ND		500	444	89	435	87	2	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		500	466	93	460	92	1	70-130/30
67-66-3	Chloroform	ND		500	397	79	404	81	2	70-130/30
74-87-3	Chloromethane	ND		500	534	107	569	114	6	70-130/30
95-49-8	o-Chlorotoluene	ND		500	472	94	485	97	3	70-130/30
106-43-4	p-Chlorotoluene	ND		500	483	97	503	101	4	70-130/30
124-48-1	Dibromochloromethane	ND		500	543	109	544	109	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		500	503	101	527	105	5	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		500	503	101	519	104	3	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		500	482	96	495	99	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND		500	634	127	615	123	3	70-130/30
75-34-3	1,1-Dichloroethane	ND		500	416	83	419	84	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		500	420	84	417	83	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		500	471	94	467	93	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		500	430	86	446	89	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		500	448	90	440	88	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		500	463	93	457	91	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		500	459	92	469	94	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		500	425	85	435	87	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		500	457	91	460	92	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		500	494	99	482	96	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		500	456	91	463	93	2	70-130/30
123-91-1	1,4-Dioxane	ND		2500	2520	101	2410	96	4	70-130/30
97-63-2	Ethyl methacrylate	ND		500	490	98	493	99	1	72-139/30
100-41-4	Ethylbenzene	0.65	J	500	501	100	493	98	2	70-130/30
87-68-3	Hexachlorobutadiene	ND		500	510	102	552	110	8	70-130/30
591-78-6	2-Hexanone	ND		500	505	101	523	105	4	70-130/30
98-82-8	Isopropylbenzene	17.3		500	540	105	546	106	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		500	535	107	553	111	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		500	451	90	477	95	6	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		500	479	96	502	100	5	70-130/30
74-95-3	Methylene bromide	ND		500	464	93	472	94	2	70-130/30
75-09-2	Methylene chloride	ND		500	409	82	414	83	1	70-130/30
103-65-1	n-Propylbenzene	13.7		500	530	103	538	105	1	70-130/30
100-42-5	Styrene	ND		500	550	110	550	110	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		500	532	106	519	104	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		500	473	95	501	100	6	70-130/30
127-18-4	Tetrachloroethene	ND		500	558	112	536	107	4	70-130/30
108-88-3	Toluene	0.93	J	500	482	96	483	96	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		500	490	98	526	105	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		500	489	98	522	104	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		500	411	82	405	81	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		500	438	88	440	88	0	70-130/30
79-01-6	Trichloroethene	ND		500	452	90	446	89	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		500	378	76	371	74	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		500	456	91	482	96	6	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		500	490	98	498	100	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		500	470	94	478	96	2	70-130/30
108-05-4	Vinyl Acetate	ND		500	528	106	572	114	8	70-130/30
75-01-4	Vinyl chloride	ND		500	470	94	467	93	1	70-130/30
	m,p-Xylene	3.3		1000	1140	114	1120	112	2	70-130/30
95-47-6	o-Xylene	0.61	J	500	592	118	577	115	3	70-130/30
1330-20-7	Xylene (total)	3.9		1500	1740	116	1700	113	2	70-130/30

* = Outside of Control Limits.

6.4.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12905-1, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Surrogate Recoveries	MS	MSD	MC12870-4	Limits
1868-53-7	Dibromofluoromethane	82%	81%	82%	70-130%
2037-26-5	Toluene-D8	97%	94%	96%	70-130%
460-00-4	4-Bromofluorobenzene	89%	92%	89%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13089-8MS	P63643.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8MSD	P63644.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8	P63626.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	MC13089-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	222	89	236	94	6	70-130/30
107-02-8	Acrolein	ND		1250	1200	96	1290	103	7	70-130/30
107-13-1	Acrylonitrile	ND		250	240	96	258	103	7	70-130/30
71-43-2	Benzene	ND		250	228	91	236	94	3	70-130/30
108-86-1	Bromobenzene	ND		250	239	96	265	106	10	70-130/30
74-97-5	Bromochloromethane	ND		250	242	97	260	104	7	70-130/30
75-27-4	Bromodichloromethane	ND		250	236	94	247	99	5	70-130/30
75-25-2	Bromoform	ND		250	217	87	233	93	7	70-130/30
74-83-9	Bromomethane	ND		250	173	69* [a]	198	79	13	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	216	86	246	98	13	70-130/30
104-51-8	n-Butylbenzene	ND		250	243	97	270	108	11	70-130/30
135-98-8	sec-Butylbenzene	ND		250	263	105	291	116	10	70-130/30
98-06-6	tert-Butylbenzene	ND		250	264	106	287	115	8	70-130/30
75-15-0	Carbon disulfide	ND		250	193	77	206	82	7	70-130/30
56-23-5	Carbon tetrachloride	ND		250	228	91	234	94	3	70-130/30
108-90-7	Chlorobenzene	ND		250	256	102	273	109	6	70-130/30
75-00-3	Chloroethane	ND		250	206	82	211	84	2	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	151	60* [a]	170	68* [a]	12	70-130/30
67-66-3	Chloroform	ND		250	241	96	250	100	4	70-130/30
74-87-3	Chloromethane	ND		250	209	84	224	90	7	70-130/30
95-49-8	o-Chlorotoluene	ND		250	256	102	280	112	9	70-130/30
106-43-4	p-Chlorotoluene	ND		250	263	105	288	115	9	70-130/30
124-48-1	Dibromochloromethane	ND		250	240	96	260	104	8	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	252	101	277	111	9	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	249	100	272	109	9	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	235	94	261	104	10	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	228	91	234	94	3	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	236	94	247	99	5	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	236	94	250	100	6	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	216	86	225	90	4	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	234	94	243	97	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	215	86	232	93	8	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	245	98	257	103	5	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	249	100	268	107	7	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	184	74	199	80	8	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	248	99	258	103	4	70-130/30

* = Outside of Control Limits.

6.4.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13089-8MS	P63643.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8MSD	P63644.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8	P63626.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Compound	MC13089-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	215	86	228	91	6	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	221	88	236	94	7	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1370	110	1370	110	0	70-130/30
97-63-2	Ethyl methacrylate	ND		250	221	88	241	96	9	72-139/30
100-41-4	Ethylbenzene	ND		250	247	99	262	105	6	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	221	88	249	100	12	70-130/30
591-78-6	2-Hexanone	ND		250	254	102	283	113	11	70-130/30
98-82-8	Isopropylbenzene	ND		250	267	107	291	116	9	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	253	101	277	111	9	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	204	82	231	92	12	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	238	95	260	104	9	70-130/30
74-95-3	Methylene bromide	ND		250	241	96	257	103	6	70-130/30
75-09-2	Methylene chloride	ND		250	216	86	225	90	4	70-130/30
103-65-1	n-Propylbenzene	ND		250	271	108	290	116	7	70-130/30
100-42-5	Styrene	ND		250	255	102	272	109	6	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	261	104	274	110	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	261	104	287	115	9	70-130/30
127-18-4	Tetrachloroethene	ND		250	254	102	265	106	4	70-130/30
108-88-3	Toluene	ND		250	242	97	255	102	5	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	232	93	265	106	13	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	219	88	247	99	12	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	232	93	240	96	3	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	255	102	268	107	5	70-130/30
79-01-6	Trichloroethene	ND		250	234	94	247	99	5	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	212	85	220	88	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	244	98	270	108	10	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	240	96	261	104	8	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	238	95	260	104	9	70-130/30
108-05-4	Vinyl Acetate	ND		250	236	94	252	101	7	70-130/30
75-01-4	Vinyl chloride	ND		250	189	76	207	83	9	70-130/30
	m,p-Xylene	ND		500	514	103	547	109	6	70-130/30
95-47-6	o-Xylene	ND		250	269	108	283	113	5	70-130/30
1330-20-7	Xylene (total)	ND		750	784	105	831	111	6	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13089-8MS	P63643.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8MSD	P63644.D	5	08/20/12	TT	n/a	n/a	MSP2072
MC13089-8	P63626.D	1	08/20/12	TT	n/a	n/a	MSP2072

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

MC12905-3

CAS No.	Surrogate Recoveries	MS	MSD	MC13089-8	Limits
1868-53-7	Dibromofluoromethane	92%	97%	91%	70-130%
2037-26-5	Toluene-D8	98%	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	107%	115%	112%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

6.4.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12944-15MS	N66855.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15MSD	N66856.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15	N66847.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12944-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	204	82	202	81	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	MC12944-15	Limits
1868-53-7	Dibromofluoromethane	85%	88%	93%	70-130%
2037-26-5	Toluene-D8	96%	97%	94%	70-130%
460-00-4	4-Bromofluorobenzene	94%	93%	100%	70-130%

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Check Std:	MSN2512-CC2468	Injection Date:	08/17/12
Lab File ID:	N66782.D	Injection Time:	13:54
Instrument ID:	GCMSN	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	152398	9.02	231186	9.89	113397	13.14	114179	15.70	64322	6.56
Upper Limit [a]	304796	9.52	462372	10.39	226794	13.64	228358	16.20	128644	7.06
Lower Limit [b]	76199	8.52	115593	9.39	56699	12.64	57090	15.20	32161	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2512-BS	168359	9.02	240070	9.89	131037	13.14	127328	15.70	61307	6.56
MSN2512-BSD	149437	9.02	248165	9.89	123957	13.14	115078	15.70	55717	6.56
MSN2512-MB	160331	9.02	240599	9.89	119577	13.15	95607	15.70	52979	6.57
ZZZZZZ	141818	9.02	220974	9.89	108889	13.15	90986	15.71	48285	6.58
ZZZZZZ	161924	9.02	241742	9.89	123121	13.14	122197	15.70	61137	6.56
MC12870-4	172211	9.02	257763	9.89	127732	13.15	125716	15.70	53392	6.57
MC12870-4MS	169372	9.02	254380	9.89	127924	13.14	126190	15.70	67500	6.56
MC12870-4MSD	167570	9.02	256902	9.89	130163	13.15	122765	15.70	65039	6.57
MC12905-1	168232	9.02	255625	9.89	122507	13.15	113092	15.70	58241	6.57
ZZZZZZ	162723	9.02	246607	9.89	119504	13.15	108680	15.71	58589	6.57
MC12905-6	165338	9.03	308089	9.90	146653	13.14	142458	15.70	66476	6.56
MC12905-4	185538	9.02	282422	9.89	134586	13.15	128702	15.70	63908	6.57
MC12905-5	188683	9.02	292377	9.89	136531	13.15	127541	15.70	71167	6.57
MC12905-7	190386	9.02	312657	9.89	145931	13.15	135350	15.70	70801	6.57
MC12905-8	205011	9.02	332909	9.89	155770	13.14	145381	15.70	69451	6.56
ZZZZZZ	209507	9.03	349371	9.90	158586	13.14	147822	15.70	72286	6.56
ZZZZZZ	197163	9.02	330863	9.89	154875	13.15	139946	15.70	74190	6.56
ZZZZZZ	211551	9.02	348439	9.89	158491	13.15	148021	15.70	77402	6.56
ZZZZZZ	202409	9.02	313303	9.89	143668	13.15	130293	15.70	73049	6.57

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

(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.

6.5.1

Volatile Internal Standard Area Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2514-CC2468	Injection Date:	08/20/12
Lab File ID:	N66835.D	Injection Time:	08:49
Instrument ID:	GCMSN	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	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
Upper Limit [a]	238570	9.52	355844	10.39	202392	13.65	187186	16.20	96770	7.06
Lower Limit [b]	59643	8.52	88961	9.39	50598	12.65	46797	15.20	24193	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2514-BS	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
MSN2514-BSD	131527	9.02	194742	9.89	104163	13.15	97420	15.70	51745	6.56
MSN2514-MB	116175	9.02	175016	9.89	91498	13.15	82202	15.70	53764	6.57
ZZZZZZ	110387	9.02	161728	9.89	85841	13.15	72844	15.71	51759	6.57
ZZZZZZ	103985	9.02	152724	9.89	81698	13.14	79453	15.70	42536	6.57
ZZZZZZ	120794	9.02	180937	9.88	102916	13.15	99655	15.70	52693	6.56
ZZZZZZ	132300	9.02	196454	9.89	102351	13.15	88889	15.70	51415	6.56
MC12905-5	128302	9.02	189196	9.89	98361	13.15	84824	15.70	53230	6.57
MC12905-6	115479	9.02	171824	9.89	90654	13.15	77410	15.70	44901	6.57
MC12905-7	118516	9.02	173218	9.89	90126	13.15	75951	15.70	44246	6.57
MC12905-8	114874	9.02	171628	9.89	90059	13.15	79557	15.70	41446	6.57
MC12944-15	107209	9.02	160640	9.89	81210	13.15	71103	15.70	41687	6.57
ZZZZZZ	106676	9.01	163106	9.89	86273	13.15	71137	15.70	45130	6.56
ZZZZZZ	107118	9.02	158683	9.89	85706	13.15	74032	15.70	40817	6.57
ZZZZZZ	107424	9.02	161341	9.89	85386	13.15	71739	15.70	43608	6.57
ZZZZZZ	108875	9.02	168961	9.88	97176	13.15	99551	15.70	43349	6.56
MC12944-15MS	143688	9.02	210891	9.89	114622	13.15	105761	15.70	56406	6.56
MC12944-15MSD	140640	9.01	209077	9.88	108708	13.15	104319	15.70	55543	6.56
ZZZZZZ	139105	9.02	208838	9.89	105188	13.14	94258	15.70	55629	6.56
ZZZZZZ	132779	9.02	201615	9.89	102905	13.15	90402	15.70	48467	6.57

IS 1 = Pentaflnorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Bntyl Alcohol-D9

(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.

6.5.2

Volatile Internal Standard Area Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSP2072-CC2072	Injection Date:	08/20/12
Lab File ID:	P63620.D	Injection Time:	07:22
Instrument ID:	GCMSP	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	620319	8.25	988758	9.09	506459	12.31	442665	14.87	155840	5.93
Upper Limit [a]	1240638	8.75	1977516	9.59	1012918	12.81	885330	15.37	311680	6.43
Lower Limit [b]	310160	7.75	494379	8.59	253230	11.81	221333	14.37	77920	5.43
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSP2072-BS	646165	8.25	1027686	9.09	524709	12.31	450928	14.87	148276	5.93
MSP2072-MB	617134	8.25	969082	9.10	467774	12.32	378328	14.87	156439	5.94
ZZZZZZ	641595	8.25	1009731	9.10	490625	12.31	399798	14.87	155698	5.94
MC13089-8	624763	8.25	991557	9.10	484555	12.32	391732	14.87	198960	5.94
ZZZZZZ	608344	8.25	963881	9.10	473597	12.32	381671	14.87	212856	5.95
ZZZZZZ	598403	8.25	959157	9.10	473436	12.32	386213	14.87	161937	5.94
ZZZZZZ	617310	8.25	973918	9.10	480357	12.32	379296	14.87	150919	5.95
ZZZZZZ	614678	8.25	967981	9.10	473780	12.32	381894	14.87	157990	5.95
ZZZZZZ	587065	8.25	932162	9.10	456566	12.32	365272	14.87	160901	5.95
ZZZZZZ	593989	8.25	943951	9.10	462593	12.32	362027	14.87	148068	5.95
ZZZZZZ	593904	8.25	935605	9.10	461820	12.32	368254	14.87	161780	5.94
ZZZZZZ	586590	8.25	936537	9.10	457075	12.32	370530	14.87	141003	5.97
ZZZZZZ	598658	8.25	949938	9.10	465139	12.32	369692	14.87	155021	5.97
ZZZZZZ	569592	8.25	901725	9.10	443666	12.32	351568	14.87	144466	5.95
MC12905-3	623617	8.25	981159	9.10	480626	12.31	396946	14.87	181460	5.96
ZZZZZZ	599300	8.25	946407	9.10	484870	12.31	423666	14.87	162747	5.95
ZZZZZZ	703055	8.25	1088471	9.10	514028	12.32	401755	14.87	233196	5.94
ZZZZZZ	723282	8.25	1124081	9.10	543376	12.31	434871	14.87	289351	5.94
ZZZZZZ	580557	8.25	932941	9.10	454677	12.31	389395	14.87	156781	5.95
MC13089-8MS	626849	8.25	1000685	9.09	519190	12.31	453510	14.87	160940	5.95
MC13089-8MSD	611342	8.25	974036	9.10	497495	12.31	422137	14.87	159497	5.94

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 miuutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12905-1	N66795.D	81.0	94.0	93.0
MC12905-3	P63637.D	86.0	93.0	108.0
MC12905-4	N66799.D	76.0	95.0	91.0
MC12905-5	N66843.D	90.0	95.0	102.0
MC12905-5	N66800.D	78.0	95.0	92.0
MC12905-6	N66844.D	92.0	96.0	100.0
MC12905-6	N66797.D	81.0	93.0	88.0
MC12905-7	N66845.D	91.0	97.0	100.0
MC12905-7	N66801.D	78.0	93.0	95.0
MC12905-8	N66846.D	92.0	97.0	98.0
MC12905-8	N66802.D	75.0	92.0	92.0
MC12870-4MS	N66792.D	82.0	97.0	89.0
MC12870-4MSD	N66793.D	81.0	94.0	92.0
MC12944-15MS	N66855.D	85.0	96.0	94.0
MC12944-15MSD	N66856.D	88.0	97.0	93.0
MC13089-8MS	P63643.D	92.0	98.0	107.0
MC13089-8MSD	P63644.D	97.0	102.0	115.0
MSN2512-BS	N66783.D	82.0	102.0	87.0
MSN2512-BSD	N66784.D	83.0	97.0	96.0
MSN2512-MB	N66786.D	85.0	97.0	101.0
MSN2514-BS	N66835.D	91.0	98.0	93.0
MSN2514-BSD	N66836.D	90.0	97.0	96.0
MSN2514-MB	N66838.D	94.0	96.0	96.0
MSP2072-BS	P63621.D	96.0	102.0	111.0
MSP2072-MB	P63624.D	94.0	102.0	119.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.6.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-MB	F56721.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Diuitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitropheool	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichloropheuol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ng/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ng/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-bntyl phthalate	1.7	5.0	0.36	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	5.5	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorohenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-MB	F56721.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	37%	15-110%
4165-62-2	Phenol-d5	28%	15-110%
118-79-6	2,4,6-Trihromophenol	76%	15-110%
4165-60-0	Nitrobenzene-d5	67%	30-130%
321-60-8	2-Fluorobiphenyl	65%	30-130%
1718-51-0	Terphenyl-d14	95%	30-130%

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

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29962-MB	U9127.D	1	08/10/12	NS	08/08/12	OP29962	MSU507

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	0.058	0.10	0.036	ug/l	J
85-01-8	Phenanthrene	0.052	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	77%	30-130%
321-60-8	2-Fluorobiphenyl	67%	30-130%
1718-51-0	Terphenyl-d14	98%	30-130%

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-BS	F56723.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	29.9	30	30-130
95-57-8	2-Chlorophenol	100	66.5	67	30-130
59-50-7	4-Chloro-3-methyl phenol	100	77.1	77	30-130
120-83-2	2,4-Dichlorophenol	100	77.4	77	30-130
105-67-9	2,4-Dimethylphenol	100	72.9	73	30-130
51-28-5	2,4-Dinitrophenol	100	59.6	60	30-130
534-52-1	4,6-Dinitro-o-cresol	100	81.1	81	30-130
95-48-7	2-Methylphenol	100	61.4	61	30-130
	3&4-Methylphenol	200	116	58	30-130
88-75-5	2-Nitrophenol	100	79.0	79	30-130
100-02-7	4-Nitrophenol	100	34.5	35	30-130
87-86-5	Pentachlorophenol	100	77.2	77	30-130
108-95-2	Phenol	100	33.9	34	30-130
95-95-4	2,4,5-Trichlorophenol	100	81.7	82	30-130
88-06-2	2,4,6-Trichlorophenol	100	83.2	83	30-130
62-53-3	Aniline	50	4.9	10* a	40-140
101-55-3	4-Bromophenyl phenyl ether	50	42.2	84	40-140
85-68-7	Butyl benzyl phthalate	50	44.8	90	40-140
100-51-6	Benzyl Alcohol	50	31.7	63	40-140
91-58-7	2-Chloronaphthalene	50	39.1	78	40-140
106-47-8	4-Chloroaniline	50	15.9	32* a	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	40.5	81	40-140
111-44-4	bis(2-Chloroethyl)ether	50	37.5	75	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	40.6	81	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	41.8	84	40-140
122-66-7	1,2-Diphenylhydrazine	50	40.6	81	40-140
121-14-2	2,4-Dinitrotoluene	50	44.3	89	40-140
606-20-2	2,6-Dinitrotoluene	50	43.1	86	40-140
91-94-1	3,3'-Dichlorobenzidine	50	2.9	6* a	40-140
132-64-9	Dibenzofnran	50	39.3	79	40-140
84-74-2	Di-n-butyl phthalate	50	43.2	86	40-140
117-84-0	Di-n-octyl phthalate	50	45.1	90	40-140
84-66-2	Diethyl phthalate	50	45.6	91	40-140
131-11-3	Dimethyl phthalate	50	43.3	87	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	43.5	87	40-140
118-74-1	Hexachlorobenzene	50	41.1	82	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-BS	F56723.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	20.7	41	40-140
67-72-1	Hexachloroethane	50	25.9	52	40-140
78-59-1	Isophorone	50	40.1	80	40-140
88-74-4	2-Nitroaniline	50	42.5	85	40-140
99-09-2	3-Nitroaniline	50	36.3	73	40-140
100-01-6	4-Nitroaniline	50	39.2	78	40-140
98-95-3	Nitrobenzene	50	39.1	78	40-140
62-75-9	n-Nitrosodimethylamine	50	21.4	43	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	42.3	85	40-140
86-30-6	N-Nitrosodiphenylamine	50	42.3	85	40-140
110-86-1	Pyridine	50	5.3	11* [a]	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	43%	15-110%
4165-62-2	Phenol-d5	31%	15-110%
118-79-6	2,4,6-Tribromophenol	81%	15-110%
4165-60-0	Nitrobenzene-d5	77%	30-130%
321-60-8	2-Flnorobiphenyl	70%	30-130%
1718-51-0	Terphenyl-d14	98%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29962-BS	U9128.D	1	08/10/12	NS	08/08/12	OP29962	MSU507

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	40.2	80	40-140
208-96-8	Acenaphthylene	50	29.6	59	40-140
120-12-7	Anthracene	50	42.5	85	40-140
56-55-3	Benzo(a)anthracene	50	48.4	97	40-140
50-32-8	Benzo(a)pyrene	50	48.9	98	40-140
205-99-2	Benzo(b)fluoranthene	50	55.7	111	40-140
191-24-2	Benzo(g,h,i)perylene	50	50.6	101	40-140
207-08-9	Benzo(k)fluoranthene	50	62.1	124	40-140
218-01-9	Chrysene	50	44.2	88	40-140
53-70-3	Dibenzo(a,h)anthracene	50	52.5	105	40-140
206-44-0	Fluoranthene	50	41.9	84	40-140
86-73-7	Fluorene	50	41.8	84	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	52.2	104	40-140
90-12-0	1-Methylnaphthalene	50	31.1	62	40-140
91-57-6	2-Methylnaphthalene	50	34.4	69	40-140
91-20-3	Naphthalene	50	34.9	70	40-140
85-01-8	Phenanthrene	50	43.0	86	40-140
129-00-0	Pyrene	50	40.3	81	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	71%	30-130%
1718-51-0	Terphenyl-d14	106%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-MS	F56724.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
OP29961-MSD	F56725.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
MC12879-6	F56726.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12879-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	34.1	34	35.1	35	3	30-130/20
95-57-8	2-Chlorophenol	ND		100	66.8	67	67.6	68	1	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	78.4	78	77.6	78	1	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	75.3	75	78.2	78	4	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	72.9	73	73.8	74	1	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	67.7	68	71.1	71	5	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	87.4	87	90.0	90	3	30-130/20
95-48-7	2-Methylphenol	ND		100	61.5	62	61.9	62	1	30-130/20
	3&4-Methylphenol	ND		200	116	58	117	59	1	30-130/20
88-75-5	2-Nitrophenol	ND		100	76.8	77	78.7	79	2	30-130/20
100-02-7	4-Nitrophenol	ND		100	36.2	36	34.7	35	4	30-130/20
87-86-5	Pentachlorophenol	ND		100	80.9	81	81.3	81	0	30-130/20
108-95-2	Phenol	ND		100	33.6	34	33.8	34	1	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	81.9	82	83.8	84	2	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	83.2	83	83.7	84	1	30-130/20
62-53-3	Aniline	ND		50	2.2	4* [a]	2.8	6* [a]	24* [b]	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	42.3	85	43.0	86	2	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	45.0	90	45.1	90	0	40-140/20
100-51-6	Benzyl Alcohol	ND		50	31.5	63	31.8	64	1	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	38.6	77	39.2	78	2	40-140/20
106-47-8	4-Chloroaniline	ND		50	5.8	12* [a]	4.8	10* [a]	19	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	39.5	79	40.9	82	3	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	36.3	73	37.3	75	3	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	39.3	79	39.9	80	2	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	41.3	83	42.7	85	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	40.0	80	39.7	79	1	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	43.4	87	45.5	91	5	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	44.1	88	44.5	89	1	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	ND	0* [a]	ND	0* [a]	nc	40-140/20
132-64-9	Dibenzofuran	ND		50	39.0	78	39.3	79	1	40-140/20
84-74-2	Di-n-butyl phthalate	1.0		50	44.5	87	44.2	86	1	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	45.5	91	47.3	95	4	40-140/20
84-66-2	Diethyl phthalate	2.7		50	45.7	86	46.5	88	2	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.1	88	43.6	87	1	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	44.0	88	44.2	88	0	40-140/20
118-74-1	Hexachlorobenzene	ND		50	41.6	83	42.2	84	1	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29961-MS	F56724.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
OP29961-MSD	F56725.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695
MC12879-6	F56726.D	1	08/10/12	KR	08/08/12	OP29961	MSF2695

The QC reported here applies to the following samples: Method: SW846 8270C

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12879-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	20.0	40	20.6	41	3	40-140/20
67-72-1	Hexachloroethane	ND		50	24.9	50	24.9	50	0	40-140/20
78-59-1	Isophorone	ND		50	38.8	78	41.0	82	6	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.6	87	43.9	88	1	40-140/20
99-09-2	3-Nitroaniline	ND		50	12.7	25* [a]	3.2	6* [a]	119* [b]	40-140/20
100-01-6	4-Nitroaniline	ND		50	33.1	66	26.1	52	24* [b]	40-140/20
98-95-3	Nitrobenzene	ND		50	37.9	76	38.7	77	2	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	22.6	45	23.0	46	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	41.8	84	42.9	86	3	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	38.9	78	39.5	79	2	40-140/20
110-86-1	Pyridine	ND		50	ND	0* [a]	ND	0* [a]	nc	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-6	Limits
367-12-4	2-Fluorophenol	43%	43%	39%	15-110%
4165-62-2	Phenol-d5	31%	31%	29%	15-110%
118-79-6	2,4,6-Tribromophenol	83%	83%	76%	15-110%
4165-60-0	Nitrobenzene-d5	74%	76%	75%	30-130%
321-60-8	2-Fluorobiphenyl	70%	71%	72%	30-130%
1718-51-0	Terphenyl-d14	97%	99%	101%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29962-MS	U9129.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
OP29962-MSD	U9131.D	1	08/10/12	NS	08/08/12	OP29962	MSU507
MC12879-11	U9132.D	1	08/10/12	NS	08/08/12	OP29962	MSU507

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12879-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	40.2	80	40.8	82	1	40-140/20
208-96-8	Acenaphthylene	ND		50	29.1	58	29.6	59	2	40-140/20
120-12-7	Anthracene	ND		50	42.6	85	42.4	85	0	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	48.8	98	48.1	96	1	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	50.1	100	54.4	109	8	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	56.9	114	63.1	126	10	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	51.8	104	55.4	111	7	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	63.3	127	71.2	142* a	12	40-140/20
218-01-9	Chrysene	ND		50	44.7	89	44.6	89	0	40-140/20
53-70-3	Dibenzo(a,b)anthracene	ND		50	53.8	108	58.9	118	9	40-140/20
206-44-0	Fluoranthene	ND		50	42.0	84	42.7	85	2	40-140/20
86-73-7	Fluorene	ND		50	42.6	85	42.3	85	1	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	53.5	107	58.1	116	8	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	29.9	60	32.0	64	7	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	33.6	67	34.1	68	1	40-140/20
91-20-3	Naphthalene	ND		50	33.8	68	33.7	67	0	40-140/20
85-01-8	Phenanthrene	ND		50	44.0	88	42.9	86	3	40-140/20
129-00-0	Pyrene	ND		50	40.4	81	40.8	82	1	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-11	Limits
4165-60-0	Nitrobenzene-d5	83%	85%	84%	30-130%
321-60-8	2-Fluorobiphenyl	72%	74%	75%	30-130%
1718-51-0	Terphenyl-d14	106%	106%	105%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12905
Account: SHELLW1C Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2695-CC2682	Injection Date:	08/10/12
Lab File ID:	F56720.D	Injection Time:	08:19
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	438966	3.96	1635964	4.94	1008551	6.37	1877404	7.72	1792629	10.50	1692663	11.95
Upper Limit [a]	877932	4.46	3271928	5.44	2017102	6.87	3754808	8.22	3585258	11.00	3385326	12.45
Lower Limit [b]	219483	3.46	817982	4.44	504276	5.87	938702	7.22	896315	10.00	846332	11.45
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
OP29961-MB	420079	3.96	1531248	4.94	962022	6.36	1726147	7.72	1667190	10.49	1683558	11.95
ZZZZZZ	293377	3.95	1101634	4.94	710445	6.37	1275588	7.72	966423	10.48	1177902	11.95
OP29961-BS	438990	3.96	1589201	4.94	1001218	6.36	1832045	7.72	1687833	10.49	1625009	11.95
OP29961-MS	410459	3.95	1507280	4.94	949657	6.37	1720667	7.72	1626888	10.49	1568861	11.95
OP29961-MSD	416764	3.96	1534975	4.94	966763	6.37	1763361	7.72	1669390	10.49	1549409	11.95
MC12879-6	425852	3.95	1553995	4.94	968417	6.36	1758843	7.71	1662239	10.49	1642297	11.95
ZZZZZZ	509766	3.96	1830407	4.94	1098479	6.37	1938042	7.72	1841450	10.49	1954395	11.95
ZZZZZZ	501898	3.95	1765646	4.94	1082893	6.37	1878018	7.72	1835254	10.49	2064848	11.95
ZZZZZZ	493210	3.96	1766274	4.94	1056860	6.36	1891216	7.72	1782169	10.49	2012998	11.95
ZZZZZZ	497223	3.96	1741413	4.94	1072482	6.36	1914245	7.71	1852599	10.49	2024761	11.95
ZZZZZZ	502257	3.96	1775366	4.94	1065955	6.37	1883349	7.72	1815498	10.49	2043767	11.95
MC12905-3	426645	3.96	1499989	4.94	943969	6.36	1728317	7.72	1670086	10.49	1710510	11.95
MC12905-4	430756	3.96	1563375	4.94	980119	6.36	1774282	7.72	1689781	10.49	1708518	11.95
MC12905-5	435756	3.96	1560781	4.94	983555	6.37	1757988	7.72	1746164	10.49	1749216	11.95
MC12905-6	406587	3.96	1460286	4.94	917744	6.37	1641331	7.72	1598493	10.49	1594520	11.95
ZZZZZZ	489942	3.96	1769382	4.94	1125866	6.36	1995471	7.72	1838792	10.49	2332633	11.95
MC12905-7	409906	3.96	1470794	4.94	949924	6.37	1664136	7.72	1611564	10.49	1629625	11.95
MC12905-8	399542	3.96	1434964	4.94	907029	6.37	1593296	7.72	1561748	10.49	1530000	11.95

IS I = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphtheue-D10
IS 4 = Phenauthrene-d10
IS 5 = Chrysene-d12
1S 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: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2704-CC2682	Injection Date:	08/21/12
Lab File ID:	F56967.D	Injection Time:	08:08
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		1S 3		1S 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	333315	3.89	1267534	4.88	826367	6.30	1497194	7.65	1461016	10.43	1367929	11.88
Upper Limit [a]	666630	4.39	2535068	5.38	1652734	6.80	2994388	8.15	2922032	10.93	2735858	12.38
Lower Limit [b]	166658	3.39	633767	4.38	413184	5.80	748597	7.15	730508	9.93	683965	11.38
Lab Sample ID	1S 1 AREA	RT	IS 2 AREA	RT	1S 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	1S 6 AREA	RT
ZZZZZZ	329040	3.90	1186331	4.88	738176	6.30	1328419	7.65	1244924	10.43	1379473	11.88
ZZZZZZ	347565	3.89	1276085	4.88	812546	6.30	1487122	7.65	1317927	10.43	1450333	11.88
ZZZZZZ	349257	3.89	1279022	4.88	806144	6.30	1461918	7.64	1306402	10.42	1380326	11.88
ZZZZZZ	343365	3.89	1213786	4.88	774836	6.31	1399805	7.64	1224058	10.42	1283302	11.88
ZZZZZZ	373636	3.89	1353107	4.88	854890	6.30	1544599	7.64	1427701	10.43	1467460	11.88
ZZZZZZ	333766	3.89	1234243	4.88	790013	6.30	1420946	7.64	1257318	10.43	1349484	11.88
ZZZZZZ	354655	3.90	1288088	4.88	826346	6.30	1492047	7.64	1361632	10.42	1436349	11.88
MC12905-8	303789	3.89	1133043	4.88	723268	6.30	1347504	7.64	1391218	10.42	1526111	11.88
ZZZZZZ	366014	3.89	1313260	4.88	839591	6.30	1520308	7.64	1406505	10.42	1487111	11.88
ZZZZZZ	323374	3.89	1209463	4.88	772153	6.30	1414200	7.64	1321005	10.42	1413734	11.88
ZZZZZZ	356898	3.89	1359759	4.88	878210	6.30	1592401	7.64	1477632	10.42	1480621	11.88
ZZZZZZ	362062	3.89	1327291	4.88	851452	6.30	1584917	7.65	1492747	10.42	1584158	11.88
ZZZZZZ	355207	3.89	1343529	4.88	845349	6.30	1548599	7.64	1487885	10.42	1562848	11.88
ZZZZZZ	353613	3.89	1261128	4.88	818589	6.30	1501488	7.64	1406070	10.42	1496058	11.88
ZZZZZZ	378134	3.89	1400278	4.88	907612	6.30	1628440	7.64	1573461	10.42	1702529	11.88
ZZZZZZ	340201	3.89	1282282	4.88	836651	6.30	1597156	7.64	1589768	10.42	1722913	11.88
ZZZZZZ	344325	3.90	1260791	4.88	808474	6.30	1458347	7.64	1379657	10.42	1492744	11.88
ZZZZZZ	380168	3.89	1396378	4.88	864338	6.30	1548150	7.64	1426481	10.42	1469769	11.88
ZZZZZZ	320282	3.89	1144549	4.88	732242	6.30	1329351	7.65	1341062	10.43	1332011	11.89
ZZZZZZ	320835	3.90	1144527	4.88	719448	6.30	1324522	7.65	1343875	10.43	1352417	11.89
ZZZZZZ	305878	3.89	1096787	4.88	690257	6.31	1233210	7.65	1221830	10.43	1286190	11.89
ZZZZZZ	276252	3.90	1155507	4.90	683039	6.32	1305656	7.65	1343705	10.43	1383128	11.89
ZZZZZZ	297840	3.89	1121040	4.88	713553	6.30	1351372	7.65	1311233	10.43	1566068	11.89
ZZZZZZ	286936	3.89	1081454	4.88	698632	6.30	1293932	7.65	1268009	10.43	1482840	11.89
ZZZZZZ	296349	3.89	1086272	4.88	691083	6.30	1262144	7.65	1280772	10.43	1467983	11.89

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: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU507-CC486	Injection Date:	08/10/12
Lab File ID:	U9125.D	Injection Time:	12:47
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	66580	3.76	200009	4.74	112786	6.16	216741	7.48	151678	10.25	280566	11.69
Upper Limit [a]	133160	4.26	400018	5.24	225572	6.66	433482	7.98	303356	10.75	561132	12.19
Lower Limit [b]	33290	3.26	100005	4.24	56393	5.66	108371	6.98	75839	9.75	140283	11.19
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
ZZZZZZ	57307	3.77	171955	4.74	100142	6.16	185099	7.48	136222	10.25	257029	11.69
OP29962-MB	60926	3.76	179552	4.74	100848	6.16	189071	7.48	139637	10.25	225117	11.69
OP29962-BS	58692	3.77	169024	4.74	94450	6.16	177047	7.48	122859	10.25	198159	11.69
OP29962-MS	62894	3.77	182860	4.74	103380	6.16	196302	7.48	137127	10.25	216019	11.69
OP29962-MSD	67650	3.77	197078	4.74	109384	6.16	208455	7.48	142799	10.25	199185	11.69
MC12879-11	59493	3.76	173593	4.74	97872	6.16	182311	7.47	131874	10.25	213778	11.69
MC12905-3	67235	3.76	192553	4.74	105766	6.16	195380	7.47	138939	10.25	222117	11.69
MC12905-4	68606	3.76	197002	4.74	110317	6.16	205478	7.48	146338	10.25	232667	11.69
MC12905-5	65569	3.77	193698	4.74	108929	6.16	207152	7.48	149105	10.25	238700	11.69
MC12905-6	59786	3.77	178159	4.74	98703	6.16	185612	7.48	132099	10.25	212228	11.69
ZZZZZZ	70959	3.76	202844	4.74	111810	6.16	209190	7.48	143211	10.25	225294	11.69
ZZZZZZ	69504	3.76	196996	4.74	108992	6.16	199663	7.47	141129	10.25	220980	11.69
ZZZZZZ	70784	3.76	203864	4.74	112300	6.16	206833	7.48	146562	10.25	223847	11.69
ZZZZZZ	68038	3.76	195172	4.74	108670	6.16	200130	7.47	140028	10.25	222357	11.69
ZZZZZZ	70837	3.76	201896	4.74	114125	6.16	210415	7.48	149656	10.25	234367	11.69
ZZZZZZ	69273	3.76	201949	4.74	111480	6.16	203643	7.48	143618	10.25	228046	11.69
ZZZZZZ	71766	3.76	204722	4.74	111151	6.16	204720	7.48	144390	10.25	227130	11.69
ZZZZZZ	65237	3.76	188021	4.74	104942	6.16	195681	7.48	137615	10.25	215436	11.69
ZZZZZZ	72102	3.76	206544	4.74	112899	6.16	210363	7.47	146334	10.25	224680	11.69
ZZZZZZ	67300	3.76	198136	4.74	106606	6.16	199658	7.47	141732	10.25	220637	11.69
MC12905-7	65319	3.77	190193	4.74	102623	6.16	195626	7.48	138516	10.25	219926	11.69
MC12905-8	61085	3.77	181732	4.74	100433	6.16	189013	7.48	135972	10.25	213154	11.69

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: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	74183	3.74	215966	4.72	121568	6.14	231849	7.44	157950	10.22	287514	11.67
Upper Limit [a]	148366	4.24	431932	5.22	243136	6.64	463698	7.94	315900	10.72	575028	12.17
Lower Limit [b]	37092	3.24	107983	4.22	60784	5.64	115925	6.94	78975	9.72	143757	11.17
Lab Sample ID	IS I AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP29999-MS	71583	3.74	207520	4.72	112545	6.14	209934	7.45	83852	10.22	111938[c]	11.66
OP29999-MSD	71233	3.74	203886	4.72	109746	6.14	205650	7.44	83352	10.22	114920[c]	11.66
MC12978-4	69748	3.74	200172	4.72	109689	6.14	203795	7.44	88467	10.22	120327[c]	11.66
ZZZZZZ	72217	3.74	205369	4.72	111617	6.14	207245	7.44	92848	10.22	130035[c]	11.66
ZZZZZZ	72201	3.74	204902	4.72	112553	6.14	208471	7.44	93883	10.22	130090[c]	11.66
ZZZZZZ	68332	3.74	196326	4.72	106309	6.14	198140	7.44	91794	10.22	127541[c]	11.66
ZZZZZZ	68525	3.74	193092	4.72	106918	6.14	198831	7.44	109460	10.22	161532	11.66
ZZZZZZ	64898	3.74	184919	4.72	100976	6.14	189141	7.44	69395[c]	10.22	94469[c]	11.66
ZZZZZZ	73978	3.74	210885	4.72	115830	6.14	212901	7.44	79723	10.22	107257[c]	11.66
ZZZZZZ	64928	3.74	189697	4.72	102497	6.14	186877	7.44	71573[c]	10.22	96546[c]	11.66
MC12905-7	71004	3.74	203218	4.72	113722	6.14	213711	7.44	141576	10.22	199474	11.66
MC12905-8	70986	3.74	202204	4.72	112847	6.14	209861	7.44	144823	10.22	199711	11.66
OP29979-MB	66015	3.74	192336	4.72	106078	6.14	197204	7.44	137291	10.22	217162	11.66
OP29979-BS	63085	3.74	184334	4.72	100797	6.14	185462	7.45	126986	10.23	206580	11.66
OP29979-MS	60942	3.74	176504	4.72	98042	6.14	188532	7.45	132951	10.23	219452	11.66
OP29979-MSD	67652	3.74	194177	4.72	108229	6.14	201785	7.45	134825	10.23	173460	11.67
MC12994-2	66309	3.74	193152	4.72	106374	6.14	198533	7.44	137855	10.22	234364	11.66
ZZZZZZ	65411	3.74	188895	4.72	106106	6.14	197315	7.44	139482	10.22	230154	11.66
ZZZZZZ	64629	3.74	188478	4.72	105190	6.14	194361	7.44	138043	10.22	229882	11.66
ZZZZZZ	62752	3.74	186064	4.72	99713	6.14	183392	7.44	129195	10.22	229281	11.67
ZZZZZZ	63779	3.74	191425	4.72	101337	6.14	190332	7.45	133777	10.22	236316	11.67
ZZZZZZ	67061	3.74	195745	4.72	107355	6.14	200814	7.44	141954	10.22	243369	11.66
MC12978-4	71272	3.74	203022	4.72	113316	6.14	206807	7.44	89607	10.22	124219[c]	11.66
ZZZZZZ	67065	3.74	192739	4.72	105486	6.14	196366	7.44	90479	10.22	128564[c]	11.66
ZZZZZZ	67697	3.74	194421	4.72	108014	6.13	203927	7.44	95375	10.22	135262[c]	11.66
ZZZZZZ	71130	3.74	205153	4.72	109730	6.14	204141	7.44	94580	10.22	131219[c]	11.66
ZZZZZZ	64007	3.74	183110	4.72	101259	6.14	187958	7.44	71606[c]	10.22	96577[c]	11.66
ZZZZZZ	73579	3.74	211712	4.72	117518	6.14	216650	7.44	83184	10.22	109599[c]	11.66
ZZZZZZ	66563	3.74	197066	4.72	106019	6.14	195577	7.44	73907[c]	10.22	98115[c]	11.66

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Ceutral Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

Lab	IS 1		1S 2		IS 3		IS 4		IS 5		1S 6	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

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.
(c) Outside control limits. Results confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12905-3	F56732.D	29.0	23.0	77.0	61.0	63.0	73.0
MC12905-4	F56733.D	33.0	27.0	78.0	64.0	68.0	65.0
MC12905-5	F56734.D	32.0	25.0	83.0	64.0	67.0	71.0
MC12905-6	F56735.D	33.0	25.0	81.0	64.0	67.0	90.0
MC12905-7	F56737.D	34.0	29.0	86.0	76.0	71.0	91.0
MC12905-8	F56977.D	34.0	37.0	80.0	68.0	70.0	80.0
MC12905-8	F56738.D	38.0	43.0	88.0	76.0	74.0	88.0
OP29961-BS	F56723.D	43.0	31.0	81.0	77.0	70.0	98.0
OP29961-MB	F56721.D	37.0	28.0	76.0	67.0	65.0	95.0
OP29961-MS	F56724.D	43.0	31.0	83.0	74.0	70.0	97.0
OP29961-MSD	F56725.D	43.0	31.0	83.0	76.0	71.0	99.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12905-3	U9133.D	65.0	66.0	77.0
MC12905-4	U9134.D	70.0	71.0	68.0
MC12905-5	U9135.D	68.0	69.0	75.0
MC12905-6	U9136.D	67.0	70.0	98.0
MC12905-7	U9147.D	77.0	79.0	95.0
MC12905-7	U9174.D	80.0	84.0	111.0
MC12905-8	U9148.D	79.0	80.0	96.0
MC12905-8	U9175.D	82.0	81.0	103.0
OP29962-BS	U9128.D	85.0	71.0	106.0
OP29962-MB	U9127.D	77.0	67.0	98.0
OP29962-MS	U9129.D	83.0	72.0	106.0
OP29962-MSD	U9131.D	85.0	74.0	106.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-MB	BK15906.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12905-2, MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	102%	36-173%
460-00-4	Bromofluorobenzene (S)	89%	36-173%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-BS	BK15908.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
OP29956-BSD	BK15909.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12905-2, MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.072	101	0.072	101	0	60-140/30
106-93-4	1,2-Dibromoethane	0.071	0.070	99	0.069	97	1	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	Bromofluorobenzene (S)	108%	110%	36-173%
460-00-4	Bromofluorobenzene (S)	92%	93%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-MS	BK15910.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
OP29956-MSD	BK15911.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
MC12879-8	BK15912.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12905-2, MC12905-3, MC12905-4, MC12905-5, MC12905-6, MC12905-7, MC12905-8

CAS No.	Compound	MC12879-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.076	107	0.078	110	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.071	100	0.074	104	4	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-8	Limits
460-00-4	Bromofluorobenzene (S)	109%	114%	107%	36-173%
460-00-4	Bromofluorobenzene (S)	100%	100%	96%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12905-2	BK15923.D	110.0	92.0
MC12905-3	BK15924.D	129.0	97.0
MC12905-4	BK15925.D	94.0	99.0
MC12905-5	BK15927.D	125.0	92.0
MC12905-6	BK15928.D	129.0	89.0
MC12905-7	BK15929.D	116.0	99.0
MC12905-8	BK15930.D	105.0	101.0
OP29956-BS	BK15908.D	108.0	92.0
OP29956-BSD	BK15909.D	110.0	93.0
OP29956-MB	BK15906.D	102.0	89.0
OP29956-MS	BK15910.D	109.0	100.0
OP29956-MSD	BK15911.D	114.0	100.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-ICC604	Injection Date:	08/09/12
Lab File ID:	BK15900.D	Injection Time:	17:12
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.39	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP29956-MB	BK15906.D	08/09/12	19:38	4.40	5.28
ZZZZZZ	BK15907.D	08/09/12	20:03	4.40	5.28
OP29956-BS	BK15908.D	08/09/12	20:27	4.40	5.28
OP29956-BSD	BK15909.D	08/09/12	20:51	4.40	5.28
OP29956-MS	BK15910.D	08/09/12	21:15	4.40	5.28
OP29956-MSD	BK15911.D	08/09/12	21:39	4.40	5.28
MC12879-8	BK15912.D	08/09/12	22:04	4.40	5.28
ZZZZZZ	BK15913.D	08/09/12	22:28	4.40	5.28
ZZZZZZ	BK15914.D	08/09/12	22:52	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC sigual #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/09/12
Lab File ID:	BK15915.D	Injection Time:	23:17
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15916.D	08/09/12	23:41	4.40	5.28
ZZZZZZ	BK15917.D	08/10/12	00:06	4.40	5.28
ZZZZZZ	BK15918.D	08/10/12	00:30	4.40	5.28
ZZZZZZ	BK15919.D	08/10/12	00:54	4.40	5.28
ZZZZZZ	BK15920.D	08/10/12	01:19	4.40	5.28
ZZZZZZ	BK15921.D	08/10/12	01:43	4.40	5.28
ZZZZZZ	BK15922.D	08/10/12	02:08	4.40	5.28
MC12905-2	BK15923.D	08/10/12	02:32	4.40	5.28
MC12905-3	BK15924.D	08/10/12	02:57	4.40	5.28
MC12905-4	BK15925.D	08/10/12	03:21	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

8

GC Surrogate Retention Time Summary

Job Number: MC12905
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
MC12905-5	BK15927.D	08/10/12	04:10	4.40	5.28
MC12905-6	BK15928.D	08/10/12	04:34	4.40	5.28
MC12905-7	BK15929.D	08/10/12	04:59	4.40	5.28
MC12905-8	BK15930.D	08/10/12	05:23	4.40	5.28
ZZZZZZ	BK15931.D	08/10/12	05:48	4.40	5.28
ZZZZZZ	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.3

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12941

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/10/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW7-ROX-080712	TB-080712-HCL
TB-080712-ST	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries, and PAH LCS/LCSD RPDs were outside evaluation criteria. Although not indicated in the laboratory case narrative, diethyl phthalate was detected in the method blank. Professional judgment was used to qualify acetone in sample MW7-ROX-080712. These issues are addressed further in the appropriate sections below. Although beyond the scope of this review, the initial calibration verification for acetone exceeded 50 percent difference (%D). The continuing calibration for acrolein and vinyl chloride were outside evaluation criteria.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29978-MB	SVOCs	Diethyl phthalate	0.37 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW7-ROX-080712	SVOCs	Diethyl phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2512-BS/BSD	VOCs	Acrolein	**148/164**	10	70-130/25
MSN2512-BS/BSD	VOCs	Acrylonitrile	**446/442**	1	70-130/25
MSN2512-BS/BSD	VOCs	Dichlorodifluoromethane	118/**131**	11	70-130/25
OP29978-BS	SVOCs	4-Nitrophenol	**4**	NA	30-130
OP29978-BS	SVOCs	Aniline	**34**	NA	40-140
OP29978-BS	SVOCs	Hexachlorocyclopentadiene	**18**	NA	40-140
OP29979-BS/BSD	PAHs	1-Methylnaphthalene	57/88	**43**	40-140/30

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS samples are not qualified based on RPD alone and LCS recoveries were within acceptance criteria, therefore, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW7-ROX-080712	SVOCs	4-Nitrophenol	**R**
MW7-ROX-080712	SVOCs	Aniline	**UJ**
MW7-ROX-080712	SVOCs	Hexachlorocyclopentadiene	**R**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

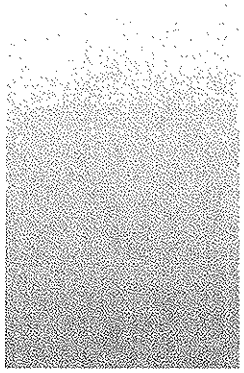
Were additional qualifications applied?

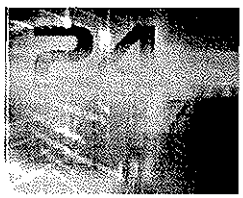
Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (>2X) the reporting limit (RL), since acetone is not representative of site conditions.

Sample ID	Analyte	New RL	Qualification	Comment
MW7-ROX-080712	Acetone	199 ug/L	**U**	Professional Judgment

New England ACCUTEST LABORATORIES

09/10/12





Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12941

Sampling Date: 08/07/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

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

Reviewed on 9/10/2012

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

-1-

Section 1: Sample Summary 3
Section 2: Case Narrative/Conformance Summary 4
Section 3: Summary of Hits 6
Section 4: Sample Results 7
4.1: MC12941-1: MW7-ROX-080712 8
4.2: MC12941-2: TB-080712-HCL 15
4.3: MC12941-3: TB-080712-ST 18
Section 5: Misc. Forms 19
5.1: Chain of Custody 20
5.2: Sample Tracking Chronicle 22
5.3: Internal Chain of Custody 23
Section 6: GC/MS Volatiles - QC Data Summaries 24
6.1: Method Blank Summary 25
6.2: Blank Spike/Blank Spike Duplicate Summary 29
6.3: Matrix Spike/Matrix Spike Duplicate Summary 33
6.4: Internal Standard Area Summaries 37
6.5: Surrogate Recovery Summaries 39
Section 7: GC/MS Semi-volatiles - QC Data Summaries 40
7.1: Method Blank Summary 41
7.2: Blank Spike Summary 44
7.3: Blank Spike/Blank Spike Duplicate Summary 46
7.4: Matrix Spike/Matrix Spike Duplicate Summary 47
7.5: Internal Standard Area Summaries 50
7.6: Surrogate Recovery Summaries 55
Section 8: GC Volatiles - QC Data Summaries 57
8.1: Method Blank Summary 58
8.2: Blank Spike/Blank Spike Duplicate Summary 59
8.3: Matrix Spike/Matrix Spike Duplicate Summary 60
8.4: Surrogate Recovery Summaries 61
8.5: GC Surrogate Retention Time Summaries 62

Sample Summary

Shell Oil

Job No: MC12941

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12941-1	08/07/12	14:55 DM	08/08/12	AQ	Ground Water	MW7-ROX-080712
MC12941-2	08/07/12	00:00 DM	08/08/12	AQ	Trip Blank Water	TB-080712-HCL
MC12941-3	08/07/12	00:00 DM	08/08/12	AQ	Trip Blank Water	TB-080712-ST

ACCUTEST LABORATORIES

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	**Job No**	MC12941
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Centra	**Report Date**	8/22/2012 4:19:14 PM

1 Sample(s), 2 Trip Blank(s) were collected on 08/07/2012 and were received at Accutest on 08/08/2012 properly preserved, at 3.7 Deg. C and intact. These Samples received an Accutest job number of MC12941. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** MSN2512

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12870-4MS, MC12870-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for Acetone, Acrolein are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Blank Spike Duplic ate Recovery(s) for Acrolein, Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.
- MSN2512-BS/BSD and MC12870-4MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Initial calibration verification MSN2468-ICV2468 for acetone exceeds 50% Difference e. Acetone is within criteria in continuing calibration check standard MSN2512-CC2468.
- Continuing calibration check standard MSN2512-CC2468 for acrolein exceeds 50% Difference (results biased high). Associated samples are non-detect for these compounds.

Matrix: AQ **Batch ID:** MSN2514

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12944-15MS, MC12944-15MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Continuing calibration check standard MSN2514-CC2468 for Vinyl Chloride (CCC) exceeds 20% Difference. Reported compound (Benzene) is within 20% Difference.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29978

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12994-1MS, MC12994-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 4-Nitrophenol, Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 4-Nitrophenol, Aniline, Hexachlorocyclopentadiene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 4-Nitrophenol, Hexachlorocyclopentadiene, 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitroaniline, Aniline, Pyridine are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 1-Methylnaphthalene, 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitroaniline, Aniline, N-Nitrosodiphenylamine, Pyridine are outside control limits for sample OP29978-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29979

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12994-2MS, MC12994-2MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery(s) for Benzo(k)fluoranthene are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- RPD(s) for MSD for 1-Methylnaphthalene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene are outside control limits for sample OP29979-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD of OP29979-BSD for 1-Methylnaphthalene: Outside control limits. Individual spike recoveries within acceptance limits.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29956

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-8MS, MC12879-8MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12941).

Summary of Hits

Job Number: MC12941
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/07/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12941-1	MW7-ROX-080712					
Acetone		199	50	30	ug/l	SW846 8260B
Benzene		591000	2500	1200	ug/l	SW846 8260B
Ethylbenzene		61.9	10	5.1	ug/l	SW846 8260B
n-Propylbenzene		10.2 J	50	5.8	ug/l	SW846 8260B
Toluene		62.9	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		100	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		21.0 J	50	4.7	ug/l	SW846 8260B
m,p-Xylene		120	10	7.3	ug/l	SW846 8260B
o-Xylene		48.6	10	5.8	ug/l	SW846 8260B
Xylene (total)		169	10	5.8	ug/l	SW846 8260B
Phenol		57.6	5.1	0.94	ug/l	SW846 8270C
Diethyl phthalate		0.58 J	5.1	0.19	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.60 J	2.0	0.38	ug/l	SW846 8270C
Acenaphthene		0.24	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.037 J	0.10	0.013	ug/l	SW846 8270C BY SIM
Anthracene		0.022 J	0.10	0.018	ug/l	SW846 8270C BY SIM
Fluorene		0.16	0.10	0.047	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		5.5	0.20	0.14	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		6.5	0.20	0.052	ug/l	SW846 8270C BY SIM
Naphthalene		8.9	0.10	0.036	ug/l	SW846 8270C BY SIM
Phenanthrene		0.19	0.051	0.013	ug/l	SW846 8270C BY SIM

MC12941-2 TB-080712-HCL

No hits reported in this sample.

MC12941-3 TB-080712-ST

No hits reported in this sample.

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66803.D	10	08/17/12	JP	n/a	n/a	MSN2512
Run #2	N66858.D	5000	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~199~~ 4	~~50~~ 199	30	ug/l	4
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	591000 [a]	2500	1200	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ug/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobeuzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND	50	16	ug/l	
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	61.9	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	ND	50	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	10.2	50	5.8	ug/l	J
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	62.9	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorohenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	100	50	3.5	ug/l	
108-67-8	1,3,5-Trimetbylhenzene	21.0	50	4.7	ug/l	J
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	120	10	7.3	ug/l	
95-47-6	o-Xylene	48.6	10	5.8	ug/l	
1330-20-7	Xylene (total)	169	10	5.8	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:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	76%	91%	70-130%
2037-26-5	Toluene-D8	91%	95%	70-130%
460-00-4	4-Bromofluorobenzene	90%	100%	70-130%

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

(a) Result is from Run# 2

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:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3878.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.41	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.38	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.61	ug/l	
	3&4-Methylphenol	ND	10	0.76	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.48	ug/l	
100-02-7	4-Nitrophenol	ND R	20	2.8	ug/l	R
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	57.6	5.1	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND UJ	10	2.0	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.64	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.38	ng/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.1	0.22	ug/l	
121-14-2	2,4-Dinitrotolnene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ng/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	0.90	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.36	ng/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.24	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:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~0.58~~ U	5.1	0.19	ug/l	J U
131-11-3	Dimethyl phthalate	ND	5.1	5.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.60	2.0	0.38	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.1	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND R	10	5.1	ug/l	R
67-72-1	Hexachloroethane	ND	5.1	2.0	ug/l	
78-59-1	Isophorone	ND	5.1	0.32	ug/l	
88-74-4	2-Nitroaniliue	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.1	0.60	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	80%		15-110%
4165-60-0	Nitrohenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	96%		30-130%

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

Report of Analysis

Client Sample ID:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9181.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.24	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.037	0.10	0.013	ug/l	J
120-12-7	Anthracene	0.022	0.10	0.018	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.051	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.051	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	0.16	0.10	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	5.5	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	6.5	0.20	0.052	ug/l	
91-20-3	Naphthalene	8.9	0.10	0.036	ug/l	
85-01-8	Phenanthrene	0.19	0.051	0.013	ng/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	87%		30-130%

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:	MW7-ROX-080712		
Lab Sample ID:	MC12941-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15931.D	1	08/10/12	AP	08/09/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	33.7 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.016	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.016	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	98%		36-173%
460-00-4	Bromofluorobenzene (S)	82%		36-173%

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:	TB-080712-HCL		
Lab Sample ID:	MC12941-2	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66796.D	1	08/17/12	JP	n/a	n/a	MSN2512
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ng/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	TB-080712-HCL		
Lab Sample ID:	MC12941-2	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ng/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Tricbloropropane	ND	5.0	0.85	ng/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080712-HCL		
Lab Sample ID:	MC12941-2	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080712-ST		
Lab Sample ID:	MC12941-3	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #I	BK15932.D	1	08/10/12	AP	08/09/12	OP29956	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	110%		36-173%
460-00-4	Bromofluorobenzene (S)	90%		36-173%

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 England ACCUTEST LABORATORIES

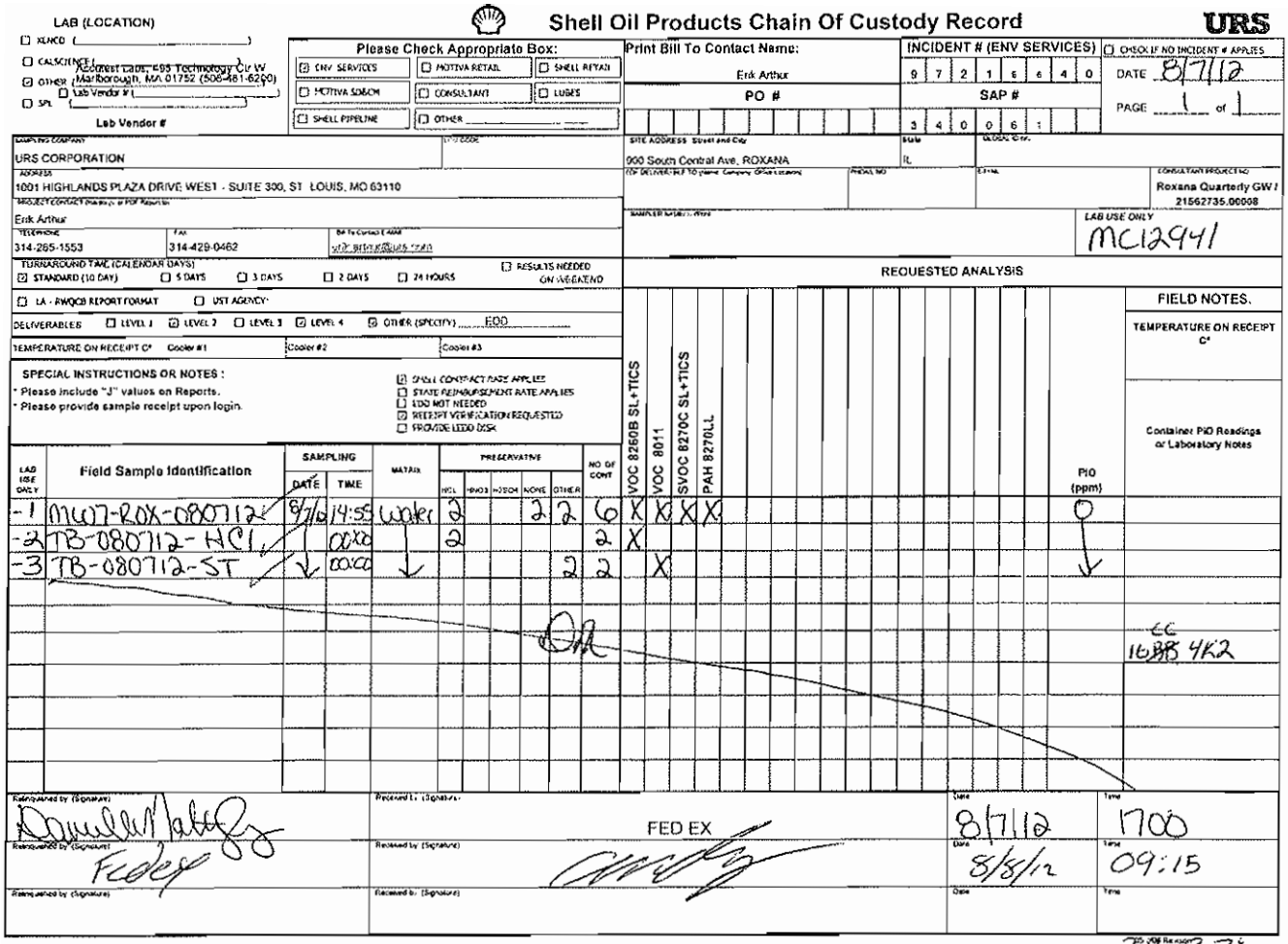
Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

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



LAB (LOCATION)

☐ XENCO ( )
☐ CALSCIENCE ( )
☑ OTHER (Accutest Labs, 495 Technology Cir W Marlborough, MA 01752 (508-481-6200))
☐ Lab Vendor # ( )
☐ SPL ( )

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SDBCM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 8/7/12

PAGE 1 of 1

SAMPLING COMPANY: URS CORPORATION

LOG CODE:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST LOUIS, MO 63110

PROJECT CONTACT (Name or PDF Report to): Erik Arthur

TELEPHONE: 314-265-1553 FAX: 314-429-0462 Bill To Contact E-MAIL: erik.arthur@urs.com

SITE ADDRESS Street and City: 900 South Central Ave, ROXANA

State: IL

GLOBAL ID #:

CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562735.00008

SAMPLER NAME(S) - Print

LAB USE ONLY: MC12941

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login.

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES.

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	MW07-ROX-080712	8/7/12	14:55	Water	2			2	2	6	X	X	X	X	0	
-2	TB-080712-HCl		00:00		2					2	X					
-3	TB-080712-ST		00:00						2	2		X				

OK

CC 16BB 4K2

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	8/7/12	1700
Fedex	[signature]	8/8/12	09:15

2.9, 3.7°

5.1

5

MC12941: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12941 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/8/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL AVE No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservatio	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

MC12941: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12941

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12941-1 Collected: 07-AUG-12 14:55 By: DM Received: 08-AUG-12 By: MW7-ROX-080712						
MC12941-1	SW846 8011	10-AUG-12 05:48	AP	09-AUG-12	SC	V8011SL
MC12941-1	SW846 8270C	13-AUG-12 13:29	KR	09-AUG-12	MEW	AB8270SL+
MC12941-1	SW846 8270C BY SIM	13-AUG-12 17:39	NS	09-AUG-12	MT	B8270SIMPAH
MC12941-1	SW846 8260B	17-AUG-12 23:55	JP			V8260SL+
MC12941-1	SW846 8260B	20-AUG-12 19:42	AMY			V8260SL+
MC12941-2 Collected: 07-AUG-12 00:00 By: DM Received: 08-AUG-12 By: TB-080712-HCL						
MC12941-2	SW846 8260B	17-AUG-12 20:37	JP			V8260SL+
MC12941-3 Collected: 07-AUG-12 00:00 By: DM Received: 08-AUG-12 By: TB-080712-ST						
MC12941-3	SW846 8011	10-AUG-12 06:12	AP	09-AUG-12	SC	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/08/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12941-1.1	Walk In Ref #22	Nick Krasinski	08/09/12 16:11	Retrieve from Storage
MC12941-1.1	Nick Krasinski		08/09/12 21:58	Depleted
MC12941-1.3	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage
MC12941-1.3	Nick Krasinski		08/09/12 21:58	Depleted
MC12941-1.5	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12941-1.5	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12941-1.5	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12941-1.5	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12941-1.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12941-1.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12941-1.6	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12941-1.6	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12941-1.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12941-1.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12941-2.1	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12941-2.1	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12941-2.1	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12941-2.1	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12941-3.2	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage
MC12941-3.2	Nick Krasinski		08/09/12 21:58	Depleted

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ng/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ng/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	85%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

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

6.1.1

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-MB	N66838.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12941-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dihromofluoromethane	94%	70-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	46.7	93	50.9	102	9	70-130/25
107-02-8	Acrolein	250	370	148* a	410	164* a	10	70-130/25
107-13-1	Acrylonitrile	50	223	446* b	221	442* b	1	70-130/25
71-43-2	Benzene	50	46.9	94	47.5	95	1	70-130/25
108-86-1	Bromobenzene	50	49.0	98	54.0	108	10	70-130/25
74-97-5	Bromochloromethane	50	47.3	95	46.9	94	1	70-130/25
75-27-4	Bromodichloromethane	50	47.2	94	46.7	93	1	70-130/25
75-25-2	Bromoform	50	53.8	108	53.1	106	1	70-130/25
74-83-9	Bromomethane	50	56.7	113	63.5	127	11	70-130/25
78-93-3	2-Butanone (MEK)	50	44.3	89	43.3	87	2	70-130/25
104-51-8	n-Butylbenzene	50	47.1	94	48.8	98	4	70-130/25
135-98-8	sec-Bntylbenzene	50	53.5	107	55.4	111	3	70-130/25
98-06-6	tert-Butylbenzene	50	50.3	101	53.6	107	6	70-130/25
75-15-0	Carbon disulfide	50	42.5	85	46.3	93	9	70-130/25
56-23-5	Carbon tetrachloride	50	51.1	102	48.9	98	4	70-130/25
108-90-7	Chlorobenzene	50	56.0	112	56.9	114	2	70-130/25
75-00-3	Chloroethane	50	42.2	84	49.1	98	15	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	47.0	94	48.0	96	2	70-130/25
67-66-3	Chloroform	50	41.4	83	42.3	85	2	70-130/25
74-87-3	Chloromethane	50	57.7	115	62.0	124	7	70-130/25
95-49-8	o-Chlorotoluene	50	48.2	96	52.2	104	8	70-130/25
106-43-4	p-Chlorotoluene	50	49.4	99	54.8	110	10	70-130/25
124-48-1	Dihromochloromethane	50	56.4	113	56.9	114	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.4	103	51.8	104	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	51.4	103	53.6	107	4	70-130/25
106-46-7	1,4-Dichlorobenzene	50	49.7	99	51.7	103	4	70-130/25
75-71-8	Dichlorodifluoromethane	50	58.9	118	65.7	131* a	11	70-130/25
75-34-3	1,1-Dichloroethane	50	44.2	88	43.4	87	2	70-130/25
107-06-2	1,2-Dichloroethane	50	44.8	90	42.8	86	5	70-130/25
75-35-4	1,1-Dichloroethene	50	46.0	92	50.9	102	10	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	46.1	92	46.5	93	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	46.3	93	45.8	92	1	70-130/25
78-87-5	1,2-Dichloropropane	50	46.7	93	47.7	95	2	70-130/25
142-28-9	1,3-Dichloropropane	50	47.3	95	48.9	98	3	70-130/25
594-20-7	2,2-Dichloropropane	50	45.2	90	45.6	91	1	70-130/25
563-58-6	1,1-Dichloropropene	50	47.9	96	46.6	93	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	54.2	108	50.2	100	8	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.6	103	48.3	97	7	70-130/25
123-91-1	1,4-Dioxane	250	285	114	241	96	17	70-130/25
97-63-2	Ethyl methacrylate	50	55.4	111	50.7	101	9	77-137/25
100-41-4	Ethylbenzene	50	49.3	99	51.3	103	4	70-130/25
87-68-3	Hexachlorobutadiene	50	50.6	101	55.9	112	10	70-130/25
591-78-6	2-Hexanone	50	52.9	106	51.0	102	4	70-130/25
98-82-8	Isopropylbenzene	50	52.2	104	56.0	112	7	70-130/25
99-87-6	p-Isopropyltoluene	50	54.5	109	56.5	113	4	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	47.0	94	46.5	93	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.1	104	46.1	92	12	70-130/25
74-95-3	Methylene bromide	50	50.2	100	49.6	99	1	70-130/25
75-09-2	Methylene chloride	50	42.4	85	46.7	93	10	70-130/25
103-65-1	n-Propylbenzene	50	51.2	102	56.2	112	9	70-130/25
100-42-5	Styrene	50	55.6	111	57.2	114	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.3	107	53.7	107	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	48.7	97	49.5	99	2	70-130/25
127-18-4	Tetrachloroethene	50	54.2	108	56.6	113	4	70-130/25
108-88-3	Toluene	50	52.4	105	50.1	100	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	48.1	96	52.3	105	8	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	48.5	97	52.4	105	8	70-130/25
71-55-6	1,1,1-Trichloroethane	50	41.0	82	45.0	90	9	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.9	96	45.1	90	6	70-130/25
79-01-6	Trichloroethene	50	45.8	92	46.7	93	2	70-130/25
75-69-4	Trichlorofluoromethane	50	36.8	74	41.6	83	12	70-130/25
96-18-4	1,2,3-Trichloropropane	50	48.3	97	48.0	96	1	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.8	100	52.7	105	6	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	48.0	96	51.8	104	8	70-130/25
108-05-4	Vinyl Acetate	50	55.2	110	55.8	112	1	70-130/25
75-01-4	Vinyl chloride	50	47.3	95	51.8	104	9	70-130/25
	m,p-Xylene	100	109	109	111	111	2	70-130/25
95-47-6	o-Xylene	50	57.5	115	59.6	119	4	70-130/25
1330-20-7	Xylene (total)	150	166	111	171	114	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	82%	83%	70-130%
2037-26-5	Toluene-D8	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	87%	96%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-BS	N66835.D	1	08/20/12	AMY	n/a	n/a	MSN2514
MSN2514-BSD	N66836.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12941-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	47.4	95	42.2	84	12	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	90%	70-130%
2037-26-5	Toluene-D8	98%	97%	70-130%
460-00-4	4-Bromofluorobenzene	93%	96%	70-130%

* = Outside of Control Limits.

6.2.2

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		500	777	155* [a]	815	163* [a]	5	70-130/30
107-02-8	Acrolein	ND		2500	3920	157* [a]	3950	158* [a]	1	70-130/30
107-13-1	Acrylonitrile	ND		500	2310	462* [b]	2160	432* [b]	7	70-130/30
71-43-2	Benzene	13.1		500	478	93	477	93	0	70-130/30
108-86-1	Bromobenzene	ND		500	486	97	493	99	1	70-130/30
74-97-5	Bromochloromethane	ND		500	464	93	465	93	0	70-130/30
75-27-4	Bromodichloromethane	ND		500	438	88	445	89	2	70-130/30
75-25-2	Bromoform	ND		500	498	100	503	101	1	70-130/30
74-83-9	Bromomethane	ND		500	541	108	567	113	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		500	433	87	456	91	5	70-130/30
104-51-8	n-Butylbenzene	1.5	J	500	474	95	494	99	4	70-130/30
135-98-8	sec-Butylbenzene	2.7	J	500	533	106	551	110	3	70-130/30
98-06-6	tert-Butylbenzene	ND		500	499	100	507	101	2	70-130/30
75-15-0	Carbon disulfide	ND		500	434	87	435	87	0	70-130/30
56-23-5	Carbon tetrachloride	ND		500	483	97	470	94	3	70-130/30
108-90-7	Chlorobenzene	ND		500	557	111	554	111	1	70-130/30
75-00-3	Chloroethane	ND		500	444	89	435	87	2	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		500	466	93	460	92	1	70-130/30
67-66-3	Chloroform	ND		500	397	79	404	81	2	70-130/30
74-87-3	Chloromethane	ND		500	534	107	569	114	6	70-130/30
95-49-8	o-Chlorotoluene	ND		500	472	94	485	97	3	70-130/30
106-43-4	p-Chlorotoluene	ND		500	483	97	503	101	4	70-130/30
124-48-1	Dibromochloromethane	ND		500	543	109	544	109	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		500	503	101	527	105	5	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		500	503	101	519	104	3	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		500	482	96	495	99	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND		500	634	127	615	123	3	70-130/30
75-34-3	1,1-Dichloroethane	ND		500	416	83	419	84	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		500	420	84	417	83	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		500	471	94	467	93	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		500	430	86	446	89	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		500	448	90	440	88	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		500	463	93	457	91	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		500	459	92	469	94	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		500	425	85	435	87	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		500	457	91	460	92	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		500	494	99	482	96	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		500	456	91	463	93	2	70-130/30
123-91-1	1,4-Dioxane	ND		2500	2520	101	2410	96	4	70-130/30
97-63-2	Ethyl methacrylate	ND		500	490	98	493	99	1	72-139/30
100-41-4	Ethylbenzene	0.65	J	500	501	100	493	98	2	70-130/30
87-68-3	Hexachlorobutadiene	ND		500	510	102	552	110	8	70-130/30
591-78-6	2-Hexanone	ND		500	505	101	523	105	4	70-130/30
98-82-8	Isopropylbenzene	17.3		500	540	105	546	106	1	70-130/30
99-87-6	p-Isopropyltolnene	ND		500	535	107	553	111	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		500	451	90	477	95	6	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		500	479	96	502	100	5	70-130/30
74-95-3	Methylene bromide	ND		500	464	93	472	94	2	70-130/30
75-09-2	Methylene chloride	ND		500	409	82	414	83	1	70-130/30
103-65-1	n-Propylbenzene	13.7		500	530	103	538	105	1	70-130/30
100-42-5	Styrene	ND		500	550	110	550	110	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		500	532	106	519	104	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		500	473	95	501	100	6	70-130/30
127-18-4	Tetrachloroethene	ND		500	558	112	536	107	4	70-130/30
108-88-3	Toluene	0.93	J	500	482	96	483	96	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		500	490	98	526	105	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		500	489	98	522	104	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		500	411	82	405	81	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		500	438	88	440	88	0	70-130/30
79-01-6	Trichloroethene	ND		500	452	90	446	89	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		500	378	76	371	74	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		500	456	91	482	96	6	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		500	490	98	498	100	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		500	470	94	478	96	2	70-130/30
108-05-4	Vinyl Acetate	ND		500	528	106	572	114	8	70-130/30
75-01-4	Vinyl chloride	ND		500	470	94	467	93	1	70-130/30
	m,p-Xylene	3.3		1000	1140	114	1120	112	2	70-130/30
95-47-6	o-Xylene	0.61	J	500	592	118	577	115	3	70-130/30
1330-20-7	Xylene (total)	3.9		1500	1740	116	1700	113	2	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12941-1, MC12941-2

CAS No.	Surrogate Recoveries	MS	MSD	MC12870-4	Limits
1868-53-7	Dibromofluoromethane	82%	81%	82%	70-130%
2037-26-5	Toluene-D8	97%	94%	96%	70-130%
460-00-4	4-Bromofluorobenzene	89%	92%	89%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(h) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12944-15MS	N66855.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15MSD	N66856.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15	N66847.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12941-1

CAS No.	Compound	MC12944-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	204	82	202	81	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	MC12944-15	Limits
1868-53-7	Dibromofluoromethane	85%	88%	93%	70-130%
2037-26-5	Toluene-D8	96%	97%	94%	70-130%
460-00-4	4-Bromofluorobeuzene	94%	93%	100%	70-130%

6.3.2

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2512-CC2468	Injection Date:	08/17/12
Lab File ID:	N66782.D	Injection Time:	13:54
Instrument ID:	GCMSN	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	152398	9.02	231186	9.89	113397	13.14	114179	15.70	64322	6.56
Upper Limit [a]	304796	9.52	462372	10.39	226794	13.64	228358	16.20	128644	7.06
Lower Limit [b]	76199	8.52	115593	9.39	56699	12.64	57090	15.20	32161	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2512-BS	168359	9.02	240070	9.89	131037	13.14	127328	15.70	61307	6.56
MSN2512-BSD	149437	9.02	248165	9.89	123957	13.14	115078	15.70	55717	6.56
MSN2512-MB	160331	9.02	240599	9.89	119577	13.15	95607	15.70	52979	6.57
ZZZZZZ	141818	9.02	220974	9.89	108889	13.15	90986	15.71	48285	6.58
ZZZZZZ	161924	9.02	241742	9.89	123121	13.14	122197	15.70	61137	6.56
MC12870-4	172211	9.02	257763	9.89	127732	13.15	125716	15.70	53392	6.57
MC12870-4MS	169372	9.02	254380	9.89	127924	13.14	126190	15.70	67500	6.56
MC12870-4MSD	167570	9.02	256902	9.89	130163	13.15	122765	15.70	65039	6.57
ZZZZZZ	168232	9.02	255625	9.89	122507	13.15	113092	15.70	58241	6.57
MC12941-2	162723	9.02	246607	9.89	119504	13.15	108680	15.71	58589	6.57
ZZZZZZ	165338	9.03	308089	9.90	146653	13.14	142458	15.70	66476	6.56
ZZZZZZ	185538	9.02	282422	9.89	134586	13.15	128702	15.70	63908	6.57
ZZZZZZ	188683	9.02	292377	9.89	136531	13.15	127541	15.70	71167	6.57
ZZZZZZ	190386	9.02	312657	9.89	145931	13.15	135350	15.70	70801	6.57
ZZZZZZ	205011	9.02	332909	9.89	155770	13.14	145381	15.70	69451	6.56
MC12941-1	209507	9.03	349371	9.90	158586	13.14	147822	15.70	72286	6.56
ZZZZZZ	197163	9.02	330863	9.89	154875	13.15	139946	15.70	74190	6.56
ZZZZZZ	211551	9.02	348439	9.89	158491	13.15	148021	15.70	77402	6.56
ZZZZZZ	202409	9.02	313303	9.89	143668	13.15	130293	15.70	73049	6.57

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

(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.

6.4.1

Volatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2514-CC2468	Injection Date:	08/20/12
Lab File ID:	N66835.D	Injection Time:	08:49
Instrument ID:	GCMSN	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	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
Upper Limit [a]	238570	9.52	355844	10.39	202392	13.65	187186	16.20	96770	7.06
Lower Limit [b]	59643	8.52	88961	9.39	50598	12.65	46797	15.20	24193	6.06

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2514-BS	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
MSN2514-BSD	131527	9.02	194742	9.89	104163	13.15	97420	15.70	51745	6.56
MSN2514-MB	116175	9.02	175016	9.89	91498	13.15	82202	15.70	53764	6.57
ZZZZZZ	110387	9.02	161728	9.89	85841	13.15	72844	15.71	51759	6.57
ZZZZZZ	103985	9.02	152724	9.89	81698	13.14	79453	15.70	42536	6.57
ZZZZZZ	120794	9.02	180937	9.88	102916	13.15	99655	15.70	52693	6.56
ZZZZZZ	132300	9.02	196454	9.89	102351	13.15	88889	15.70	51415	6.56
ZZZZZZ	128302	9.02	189196	9.89	98361	13.15	84824	15.70	53230	6.57
ZZZZZZ	115479	9.02	171824	9.89	90654	13.15	77410	15.70	44901	6.57
ZZZZZZ	118516	9.02	173218	9.89	90126	13.15	75951	15.70	44246	6.57
ZZZZZZ	114874	9.02	171628	9.89	90059	13.15	79557	15.70	41446	6.57
MC12944-15	107209	9.02	160640	9.89	81210	13.15	71103	15.70	41687	6.57
ZZZZZZ	106676	9.01	163106	9.89	86273	13.15	71137	15.70	45130	6.56
ZZZZZZ	107118	9.02	158683	9.89	85706	13.15	74032	15.70	40817	6.57
ZZZZZZ	107424	9.02	161341	9.89	85386	13.15	71739	15.70	43608	6.57
ZZZZZZ	108875	9.02	168961	9.88	97176	13.15	99551	15.70	43349	6.56
MC12944-15MS	143688	9.02	210891	9.89	114622	13.15	105761	15.70	56406	6.56
MC12944-15MSD	140640	9.01	209077	9.88	108708	13.15	104319	15.70	55543	6.56
ZZZZZZ	139105	9.02	208838	9.89	105188	13.14	94258	15.70	55629	6.56
MC12941-1	132779	9.02	201615	9.89	102905	13.15	90402	15.70	48467	6.57

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

(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.

6.4.2

Volatile Surrogate Recovery Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12941-1	N66858.D	91.0	95.0	100.0
MC12941-1	N66803.D	76.0	91.0	90.0
MC12941-2	N66796.D	83.0	95.0	97.0
MC12870-4MS	N66792.D	82.0	97.0	89.0
MC12870-4MSD	N66793.D	81.0	94.0	92.0
MC12944-15MS	N66855.D	85.0	96.0	94.0
MC12944-15MSD	N66856.D	88.0	97.0	93.0
MSN2512-BS	N66783.D	82.0	102.0	87.0
MSN2512-BSD	N66784.D	83.0	97.0	96.0
MSN2512-MB	N66786.D	85.0	97.0	101.0
MSN2514-BS	N66835.D	91.0	98.0	93.0
MSN2514-BSD	N66836.D	90.0	97.0	96.0
MSN2514-MB	N66838.D	94.0	96.0	96.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MB	W3868.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ng/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotolnene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dihenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	0.37	5.0	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorohenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MB	W3868.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

7.1.1

7

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	34%	15-110%
4165-62-2	Phenol-d5	24%	15-110%
118-79-6	2,4,6-Tribromophenol	67%	15-110%
4165-60-0	Nitrobenzene-d5	68%	30-130%
321-60-8	2-Fluorohiphenyl	61%	30-130%
1718-51-0	Terphenyl-d14	100%	30-130%

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

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-MB	U9176.D	1	08/13/12	NS	08/09/12	OP29979	MSU508

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12941-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluorauthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ng/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	67%	30-130%
321-60-8	2-Fluorobiphenyl	61%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

Blank Spike Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-BS	W3869.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	32.2	32	30-130
95-57-8	2-Chlorophenol	100	71.8	72	30-130
59-50-7	4-Chloro-3-methyl phenol	100	78.6	79	30-130
120-83-2	2,4-Dichlorophenol	100	78.4	78	30-130
105-67-9	2,4-Dimethylphenol	100	71.7	72	30-130
51-28-5	2,4-Dinitrophenol	100	79.7	80	30-130
534-52-1	4,6-Dinitro-o-cresol	100	105	105	30-130
95-48-7	2-Methylphenol	100	63.0	63	30-130
	3&4-Methylphenol	200	124	62	30-130
88-75-5	2-Nitrophenol	100	82.4	82	30-130
100-02-7	4-Nitrophenol	100	4.0	4* a	30-130
87-86-5	Pentachlorophenol	100	79.9	80	30-130
108-95-2	Phenol	100	35.0	35	30-130
95-95-4	2,4,5-Trichlorophenol	100	84.6	85	30-130
88-06-2	2,4,6-Trichlorophenol	100	83.4	83	30-130
62-53-3	Aniline	50	17.2	34* a	40-140
101-55-3	4-Bromophenyl phenyl ether	50	44.8	90	40-140
85-68-7	Butyl benzyl phthalate	50	49.4	99	40-140
100-51-6	Benzyl Alcohol	50	33.5	67	40-140
91-58-7	2-Chloronaphthalene	50	39.8	80	40-140
106-47-8	4-Chloroaniline	50	32.6	65	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	44.3	89	40-140
111-44-4	bis(2-Chloroethyl)ether	50	43.8	88	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	49.4	99	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	44.8	90	40-140
122-66-7	1,2-Diphenylhydrazine	50	50.0	100	40-140
121-14-2	2,4-Dinitrotoluene	50	46.0	92	40-140
606-20-2	2,6-Dinitrotoluene	50	45.3	91	40-140
91-94-1	3,3'-Dichlorobenzidine	50	50.7	101	40-140
132-64-9	Dibenzofuran	50	40.3	81	40-140
84-74-2	Di-n-butyl phthalate	50	49.0	98	40-140
117-84-0	Di-n-octyl phthalate	50	58.5	117	40-140
84-66-2	Diethyl phthalate	50	47.4	95	40-140
131-11-3	Dimethyl phthalate	50	45.5	91	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.8	100	40-140
118-74-1	Hexachlorobenzene	50	45.9	92	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-BS	W3869.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	8.9	18* [a]	40-140
67-72-1	Hexachloroethane	50	27.2	54	40-140
78-59-1	Isophorone	50	42.8	86	40-140
88-74-4	2-Nitroaniline	50	44.5	89	40-140
99-09-2	3-Nitroaniline	50	39.0	78	40-140
100-01-6	4-Nitroaniline	50	38.2	76	40-140
98-95-3	Nitrobenzene	50	43.9	88	40-140
62-75-9	n-Nitrosodimethylamine	50	26.4	53	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	47.4	95	40-140
86-30-6	N-Nitrosodiphenylamine	50	46.2	92	40-140
110-86-1	Pyridine	50	23.2	46	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	46%	15-110%
4165-62-2	Phenol-d5	33%	15-110%
118-79-6	2,4,6-Tribromophenol	90%	15-110%
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	104%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

7.2.1

7

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-BS	U9177.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
OP29979-BSD	U9253.D	1	08/16/12	NS	08/09/12	OP29979	MSU511

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12941-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	50	38.6	77	38.5	77	0	40-140/30
208-96-8	Acenaphthylene	50	28.3	57	28.0	56	1	40-140/30
120-12-7	Anthracene	50	41.6	83	39.0	78	6	40-140/30
56-55-3	Benzo(a)anthracene	50	46.7	93	42.4	85	10	40-140/30
50-32-8	Benzo(a)pyrene	50	46.5	93	36.1	72	25	40-140/30
205-99-2	Benzo(b)fluoranthene	50	55.2	110	41.1	82	29	40-140/30
191-24-2	Benzo(g,h,i)perylene	50	47.1	94	36.4	73	26	40-140/30
207-08-9	Benzo(k)fluoranthene	50	56.2	112	44.4	89	23	40-140/30
218-01-9	Chrysene	50	42.5	85	37.8	76	12	40-140/30
53-70-3	Dibenzo(a,h)anthracene	50	49.1	98	36.3	73	30	40-140/30
206-44-0	Fluoranthene	50	40.7	81	40.8	82	0	40-140/30
86-73-7	Fluorene	50	40.1	80	38.5	77	4	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	50	48.9	98	37.3	75	27	40-140/30
90-12-0	1-Methylnaphthalene	50	28.3	57	43.8	88	43* a	40-140/30
91-57-6	2-Methylnaphthalene	50	31.9	64	40.5	81	24	40-140/30
91-20-3	Naphthalene	50	32.6	65	34.2	68	5	40-140/30
85-01-8	Phenanthrene	50	41.6	83	39.2	78	6	40-140/30
129-00-0	Pyrene	50	39.1	78	39.2	78	0	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	83%	82%	30-130%
321-60-8	2-Fluorobiphenyl	70%	73%	30-130%
1718-51-0	Terphenyl-d14	103%	76%	30-130%

(a) Outside control limits. Individual spike recoveries within acceptance limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MS	W3875.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
OP29978-MSD	W3876.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
MC12994-1	W3877.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

7.4.1

7

CAS No.	Compound	MC12994-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	34.2	34	35.0	35	2	30-130/20
95-57-8	2-Chlorophenol	ND		100	72.3	72	71.2	71	2	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	79.8	80	78.3	78	2	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	79.8	80	77.9	78	2	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	70.0	70	77.0	77	10	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	73.2	73	81.1	81	10	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	96.3	96	103	103	7	30-130/20
95-48-7	2-Methylphenol	ND		100	63.9	64	63.0	63	1	30-130/20
	3&4-Methylphenol	ND		200	125	63	123	62	2	30-130/20
88-75-5	2-Nitrophenol	ND		100	83.1	83	82.7	83	0	30-130/20
100-02-7	4-Nitrophenol	ND		100	ND	0* [a]	ND	0* [a]	nc	30-130/20
87-86-5	Pentachlorophenol	ND		100	81.7	82	77.7	78	5	30-130/20
108-95-2	Phenol	ND		100	36.0	36	33.1	33	8	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	85.1	85	84.2	84	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	84.9	85	84.6	85	0	30-130/20
62-53-3	Aniline	ND		50	17.7	35* [a]	ND	0* [a]	200* [b]	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	44.8	90	43.6	87	3	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	50.0	100	50.5	101	1	40-140/20
100-51-6	Benzyl Alcohol	ND		50	33.9	68	31.3	63	8	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	38.8	78	41.6	83	7	40-140/20
106-47-8	4-Chloroaniline	ND		50	32.4	65	3.1	6* [a]	165* [b]	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	44.9	90	43.7	87	3	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	44.0	88	42.7	85	3	40-140/20
108-60-1	bis(2-Chloroisopropyl)etber	ND		50	49.4	99	50.4	101	2	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	44.7	89	46.1	92	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	49.7	99	48.2	96	3	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	45.3	91	46.1	92	2	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	45.0	90	44.7	89	1	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	48.8	98	ND	0* [a]	200* [b]	40-140/20
132-64-9	Dibenzofuran	ND		50	39.5	79	41.2	82	4	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	49.2	98	48.9	98	1	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	59.4	119	64.2	128	8	40-140/20
84-66-2	Diethyl phthalate	0.26		50	48.2	96	47.7	95	1	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.4	89	44.9	90	1	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	50.3	101	50.6	101	1	40-140/20
118-74-1	Hexachlorobenzene	ND		50	46.3	93	44.9	90	3	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Bateh	Analytical Batch
OP29978-MS	W3875.D	1	08/13/12	KR	08/09/I2	OP29978	MSW176
OP29978-MSD	W3876.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
MC12994-1	W3877.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12941-1

CAS No.	Compound	MC12994-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	8.6	17* [a]	10.5	21* [a]	20	40-140/20
67-72-1	Hexachloroethane	ND		50	26.9	54	30.2	60	12	40-140/20
78-59-1	Isophorone	ND		50	43.0	86	42.9	86	0	40-140/20
88-74-4	2-Nitroaniline	ND		50	44.6	89	43.2	86	3	40-140/20
99-09-2	3-Nitroaniline	ND		50	37.8	76	0.73	1* [a]	192* [b]	40-140/20
100-01-6	4-Nitroaniline	ND		50	37.0	74	13.1	26* [a]	95* [b]	40-140/20
98-95-3	Nitrobenzene	ND		50	44.2	88	44.6	89	1	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	26.5	53	27.0	54	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	48.2	96	49.2	98	2	40-140/20
86-30-6	N-Nitrosodiphenylamiue	ND		50	46.0	92	36.1	72	24* [b]	40-140/20
110-86-1	Pyridine	ND		50	24.0	48	ND	0* [a]	200* [b]	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12994-1	Limits
367-12-4	2-Fluorophenol	47%	45%	39%	15-110%
4165-62-2	Phenol-d5	34%	32%	27%	15-110%
118-79-6	2,4,6-Tribromophenol	93%	89%	75%	15-110%
4165-60-0	Nitrobenzene-d5	86%	87%	79%	30-130%
321-60-8	2-Fluorobiphenyl	72%	77%	69%	30-130%
1718-51-0	Terphenyl-d14	105%	105%	104%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

7.4.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxaua 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-MS	U9178.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
OP29979-MSD	U9179.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
MC12994-2	U9180.D	1	08/13/12	NS	08/09/12	OP29979	MSU508

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12941-1

CAS No.	Compound	MC12994-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	38.3	77	39.6	79	3	40-140/20
208-96-8	Acenaphthylene	ND		50	28.1	56	28.5	57	1	40-140/20
120-12-7	Anthracene	ND		50	40.2	80	39.7	79	1	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	46.1	92	45.6	91	1	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	46.1	92	54.2	108	16	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	53.4	107	67.2	134	23* [a]	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	47.6	95	56.2	112	17	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	55.6	111	70.4	141* [b]	23* [a]	40-140/20
218-01-9	Chrysene	ND		50	42.6	85	42.9	86	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	48.9	98	61.6	123	23* [a]	40-140/20
206-44-0	Fluoranthene	ND		50	39.4	79	40.7	81	3	40-140/20
86-73-7	Fluorene	ND		50	39.9	80	40.3	81	1	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	49.2	98	59.7	119	19	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	25.3	51	33.2	66	27* [a]	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	31.7	63	34.3	69	8	40-140/20
91-20-3	Naphthalene	ND		50	32.7	65	35.0	70	7	40-140/20
85-01-8	Phenanthrene	ND		50	40.7	81	41.3	83	1	40-140/20
129-00-0	Pyrene	ND		50	38.1	76	39.0	78	2	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12994-2	Limits
4165-60-0	Nitrobenzene-d5	83%	84%	76%	30-130%
321-60-8	2-Fluorobiphenyl	71%	73%	68%	30-130%
1718-51-0	Terphenyl-d14	99%	104%	96%	30-130%

(a) High RPD due to possible matrix interference and/or sample non-homogeneity.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	74183	3.74	215966	4.72	121568	6.14	231849	7.44	157950	10.22	287514	11.67
Upper Limit [a]	148366	4.24	431932	5.22	243136	6.64	463698	7.94	315900	10.72	575028	12.17
Lower Limit [b]	37092	3.24	107983	4.22	60784	5.64	115925	6.94	78975	9.72	143757	11.17
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
OP29999-MS	71583	3.74	207520	4.72	112545	6.14	209934	7.45	83852	10.22	111938[c]	11.66
OP29999-MSD	71233	3.74	203886	4.72	109746	6.14	205650	7.44	83352	10.22	114920[c]	11.66
MC12978-4	69748	3.74	200172	4.72	109689	6.14	203795	7.44	88467	10.22	120327[c]	11.66
ZZZZZZ	72217	3.74	205369	4.72	111617	6.14	207245	7.44	92848	10.22	130035[c]	11.66
ZZZZZZ	72201	3.74	204902	4.72	112553	6.14	208471	7.44	93883	10.22	130090[c]	11.66
ZZZZZZ	68332	3.74	196326	4.72	106309	6.14	198140	7.44	91794	10.22	127541[c]	11.66
ZZZZZZ	68525	3.74	193092	4.72	106918	6.14	198831	7.44	109460	10.22	161532	11.66
ZZZZZZ	64898	3.74	184919	4.72	100976	6.14	189141	7.44	69395[c]	10.22	94469[c]	11.66
ZZZZZZ	73978	3.74	210885	4.72	115830	6.14	212901	7.44	79723	10.22	107257[c]	11.66
ZZZZZZ	64928	3.74	189697	4.72	102497	6.14	186877	7.44	71573[c]	10.22	96546[c]	11.66
ZZZZZZ	71004	3.74	203218	4.72	113722	6.14	213711	7.44	141576	10.22	199474	11.66
ZZZZZZ	70986	3.74	202204	4.72	112847	6.14	209861	7.44	144823	10.22	199711	11.66
OP29979-MB	66015	3.74	192336	4.72	106078	6.14	197204	7.44	137291	10.22	217162	11.66
OP29979-BS	63085	3.74	184334	4.72	100797	6.14	185462	7.45	126986	10.23	206580	11.66
OP29979-MS	60942	3.74	176504	4.72	98042	6.14	188532	7.45	132951	10.23	219452	11.66
OP29979-MSD	67652	3.74	194177	4.72	108229	6.14	201785	7.45	134825	10.23	173460	11.67
MC12994-2	66309	3.74	193152	4.72	106374	6.14	198533	7.44	137855	10.22	234364	11.66
MC12941-1	65411	3.74	188895	4.72	106106	6.14	197315	7.44	139482	10.22	230154	11.66
ZZZZZZ	64629	3.74	188478	4.72	105190	6.14	194361	7.44	138043	10.22	229882	11.66
ZZZZZZ	62752	3.74	186064	4.72	99713	6.14	183392	7.44	129195	10.22	229281	11.67
ZZZZZZ	63779	3.74	191425	4.72	101337	6.14	190332	7.45	133777	10.22	236316	11.67
ZZZZZZ	67061	3.74	195745	4.72	107355	6.14	200814	7.44	141954	10.22	243369	11.66
MC12978-4	71272	3.74	203022	4.72	113316	6.14	206807	7.44	89607	10.22	124219[c]	11.66
ZZZZZZ	67065	3.74	192739	4.72	105486	6.14	196366	7.44	90479	10.22	128564[c]	11.66
ZZZZZZ	67697	3.74	194421	4.72	108014	6.13	203927	7.44	95375	10.22	135262[c]	11.66
ZZZZZZ	71130	3.74	205153	4.72	109730	6.14	204141	7.44	94580	10.22	131219[c]	11.66
ZZZZZZ	64007	3.74	183110	4.72	101259	6.14	187958	7.44	71606[c]	10.22	96577[c]	11.66
ZZZZZZ	73579	3.74	211712	4.72	117518	6.14	216650	7.44	83184	10.22	109599[c]	11.66
ZZZZZZ	66563	3.74	197066	4.72	106019	6.14	195577	7.44	73907[c]	10.22	98115[c]	11.66

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

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 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check staudard area; Retention time -0.5 minutes.
(c) Outside control limits. Results coufirmed by reanalysis.

7.5.1

Semivolatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU511-CC486	Injection Date:	08/16/12
Lab File ID:	U9252.D	Injection Time:	11:52
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	77180	3.69	271247	4.67	152714	6.08	281214	7.39	173656	10.17	300854	11.60
Upper Limit [a]	154360	4.19	542494	5.17	305428	6.58	562428	7.89	347312	10.67	601708	12.10
Lower Limit [b]	38590	3.19	135624	4.17	76357	5.58	140607	6.89	86828	9.67	150427	11.10
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
OP29979-BSD	64070	3.69	188036	4.67	122814	6.08	222734	7.39	137688	10.17	253155	11.60
ZZZZZZ	64568	3.69	192030	4.67	123624	6.08	221264	7.39	142896	10.17	264196	11.60
ZZZZZZ	60091	3.69	212907	4.67	117739	6.08	216394	7.39	137136	10.17	248891	11.60
ZZZZZZ	62743	3.69	221244	4.67	120264	6.08	222778	7.39	139035	10.17	259339	11.60
ZZZZZZ	61916	3.69	179989	4.67	120528	6.08	219716	7.39	138321	10.17	251756	11.60
ZZZZZZ	63465	3.69	223690	4.67	121939	6.08	222311	7.39	139876	10.17	259912	11.60
ZZZZZZ	63941	3.69	225680	4.67	120670	6.08	219857	7.39	137887	10.17	253022	11.60
ZZZZZZ	65155	3.69	222882	4.67	122908	6.08	225164	7.39	141973	10.17	261700	11.60

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: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW176-CC129	Injection Date:	08/13/12
Lab File ID:	W3865.D	Injection Time:	08:38
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	568383	3.79	2125545	4.78	1331140	6.20	2438245	7.53	2961924	10.42	2555816	11.99
Upper Limit [a]	1136766	4.29	4251090	5.28	2662280	6.70	4876490	8.03	5923848	10.92	5111632	12.49
Lower Limit [b]	284192	3.29	1062773	4.28	665570	5.70	1219123	7.03	1480962	9.92	1277908	11.49
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
OP29988-MB	516437	3.79	1925687	4.78	1136646	6.20	2008432	7.52	2393291	10.40	1994564	11.98
OP29988-BS	521823	3.79	1912591	4.78	1156624	6.20	2055114	7.52	2499894	10.41	2017284	11.98
OP29978-MB	432371	3.79	1622075	4.78	973554	6.20	1748206	7.52	2056611	10.40	1775418	11.98
OP29978-BS	427284	3.79	1583039	4.78	955279	6.20	1675200	7.52	2069232	10.41	1710873	11.98
ZZZZZZ	492492	3.79	1769695	4.78	1039226	6.20	1786427	7.52	1602635	10.41	1184919*	11.98
ZZZZZZ	544145	3.79	1983541	4.77	1163800	6.20	1958882	7.52	1740202	10.40	1295358	11.98
ZZZZZZ	522715	3.79	1907276	4.78	1111283	6.20	1898199	7.52	1428195[c]	10.40	1047966[c]	11.98
ZZZZZZ	512687	3.79	1854313	4.78	1102200	6.20	1890351	7.52	1476916[c]	10.41	1080093[c]	11.98
ZZZZZZ	493574	3.79	1790553	4.78	1044489	6.20	1789889	7.52	1487663	10.40	1090677[c]	11.98
OP29978-MS	464735	3.79	1707028	4.78	1032699	6.20	1786358	7.52	2128910	10.41	1767891	11.98
OP29978-MSD	456249	3.79	1673903	4.78	996564	6.20	1763994	7.52	2085759	10.41	1617159	11.98
MC12994-1	507378	3.79	1872516	4.78	1117929	6.20	2005153	7.52	2306028	10.41	2097976	11.98
MC12941-1	511202	3.79	1918461	4.78	1142125	6.20	2023012	7.52	2317870	10.41	2090413	11.98
ZZZZZZ	500453	3.79	1839073	4.78	1095290	6.20	1963795	7.52	2242357	10.40	2031102	11.98
ZZZZZZ	499219	3.79	1871439	4.77	1086411	6.20	1923794	7.52	2139468	10.41	2058752	11.98
ZZZZZZ	503792	3.79	1833018	4.78	1100117	6.20	1952388	7.52	2222439	10.41	2127147	11.98
ZZZZZZ	458335	3.79	1735032	4.77	1048235	6.20	1820657	7.52	2086949	10.40	2156640	11.98
ZZZZZZ	533727	3.79	1972738	4.77	1162790	6.20	1961156	7.52	2112078	10.40	2402051	11.98
OP29988-MS	478820	3.79	1752350	4.78	1052462	6.20	1788383	7.52	2110894	10.41	1827710	11.98
OP29988-MSD	476151	3.79	1746310	4.77	1042347	6.20	1816722	7.52	2204558	10.42	1943956	11.99
MC12990-9	456865	3.79	1679291	4.77	996637	6.20	1716306	7.52	2037725	10.41	1831271	11.98
ZZZZZZ	466445	3.79	1683886	4.78	980058	6.20	1694356	7.52	2011202	10.41	1888710	12.00
ZZZZZZ	502985	3.79	1812686	4.78	1069342	6.20	1837698	7.53	2520378	10.43	2468344	12.03
ZZZZZZ	482930	3.79	1720255	4.78	988575	6.20	1682044	7.53	2055777	10.42	1989537	12.01
ZZZZZZ	490028	3.79	1769741	4.78	1038525	6.20	1788656	7.53	2019205	10.42	1893719	12.00
ZZZZZZ	426942	3.79	1587863	4.78	963575	6.20	1748456	7.52	2144011	10.42	1903023	12.00
ZZZZZZ	501667	3.79	1784066	4.78	1046105	6.20	1721303	7.53	1871444	10.42	1768674	12.00
ZZZZZZ	542676	3.79	1961558	4.78	1181414	6.20	1973179	7.53	2299018	10.42	2132281	12.00

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

Semivolatile Internal Standard Area Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Check Std:	MSW176-CC129	Injection Date:	08/13/12
Lab File ID:	W3865.D	Injection Time:	08:38
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12941-1	W3878.D	34.0	25.0	80.0	75.0	68.0	96.0
OP29978-BS	W3869.D	46.0	33.0	90.0	86.0	73.0	104.0
OP29978-MB	W3868.D	34.0	24.0	67.0	68.0	61.0	100.0
OP29978-MS	W3875.D	47.0	34.0	93.0	86.0	72.0	105.0
OP29978-MSD	W3876.D	45.0	32.0	89.0	87.0	77.0	105.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12941-1	U9181.D	74.0	67.0	87.0
OP29979-BS	U9177.D	83.0	70.0	103.0
OP29979-BSD	U9253.D	82.0	73.0	76.0
OP29979-MB	U9176.D	67.0	61.0	92.0
OP29979-MS	U9178.D	83.0	71.0	99.0
OP29979-MSD	U9179.D	84.0	73.0	104.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-MB	BK15906.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12941-1, MC12941-3

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	102%	36-173%
460-00-4	Bromofluorobenzene (S)	89%	36-173%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-BS	BK15908.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
OP29956-BSD	BK15909.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12941-1, MC12941-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.072	101	0.072	101	0	60-140/30
106-93-4	1,2-Dibromoethane	0.071	0.070	99	0.069	97	1	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	Bromofluorobenzene (S)	108%	110%	36-173%
460-00-4	Bromofluorobenzene (S)	92%	93%	36-173%

8.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29956-MS	BK15910.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
OP29956-MSD	BK15911.D	1	08/09/12	AP	08/08/12	OP29956	GBK604
MC12879-8	BK15912.D	1	08/09/12	AP	08/08/12	OP29956	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12941-1, MC12941-3

CAS No.	Compound	MC12879-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.076	107	0.078	110	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.071	100	0.074	104	4	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-8	Limits
460-00-4	Bromofluorobenzene (S)	109%	114%	107%	36-173%
460-00-4	Bromofluorobenzene (S)	100%	100%	96%	36-173%

8.3.1

8

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12941-1	BK15931.D	98.0	82.0
MC12941-3	BK15932.D	110.0	90.0
OP29956-BS	BK15908.D	108.0	92.0
OP29956-BSD	BK15909.D	110.0	93.0
OP29956-MB	BK15906.D	102.0	89.0
OP29956-MS	BK15910.D	109.0	100.0
OP29956-MSD	BK15911.D	114.0	100.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-ICC604	Injection Date:	08/09/12
Lab File ID:	BK15900.D	Injection Time:	17:12
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.39	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP29956-MB	BK15906.D	08/09/12	19:38	4.40	5.28
ZZZZZZ	BK15907.D	08/09/12	20:03	4.40	5.28
OP29956-BS	BK15908.D	08/09/12	20:27	4.40	5.28
OP29956-BSD	BK15909.D	08/09/12	20:51	4.40	5.28
OP29956-MS	BK15910.D	08/09/12	21:15	4.40	5.28
OP29956-MSD	BK15911.D	08/09/12	21:39	4.40	5.28
MC12879-8	BK15912.D	08/09/12	22:04	4.40	5.28
ZZZZZZ	BK15913.D	08/09/12	22:28	4.40	5.28
ZZZZZZ	BK15914.D	08/09/12	22:52	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC12941
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15927.D	08/10/12	04:10	4.40	5.28
ZZZZZZ	BK15928.D	08/10/12	04:34	4.40	5.28
ZZZZZZ	BK15929.D	08/10/12	04:59	4.40	5.28
ZZZZZZ	BK15930.D	08/10/12	05:23	4.40	5.28
MC12941-1	BK15931.D	08/10/12	05:48	4.40	5.28
MC12941-3	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2 8

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12942

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/11/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
ROST3PZ-080712	MW8-ROX-080712
MW8-ROX-080712-Dup	TB-080712-HCL
TB-080712-ST	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC LCS/LCSD recoveries and SVOC LCS recoveries, and PAH LCS/LCSD RPDs were outside evaluation criteria. Although not indicated in the laboratory case narrative, diethyl phthalate was detected in the method blank. Benzene was qualified due to field duplicate RPD outside evaluation criteria in field duplicate pair MW8-ROX-080712/MW8-ROX-080712-Dup. Field duplicate pair MW8-ROX-080712/MW8-ROX-080712-Dup were diluted due to high levels of VOCs. Professional judgment was used to qualify acetone in field duplicate pair MW8-ROX-080712/MW8-ROX-080712-Dup. These issues are addressed further in the appropriate sections below. Additionally, although beyond the scope of this review, the initial calibration verification for acetone exceeded 50 percent difference (%D).

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
OP29978-MB	SVOCs	Diethyl phthalate	0.37 ug/L
TB-080712-HCL	VOCs	Benzene	3840 ug/L
TB-080712-HCL	VOCs	Toluene	5.6 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. Professional judgment was used to not qualify or reject samples associated with TB-080712-HCL due to possible cross contamination with field duplicate pair MW8-ROX-080712/MW8-ROX-080712-Dup and historical detections.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW8-ROX-080712	SVOCs	Diethyl phthalate	-	**U**
MW8-ROX-080712-Dup	SVOCs	Diethyl phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
MSN2512-BS/BSD	VOCs	Acrolein	**148/164**	10	70-130/25
MSN2512-BS/BSD	VOCs	Acrylonitrile	**446/442**	1	70-130/25
MSN2512-BS/BSD	VOCs	Dichlorodifluoromethane	118/**131**	11	70-130/25
MSN2515-BS/BSD	VOCs	Acrolein	**172/167**	3	70-130/25
MSN2515-BS/BSD	VOCs	Acrylonitrile	**514/484**	6	70-130/25
MSN2515-BS/BSD	VOCs	Dichlorodifluoromethane	**67/65**	3	70-130/25
MSN2515-BS/BSD	VOCs	Trichlorofluoromethane	**63/65**	2	70-130/25
MSN2515-BS/BSD	VOCs	Vinyl chloride	**62/62**	0	70-130/25
OP09978-BS	SVOCs	4-Nitrophenol	**4**	NA	30-130
OP29978-BS	SVOCs	Aniline	**34**	NA	40-140
OP29978-BS	SVOCs	Hexachlorocyclopentadiene	**18**	NA	40-140
OP29979-BS/BSD	PAHs	1-Methylnaphthalene	57/88	**43**	40-140/30

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS samples are not qualified based on RPD alone and LCS recoveries were within acceptance criteria, therefore, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
ROST3PZ-ROX-080712	VOCs	Dichlorodifluoromethane	**UJ**

Sample ID	Parameter	Analyte	Qualification
ROST3PZ-ROX-080712	VOCs	Trichlorofluoromethane	**UJ**
ROST3PZ-ROX-080712	VOCs	Vinyl chloride	**UJ**
ROST3PZ-ROX-080712	SVOCs	4-Nitrophenol	**R**
ROST3PZ-ROX-080712	SVOCs	Aniline	**UJ**
ROST3PZ-ROX-080712	SVOCs	Hexachlorocyclopentadiene	**R**
MW8-ROX-080712	SVOCs	4-Nitrophenol	**R**
MW8-ROX-080712	SVOCs	Aniline	**UJ**
MW8-ROX-080712	SVOCs	Hexachlorocyclopentadiene	**R**
MW8-ROX-080712-Dup	SVOCs	4-Nitrophenol	**R**
MW8-ROX-080712-Dup	SVOCs	Aniline	**UJ**
MW8-ROX-080712-Dup	SVOCs	Hexachlorocyclopentadiene	**R**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
MW8-ROX-080712	MW8-ROX-080712-Dup

Were field duplicates within evaluation criteria?

No

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
MW8-ROX-080712	MW8-ROX-080712-Dup	VOCs	Benzene	**49**	**J/J**

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

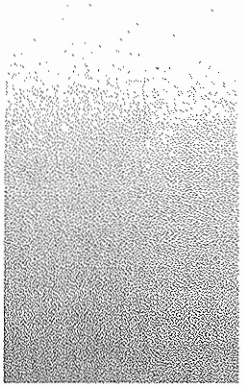
Were additional qualifications applied?

Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (>2X) the reporting limit (RL), since acetone is not representative of site conditions.

Sample ID	Analyte	New RL	Qualification	Comment
MW8-ROX-080712	Acetone	378 ug/L	**U**	Professional Judgment
MW8-ROX-080712-Dup	Acetone	235 ug/L	**U**	Professional Judgment

New England ACCUTEST LABORATORIES

09/10/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12942

Sampling Date: 08/07/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **89**

Reviewed on 9/11/2012

Reza Tand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

Section 1: Sample Summary 3
Section 2: Case Narrative/Conformance Summary 4
Section 3: Summary of Hits 6
Section 4: Sample Results 8
4.1: MC12942-1: ROST3PZ-ROX-080712 9
4.2: MC12942-2: MW8-ROX-080712 16
4.3: MC12942-3: MW8-ROX-080712-DUP 23
4.4: MC12942-4: TB-080712-HCL 30
4.5: MC12942-5: TB-080712-ST 33
Section 5: Misc. Forms 34
5.1: Chain of Custody 35
5.2: Sample Tracking Chronicle 37
5.3: Internal Chain of Custody 38
Section 6: GC/MS Volatiles - QC Data Summaries 40
6.1: Method Blank Summary 41
6.2: Blank Spike/Blank Spike Duplicate Summary 48
6.3: Matrix Spike/Matrix Spike Duplicate Summary 55
6.4: Internal Standard Area Summaries 62
6.5: Surrogate Recovery Summaries 65
Section 7: GC/MS Semi-volatiles - QC Data Summaries 66
7.1: Method Blank Summary 67
7.2: Blank Spike Summary 70
7.3: Blank Spike/Blank Spike Duplicate Summary 72
7.4: Matrix Spike/Matrix Spike Duplicate Summary 73
7.5: Internal Standard Area Summaries 76
7.6: Surrogate Recovery Summaries 81
Section 8: GC Volatiles - QC Data Summaries 83
8.1: Method Blank Summary 84
8.2: Blank Spike Summary 85
8.3: Matrix Spike/Matrix Spike Duplicate Summary 86
8.4: Surrogate Recovery Summaries 87
8.5: GC Surrogate Retention Time Summaries 88

Sample Summary

Shell Oil

Job No: MC12942

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12942-1	08/07/12	10:30	DMNM	08/08/12	AQ	Ground Water	ROST3PZ-ROX-080712
MC12942-2	08/07/12	12:55	DMNM	08/08/12	AQ	Ground Water	MW8-ROX-080712
MC12942-3	08/07/12	12:55	DMNM	08/08/12	AQ	Ground Water	MW8-ROX-080712-DUP
MC12942-4	08/07/12	00:00	DMNM	08/08/12	AQ	Trip Blank Water	TB-080712-HCL
MC12942-5	08/07/12	00:00	DMNM	08/08/12	AQ	Trip Blank Water	TB-080712-ST

ACCUTEST Laboratories

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	Job No	MC12942
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	Report Date	8/23/2012 11:56:13 AM

3 Sample(s), 2 Trip Blank(s) and 0 Field Blank(s) were collected on 08/07/2012 and were received at Accutest on 08/08/2012 properly preserved, at 3.7 Deg. C and intact. These Samples received an Accutest job number of MC12942. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ Batch ID: MSN2512

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12870-4MS, MC12870-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSN2512-BS/BSD for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- MC12870-4MS/MSD for Acetone, Acrolein are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC12870-4MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compouud.
- MSN2512-BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- Initial calibration verification MSN2468-ICV2468 for acetone exceeds 50% Difference. Acetone is within criteria in continuing calibration check MSN2512-CC2468, MSN2514-CC2468, MSN2515-CC2468.
- MSN2512-BSD for Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.

Matrix: AQ Batch ID: MSN2514

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12944-15MS, MC12944-15MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ Batch ID: MSN2515

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13142-1MS, MC13142-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MSN2515-BS/BSD for Acrolein, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride are outside control limits. Blank Spike meets program technical requirements.
- MC13142-1MS/MSD for Acrolein, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MSN2515-BS/BSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC13142-1MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix: AQ	Batch ID: OP29978

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12994-1MS, MC12994-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP29978-BS for 4-Nitrophenol, Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- OP29978-MS/MSD for 4-Nitrophenol, Aniline, Hexachlorocyclopentadiene are outside control limits due to possible matrix interference. Refer to Blank Spike.
- OP29978-MSD for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitroaniline, Pyridine are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for OP29978-MSD for 1-Methylnaphthalene, 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitroaniline, Aniline, N-Nitrosodiphenylamine, Pyridine are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: AQ	Batch ID: OP29979

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC12994-2MS, MC12994-2MSD were used as the QC samples indicated.
- OP29979-MSD for Benzo(k)fluoranthene are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for OP29979-MSD for 1-Methylnaphthalene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- OP29979-BSD for 1-Methylnaphthalene: Outside control limits. Individual spike recoveries within acceptance limits.

Volatiles by GC By Method SW846 8011

Matrix: AQ	Batch ID: OP29955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12879-7MS, MC12879-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Aecutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC12942).

Summary of Hits

Job Number: MC12942
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/07/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12942-1	ROST3PZ-ROX-080712					
Benzene		4.1	0.50	0.24	ug/l	SW846 8260B
tert-Butylbenzene		0.72 J	5.0	0.64	ug/l	SW846 8260B
Ethylbenzene		4.7	1.0	0.51	ug/l	SW846 8260B
Toluene		1.5	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		4.2 J	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		1.2 J	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene		28.9	1.0	0.73	ug/l	SW846 8260B
o-Xylene		7.4	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		36.3	1.0	0.58	ug/l	SW846 8260B
3&4-Methylphenol		5.6 J	11	0.82	ug/l	SW846 8270C
Butyl benzyl phthalate		1.6 J	5.4	0.29	ug/l	SW846 8270C
Di-n-butyl phthalate		4.9 J	5.4	0.39	ug/l	SW846 8270C
Diethyl phthalate		3.3 J	5.4	0.21	ug/l	SW846 8270C
1-Methylnaphthalene		0.31	0.22	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		0.35	0.22	0.056	ug/l	SW846 8270C BY SIM
Naphthalene		0.38	0.11	0.039	ug/l	SW846 8270C BY SIM
MC12942-2	MW8-ROX-080712					
Acetone		378	100	60	ug/l	SW846 8260B
Benzene		397000	500	240	ug/l	SW846 8260B
Ethylbenzene		249	20	10	ug/l	SW846 8260B
Methyl Tert Butyl Ether		878	20	8.2	ug/l	SW846 8260B
n-Propylbenzene		19.1 J	100	12	ug/l	SW846 8260B
Toluene		781	20	10	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		104	100	6.9	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		29.9 J	100	9.3	ug/l	SW846 8260B
m,p-Xylene		623	20	15	ug/l	SW846 8260B
o-Xylene		246	20	12	ug/l	SW846 8260B
Xylene (total)		868	20	12	ug/l	SW846 8260B
2,4-Dimethylphenol		15.0	11	3.0	ug/l	SW846 8270C
2-Methylphenol		7.5 J	11	0.66	ug/l	SW846 8270C
3&4-Methylphenol		23.1	11	0.82	ug/l	SW846 8270C
Phenol		136	5.4	1.0	ug/l	SW846 8270C
Dibenzofuran		0.35 J	2.2	0.23	ug/l	SW846 8270C
Diethyl phthalate		1.6 J	5.4	0.21	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.51 J	2.2	0.41	ug/l	SW846 8270C
Acenaphthene		0.23	0.11	0.015	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.13	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.055 J	0.11	0.019	ug/l	SW846 8270C BY SIM
Fluorene		0.27	0.11	0.050	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		8.9	0.22	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		10.8	0.22	0.056	ug/l	SW846 8270C BY SIM

Summary of Hits

Job Number: MC12942
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/07/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Naphthaleue		16.4	0.11	0.039	ug/l	SW846 8270C BY SIM
Pheuanthrene		0.15	0.054	0.014	ug/l	SW846 8270C BY SIM
MC12942-3	MW8-ROX-080712-DUP					
Acetone		235	50	30	ug/l	SW846 8260B
Benzene		653000	2500	1200	ug/l	SW846 8260B
Ethylbenzene		232	10	5.1	ug/l	SW846 8260B
Methyl Tert Butyl Ether		885	10	4.1	ug/l	SW846 8260B
n-Propylbenzene		17.6 J	50	5.8	ug/l	SW846 8260B
Toluene		729	10	5.1	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		92.1	50	3.5	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		26.5 J	50	4.7	ug/l	SW846 8260B
m,p-Xylene		598	10	7.3	ug/l	SW846 8260B
o-Xylene		235	10	5.8	ug/l	SW846 8260B
Xylene (total)		833	10	5.8	ug/l	SW846 8260B
2,4-Dimethylphenol		15.8	11	3.1	ug/l	SW846 8270C
2-Methylphenol		8.1 J	11	0.68	ug/l	SW846 8270C
3&4-Methylphenol		24.0	11	0.85	ug/l	SW846 8270C
Phenol		134	5.6	1.0	ug/l	SW846 8270C
Dibenzofuran		0.40 J	2.2	0.24	ug/l	SW846 8270C
Diethyl phthalate		1.8 J	5.6	0.21	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.43 J	2.2	0.42	ug/l	SW846 8270C
Acenaphthene		0.20	0.11	0.015	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.29	0.11	0.015	ug/l	SW846 8270C BY SIM
Anthracene		0.071 J	0.11	0.020	ug/l	SW846 8270C BY SIM
Fluorene		0.26	0.11	0.052	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		8.7	0.22	0.16	ug/l	SW846 8270C BY SIM
2-Methylnaphthaleue		10.4	0.22	0.058	ug/l	SW846 8270C BY SIM
Naphthalene		16.4	0.11	0.040	ug/l	SW846 8270C BY SIM
Phenanthrene		0.14	0.056	0.014	ug/l	SW846 8270C BY SIM
MC12942-4	TB-080712-HCL					
Benzene		3840	5.0	2.4	ug/l	SW846 8260B
Toluene		5.6 J	10	5.1	ug/l	SW846 8260B
MC12942-5	TB-080712-ST					

No hits reported in this sample.

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66865.D	1	08/21/12	JM	n/a	n/a	MSN2515
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	4.1	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	0.72	5.0	0.64	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND UJ	2.0	1.7	ug/l	UJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ng/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	4.7	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ng/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	1.5	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND UJ	1.0	0.29	ug/l	UJ
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	4.2	5.0	0.35	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	1.2	5.0	0.47	ug/l	J
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND UJ	1.0	0.63	ug/l	UJ
	m,p-Xylene	28.9	1.0	0.73	ug/l	
95-47-6	o-Xylene	7.4	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	36.3	1.0	0.58	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:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%		70-130%
2037-26-5	Toluene-D8	93%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

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

Report of Analysis

Client Sample ID:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3879.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.3	ug/l	
95-57-8	2-Chlorophenol	ND	5.4	0.44	ng/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.41	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.41	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	3.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	ND	11	0.66	ug/l	
	3&4-Methylphenol	5.6	11	0.82	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND R	22	3.0	ug/l	R
87-86-5	Pentachlorophenol	ND	11	0.69	ug/l	
108-95-2	Phenol	ND	5.4	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.2	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	1.6	5.4	0.29	ug/l	J
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.69	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.24	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.41	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.32	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.23	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.97	ug/l	
132-64-9	Dibenzofuran	ND	2.2	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	4.9	5.4	0.39	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.4	0.26	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:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	3.3	5.4	0.21	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	0.41	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND R	11	5.4	ug/l	R
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.35	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.25	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.28	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		15-110%
4165-62-2	Phenol-d5	21%		15-110%
118-79-6	2,4,6-Trihromophenol	54%		15-110%
4165-60-0	Nitrobenzene-d5	69%		30-130%
321-60-8	2-Fluorohiphenyl	60%		30-130%
1718-51-0	Terphenyl-d14	48%		30-130%

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

Report of Analysis

Client Sample ID:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9182.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.054	0.033	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.064	ug/l	
218-01-9	Chrysene	ND	0.11	0.079	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ng/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.050	ng/l	
90-12-0	1-Methylnaphthalene	0.31	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	0.35	0.22	0.056	ug/l	
91-20-3	Naphthalene	0.38	0.11	0.039	ug/l	
85-01-8	Phenanthrene	ND	0.054	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	60%		30-130%
1718-51-0	Terphenyl-d14	47%		30-130%

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:	ROST3PZ-ROX-080712		
Lab Sample ID:	MC12942-1	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Bateh	Analytieal Batch
Run #1	BK15955.D	1	08/10/12	AP	08/09/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	118%		36-173%
460-00-4	Bromofluorobenzene (S)	131%		36-173%

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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66805.D	20	08/18/12	JP	n/a	n/a	MSN2512
Run #2	N66849.D	1000	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~378~~ U	~~100~~ 518	60	ug/l	U
107-02-8	Acrolein	ND	500	200	ug/l	
107-13-1	Acrylonitrile	ND	100	65	ug/l	
71-43-2	Benzene	397000 [a]	500	240	ug/l	J
108-86-1	Bromobenzene	ND	100	12	ug/l	
74-97-5	Bromochloromethane	ND	100	24	ug/l	
75-27-4	Bromodichloromethane	ND	20	12	ug/l	
75-25-2	Bromoform	ND	20	16	ug/l	
74-83-9	Bromomethane	ND	40	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	48	ug/l	
104-51-8	n-Butylbenzene	ND	100	14	ug/l	
135-98-8	sec-Butylbenzene	ND	100	11	ug/l	
98-06-6	tert-Butylbenzene	ND	100	13	ug/l	
75-15-0	Carbon disulfide	ND	100	12	ug/l	
56-23-5	Carbon tetrachloride	ND	20	17	ug/l	
108-90-7	Chlorobenzene	ND	20	9.4	ug/l	
75-00-3	Chloroethane	ND	40	10	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	100	16	ug/l	
67-66-3	Chloroform	ND	20	9.9	ug/l	
74-87-3	Chloromethane	ND	40	15	ug/l	
95-49-8	o-Chlorotoluene	ND	100	13	ug/l	
106-43-4	p-Chlorotoluene	ND	100	9.7	ug/l	
124-48-1	Dibromochloromethane	ND	20	11	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20	19	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20	9.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	13	ug/l	
75-71-8	Dichlorodifluoromethane	ND	40	35	ug/l	
75-34-3	1,1-Dichloroethane	ND	20	12	ug/l	
107-06-2	1,2-Dichloroethane	ND	20	13	ug/l	
75-35-4	1,1-Dichloroethene	ND	20	8.2	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	20	13	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	20	19	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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	40	14	ug/l	
142-28-9	1,3-Dichloropropane	ND	100	13	ug/l	
594-20-7	2,2-Dichloropropane	ND	100	31	ug/l	
563-58-6	1,1-Dichloropropene	ND	100	18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	9.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	3.9	ug/l	
123-91-1	1,4-Dioxane	ND	500	300	ug/l	
97-63-2	Ethyl methacrylate	ND	100	16	ug/l	
100-41-4	Ethylbenzene	249	20	10	ng/l	
87-68-3	Hexachlorohutadiene	ND	100	41	ug/l	
591-78-6	2-Hexanone	ND	100	39	ug/l	
98-82-8	Isopropylbenzene	ND	100	10	ug/l	
99-87-6	p-Isopropyltoluene	ND	100	11	ug/l	
1634-04-4	Methyl Tert Butyl Ether	878	20	8.2	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	100	58	ug/l	
74-95-3	Methylene bromide	ND	100	22	ug/l	
75-09-2	Methylene chloride	ND	40	17	ug/l	
103-65-1	n-Propylbenzene	19.1	100	12	ug/l	J
100-42-5	Styrene	ND	100	9.1	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	11	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	12	ug/l	
127-18-4	Tetrachloroethene	ND	20	8.4	ug/l	
108-88-3	Toluene	781	20	10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	21	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	26	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20	17	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20	10	ug/l	
79-01-6	Trichloroethene	ND	20	16	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	5.7	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	100	17	ug/l	
95-63-6	1,2,4-Trimethylbenzene	104	100	6.9	ug/l	
108-67-8	1,3,5-Trimethylbenzene	29.9	100	9.3	ug/l	J
108-05-4	Vinyl Acetate	ND	100	20	ug/l	
75-01-4	Vinyl chloride	ND	20	13	ug/l	
	m,p-Xylene	623	20	15	ug/l	
95-47-6	o-Xylene	246	20	12	ug/l	
1330-20-7	Xylene (total)	868	20	12	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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	79%	95%	70-130%
2037-26-5	Toluene-D8	94%	96%	70-130%
460-00-4	4-Bromofluorobenzene	94%	100%	70-130%

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

(a) Result is from Run# 2

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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3880.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.3	ug/l	
95-57-8	2-Chlorophenol	ND	5.4	0.44	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.41	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.41	ug/l	
105-67-9	2,4-Dimethylphenol	15.0	11	3.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	7.5	11	0.66	ug/l	J
	3&4-Methylphenol	23.1	11	0.82	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND R	22	3.0	ug/l	R
87-86-5	Pentachlorophenol	ND	11	0.69	ug/l	
108-95-2	Phenol	136	5.4	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.2	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.29	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.69	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.24	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.41	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.32	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.23	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.97	ug/l	
132-64-9	Dibenzofuran	0.35	2.2	0.23	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.4	0.39	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.4	0.26	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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.6	5.4	0.21	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	2.2	0.41	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.4	ug/l	
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.35	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.25	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.28	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	28%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	77%		15-110%
4165-60-0	Nitrobenzene-d5	71%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	43%		30-130%

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

Report of Analysis

Client Sample ID:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9183.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.23	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	0.13	0.11	0.014	ug/l	
120-12-7	Anthracene	0.055	0.11	0.019	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.054	0.033	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.064	ug/l	
218-01-9	Chrysene	ND	0.11	0.079	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	0.27	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.050	ug/l	
90-12-0	1-Methylnaphthalene	8.9	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	10.8	0.22	0.056	ug/l	
91-20-3	Naphthalene	16.4	0.11	0.039	ug/l	
85-01-8	Phenanthrene	0.15	0.054	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	42%		30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	MW8-ROX-080712		
Lab Sample ID:	MC12942-2	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15956.D	1	08/10/12	AP	08/09/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	113%		36-173%
460-00-4	Bromofluorobenzene (S)	91%		36-173%

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:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66806.D	10	08/18/12	JP	n/a	n/a	MSN2512
Run #2	N66857.D	5000	08/20/12	AMY	n/a	n/a	MSN2514

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~235~~ U	~~50~~ 235	30	ug/l	U
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	653000 [a]	2500	1200	ug/l	J
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ug/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ng/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ng/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ng/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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 aualyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND	50	16	ug/l	
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	232	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	ND	50	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	885	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	17.6	50	5.8	ug/l	J
100-42-5	Styrene	ND	50	4.5	ng/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	729	10	5.1	ug/l	
87-61-6	1,2,3-Trichlorubenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	92.1	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	26.5	50	4.7	ug/l	J
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	598	10	7.3	ug/l	
95-47-6	o-Xylene	235	10	5.8	ug/l	
1330-20-7	Xylene (total)	833	10	5.8	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:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	75%	90%	70-130%
2037-26-5	Toluene-D8	92%	94%	70-130%
460-00-4	4-Bromofluorobenzene	91%	96%	70-130%

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

(a) Result is from Run# 2

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:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3881.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
Run #2							

	Initial Volume	Final Volume
Run #1	890 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.3	ug/l	
95-57-8	2-Chlorophenol	ND	5.6	0.45	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.42	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.42	ug/l	
105-67-9	2,4-Dimethylphenol	15.8	11	3.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.6	ug/l	
95-48-7	2-Methylphenol	8.1	11	0.68	ug/l	J
	3&4-Methylphenol	24.0	11	0.85	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.53	ng/l	
100-02-7	4-Nitrophenol	ND	22	3.1	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.72	ug/l	
108-95-2	Phenol	134	5.6	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.55	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
62-53-3	Aniline	ND	11	2.2	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.6	0.37	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.6	0.30	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.29	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.6	0.20	ug/l	
106-47-8	4-Chloroauiline	ND	11	0.71	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.6	0.24	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.6	0.42	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.6	0.32	ng/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.6	0.33	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.6	0.24	ng/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Diuitrotoluene	ND	11	0.23	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.6	1.0	ug/l	
132-64-9	Dibenzofuran	0.40	2.2	0.24	ug/l	J
84-74-2	Di-n-butyl phthalate	ND	5.6	0.40	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.6	0.27	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:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	~~1.8~~	5.6	0.21	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.6	5.6	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.43	2.2	0.42	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.6	0.28	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.6	ug/l	
67-72-1	Hexachloroethane	ND	5.6	2.2	ug/l	
78-59-1	Isophorone	ND	5.6	0.36	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.25	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.28	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.6	0.27	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.6	0.67	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.6	0.31	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.6	0.49	ug/l	
110-86-1	Pyridine	ND	11	5.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	75%		15-110%
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	46%		30-130%

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

Report of Analysis

Client Sample ID:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9184.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
Run #2							

	Initial Volume	Final Volume
Run #1	890 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.20	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	0.29	0.11	0.015	ug/l	
120-12-7	Anthracene	0.071	0.11	0.020	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.056	0.034	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.020	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.056	0.027	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.042	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.066	ug/l	
218-01-9	Chrysene	ND	0.11	0.082	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.047	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.037	ug/l	
86-73-7	Fluorene	0.26	0.11	0.052	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.052	ug/l	
90-12-0	1-Methylnaphthalene	8.7	0.22	0.16	ug/l	
91-57-6	2-Methylnaphthalene	10.4	0.22	0.058	ug/l	
91-20-3	Naphthalene	16.4	0.11	0.040	ug/l	
85-01-8	Phenanthrene	0.14	0.056	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	44%		30-130%

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

Report of Analysis

Client Sample ID:	MW8-ROX-080712-DUP		
Lab Sample ID:	MC12942-3	Date Sampled:	08/07/12
Matrix:	AQ - Ground Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15957.D	1	08/10/12	AP	08/09/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	35.2 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	138%		36-173%
460-00-4	Bromofluorobenzene (S)	100%		36-173%

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 = Iudicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-080712-HCL		
Lab Sample ID:	MC12942-4	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N66807.D	10	08/18/12	JP	n/a	n/a	MSN2512
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	30	ug/l	
107-02-8	Acrolein	ND	250	100	ug/l	
107-13-1	Acrylonitrile	ND	50	32	ug/l	
71-43-2	Benzene	3840	5.0	2.4	ug/l	
108-86-1	Bromobenzene	ND	50	6.2	ug/l	
74-97-5	Bromochloromethane	ND	50	12	ng/l	
75-27-4	Bromodichloromethane	ND	10	5.8	ug/l	
75-25-2	Bromoform	ND	10	7.8	ug/l	
74-83-9	Bromomethane	ND	20	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	24	ug/l	
104-51-8	n-Butylbenzene	ND	50	6.8	ug/l	
135-98-8	sec-Butylbenzene	ND	50	5.5	ug/l	
98-06-6	tert-Butylbenzene	ND	50	6.4	ug/l	
75-15-0	Carbon disulfide	ND	50	6.1	ug/l	
56-23-5	Carbon tetrachloride	ND	10	8.7	ug/l	
108-90-7	Chlorobenzene	ND	10	4.7	ug/l	
75-00-3	Chloroethane	ND	20	5.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50	7.8	ug/l	
67-66-3	Chloroform	ND	10	5.0	ng/l	
74-87-3	Chloromethane	ND	20	7.3	ug/l	
95-49-8	o-Chlorotoluene	ND	50	6.5	ug/l	
106-43-4	p-Chlorotoluene	ND	50	4.8	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	9.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	4.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	6.4	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	17	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	6.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.3	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	4.1	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	6.4	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	9.5	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 presnmptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-080712-HCL		
Lab Sample ID:	MC12942-4	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	20	7.2	ug/l	
142-28-9	1,3-Dichloropropane	ND	50	6.4	ug/l	
594-20-7	2,2-Dichloropropane	ND	50	16	ug/l	
563-58-6	1,1-Dichloropropene	ND	50	9.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	4.5	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/l	
123-91-1	1,4-Dioxane	ND	250	150	ug/l	
97-63-2	Ethyl methacrylate	ND	50	8.1	ug/l	
100-41-4	Ethylbenzene	ND	10	5.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	21	ug/l	
591-78-6	2-Hexanone	ND	50	20	ug/l	
98-82-8	Isopropylbenzene	ND	50	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	5.7	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	4.1	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	29	ug/l	
74-95-3	Methylene bromide	ND	50	11	ug/l	
75-09-2	Methylene chloride	ND	20	8.3	ug/l	
103-65-1	n-Propylbenzene	ND	50	5.8	ug/l	
100-42-5	Styrene	ND	50	4.5	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	5.7	ng/l	
79-34-5	1,1,2,2-Tetracbloroethane	ND	10	6.0	ug/l	
127-18-4	Tetrachloroethene	ND	10	4.2	ug/l	
108-88-3	Toluene	5.6	10	5.1	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	50	11	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	8.5	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.0	ug/l	
79-01-6	Trichloroethene	ND	10	7.8	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	2.9	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	8.5	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	50	3.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	50	4.7	ug/l	
108-05-4	Vinyl Acetate	ND	50	10	ug/l	
75-01-4	Vinyl chloride	ND	10	6.3	ug/l	
	m,p-Xylene	ND	10	7.3	ug/l	
95-47-6	o-Xylene	ND	10	5.8	ug/l	
1330-20-7	Xylene (total)	ND	10	5.8	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:	TB-080712-HCL		
Lab Sample ID:	MC12942-4	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	77%		70-130%
2037-26-5	Toluene-D8	93%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080712-ST		
Lab Sample ID:	MC12942-5	Date Sampled:	08/07/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/08/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK15958.D	1	08/10/12	AP	08/09/12	OP29955	GBK604
Run #2							

	Initial Volume	Final Volume
Run #1	34.7 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	108%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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

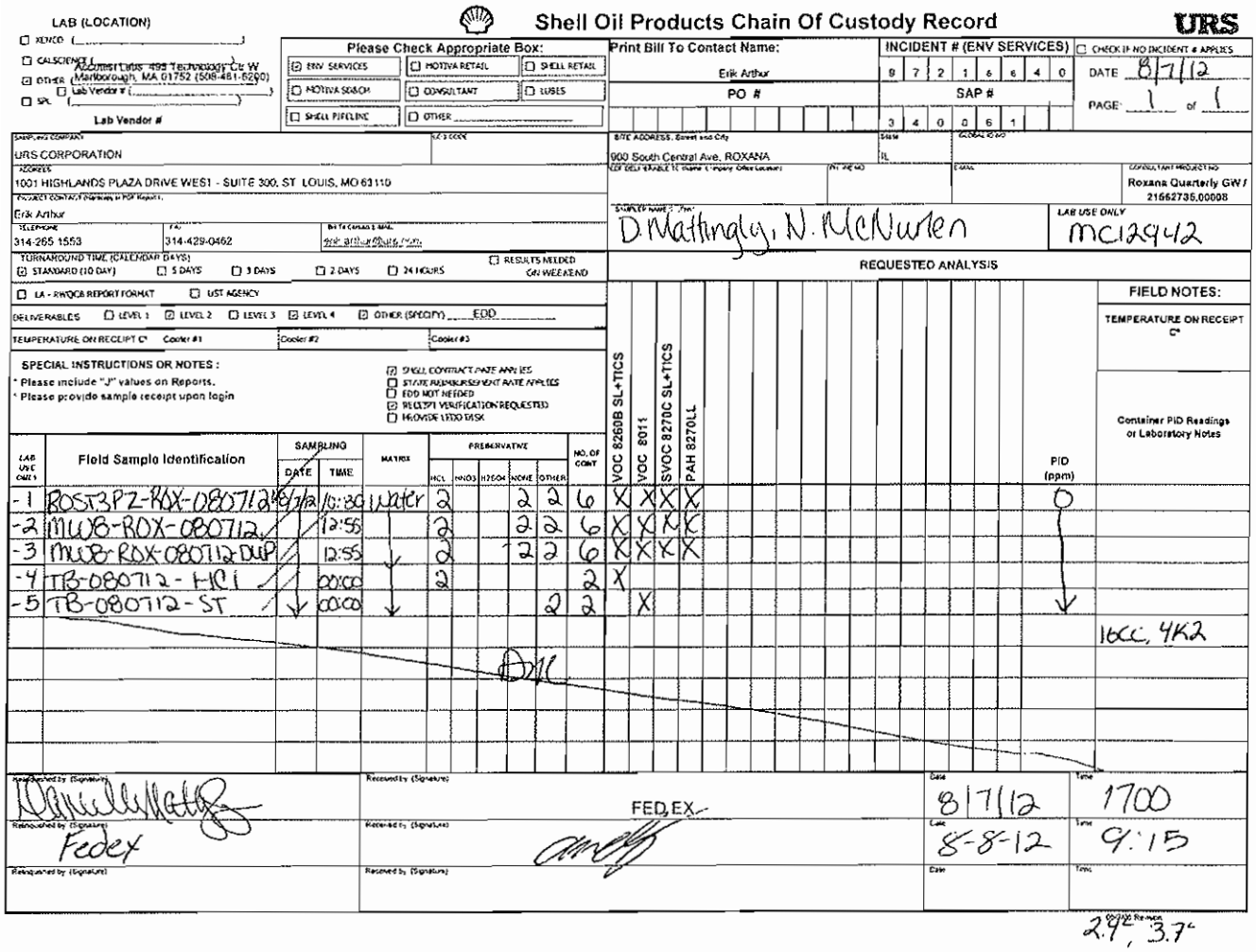
New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs 495 Technology Ct W Marlborough, MA 01752 (508-481-6200))
☐ SPL (Lab Vendor # (_____))

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 8/7/12

PAGE 1 of 1

SAMPLING COMPANY: URS CORPORATION

LC-3 CODE:

SITE ADDRESS, Street and City: 900 South Central Ave, ROXANA

State: IL

GLOBAL ID NO:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST LOUIS, MO 63110

CDF DELIVERABLE TO (Name / Company Office Location):

PH. NO.:

E-MAIL:

CONSULTANT PROJECT NO.: Roxana Quarterly GW / 21562735.00008

PROJECT CONTACT (Name/Address in PDF Report): Erik Arthur

TELEPHONE: 314-265 1553

FAX: 314-429-0462

BY TO CONSULT MAIL: erik.arthur@urs.com

SAMPLER NAME (Print): D. Mattingly, N. McNurlen

LAB USE ONLY: MC12942

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	ROST3PZ-ROX-080712	8/7/12	10:30	Water	2			2	2	6	X	X	X	X	0	
-2	MW8-ROX-080712		12:55		2			2	2	6	X	X	X	X		
-3	MW8-ROX-080712-DUP		12:55		2			2	2	6	X	X	X	X		
-4	TB-080712-HCl		00:00		2					2	X					
-5	TB-080712-ST		00:00						2	2		X				
																16CC, 4K2

DM

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	8/7/12	1700
Fedex	[signature]	8-8-12	9:15

ORIGINAL Revision 2.9°, 3.7°

5.1

5

MC12942: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12942 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/8/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL AVE No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservation	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete	☑ ☐
3. Sample container label / COC agree:	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

MC12942: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12942

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12942-1 Collected: 07-AUG-12 10:30 By: DMNM Received: 08-AUG-12 By: ROST3PZ-ROX-080712						
MC12942-1	SW846 8011	10-AUG-12 15:37	AP	09-AUG-12	SC	V8011SL
MC12942-1	SW846 8270C	13-AUG-12 13:51	KR	09-AUG-12	MEW	AB8270SL+
MC12942-1	SW846 8270C BY SIM	13-AUG-12 18:02	NS	09-AUG-12	MT	B8270SIMPAH
MC12942-1	SW846 8260B	21-AUG-12 13:36	JM			V8260SL+
MC12942-2 Collected: 07-AUG-12 12:55 By: DMNM Received: 08-AUG-12 By: MW8-ROX-080712						
MC12942-2	SW846 8011	10-AUG-12 16:01	AP	09-AUG-12	SC	V8011SL
MC12942-2	SW846 8270C	13-AUG-12 14:14	KR	09-AUG-12	MEW	AB8270SL+
MC12942-2	SW846 8270C BY SIM	13-AUG-12 18:25	NS	09-AUG-12	MT	B8270SIMPAH
MC12942-2	SW846 8260B	18-AUG-12 00:51	JP			V8260SL+
MC12942-2	SW846 8260B	20-AUG-12 15:28	AMY			V8260SL+
MC12942-3 Collected: 07-AUG-12 12:55 By: DMNM Received: 08-AUG-12 By: MW8-ROX-080712-DUP						
MC12942-3	SW846 8011	10-AUG-12 16:25	AP	09-AUG-12	SC	V8011SL
MC12942-3	SW846 8270C	13-AUG-12 14:36	KR	09-AUG-12	MEW	AB8270SL+
MC12942-3	SW846 8270C BY SIM	13-AUG-12 18:48	NS	09-AUG-12	MT	B8270SIMPAH
MC12942-3	SW846 8260B	18-AUG-12 01:19	JP			V8260SL+
MC12942-3	SW846 8260B	20-AUG-12 19:14	AMY			V8260SL+
MC12942-4 Collected: 07-AUG-12 00:00 By: DMNM Received: 08-AUG-12 By: TB-080712-HCL						
MC12942-4	SW846 8260B	18-AUG-12 01:47	JP			V8260SL+
MC12942-5 Collected: 07-AUG-12 00:00 By: DMNM Received: 08-AUG-12 By: TB-080712-ST						
MC12942-5	SW846 8011	10-AUG-12 16:49	AP	09-AUG-12	SC	V8011SL

Accutest Internal Chain of Custody

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/08/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12942-1.2	Walk In Ref #22	Nick Krasinski	08/09/12 16:11	Retrieve from Storage
MC12942-1.2	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-1.4	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage
MC12942-1.4	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-1.5	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12942-1.5	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12942-1.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-1.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-1.6	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12942-1.6	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12942-1.6	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12942-1.6	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12942-1.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-1.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-1.6	VOC Ref #4	Dana Tyron	08/21/12 11:24	Retrieve from Storage
MC12942-1.6	Dana Tyron	GCMSN	08/21/12 11:24	Load on Instrument
MC12942-1.6	GCMSN	Jaime Maslowski	08/22/12 11:45	Unload from Instrument
MC12942-1.6	Jaime Maslowski	VOC Ref #4	08/22/12 16:12	Return to Storage
MC12942-2.1	Walk In Ref #22	Nick Krasinski	08/09/12 16:11	Retrieve from Storage
MC12942-2.1	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-2.3	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage
MC12942-2.3	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-2.5	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12942-2.5	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12942-2.5	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12942-2.5	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12942-2.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-2.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-2.6	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12942-2.6	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12942-2.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-2.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-3.1	Walk In Ref #22	Nick Krasinski	08/09/12 16:11	Retrieve from Storage
MC12942-3.1	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-3.4	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/08/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12942-3.4	Nick Krasinski		08/09/12 21:58	Depleted
MC12942-3.5	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12942-3.5	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12942-3.5	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-3.5	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-3.6	VOC Ref #4	Amy Min Yang	08/20/12 11:30	Retrieve from Storage
MC12942-3.6	Amy Min Yang	GCMSV	08/20/12 11:30	Load on Instrument
MC12942-3.6	GCMSV	Amy Min Yang	08/20/12 11:31	Unload from Instrument
MC12942-3.6	Amy Min Yang	GCMSN	08/20/12 11:31	Load on Instrument
MC12942-3.6	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-3.6	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-4.2	VOC Ref #4	Dana Tyron	08/17/12 14:36	Retrieve from Storage
MC12942-4.2	Dana Tyron	GCMSN	08/17/12 14:36	Load on Instrument
MC12942-4.2	GCMSN	Dana Tyron	08/21/12 10:12	Unload from Instrument
MC12942-4.2	Dana Tyron	VOC Ref #4	08/21/12 10:12	Return to Storage
MC12942-5.1	VOC Ref #4	Nick Krasinski	08/09/12 14:30	Retrieve from Storage
MC12942-5.1	Nick Krasinski		08/09/12 21:58	Depleted

5.3
5

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methyleue bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ng/l	

6.1.1

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-MB	N66786.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	85%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

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

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-MB	N66838.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12942-2, MC12942-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

6.1.2

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-MB	N66864.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzeue	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-MB	N66864.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

6.1.3

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-MB	N66864.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	89%	70-130%
2037-26-5	Toluene-D8	93%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

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

6.1.3

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	46.7	93	50.9	102	9	70-130/25
107-02-8	Acrolein	250	370	148* a	410	164* a	10	70-130/25
107-13-1	Acrylonitrile	50	223	446* b	221	442* b	1	70-130/25
71-43-2	Benzene	50	46.9	94	47.5	95	1	70-130/25
108-86-1	Bromobenzene	50	49.0	98	54.0	108	10	70-130/25
74-97-5	Bromochloromethane	50	47.3	95	46.9	94	1	70-130/25
75-27-4	Bromodichloromethane	50	47.2	94	46.7	93	1	70-130/25
75-25-2	Bromoform	50	53.8	108	53.1	106	1	70-130/25
74-83-9	Bromomethane	50	56.7	113	63.5	127	11	70-130/25
78-93-3	2-Butanone (MEK)	50	44.3	89	43.3	87	2	70-130/25
104-51-8	n-Butylbenzene	50	47.1	94	48.8	98	4	70-130/25
135-98-8	sec-Bntylbenzene	50	53.5	107	55.4	111	3	70-130/25
98-06-6	tert-Butylbenzene	50	50.3	101	53.6	107	6	70-130/25
75-15-0	Carbon disulfide	50	42.5	85	46.3	93	9	70-130/25
56-23-5	Carbon tetrachloride	50	51.1	102	48.9	98	4	70-130/25
108-90-7	Chlorobenzene	50	56.0	112	56.9	114	2	70-130/25
75-00-3	Chloroethane	50	42.2	84	49.1	98	15	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	47.0	94	48.0	96	2	70-130/25
67-66-3	Chloroform	50	41.4	83	42.3	85	2	70-130/25
74-87-3	Chloromethane	50	57.7	115	62.0	124	7	70-130/25
95-49-8	o-Chlorotoluene	50	48.2	96	52.2	104	8	70-130/25
106-43-4	p-Chlorotoluene	50	49.4	99	54.8	110	10	70-130/25
124-48-1	Dibromochloromethaue	50	56.4	113	56.9	114	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.4	103	51.8	104	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	51.4	103	53.6	107	4	70-130/25
106-46-7	1,4-Dichlorobenzene	50	49.7	99	51.7	103	4	70-130/25
75-71-8	Dichlorodifluoromethane	50	58.9	118	65.7	131* a	11	70-130/25
75-34-3	1,1-Dicbloroetbane	50	44.2	88	43.4	87	2	70-130/25
107-06-2	1,2-Dichloroethane	50	44.8	90	42.8	86	5	70-130/25
75-35-4	1,1-Dichloroethene	50	46.0	92	50.9	102	10	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	46.1	92	46.5	93	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	46.3	93	45.8	92	1	70-130/25
78-87-5	1,2-Dichloropropane	50	46.7	93	47.7	95	2	70-130/25
142-28-9	1,3-Dichloropropane	50	47.3	95	48.9	98	3	70-130/25
594-20-7	2,2-Dichloropropane	50	45.2	90	45.6	91	1	70-130/25
563-58-6	1,1-Dichloropropene	50	47.9	96	46.6	93	3	70-130/25

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	54.2	108	50.2	100	8	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.6	103	48.3	97	7	70-130/25
123-91-1	1,4-Dioxane	250	285	114	241	96	17	70-130/25
97-63-2	Ethyl methacrylate	50	55.4	111	50.7	101	9	77-137/25
100-41-4	Ethylbenzene	50	49.3	99	51.3	103	4	70-130/25
87-68-3	Hexachlorobutadiene	50	50.6	101	55.9	112	10	70-130/25
591-78-6	2-Hexanone	50	52.9	106	51.0	102	4	70-130/25
98-82-8	Isopropylbenzene	50	52.2	104	56.0	112	7	70-130/25
99-87-6	p-Isopropyltolnene	50	54.5	109	56.5	113	4	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	47.0	94	46.5	93	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.1	104	46.1	92	12	70-130/25
74-95-3	Methylene bromide	50	50.2	100	49.6	99	1	70-130/25
75-09-2	Methylene chloride	50	42.4	85	46.7	93	10	70-130/25
103-65-1	n-Propylbenzene	50	51.2	102	56.2	112	9	70-130/25
100-42-5	Styrene	50	55.6	111	57.2	114	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.3	107	53.7	107	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	48.7	97	49.5	99	2	70-130/25
127-18-4	Tetrachloroethene	50	54.2	108	56.6	113	4	70-130/25
108-88-3	Toluene	50	52.4	105	50.1	100	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	48.1	96	52.3	105	8	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	48.5	97	52.4	105	8	70-130/25
71-55-6	1,1,1-Trichloroethane	50	41.0	82	45.0	90	9	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.9	96	45.1	90	6	70-130/25
79-01-6	Trichloroethene	50	45.8	92	46.7	93	2	70-130/25
75-69-4	Trichlorofluoromethane	50	36.8	74	41.6	83	12	70-130/25
96-18-4	1,2,3-Trichloropropane	50	48.3	97	48.0	96	1	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.8	100	52.7	105	6	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	48.0	96	51.8	104	8	70-130/25
108-05-4	Vinyl Acetate	50	55.2	110	55.8	112	1	70-130/25
75-01-4	Vinyl chloride	50	47.3	95	51.8	104	9	70-130/25
	m,p-Xylene	100	109	109	111	111	2	70-130/25
95-47-6	o-Xylene	50	57.5	115	59.6	119	4	70-130/25
1330-20-7	Xylene (total)	150	166	111	171	114	3	70-130/25

* = Outside of Control Limits.

6.2.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2512-BS	N66783.D	1	08/17/12	JP	n/a	n/a	MSN2512
MSN2512-BSD	N66784.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dihromofluoromethane	82%	83%	70-130%
2037-26-5	Toluene-D8	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	87%	96%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

6.2.1

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2514-BS	N66835.D	1	08/20/12	AMY	n/a	n/a	MSN2514
MSN2514-BSD	N66836.D	1	08/20/12	AMY	n/a	n/a	MSN2514

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

MC12942-2, MC12942-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	47.4	95	42.2	84	12	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	90%	70-130%
2037-26-5	Toluene-D8	98%	97%	70-130%
460-00-4	4-Bromofluorobenzene	93%	96%	70-130%

* = Outside of Control Limits.

6.2.2

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-BS	N66861.D	1	08/21/12	JM	n/a	n/a	MSN2515
MSN2515-BSD	N66862.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	45.9	92	45.5	91	1	70-130/25
107-02-8	Acrolein	250	429	172* a	417	167* a	3	70-130/25
107-13-1	Acrylonitrile	50	257	514* b	242	484* b	6	70-130/25
71-43-2	Benzene	50	48.3	97	48.2	96	0	70-130/25
108-86-1	Bromobenzene	50	51.2	102	52.0	104	2	70-130/25
74-97-5	Bromochloromethane	50	46.9	94	48.4	97	3	70-130/25
75-27-4	Bromodichloromethane	50	47.1	94	46.5	93	1	70-130/25
75-25-2	Bromoform	50	53.3	107	57.5	115	8	70-130/25
74-83-9	Bromomethane	50	48.8	98	49.5	99	1	70-130/25
78-93-3	2-Butanone (MEK)	50	52.8	106	53.8	108	2	70-130/25
104-51-8	n-Butylbenzene	50	53.2	106	52.4	105	2	70-130/25
135-98-8	sec-Butylbenzene	50	56.8	114	57.1	114	1	70-130/25
98-06-6	tert-Butylbenzene	50	51.1	102	51.2	102	0	70-130/25
75-15-0	Carbon disnlfide	50	41.0	82	40.3	81	2	70-130/25
56-23-5	Carbon tetrachloride	50	45.1	90	45.7	91	1	70-130/25
108-90-7	Chlorobenzene	50	56.2	112	59.5	119	6	70-130/25
75-00-3	Chloroethane	50	41.8	84	40.5	81	3	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	50.6	101	50.1	100	1	70-130/25
67-66-3	Chloroform	50	43.2	86	43.8	88	1	70-130/25
74-87-3	Chloromethane	50	35.8	72	36.6	73	2	70-130/25
95-49-8	o-Chlorotoluene	50	50.2	100	50.4	101	0	70-130/25
106-43-4	p-Chlorotolnene	50	50.9	102	52.2	104	3	70-130/25
124-48-1	Dibromochloromethane	50	55.4	111	58.9	118	6	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.8	110	55.8	112	2	70-130/25
541-73-1	1,3-Dichlorobenzene	50	54.8	110	55.7	111	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	51.0	102	51.2	102	0	70-130/25
75-71-8	Dichlorodifluoromethane	50	33.4	67* a	32.4	65* a	3	70-130/25
75-34-3	1,1-Dichloroethane	50	44.4	89	44.9	90	1	70-130/25
107-06-2	1,2-Dichloroethane	50	40.5	81	40.5	81	0	70-130/25
75-35-4	1,1-Dichloroethene	50	44.8	90	45.2	90	1	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	49.3	99	49.4	99	0	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	46.4	93	45.8	92	1	70-130/25
78-87-5	1,2-Dichloropropane	50	50.2	100	49.8	100	1	70-130/25
142-28-9	1,3-Dichloropropane	50	49.8	100	52.5	105	5	70-130/25
594-20-7	2,2-Dichloropropane	50	41.9	84	42.3	85	1	70-130/25
563-58-6	1,1-Dichloropropene	50	44.6	89	45.2	90	1	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-BS	N66861.D	1	08/21/12	JM	n/a	n/a	MSN2515
MSN2515-BSD	N66862.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	52.3	105	52.0	104	1	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	47.4	95	47.6	95	0	70-130/25
123-91-1	1,4-Dioxane	250	278	111	264	106	5	70-130/25
97-63-2	Ethyl methacrylate	50	53.6	107	53.6	107	0	77-137/25
100-41-4	Ethylbenzene	50	49.8	100	52.7	105	6	70-130/25
87-68-3	Hexachlorobutadiene	50	52.9	106	55.3	111	4	70-130/25
591-78-6	2-Hexanone	50	52.1	104	54.5	109	5	70-130/25
98-82-8	Isopropylbenzene	50	53.5	107	54.3	109	1	70-130/25
99-87-6	p-Isopropyltoluene	50	53.8	108	54.1	108	1	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	45.3	91	45.6	91	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	51.0	102	51.6	103	1	70-130/25
74-95-3	Methylene bromide	50	51.1	102	49.9	100	2	70-130/25
75-09-2	Methylene chloride	50	44.6	89	44.8	90	0	70-130/25
103-65-1	n-Propylbenzene	50	55.6	111	55.6	111	0	70-130/25
100-42-5	Styrene	50	57.0	114	58.5	117	3	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	52.1	104	55.3	111	6	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	56.3	113	55.6	111	1	70-130/25
127-18-4	Tetrachloroethene	50	54.4	109	57.8	116	6	70-130/25
108-88-3	Toluene	50	50.5	101	49.9	100	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	52.7	105	53.2	106	1	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	51.8	104	52.3	105	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	40.9	82	41.3	83	1	70-130/25
79-00-5	1,1,2-Trichloroethane	50	50.6	101	48.9	98	3	70-130/25
79-01-6	Trichloroethene	50	46.6	93	46.3	93	1	70-130/25
75-69-4	Trichlorofluoromethane	50	31.7	63* a	32.4	65* a	2	70-130/25
96-18-4	1,2,3-Trichloropropane	50	51.1	102	51.4	103	1	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	48.8	98	49.6	99	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	47.2	94	48.2	96	2	70-130/25
108-05-4	Vinyl Acetate	50	56.1	112	58.1	116	4	70-130/25
75-01-4	Vinyl chloride	50	30.8	62* a	30.9	62* a	0	70-130/25
	m,p-Xylene	100	110	110	114	114	4	70-130/25
95-47-6	o-Xylene	50	58.7	117	59.4	119	1	70-130/25
1330-20-7	Xylene (total)	150	169	113	173	115	2	70-130/25

* = Outside of Control Limits.

6.2.3

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2515-BS	N66861.D	1	08/21/12	JM	n/a	n/a	MSN2515
MSN2515-BSD	N66862.D	1	08/21/12	JM	n/a	u/a	MSN2515

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

MC12942-1

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	87%	87%	70-130%
2037-26-5	Toluene-D8	95%	95%	70-130%
460-00-4	4-Bromofluorobenzene	89%	89%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Associated samples are non-detect for this compound.

6.2.3

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		500	777	155* [a]	815	163* [a]	5	70-130/30
107-02-8	Acrolein	ND		2500	3920	157* [a]	3950	158* [a]	1	70-130/30
107-13-1	Acrylonitrile	ND		500	2310	462* [b]	2160	432* [b]	7	70-130/30
71-43-2	Benzene	13.1		500	478	93	477	93	0	70-130/30
108-86-1	Bromobenzene	ND		500	486	97	493	99	1	70-130/30
74-97-5	Bromochloromethane	ND		500	464	93	465	93	0	70-130/30
75-27-4	Bromodichloromethane	ND		500	438	88	445	89	2	70-130/30
75-25-2	Bromoform	ND		500	498	100	503	101	1	70-130/30
74-83-9	Bromomethane	ND		500	541	108	567	113	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		500	433	87	456	91	5	70-130/30
104-51-8	n-Butylbenzene	1.5	J	500	474	95	494	99	4	70-130/30
135-98-8	sec-Butylbenzene	2.7	J	500	533	106	551	110	3	70-130/30
98-06-6	tert-Butylbenzene	ND		500	499	100	507	101	2	70-130/30
75-15-0	Carbon disulfide	ND		500	434	87	435	87	0	70-130/30
56-23-5	Carbon tetrachloride	ND		500	483	97	470	94	3	70-130/30
108-90-7	Chlorobenzene	ND		500	557	111	554	111	1	70-130/30
75-00-3	Chloroethane	ND		500	444	89	435	87	2	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		500	466	93	460	92	1	70-130/30
67-66-3	Chloroform	ND		500	397	79	404	81	2	70-130/30
74-87-3	Chloromethane	ND		500	534	107	569	114	6	70-130/30
95-49-8	o-Chlorotoluene	ND		500	472	94	485	97	3	70-130/30
106-43-4	p-Chlorotoluene	ND		500	483	97	503	101	4	70-130/30
124-48-1	Dibromochloromethane	ND		500	543	109	544	109	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		500	503	101	527	105	5	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		500	503	101	519	104	3	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		500	482	96	495	99	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND		500	634	127	615	123	3	70-130/30
75-34-3	1,1-Dichloroethane	ND		500	416	83	419	84	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		500	420	84	417	83	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		500	471	94	467	93	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		500	430	86	446	89	4	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		500	448	90	440	88	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		500	463	93	457	91	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		500	459	92	469	94	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		500	425	85	435	87	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		500	457	91	460	92	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Compound	MC12870-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		500	494	99	482	96	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		500	456	91	463	93	2	70-130/30
123-91-1	1,4-Dioxane	ND		2500	2520	101	2410	96	4	70-130/30
97-63-2	Ethyl methacrylate	ND		500	490	98	493	99	1	72-139/30
100-41-4	Ethylbenzene	0.65	J	500	501	100	493	98	2	70-130/30
87-68-3	Hexachlorobutadiene	ND		500	510	102	552	110	8	70-130/30
591-78-6	2-Hexanone	ND		500	505	101	523	105	4	70-130/30
98-82-8	Isopropylbenzene	17.3		500	540	105	546	106	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		500	535	107	553	111	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		500	451	90	477	95	6	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		500	479	96	502	100	5	70-130/30
74-95-3	Methylene bromide	ND		500	464	93	472	94	2	70-130/30
75-09-2	Methylene chloride	ND		500	409	82	414	83	1	70-130/30
103-65-1	n-Propylbenzene	13.7		500	530	103	538	105	1	70-130/30
100-42-5	Styrene	ND		500	550	110	550	110	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		500	532	106	519	104	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		500	473	95	501	100	6	70-130/30
127-18-4	Tetrachloroethene	ND		500	558	112	536	107	4	70-130/30
108-88-3	Toluene	0.93	J	500	482	96	483	96	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		500	490	98	526	105	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		500	489	98	522	104	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		500	411	82	405	81	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		500	438	88	440	88	0	70-130/30
79-01-6	Trichloroethene	ND		500	452	90	446	89	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		500	378	76	371	74	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		500	456	91	482	96	6	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		500	490	98	498	100	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		500	470	94	478	96	2	70-130/30
108-05-4	Vinyl Acetate	ND		500	528	106	572	114	8	70-130/30
75-01-4	Vinyl chloride	ND		500	470	94	467	93	1	70-130/30
	m,p-Xylene	3.3		1000	1140	114	1120	112	2	70-130/30
95-47-6	o-Xylene	0.61	J	500	592	118	577	115	3	70-130/30
1330-20-7	Xylene (total)	3.9		1500	1740	116	1700	113	2	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12870-4MS	N66792.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4MSD	N66793.D	10	08/17/12	JP	n/a	n/a	MSN2512
MC12870-4	N66791.D	1	08/17/12	JP	n/a	n/a	MSN2512

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

MC12942-2, MC12942-3, MC12942-4

CAS No.	Surrogate Recoveries	MS	MSD	MC12870-4	Limits
1868-53-7	Dihromoflnoromethane	82%	81%	82%	70-130%
2037-26-5	Toluene-D8	97%	94%	96%	70-130%
460-00-4	4-Bromoflnorobenzene	89%	92%	89%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

6.3.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12944-15MS	N66855.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15MSD	N66856.D	5	08/20/12	AMY	n/a	n/a	MSN2514
MC12944-15	N66847.D	1	08/20/12	AMY	n/a	n/a	MSN2514

6.3.2

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

MC12942-2, MC12942-3

CAS No.	Compound	MC12944-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	204	82	202	81	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	MC12944-15	Limits
1868-53-7	Dibromofluoromethane	85%	88%	93%	70-130%
2037-26-5	Toluene-D8	96%	97%	94%	70-130%
460-00-4	4-Bromofluorobenzene	94%	93%	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13142-1MS	N66867.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1MSD	N66868.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1	N66866.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	MC13142-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	200	80	188	75	6	70-130/30
107-02-8	Acrolein	ND		1250	2040	163* [a]	1880	150* [a]	8	70-130/30
107-13-1	Acrylonitrile	ND		250	1160	464* [b]	1160	464* [b]	0	70-130/30
71-43-2	Benzene	ND		250	216	86	217	87	0	70-130/30
108-86-1	Bromobenzene	ND		250	224	90	226	90	1	70-130/30
74-97-5	Bromochloromethane	ND		250	230	92	226	90	2	70-130/30
75-27-4	Bromodichloromethane	ND		250	210	84	206	82	2	70-130/30
75-25-2	Bromoform	ND		250	239	96	249	100	4	70-130/30
74-83-9	Bromomethane	ND		250	220	88	227	91	3	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	219	88	219	88	0	70-130/30
104-51-8	n-Butylbenzene	ND		250	225	90	234	94	4	70-130/30
135-98-8	sec-Butylbenzene	ND		250	254	102	254	102	0	70-130/30
98-06-6	tert-Butylbenzene	ND		250	226	90	223	89	1	70-130/30
75-15-0	Carbon disulfide	ND		250	183	73	184	74	1	70-130/30
56-23-5	Carbon tetrachloride	ND		250	187	75	190	76	2	70-130/30
108-90-7	Chlorobenzene	ND		250	259	104	266	106	3	70-130/30
75-00-3	Chloroethane	ND		250	196	78	195	78	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	230	92	233	93	1	70-130/30
67-66-3	Chloroform	ND		250	199	80	198	79	1	70-130/30
74-87-3	Chloromethane	ND		250	160	64* [a]	170	68* [a]	6	70-130/30
95-49-8	o-Chlorotoluene	ND		250	223	89	221	88	1	70-130/30
106-43-4	p-Chlorotoluene	ND		250	226	90	229	92	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	254	102	257	103	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	245	98	244	98	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	243	97	247	99	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	227	91	228	91	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	126	50* [a]	127	51* [a]	1	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	206	82	207	83	0	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	176	70	175	70	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	205	82	207	83	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	222	89	226	90	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	212	85	217	87	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	229	92	232	93	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	232	93	232	93	0	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	184	74	184	74	0	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	199	80	200	80	1	70-130/30

* = Outside of Control Limits.

6.3.3

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13142-1MS	N66867.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1MSD	N66868.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1	N66866.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Compound	MC13142-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	227	91	234	94	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	208	83	208	83	0	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1210	97	1140	91	6	70-130/30
97-63-2	Ethyl methacrylate	ND		250	233	93	229	92	2	72-139/30
100-41-4	Ethylbenzene	ND		250	228	91	235	94	3	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	230	92	237	95	3	70-130/30
591-78-6	2-Hexanone	ND		250	231	92	231	92	0	70-130/30
98-82-8	Isopropylbenzene	ND		250	235	94	236	94	0	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	237	95	236	94	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	205	82	197	79	4	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	220	88	219	88	0	70-130/30
74-95-3	Methylene bromide	ND		250	231	92	225	90	3	70-130/30
75-09-2	Methylene chloride	ND		250	209	84	209	84	0	70-130/30
103-65-1	n-Propylbenzene	ND		250	246	98	249	100	1	70-130/30
100-42-5	Styrene	ND		250	254	102	266	106	5	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	240	96	245	98	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	253	101	246	98	3	70-130/30
127-18-4	Tetrachloroethene	ND		250	247	99	251	100	2	70-130/30
108-88-3	Toluene	ND		250	226	90	224	90	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	223	87	227	89	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	217	87	226	90	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	180	72	182	73	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	235	94	227	91	3	70-130/30
79-01-6	Trichloroethene	ND		250	209	84	211	84	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	136	54* [a]	137	55* [a]	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	228	91	221	88	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		250	219	88	217	87	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		250	212	85	213	85	0	70-130/30
108-05-4	Vinyl Acetate	ND		250	269	108	258	103	4	70-130/30
75-01-4	Vinyl chloride	ND		250	134	54* [a]	137	55* [a]	2	70-130/30
	m,p-Xylene	ND		500	505	101	522	104	3	70-130/30
95-47-6	o-Xylene	ND		250	270	108	281	112	4	70-130/30
1330-20-7	Xylene (total)	ND		750	774	103	804	107	4	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13142-1MS	N66867.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1MSD	N66868.D	5	08/21/12	JM	n/a	n/a	MSN2515
MC13142-1	N66866.D	1	08/21/12	JM	n/a	n/a	MSN2515

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

MC12942-1

CAS No.	Surrogate Recoveries	MS	MSD	MC13142-1	Limits
1868-53-7	Dibromofluoromethane	90%	89%	89%	70-130%
2037-26-5	Toluene-D8	96%	95%	91%	70-130%
460-00-4	4-Bromofluorobenzene	89%	88%	96%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2512-CC2468	Injection Date:	08/17/12
Lab File ID:	N66782.D	Injection Time:	13:54
Instrument ID:	GCMSN	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	152398	9.02	231186	9.89	113397	13.14	114179	15.70	64322	6.56
Upper Limit [a]	304796	9.52	462372	10.39	226794	13.64	228358	16.20	128644	7.06
Lower Limit [b]	76199	8.52	115593	9.39	56699	12.64	57090	15.20	32161	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2512-BS	168359	9.02	240070	9.89	131037	13.14	127328	15.70	61307	6.56
MSN2512-BSD	149437	9.02	248165	9.89	123957	13.14	115078	15.70	55717	6.56
MSN2512-MB	160331	9.02	240599	9.89	119577	13.15	95607	15.70	52979	6.57
ZZZZZZ	141818	9.02	220974	9.89	108889	13.15	90986	15.71	48285	6.58
ZZZZZZ	161924	9.02	241742	9.89	123121	13.14	122197	15.70	61137	6.56
MC12870-4	172211	9.02	257763	9.89	127732	13.15	125716	15.70	53392	6.57
MC12870-4MS	169372	9.02	254380	9.89	127924	13.14	126190	15.70	67500	6.56
MC12870-4MSD	167570	9.02	256902	9.89	130163	13.15	122765	15.70	65039	6.57
ZZZZZZ	168232	9.02	255625	9.89	122507	13.15	113092	15.70	58241	6.57
ZZZZZZ	162723	9.02	246607	9.89	119504	13.15	108680	15.71	58589	6.57
ZZZZZZ	165338	9.03	308089	9.90	146653	13.14	142458	15.70	66476	6.56
ZZZZZZ	185538	9.02	282422	9.89	134586	13.15	128702	15.70	63908	6.57
ZZZZZZ	188683	9.02	292377	9.89	136531	13.15	127541	15.70	71167	6.57
ZZZZZZ	190386	9.02	312657	9.89	145931	13.15	135350	15.70	70801	6.57
ZZZZZZ	205011	9.02	332909	9.89	155770	13.14	145381	15.70	69451	6.56
ZZZZZZ	209507	9.03	349371	9.90	158586	13.14	147822	15.70	72286	6.56
MC12942-2	197163	9.02	330863	9.89	154875	13.15	139946	15.70	74190	6.56
MC12942-3	211551	9.02	348439	9.89	158491	13.15	148021	15.70	77402	6.56
MC12942-4	202409	9.02	313303	9.89	143668	13.15	130293	15.70	73049	6.57

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

(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.

6.4.1

Volatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2514-CC2468	Injection Date:	08/20/12
Lab File ID:	N66835.D	Injection Time:	08:49
Instrument ID:	GCMSN	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	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
Upper Limit [a]	238570	9.52	355844	10.39	202392	13.65	187186	16.20	96770	7.06
Lower Limit [b]	59643	8.52	88961	9.39	50598	12.65	46797	15.20	24193	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2514-BS	119285	9.02	177922	9.89	101196	13.15	93593	15.70	48385	6.56
MSN2514-BSD	131527	9.02	194742	9.89	104163	13.15	97420	15.70	51745	6.56
MSN2514-MB	116175	9.02	175016	9.89	91498	13.15	82202	15.70	53764	6.57
ZZZZZZ	110387	9.02	161728	9.89	85841	13.15	72844	15.71	51759	6.57
ZZZZZZ	103985	9.02	152724	9.89	81698	13.14	79453	15.70	42536	6.57
ZZZZZZ	120794	9.02	180937	9.88	102916	13.15	99655	15.70	52693	6.56
ZZZZZZ	132300	9.02	196454	9.89	102351	13.15	88889	15.70	51415	6.56
ZZZZZZ	128302	9.02	189196	9.89	98361	13.15	84824	15.70	53230	6.57
ZZZZZZ	115479	9.02	171824	9.89	90654	13.15	77410	15.70	44901	6.57
ZZZZZZ	118516	9.02	173218	9.89	90126	13.15	75951	15.70	44246	6.57
ZZZZZZ	114874	9.02	171628	9.89	90059	13.15	79557	15.70	41446	6.57
MC12944-15	107209	9.02	160640	9.89	81210	13.15	71103	15.70	41687	6.57
ZZZZZZ	106676	9.01	163106	9.89	86273	13.15	71137	15.70	45130	6.56
MC12942-2	107118	9.02	158683	9.89	85706	13.15	74032	15.70	40817	6.57
ZZZZZZ	107424	9.02	161341	9.89	85386	13.15	71739	15.70	43608	6.57
ZZZZZZ	108875	9.02	168961	9.88	97176	13.15	99551	15.70	43349	6.56
MC12944-15MS	143688	9.02	210891	9.89	114622	13.15	105761	15.70	56406	6.56
MC12944-15MSD	140640	9.01	209077	9.88	108708	13.15	104319	15.70	55543	6.56
MC12942-3	139105	9.02	208838	9.89	105188	13.14	94258	15.70	55629	6.56
ZZZZZZ	132779	9.02	201615	9.89	102905	13.15	90402	15.70	48467	6.57

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

(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 minntes.

Volatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2515-CC2468	Injection Date:	08/21/12
Lab File ID:	N66860.D	Injection Time:	11:13
Instrument ID:	GCMSN	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	148874	9.01	234230	9.89	120716	13.15	118749	15.70	62326	6.56
Upper Limit [a]	297748	9.51	468460	10.39	241432	13.65	237498	16.20	124652	7.06
Lower Limit [b]	74437	8.51	117115	9.39	60358	12.65	59375	15.20	31163	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2515-BS	157860	9.02	251135	9.88	129872	13.15	122799	15.70	63524	6.56
MSN2515-BSD	160245	9.01	253526	9.89	124046	13.14	122145	15.70	64639	6.56
MSN2515-MB	143124	9.02	228543	9.89	107934	13.15	92774	15.71	52802	6.57
MC12942-1	155324	9.02	245572	9.89	116273	13.15	102406	15.70	54403	6.57
MC13142-1	145833	9.02	236480	9.89	112423	13.15	95361	15.70	52609	6.57
MC13142-1MS	151388	9.02	246348	9.89	121960	13.14	118753	15.70	55176	6.56
MC13142-1MSD	157802	9.02	258162	9.89	125125	13.14	126362	15.70	59055	6.57
ZZZZZZ	154492	9.02	246896	9.89	118634	13.15	114497	15.70	58221	6.56
ZZZZZZ	149715	9.02	234952	9.89	112613	13.15	97703	15.71	59774	6.57
ZZZZZZ	131842	9.02	206751	9.89	98871	13.15	83413	15.71	50135	6.57
ZZZZZZ	136469	9.02	220737	9.89	104931	13.15	90101	15.70	57510	6.57
ZZZZZZ	121152	9.02	199714	9.89	98564	13.15	82399	15.70	43406	6.57
ZZZZZZ	132524	9.02	209708	9.89	100242	13.14	83829	15.70	55512	6.58
ZZZZZZ	127251	9.02	208178	9.89	98590	13.15	82661	15.71	45837	6.57
ZZZZZZ	127055	9.02	209525	9.89	98389	13.14	85631	15.71	53315	6.57
ZZZZZZ	124231	9.02	211265	9.89	102981	13.15	109032	15.70	47194	6.56
ZZZZZZ	145896	9.02	236677	9.89	112310	13.15	99839	15.70	49613	6.57
ZZZZZZ	134070	9.02	223658	9.89	106992	13.15	91727	15.70	48819	6.58
ZZZZZZ	133351	9.02	221848	9.89	103399	13.15	90668	15.70	42122	6.57
ZZZZZZ	134151	9.02	224772	9.89	104769	13.15	99884	15.70	52785	6.57
ZZZZZZ	124966	9.02	215249	9.89	101658	13.15	87784	15.70	57599	6.56
ZZZZZZ	123919	9.01	205023	9.89	97613	13.15	86481	15.70	44437	6.57

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

(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: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12942-1	N66865.D	88.0	93.0	95.0
MC12942-2	N66849.D	95.0	96.0	100.0
MC12942-2	N66805.D	79.0	94.0	94.0
MC12942-3	N66857.D	90.0	94.0	96.0
MC12942-3	N66806.D	75.0	92.0	91.0
MC12942-4	N66807.D	77.0	93.0	95.0
MC12870-4MS	N66792.D	82.0	97.0	89.0
MC12870-4MSD	N66793.D	81.0	94.0	92.0
MC12944-15MS	N66855.D	85.0	96.0	94.0
MC12944-15MSD	N66856.D	88.0	97.0	93.0
MC13142-1MS	N66867.D	90.0	96.0	89.0
MC13142-1MSD	N66868.D	89.0	95.0	88.0
MSN2512-BS	N66783.D	82.0	102.0	87.0
MSN2512-BSD	N66784.D	83.0	97.0	96.0
MSN2512-MB	N66786.D	85.0	97.0	101.0
MSN2514-BS	N66835.D	91.0	98.0	93.0
MSN2514-BSD	N66836.D	90.0	97.0	96.0
MSN2514-MB	N66838.D	94.0	96.0	96.0
MSN2515-BS	N66861.D	87.0	95.0	89.0
MSN2515-BSD	N66862.D	87.0	95.0	89.0
MSN2515-MB	N66864.D	89.0	93.0	97.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MB	W3868.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ng/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	0.37	5.0	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MB	W3868.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	34%	15-110%
4165-62-2	Phenol-d5	24%	15-110%
118-79-6	2,4,6-Tribromophenol	67%	15-110%
4165-60-0	Nitrobenzene-d5	68%	30-130%
321-60-8	2-Fluorohiphenyl	61%	30-130%
1718-51-0	Terphenyl-d14	100%	30-130%

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

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-MB	U9176.D	1	08/13/12	NS	08/09/12	OP29979	MSU508

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ng/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ng/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ng/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	67%	30-130%
321-60-8	2-Fluorobiphenyl	61%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

Blank Spike Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-BS	W3869.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	32.2	32	30-130
95-57-8	2-Chlorophenol	100	71.8	72	30-130
59-50-7	4-Chloro-3-methyl phenol	100	78.6	79	30-130
120-83-2	2,4-Dichlorophenol	100	78.4	78	30-130
105-67-9	2,4-Dimethylphenol	100	71.7	72	30-130
51-28-5	2,4-Dinitrophenol	100	79.7	80	30-130
534-52-1	4,6-Dinitro-o-cresol	100	105	105	30-130
95-48-7	2-Methylphenol	100	63.0	63	30-130
	3&4-Methylphenol	200	124	62	30-130
88-75-5	2-Nitrophenol	100	82.4	82	30-130
100-02-7	4-Nitrophenol	100	4.0	4* [a]	30-130
87-86-5	Pentachlorophenol	100	79.9	80	30-130
108-95-2	Phenol	100	35.0	35	30-130
95-95-4	2,4,5-Trichlorophenol	100	84.6	85	30-130
88-06-2	2,4,6-Trichlorophenol	100	83.4	83	30-130
62-53-3	Aniline	50	17.2	34* [a]	40-140
101-55-3	4-Bromophenyl phenyl ether	50	44.8	90	40-140
85-68-7	Butyl benzyl phthalate	50	49.4	99	40-140
100-51-6	Benzyl Alcohol	50	33.5	67	40-140
91-58-7	2-Chloronaphthalene	50	39.8	80	40-140
106-47-8	4-Chloroaniline	50	32.6	65	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	44.3	89	40-140
111-44-4	bis(2-Chloroethyl)ether	50	43.8	88	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	49.4	99	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	44.8	90	40-140
122-66-7	1,2-Diphenylhydrazine	50	50.0	100	40-140
121-14-2	2,4-Dinitrotoluene	50	46.0	92	40-140
606-20-2	2,6-Dinitrotoluene	50	45.3	91	40-140
91-94-1	3,3'-Dichlorobenzidine	50	50.7	101	40-140
132-64-9	Dibenzofuran	50	40.3	81	40-140
84-74-2	Di-n-butyl phthalate	50	49.0	98	40-140
117-84-0	Di-n-octyl phthalate	50	58.5	117	40-140
84-66-2	Diethyl phthalate	50	47.4	95	40-140
131-11-3	Dimethyl phthalate	50	45.5	91	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.8	100	40-140
118-74-1	Hexachlorobenzene	50	45.9	92	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-BS	W3869.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	8.9	18* a	40-140
67-72-1	Hexachloroethane	50	27.2	54	40-140
78-59-1	Isophorone	50	42.8	86	40-140
88-74-4	2-Nitroaniline	50	44.5	89	40-140
99-09-2	3-Nitroaniline	50	39.0	78	40-140
100-01-6	4-Nitroaniline	50	38.2	76	40-140
98-95-3	Nitrobenzene	50	43.9	88	40-140
62-75-9	n-Nitrosodimethylamine	50	26.4	53	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	47.4	95	40-140
86-30-6	N-Nitrosodiphenylamine	50	46.2	92	40-140
110-86-1	Pyridine	50	23.2	46	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	46%	15-110%
4165-62-2	Phenol-d5	33%	15-110%
118-79-6	2,4,6-Tribromophenol	90%	15-110%
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	104%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-BS	U9177.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
OP29979-BSD	U9253.D	1	08/16/12	NS	08/09/12	OP29979	MSU511

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	50	38.6	77	38.5	77	0	40-140/30
208-96-8	Acenaphthylene	50	28.3	57	28.0	56	1	40-140/30
120-12-7	Anthracene	50	41.6	83	39.0	78	6	40-140/30
56-55-3	Benzo(a)anthracene	50	46.7	93	42.4	85	10	40-140/30
50-32-8	Benzo(a)pyrene	50	46.5	93	36.1	72	25	40-140/30
205-99-2	Benzo(b)fluoranthene	50	55.2	110	41.1	82	29	40-140/30
191-24-2	Benzo(g,h,i)perylene	50	47.1	94	36.4	73	26	40-140/30
207-08-9	Benzo(k)fluoranthene	50	56.2	112	44.4	89	23	40-140/30
218-01-9	Chrysene	50	42.5	85	37.8	76	12	40-140/30
53-70-3	Dibenzo(a,h)anthracene	50	49.1	98	36.3	73	30	40-140/30
206-44-0	Flnoranthene	50	40.7	81	40.8	82	0	40-140/30
86-73-7	Fluorene	50	40.1	80	38.5	77	4	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	50	48.9	98	37.3	75	27	40-140/30
90-12-0	1-Methylnaphthalene	50	28.3	57	43.8	88	43* a	40-140/30
91-57-6	2-Methylnaphthalene	50	31.9	64	40.5	81	24	40-140/30
91-20-3	Naphtbalene	50	32.6	65	34.2	68	5	40-140/30
85-01-8	Phenanthrene	50	41.6	83	39.2	78	6	40-140/30
129-00-0	Pyrene	50	39.1	78	39.2	78	0	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	83%	82%	30-130%
321-60-8	2-Fluorobiphenyl	70%	73%	30-130%
1718-51-0	Terphenyl-d14	103%	76%	30-130%

(a) Outside control limits. Individual spike recoveries within acceptance limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MS	W3875.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
OP29978-MSD	W3876.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
MC12994-1	W3877.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

7.4.1

7

CAS No.	Compound	MC12994-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	34.2	34	35.0	35	2	30-130/20
95-57-8	2-Chlorophenol	ND		100	72.3	72	71.2	71	2	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	79.8	80	78.3	78	2	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	79.8	80	77.9	78	2	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	70.0	70	77.0	77	10	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	73.2	73	81.1	81	10	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	96.3	96	103	103	7	30-130/20
95-48-7	2-Methylphenol	ND		100	63.9	64	63.0	63	1	30-130/20
	3&4-Methylphenol	ND		200	125	63	123	62	2	30-130/20
88-75-5	2-Nitrophenol	ND		100	83.1	83	82.7	83	0	30-130/20
100-02-7	4-Nitrophenol	ND		100	ND	0* [a]	ND	0* [a]	nc	30-130/20
87-86-5	Pentachlorophenol	ND		100	81.7	82	77.7	78	5	30-130/20
108-95-2	Phenol	ND		100	36.0	36	33.1	33	8	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	85.1	85	84.2	84	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	84.9	85	84.6	85	0	30-130/20
62-53-3	Aniline	ND		50	17.7	35* [a]	ND	0* [a]	200* [b]	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	44.8	90	43.6	87	3	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	50.0	100	50.5	101	1	40-140/20
100-51-6	Benzyl Alcohol	ND		50	33.9	68	31.3	63	8	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	38.8	78	41.6	83	7	40-140/20
106-47-8	4-Chloroaniline	ND		50	32.4	65	3.1	6* [a]	165* [b]	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	44.9	90	43.7	87	3	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	44.0	88	42.7	85	3	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	49.4	99	50.4	101	2	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	44.7	89	46.1	92	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	49.7	99	48.2	96	3	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	45.3	91	46.1	92	2	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	45.0	90	44.7	89	1	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	48.8	98	ND	0* [a]	200* [b]	40-140/20
132-64-9	Dibenzofuran	ND		50	39.5	79	41.2	82	4	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	49.2	98	48.9	98	1	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	59.4	119	64.2	128	8	40-140/20
84-66-2	Diethyl phthalate	0.26		50	48.2	96	47.7	95	1	40-140/20
131-11-3	Dimethyl phthalate	ND		50	44.4	89	44.9	90	1	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		50	50.3	101	50.6	101	1	40-140/20
118-74-1	Hexachlorobenzene	ND		50	46.3	93	44.9	90	3	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29978-MS	W3875.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
OP29978-MSD	W3876.D	1	08/13/12	KR	08/09/12	OP29978	MSW176
MC12994-1	W3877.D	1	08/13/12	KR	08/09/12	OP29978	MSW176

The QC reported here applies to the following samples: Method: SW846 8270C

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	MC12994-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	8.6	17* [a]	10.5	21* [a]	20	40-140/20
67-72-1	Hexachloroethane	ND		50	26.9	54	30.2	60	12	40-140/20
78-59-1	Isophorone	ND		50	43.0	86	42.9	86	0	40-140/20
88-74-4	2-Nitroaniline	ND		50	44.6	89	43.2	86	3	40-140/20
99-09-2	3-Nitroaniline	ND		50	37.8	76	0.73	1* [a]	192* [b]	40-140/20
100-01-6	4-Nitroaniline	ND		50	37.0	74	13.1	26* [a]	95* [b]	40-140/20
98-95-3	Nitrobenzene	ND		50	44.2	88	44.6	89	1	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	26.5	53	27.0	54	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	48.2	96	49.2	98	2	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	46.0	92	36.1	72	24* [b]	40-140/20
110-86-1	Pyridine	ND		50	24.0	48	ND	0* [a]	200* [b]	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12994-1	Limits
367-12-4	2-Fluorophenol	47%	45%	39%	15-110%
4165-62-2	Phenol-d5	34%	32%	27%	15-110%
118-79-6	2,4,6-Tribromophenol	93%	89%	75%	15-110%
4165-60-0	Nitrobenzene-d5	86%	87%	79%	30-130%
321-60-8	2-Fluorobiphenyl	72%	77%	69%	30-130%
1718-51-0	Terphenyl-d14	105%	105%	104%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29979-MS	U9178.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
OP29979-MSD	U9179.D	1	08/13/12	NS	08/09/12	OP29979	MSU508
MC12994-2	U9180.D	1	08/13/12	NS	08/09/12	OP29979	MSU508

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12942-1, MC12942-2, MC12942-3

CAS No.	Compound	MC12994-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		50	38.3	77	39.6	79	3	40-140/20
208-96-8	Acenaphthylene	ND		50	28.1	56	28.5	57	1	40-140/20
120-12-7	Anthracene	ND		50	40.2	80	39.7	79	1	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	46.1	92	45.6	91	1	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	46.1	92	54.2	108	16	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	53.4	107	67.2	134	23* [a]	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	47.6	95	56.2	112	17	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	55.6	111	70.4	141* [b]	23* [a]	40-140/20
218-01-9	Chrysene	ND		50	42.6	85	42.9	86	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	48.9	98	61.6	123	23* [a]	40-140/20
206-44-0	Fluoranthene	ND		50	39.4	79	40.7	81	3	40-140/20
86-73-7	Fluorene	ND		50	39.9	80	40.3	81	1	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	49.2	98	59.7	119	19	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	25.3	51	33.2	66	27* [a]	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	31.7	63	34.3	69	8	40-140/20
91-20-3	Naphthalene	ND		50	32.7	65	35.0	70	7	40-140/20
85-01-8	Phenauthrene	ND		50	40.7	81	41.3	83	1	40-140/20
129-00-0	Pyrene	ND		50	38.1	76	39.0	78	2	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12994-2	Limits
4165-60-0	Nitrobenzene-d5	83%	84%	76%	30-130%
321-60-8	2-Fluorobiphenyl	71%	73%	68%	30-130%
1718-51-0	Terphenyl-d14	99%	104%	96%	30-130%

(a) High RPD due to possible matrix interference and/or sample non-homogeneity.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	74183	3.74	215966	4.72	121568	6.14	231849	7.44	157950	10.22	287514	11.67
Upper Limit [a]	148366	4.24	431932	5.22	243136	6.64	463698	7.94	315900	10.72	575028	12.17
Lower Limit [b]	37092	3.24	107983	4.22	60784	5.64	115925	6.94	78975	9.72	143757	11.17
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
OP29999-MS	71583	3.74	207520	4.72	112545	6.14	209934	7.45	83852	10.22	111938[c]	11.66
OP29999-MSD	71233	3.74	203886	4.72	109746	6.14	205650	7.44	83352	10.22	114920[c]	11.66
MC12978-4	69748	3.74	200172	4.72	109689	6.14	203795	7.44	88467	10.22	120327[c]	11.66
ZZZZZZ	72217	3.74	205369	4.72	111617	6.14	207245	7.44	92848	10.22	130035[c]	11.66
ZZZZZZ	72201	3.74	204902	4.72	112553	6.14	208471	7.44	93883	10.22	130090[c]	11.66
ZZZZZZ	68332	3.74	196326	4.72	106309	6.14	198140	7.44	91794	10.22	127541[c]	11.66
ZZZZZZ	68525	3.74	193092	4.72	106918	6.14	198831	7.44	109460	10.22	161532	11.66
ZZZZZZ	64898	3.74	184919	4.72	100976	6.14	189141	7.44	69395[c]	10.22	94469[c]	11.66
ZZZZZZ	73978	3.74	210885	4.72	115830	6.14	212901	7.44	79723	10.22	107257[c]	11.66
ZZZZZZ	64928	3.74	189697	4.72	102497	6.14	186877	7.44	71573[c]	10.22	96546[c]	11.66
ZZZZZZ	71004	3.74	203218	4.72	113722	6.14	213711	7.44	141576	10.22	199474	11.66
ZZZZZZ	70986	3.74	202204	4.72	112847	6.14	209861	7.44	144823	10.22	199711	11.66
OP29979-MB	66015	3.74	192336	4.72	106078	6.14	197204	7.44	137291	10.22	217162	11.66
OP29979-BS	63085	3.74	184334	4.72	100797	6.14	185462	7.45	126986	10.23	206580	11.66
OP29979-MS	60942	3.74	176504	4.72	98042	6.14	188532	7.45	132951	10.23	219452	11.66
OP29979-MSD	67652	3.74	194177	4.72	108229	6.14	201785	7.45	134825	10.23	173460	11.67
MC12994-2	66309	3.74	193152	4.72	106374	6.14	198533	7.44	137855	10.22	234364	11.66
ZZZZZZ	65411	3.74	188895	4.72	106106	6.14	197315	7.44	139482	10.22	230154	11.66
MC12942-1	64629	3.74	188478	4.72	105190	6.14	194361	7.44	138043	10.22	229882	11.66
MC12942-2	62752	3.74	186064	4.72	99713	6.14	183392	7.44	129195	10.22	229281	11.67
MC12942-3	63779	3.74	191425	4.72	101337	6.14	190332	7.45	133777	10.22	236316	11.67
ZZZZZZ	67061	3.74	195745	4.72	107355	6.14	200814	7.44	141954	10.22	243369	11.66
MC12978-4	71272	3.74	203022	4.72	113316	6.14	206807	7.44	89607	10.22	124219[c]	11.66
ZZZZZZ	67065	3.74	192739	4.72	105486	6.14	196366	7.44	90479	10.22	128564[c]	11.66
ZZZZZZ	67697	3.74	194421	4.72	108014	6.13	203927	7.44	95375	10.22	135262[c]	11.66
ZZZZZZ	71130	3.74	205153	4.72	109730	6.14	204141	7.44	94580	10.22	131219[c]	11.66
ZZZZZZ	64007	3.74	183110	4.72	101259	6.14	187958	7.44	71606[c]	10.22	96577[c]	11.66
ZZZZZZ	73579	3.74	211712	4.72	117518	6.14	216650	7.44	83184	10.22	109599[c]	11.66
ZZZZZZ	66563	3.74	197066	4.72	106019	6.14	195577	7.44	73907[c]	10.22	98115[c]	11.66

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU508-CC486	Injection Date:	08/13/12
Lab File ID:	U9160.D	Injection Time:	09:42
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

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 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.
(c) Outside control limits. Results confirmed by reanalysis.

Semivolatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLW1C Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU511-CC486	Injection Date:	08/16/12
Lab File ID:	U9252.D	Injection Time:	11:52
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	77180	3.69	271247	4.67	152714	6.08	281214	7.39	173656	10.17	300854	11.60
Upper Limit [a]	154360	4.19	542494	5.17	305428	6.58	562428	7.89	347312	10.67	601708	12.10
Lower Limit [b]	38590	3.19	135624	4.17	76357	5.58	140607	6.89	86828	9.67	150427	11.10
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
OP29979-BSD	64070	3.69	188036	4.67	122814	6.08	222734	7.39	137688	10.17	253155	11.60
ZZZZZZ	64568	3.69	192030	4.67	123624	6.08	221264	7.39	142896	10.17	264196	11.60
ZZZZZZ	60091	3.69	212907	4.67	117739	6.08	216394	7.39	137136	10.17	248891	11.60
ZZZZZZ	62743	3.69	221244	4.67	120264	6.08	222778	7.39	139035	10.17	259339	11.60
ZZZZZZ	61916	3.69	179989	4.67	120528	6.08	219716	7.39	138321	10.17	251756	11.60
ZZZZZZ	63465	3.69	223690	4.67	121939	6.08	222311	7.39	139876	10.17	259912	11.60
ZZZZZZ	63941	3.69	225680	4.67	120670	6.08	219857	7.39	137887	10.17	253022	11.60
ZZZZZZ	65155	3.69	222882	4.67	122908	6.08	225164	7.39	141973	10.17	261700	11.60

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: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW176-CC129	Injection Date:	08/13/12
Lab File ID:	W3865.D	Injection Time:	08:38
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	568383	3.79	2125545	4.78	1331140	6.20	2438245	7.53	2961924	10.42	2555816	11.99
Upper Limit [a]	1136766	4.29	4251090	5.28	2662280	6.70	4876490	8.03	5923848	10.92	5111632	12.49
Lower Limit [b]	284192	3.29	1062773	4.28	665570	5.70	1219123	7.03	1480962	9.92	1277908	11.49
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
OP29988-MB	516437	3.79	1925687	4.78	1136646	6.20	2008432	7.52	2393291	10.40	1994564	11.98
OP29988-BS	521823	3.79	1912591	4.78	1156624	6.20	2055114	7.52	2499894	10.41	2017284	11.98
OP29978-MB	432371	3.79	1622075	4.78	973554	6.20	1748206	7.52	2056611	10.40	1775418	11.98
OP29978-BS	427284	3.79	1583039	4.78	955279	6.20	1675200	7.52	2069232	10.41	1710873	11.98
ZZZZZZ	492492	3.79	1769695	4.78	1039226	6.20	1786427	7.52	1602635	10.41	1184919*	11.98
ZZZZZZ	544145	3.79	1983541	4.77	1163800	6.20	1958882	7.52	1740202	10.40	1295358	11.98
ZZZZZZ	522715	3.79	1907276	4.78	1111283	6.20	1898199	7.52	1428195[c]	10.40	1047966[c]	11.98
ZZZZZZ	512687	3.79	1854313	4.78	1102200	6.20	1890351	7.52	1476916[c]	10.41	1080093[c]	11.98
ZZZZZZ	493574	3.79	1790553	4.78	1044489	6.20	1789889	7.52	1487663	10.40	1090677[c]	11.98
OP29978-MS	464735	3.79	1707028	4.78	1032699	6.20	1786358	7.52	2128910	10.41	1767891	11.98
OP29978-MSD	456249	3.79	1673903	4.78	996564	6.20	1763994	7.52	2085759	10.41	1617159	11.98
MC12994-1	507378	3.79	1872516	4.78	1117929	6.20	2005153	7.52	2306028	10.41	2097976	11.98
ZZZZZZ	511202	3.79	1918461	4.78	1142125	6.20	2023012	7.52	2317870	10.41	2090413	11.98
MC12942-1	500453	3.79	1839073	4.78	1095290	6.20	1963795	7.52	2242357	10.40	2031102	11.98
MC12942-2	499219	3.79	1871439	4.77	1086411	6.20	1923794	7.52	2139468	10.41	2058752	11.98
MC12942-3	503792	3.79	1833018	4.78	1100117	6.20	1952388	7.52	2222439	10.41	2127147	11.98
ZZZZZZ	458335	3.79	1735032	4.77	1048235	6.20	1820657	7.52	2086949	10.40	2156640	11.98
ZZZZZZ	533727	3.79	1972738	4.77	1162790	6.20	1961156	7.52	2112078	10.40	2402051	11.98
OP29988-MS	478820	3.79	1752350	4.78	1052462	6.20	1788383	7.52	2110894	10.41	1827710	11.98
OP29988-MSD	476151	3.79	1746310	4.77	1042347	6.20	1816722	7.52	2204558	10.42	1943956	11.99
MC12990-9	456865	3.79	1679291	4.77	996637	6.20	1716306	7.52	2037725	10.41	1831271	11.98
ZZZZZZ	466445	3.79	1683886	4.78	980058	6.20	1694356	7.52	2011202	10.41	1888710	12.00
ZZZZZZ	502985	3.79	1812686	4.78	1069342	6.20	1837698	7.53	2520378	10.43	2468344	12.03
ZZZZZZ	482930	3.79	1720255	4.78	988575	6.20	1682044	7.53	2055777	10.42	1989537	12.01
ZZZZZZ	490028	3.79	1769741	4.78	1038525	6.20	1788656	7.53	2019205	10.42	1893719	12.00
ZZZZZZ	426942	3.79	1587863	4.78	963575	6.20	1748456	7.52	2144011	10.42	1903023	12.00
ZZZZZZ	501667	3.79	1784066	4.78	1046105	6.20	1721303	7.53	1871444	10.42	1768674	12.00
ZZZZZZ	542676	3.79	1961558	4.78	1181414	6.20	1973179	7.53	2299018	10.42	2132281	12.00

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

Semivolatile Internal Standard Area Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW176-CC129	Injection Date:	08/13/12
Lab File ID:	W3865.D	Injection Time:	08:38
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12942-1	W3879.D	26.0	21.0	54.0	69.0	60.0	48.0
MC12942-2	W3880.D	28.0	25.0	77.0	71.0	66.0	43.0
MC12942-3	W3881.D	29.0	25.0	75.0	78.0	68.0	46.0
OP29978-BS	W3869.D	46.0	33.0	90.0	86.0	73.0	104.0
OP29978-MB	W3868.D	34.0	24.0	67.0	68.0	61.0	100.0
OP29978-MS	W3875.D	47.0	34.0	93.0	86.0	72.0	105.0
OP29978-MSD	W3876.D	45.0	32.0	89.0	87.0	77.0	105.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12942-1	U9182.D	66.0	60.0	47.0
MC12942-2	U9183.D	68.0	66.0	42.0
MC12942-3	U9184.D	73.0	67.0	44.0
OP29979-BS	U9177.D	83.0	70.0	103.0
OP29979-BSD	U9253.D	82.0	73.0	76.0
OP29979-MB	U9176.D	67.0	61.0	92.0
OP29979-MS	U9178.D	83.0	71.0	99.0
OP29979-MSD	U9179.D	84.0	73.0	104.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MB	BK15933.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12942-1, MC12942-2, MC12942-3, MC12942-5

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	113%	36-173%
460-00-4	Bromofluorobenzene (S)	94%	36-173%

8.1.1

Blank Spike Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-BS	BK15934.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12942-1, MC12942-2, MC12942-3, MC12942-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.077	108	60-140
106-93-4	1,2-Dibromoethane	0.071	0.072	101	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	85%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29955-MS	BK15935.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
OP29955-MSD	BK15936.D	1	08/10/12	AP	08/08/12	OP29955	GBK604
MC12879-7	BK15938.D	1	08/10/12	AP	08/08/12	OP29955	GBK604

The QC reported here applies to the following samples: Method: SW846 8011

MC12942-1, MC12942-2, MC12942-3, MC12942-5

CAS No.	Compound	MC12879-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.070	99	0.072	101	3	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.069	97	0.070	99	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12879-7	Limits
460-00-4	Bromofluorobenzene (S)	97%	101%	113%	36-173%
460-00-4	Bromofluorobenzene (S)	86%	86%	95%	36-173%

8.3.1

8

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12942-1	BK15955.D	118.0	131.0
MC12942-2	BK15956.D	113.0	91.0
MC12942-3	BK15957.D	138.0	100.0
MC12942-5	BK15958.D	108.0	89.0
OP29955-BS	BK15934.D	85.0	75.0
OP29955-MB	BK15933.D	113.0	94.0
OP29955-MS	BK15935.D	97.0	86.0
OP29955-MSD	BK15936.D	101.0	86.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15926.D	Injection Time:	03:45
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15927.D	08/10/12	04:10	4.40	5.28
ZZZZZZ	BK15928.D	08/10/12	04:34	4.40	5.28
ZZZZZZ	BK15929.D	08/10/12	04:59	4.40	5.28
ZZZZZZ	BK15930.D	08/10/12	05:23	4.40	5.28
ZZZZZZ	BK15931.D	08/10/12	05:48	4.40	5.28
ZZZZZZ	BK15932.D	08/10/12	06:12	4.40	5.28
OP29955-MB	BK15933.D	08/10/12	06:37	4.40	5.28
OP29955-BS	BK15934.D	08/10/12	07:01	4.40	5.28
OP29955-MS	BK15935.D	08/10/12	07:26	4.40	5.28
OP29955-MSD	BK15936.D	08/10/12	07:50	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: MC12942
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK604-CC604	Injection Date:	08/10/12
Lab File ID:	BK15948.D	Injection Time:	12:42
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.40	5.28

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK15949.D	08/10/12	13:06	4.40	5.28
ZZZZZZ	BK15950.D	08/10/12	13:30	4.40	5.28
ZZZZZZ	BK15951.D	08/10/12	13:54	4.40	5.28
ZZZZZZ	BK15952.D	08/10/12	14:24	4.40	5.28
ZZZZZZ	BK15953.D	08/10/12	14:48	4.40	5.28
ZZZZZZ	BK15954.D	08/10/12	15:12	4.40	5.28
MC12942-1	BK15955.D	08/10/12	15:37	4.40	5.28
MC12942-2	BK15956.D	08/10/12	16:01	4.40	5.28
MC12942-3	BK15957.D	08/10/12	16:25	4.40	5.28
MC12942-5	BK15958.D	08/10/12	16:49	4.40	5.28

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC12986

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/12/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-080812-HCL	TB-080812-ST
P93D-ROX-080812	P93D-ROX-080812-EB
MW13-ROX-080812	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that SVOC LCS/LCSD recoveries were outside evaluation criteria. VOC MS/MSD surrogate recoveries for 4-bromofluorobenzene in sample MW13-ROX-080812 was outside evaluation criteria. VOC and SVOC MS/MSD recoveries and RPDs in sample MW13-ROX-080812 were outside evaluation criteria. Although not indicated in the laboratory case narrative, SVOCs and PAHs were detected in the equipment blank, and diethyl phthalate was detected in the method blank. Professional judgment was used to qualify acetone in sample MW13-ROX-080812. Additionally, professional judgment was used to qualify VOCs in sample MW13-ROX-080812 due to pH of the sample being greater than two (>2) at the time of analysis. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at temperatures of 0.1ºC and 0.3ºC, which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
P93D-ROX-080812-EB	SVOCs	Benzyl alcohol	1.1 ug/L

Blank ID	Parameter	Analyte	Concentration/ Amount
P93D-ROX-080812-EB	SVOCs	bis(2-Ethylhexyl)phthalate	0.41 ug/L
P93D-ROX-080812-EB	PAHs	2-Methylnaphthalene	0.14 ug/L
P93D-ROX-080812-EB	PAHs	Naphthalene	1.9 ug/L
OP29977-MB	SVOCs	Diethyl phthalate	0.56 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P93D-ROX-080812	SVOCs	Benzyl alcohol	-	**U**
P93D-ROX-080812	PAHs	2-Methylnaphthalene	0.42 ug/L	**U**
P93D-ROX-080812	PAHs	Naphthalene	9.2 ug/L	**U**
MW13-ROX-080812	PAHs	2-Methylnaphthalene	-	**U**
MW13-ROX-080812	PAHs	Naphthalene	1.3 ug/L	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/ LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD /RPD Criteria
OP29977-BS/BSD	SVOCs	Aniline	**36/37**	3	40-140/20
OP29977-BS/BSD	SVOCs	Hexachlorocyclopentadiene	**19/21**	11	40-140/20

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. LCS/LCSD OP29977-BS/BSD was associated with equipment blank P93D-ROX-080812-EB. Equipment blanks are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification
P93D-ROX-080812	SVOCs	Aniline	**UJ**
P93D-ROX-080812	SVOCs	Hexachlorocyclopentadiene	**UJ**
MW13-ROX-080812	SVOCs	Aniline	**UJ**
MW13-ROX-080812	SVOCs	Hexachlorocyclopentadiene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery	Criteria
MC12986-5MS/MSD	VOCs	4-Bromofluorobenzene	**133/133**	70-130

MC12986-5MS/MSD is a quality control sample and is not qualified. No qualification of data was required.

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, sample MW13-ROX-080812 was spiked and analyzed for VOCs, SVOCs, PAHs, and 8011 VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
MW13-ROX-080812	VOCs	Acetone	**58/46**	9	70-130/30
MW13-ROX-080812	VOCs	Acrolein	**0/0**	NA	70-130/30
MW13-ROX-080812	VOCs	Bromomethane	31/31	1	70-130/30
MW13-ROX-080812	VOCs	Chloroethane	91/**140**	**42**	70-130/30
MW13-ROX-080812	VOCs	2-Chloroethyl vinyl ether	72/**67**	8	70-130/30
MW13-ROX-080812	VOCs	cis-1,3-Dichloropropene	**19/18**	9	70-130/30
MW13-ROX-080812	VOCs	trans-1,3-Dichloropropene	**54/52**	4	70-130/30
MW13-ROX-080812	VOCs	2-Hexanone	**133**/126	5	70-130/30
MW13-ROX-080812	VOCs	Methyl tert butyl ether	**67/65**	2	70-130/30
MW13-ROX-080812	SVOCs	4-Nitrophenol	**9**/53	**141**	30-130/20
MW13-ROX-080812	SVOCs	Aniline	**26/34**	**28**	40-140/20
MW13-ROX-080812	SVOCs	3,3'-Dichlorobenzidine	**0/0**	NA	40-140/20
MW13-ROX-080812	SVOCs	Hexachlorocyclopentadiene	**22/22**	1	40-140/20
MW13-ROX-080812	SVOCs	Pyridine	**27**/49	**57**	40-140/20

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within

evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (>2X) the reporting limit (RL), since acetone is not representative of site conditions.

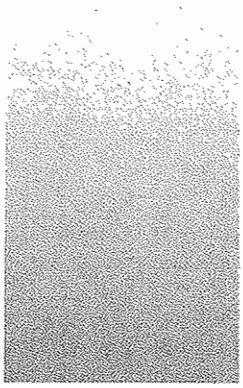
Sample ID	Analyte	New RL	Qualification	Comment
MW13-ROX-080812	Acetone	37.0 ug/L	**U**	Professional Judgment

Additionally, professional judgment was used to qualify VOCs in sample MW13-ROX-080812 due to pH of the sample being greater than two (>2) at the time of analysis. The pH of VOCs in equipment blank P93D-ROX-080812-EB was also greater than two (>2) at the time of analysis. Equipment blanks are quality control samples and are not qualified.

Sample ID	Parameter	Analyte	Qualification	Comment
MW13-ROX-080812	VOCs	Acetone	**UJ**	Professional Judgment
MW13-ROX-080812	VOCs	Benzene	**J**	Professional Judgment
MW13-ROX-080812	VOCs	Methyl tert butyl ether	**J**	Professional Judgment
MW13-ROX-080812	VOCs	All non-detects	**UJ**	Professional Judgment

New England ACCUTEST LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC12986

Sampling Date: 08/08/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **76**

Reviewed on 9/12/2012

Reza Pand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

ccutest Laboratories is the sole authority for authorizing edits or modifications to this cument. Unauthorized modification of this report is strictly prohibited.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

-1-

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Resnlts 7
4.1: MC12986-1: TB-080812-HCL 8
4.2: MC12986-2: TB-080812-ST 11
4.3: MC12986-3: P93D-ROX-080812 12
4.4: MC12986-4: P93D-ROX-080812-EB 19
4.5: MC12986-5: MW13-ROX-080812 26
Section 5: Misc. Forms **33**
5.1: Chain of Custody 34
5.2: Sample Tracking Chronicle 36
5.3: Internal Chain of Custody 37
Section 6: GC/MS Volatiles - QC Data Summaries **39**
6.1: Method Blank Summary 40
6.2: Blank Spike Summary 43
6.3: Matrix Spike/Matrix Spike Duplicate Summary 46
6.4: Internal Standard Area Summaries 49
6.5: Surrogate Recovery Summaries 50
Section 7: GC/MS Semi-volatiles - QC Data Summaries **51**
7.1: Method Blank Summary 52
7.2: Blank Spike Summary 55
7.3: Blank Spike/Blank Spike Duplicate Summary 56
7.4: Matrix Spike/Matrix Spike Duplicate Summary 58
7.5: Internal Standard Area Summaries 61
7.6: Surrogate Recovery Summaries 69
Section 8: GC Volatiles - QC Data Summaries **71**
8.1: Method Blank Summary 72
8.2: Blank Spike Summary 73
8.3: Matrix Spike/Matrix Spike Duplicate Summary 74
8.4: Surrogate Recovery Summaries 75
8.5: GC Surrogate Retention Time Summaries 76

Sample Summary

Shell Oil

Job No: MC12986

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC12986-1	08/08/12	00:00	DMCW	08/09/12	AQ	Trip Blank Water	TB-080812-HCL
MC12986-2	08/08/12	00:00	DMCW	08/09/12	AQ	Trip Blank Water	TB-080812-ST
MC12986-3	08/08/12	12:15	DMCW	08/09/12	AQ	Ground Water	P93D-ROX-080812
MC12986-4	08/08/12	12:35	DMCW	08/09/12	AQ	Equipment Blank	P93D-ROX-080812-EB
MC12986-5	08/08/12	15:55	DMCW	08/09/12	AQ	Ground Water	MW13-ROX-080812
MC12986-5D	08/08/12	15:55	DMCW	08/09/12	AQ	Water Dup/MSD	MW13-ROX-080812
MC12986-5S	08/08/12	15:55	DMCW	08/09/12	AQ	Water Matrix Spike	MW13-ROX-080812

ACCUTEST LABORATORIES

N

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	Job No	MC12986
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	Report Date	8/23/2012 4:02:25 PM

3 Sample(s), 2 Trip Blank(s) were collected on 08/08/2012 and were received at Accutest on 08/09/2012 properly preserved, at 0.3 Deg. C and intact. These Samples received an Accutest job number of MC12986. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ Batch ID: MSP2074

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12986-5MS, MC12986-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for 2-Hexanone, Acetone, Acrolein, Bromomethane, cis-1,3-Dichloropropene, Methyl Tert Butyl Ether, trans-1,3-Dichloropropene are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 2-Chloroethyl vinyl ether, Acetone, Acrolein, Bromomethane, cis-1,3-Dichloropropene, Methyl Tert Bntyl Ether, trans-1,3-Dichloropropene, Chloroethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Chloroethane are outside control limits for sample MC12986-5MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MC12986-4,5: The pH of the sample aliquot for VOA analysis was >2 at time of analysis.
- MC12986-5MS/MSD for 4-Bromofluorobenzene: Outside control limits due to possible matrix interferenee. Confirmed by MS/MSD.

Extractables by GCMS By Method SW846 8270C

Matrix AQ Batch ID: OP29977

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12986-5MS, MC12986-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 3,3'-Dichlorobenzidine, 4-Nitrophenol, Aniline, Hexachlorocyclopentadiene, Pyridine are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, Aniline, Hexachlorocyclopentadiene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 4-Nitrophenol, Aniline, Pyridine are outside control limits for sample OP29977-MSD. High RPD due to possible matrix interferenee and/or sample non-homogeneity.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP29989

- All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) MC12986-5MS, MC12986-5MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP30031

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC12986-5MS, MC12986-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Aceutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Aecutest Laboratories of NE. Laboratory Director or assignee as verified by the signature on the eover page has authorized the release of this report(MC12986).

Summary of Hits

Job Number: MC12986
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL
Collected: 08/08/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC12986-1	TB-080812-HCL					
No hits reported in this sample.						
MC12986-2	TB-080812-ST					
No hits reported in this sample.						
MC12986-3	P93D-ROX-080812					
Benzene		13.4	0.50	0.24	ug/l	SW846 8260B
2-Methylphenol		0.76 J	10	0.63	ug/l	SW846 8270C
3&4-Methylphenol		1.1 J	10	0.78	ug/l	SW846 8270C
Benzyl Alcohol		2.1 J	10	0.27	ug/l	SW846 8270C
Acenaphthene		0.17	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.051 J	0.10	0.014	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		0.40	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		0.42	0.21	0.054	ug/l	SW846 8270C BY SIM
Naphthalene		9.2	0.10	0.037	ug/l	SW846 8270C BY SIM
Phenanthrene		0.054	0.052	0.013	ug/l	SW846 8270C BY SIM
MC12986-4	P93D-ROX-080812-EB					
Benzyl Alcohol		1.1 J	11	0.28	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		0.41 J	2.1	0.39	ug/l	SW846 8270C
2-Methylnaphthalene		0.14 J	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene		1.9	0.11	0.038	ug/l	SW846 8270C BY SIM
MC12986-5	MW13-ROX-080812					
Acetone [a]		37.0	5.0	3.0	ug/l	SW846 8260B
Benzene [a]		6.9	0.50	0.24	ug/l	SW846 8260B
Methyl Tert Butyl Ether [a]		13.3	1.0	0.41	ug/l	SW846 8260B
Acenaphthene		0.10 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene		0.19	0.11	0.014	ug/l	SW846 8270C BY SIM
Anthracene		0.063 J	0.11	0.019	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		0.21	0.21	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		0.14 J	0.21	0.055	ug/l	SW846 8270C BY SIM
Naphthalene		1.3	0.11	0.038	ug/l	SW846 8270C BY SIM

(a) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

New England ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-080812-HCL		
Lab Sample ID:	MC12986-1	Date Sampled:	08/08/12
Matrix:	AQ - Trip Blauk Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P63676.D	1	08/21/12	TT	n/a	n/a	MSP2074
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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 presuruptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-080812-HCL		
Lab Sample ID:	MC12986-1	Date Sampled:	08/08/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethaue	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080812-HCL		
Lab Sample ID:	MC12986-1	Date Sampled:	08/08/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	116%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080812-ST		
Lab Sample ID:	MC12986-2	Date Sampled:	08/08/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/09/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16055.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	110%		36-173%
460-00-4	Bromofluorobenzene (S)	107%		36-173%

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:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytieal Batch
Run #1	P63692.D	1	08/21/12	TT	n/a	n/a	MSP2074
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	13.4	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	109%		70-130%

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

Report of Analysis

Client Sample ID:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Bateh	Analytical Batch
Run #1	W3933.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	0.76	10	0.63	ug/l	J
	3&4-Methylphenol	1.1	10	0.78	ug/l	J
88-75-5	2-Nitrophenol	ND	10	0.49	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.66	ug/l	
108-95-2	Phenol	ND	5.2	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.51	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.37	ug/l	
62-53-3	Aniline	ND UJ	10	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.28	ug/l	
100-51-6	Benzyl Alcohol	~~2.1~~ U	10	0.27	ng/l	JU
91-58-7	2-Chloronaphthalene	ND	5.2	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.66	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.39	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	0.93	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	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:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.2	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.39	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	10	5.2	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.2	2.1	ug/l	
78-59-1	Isophorone	ND	5.2	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.45	ug/l	
110-86-1	Pyridine	ND	10	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	82%		15-110%
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	76%		30-130%
1718-51-0	Terphenyl-d14	86%		30-130%

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 blauk
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9246.D	1	08/15/12	NS	08/09/12	OP29989	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.17	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.051	0.10	0.014	ug/l	J
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.039	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.061	ug/l	
218-01-9	Chrysene	ND	0.10	0.076	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.034	ug/l	
86-73-7	Fluorene	ND	0.10	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.048	ug/l	
90-12-0	1-Methylnaphthalene	0.40	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	~~0.42~~ u	~~0.21~~ 0.42	0.054	ug/l	u
91-20-3	Naphthalene	~~9.2~~ u	~~0.10~~ 9.2	0.037	ug/l	u
85-01-8	Phenanthrene	0.054	0.052	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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:	P93D-ROX-080812		
Lab Sample ID:	MC12986-3	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16056.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	33.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.016	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.016	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	84%		36-173%
460-00-4	Bromofluorobenzene (S)	93%		36-173%

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 evideuce of a compound

Report of Analysis

Client Sample ID:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P63677.D	1	08/21/12	TT	n/a	n/a	MSP2074
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroetbane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		70-130%
2037-26-5	Toluene-D8	93%		70-130%
460-00-4	4-Bromofluorobenzene	112%		70-130%

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

(a) The pH of the sample aliquot for VOA analysis was > 2 at time of analysis.

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:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3934.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.39	ng/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ng/l	
95-48-7	2-Methylphenol	ND	11	0.64	ng/l	
	3&4-Methylphenol	ND	11	0.79	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ng/l	
87-86-5	Pentachlorophenol	ND	11	0.67	ug/l	
108-95-2	Phenol	ND	5.3	0.98	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.37	ug/l	
62-53-3	Aniline	ND	11	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	1.1	11	0.28	ug/l	J
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.94	ng/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.41	2.1	0.39	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	5.3	ug/l	
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.62	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		15-110%
4165-62-2	Phenol-d5	28%		15-110%
118-79-6	2,4,6-Tribromophenol	83%		15-110%
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	76%		30-130%
1718-51-0	Terphenyl-d14	87%		30-130%

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 fonnd in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9247.D	1	08/15/12	NS	08/09/12	OP29989	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Flnoranthene	ND	0.11	0.034	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.048	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.15	ng/l	
91-57-6	2-Methylnaphthalene	0.14	0.21	0.055	ug/l	J
91-20-3	Naphthalene	1.9	0.11	0.038	ug/l	
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorohiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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

Report of Analysis

Client Sample ID:	P93D-ROX-080812-EB		
Lab Sample ID:	MC12986-4	Date Sampled:	08/08/12
Matrix:	AQ - Equipment Blank	Date Received:	08/09/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16057.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	34.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	90%		36-173%
460-00-4	Bromofluorobenzene (S)	102%		36-173%

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:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P63693.D	1	08/21/12	TT	n/a	n/a	MSP2074
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~37.0~~ UJ ~~5.0~~ 31.0		3.0	ug/l	UJ
107-02-8	Acrolein	ND UJ	25	10	ug/l	UJ
107-13-1	Acrylonitrile	ND ↓	5.0	3.2	ug/l	↓
71-43-2	Benzene	6.9 J	0.50	0.24	ug/l	J
108-86-1	Bromobenzene	ND UJ	5.0	0.62	ug/l	UJ
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Bntylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND ↓	1.0	0.95	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:	MW13-ROX-080812		
Lab Sample ID:	MCI2986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	13.3	1.0	0.41	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	130%		70-130%

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

(a) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

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:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3932.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.64	ug/l	
	3&4-Methylphenol	ND	11	0.80	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.50	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.9	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	ND	5.3	0.99	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.52	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND UJ	11	2.1	ug/l	UJ
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.35	ng/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.67	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.30	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	0.95	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	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:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.3	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	5.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.3	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.3	2.1	ug/l	
78-59-1	Isophorone	ND	5.3	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	0.63	ng/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.29	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.46	ug/l	
110-86-1	Pyridine	ND	11	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	89%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	73%		30-130%

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

Report of Analysis

Client Sample ID:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9245.D	1	08/15/12	NS	08/09/12	OP29989	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.10	0.11	0.014	ug/l	J
208-96-8	Acenaphthylene	0.19	0.11	0.014	ug/l	
120-12-7	Anthracene	0.063	0.11	0.019	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.053	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.062	ug/l	
218-01-9	Chrysene	ND	0.11	0.077	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.044	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.049	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	0.21	0.21	0.15	ug/l	
91-57-6	2-Methylnaphthalene	~~0.14~~ 4	0.21	0.055	ug/l	J 4
91-20-3	Naphthalene	~~1.3~~ 4	~~0.11~~ 1.3	0.038	ug/l	4
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	78%		30-130%
1718-51-0	Terphenyl-d14	72%		30-130%

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:	MW13-ROX-080812		
Lab Sample ID:	MC12986-5	Date Sampled:	08/08/12
Matrix:	AQ - Ground Water	Date Received:	08/09/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16058.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	34.9 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	161%		36-173%
460-00-4	Bromofluorobenzene (S)	76%		36-173%

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 England ACCUTEST LABORATORIES

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

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

LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs, 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200))
☐ Lab Vendor # (_____)
☐ SPL (_____)

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SOBCH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 8/8/12

PAGE: 1 of 1

COMPANY: URS CORPORATION

CO CODE:

SITE ADDRESS: Street and City: 900 South Central Ave, ROXANA

State: IL

GLOBAL ID NO:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

CO DELIVERABLE TO (name, Company, Office Location):

PHONE NO:

E-MAIL:

CONSULTANT PROJECT NO: Roxana Quarterly GW / 21562735.00006

PROJECT CONTACT (Hardcopy or PDF Report to): Erik Arthur

TELEPHONE: 314-265-1553

FAX: 314-429-0462

BY TO CONSULT E-MAIL: erik.arthur@urs.com

SAMPLER NAME(S) PRINT: D. Mattingly / C. Williams

LAB USE ONLY: MC12986

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
* Please include "J" values on Reports.
* Please provide sample receipt upon login.

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCl	HNO3	NaOH	NONE	OTHER	NO. OF CONT	VOC 8260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	TB-080812-HCl	8/8/12	00:00	water	2					2	X				0	
-2	TB-080812-ST		00:00						2	2		X				
-3	P93D-ROX-080812		1215		2			2	2	6	X	X	X	X		
-4	P93D-ROX-080812-EB		1235		2			2	2	6	X	X	X	X		
-5	MW13-ROX-080812		1555		2			2	2	6	X	X	X	X		
-5S	MW13-ROX-080812MS		1555		2			2	2	6	X	X	X	X		10C, 4L5
-5SD	MW13-ROX-080812-MSD		1555		2			2	2	6	X	X	X	X		

Relinquished by (Signature)	Received by (Signature)	Date	Time
Danielle Mattingly	FED EX	8/8/12	1830
FX	Brunell	8-9-12	950

05/2008 Revision

0.1 °C
0.3 °C

5.1

5

MC12986: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC12986 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/9/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SO CENTRAL AVE No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservatio	Y or 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 or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

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

Sample Integrity - Instructions	Y or 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

5.1

MC12986: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC12986

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC12986-1 Collected: 08-AUG-12 00:00 By: DMCW Received: 09-AUG-12 By: TB-080812-HCL						
MC12986-1	SW846 8260B	21-AUG-12 11:14	TT			V8260SL+
MC12986-2 Collected: 08-AUG-12 00:00 By: DMCW Received: 09-AUG-12 By: TB-080812-ST						
MC12986-2	SW846 8011	15-AUG-12 19:42	AP	14-AUG-12	MT	V8011SL
MC12986-3 Collected: 08-AUG-12 12:15 By: DMCW Received: 09-AUG-12 By: P93D-ROX-080812						
MC12986-3	SW846 8270C	14-AUG-12 21:23	KR	09-AUG-12	MT	AB8270SL+
MC12986-3	SW846 8011	15-AUG-12 20:06	AP	14-AUG-12	MT	V8011SL
MC12986-3	SW846 8270C BY SIM	15-AUG-12 20:23	NS	09-AUG-12	MT	B8270SIMPAH
MC12986-3	SW846 8260B	21-AUG-12 18:40	TT			V8260SL+
MC12986-4 Collected: 08-AUG-12 12:35 By: DMCW Received: 09-AUG-12 By: P93D-ROX-080812-EB						
MC12986-4	SW846 8270C	14-AUG-12 21:45	KR	09-AUG-12	MT	AB8270SL+
MC12986-4	SW846 8011	15-AUG-12 20:30	AP	14-AUG-12	MT	V8011SL
MC12986-4	SW846 8270C BY SIM	15-AUG-12 20:46	NS	09-AUG-12	MT	B8270SIMPAH
MC12986-4	SW846 8260B	21-AUG-12 11:42	TT			V8260SL+
MC12986-5 Collected: 08-AUG-12 15:55 By: DMCW Received: 09-AUG-12 By: MW13-ROX-080812						
MC12986-5	SW846 8270C	14-AUG-12 21:01	KR	09-AUG-12	MT	AB8270SL+
MC12986-5	SW846 8270C BY SIM	15-AUG-12 20:00	NS	09-AUG-12	MT	B8270SIMPAH
MC12986-5	SW846 8011	15-AUG-12 20:54	AP	14-AUG-12	MT	V8011SL
MC12986-5	SW846 8260B	21-AUG-12 19:09	TT			V8260SL+

Accutest Internal Chain of Custody

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/09/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12986-1.1	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-1.1	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-1.1	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-1.1	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-2.2	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-2.2	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-3.1	Walk In Ref #22	Nick Krasinski	08/10/12 14:14	Retrieve from Storage
MC12986-3.1	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-3.3	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-3.3	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-3.3	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-3.3	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-3.5	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-3.5	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-4.1	Walk In Ref #22	Nick Krasinski	08/10/12 14:14	Retrieve from Storage
MC12986-4.1	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-4.5	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-4.5	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-4.5	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-4.5	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-4.6	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-4.6	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.2	Walk In Ref #22	Nick Krasinski	08/10/12 14:14	Retrieve from Storage
MC12986-5.2	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.3	Walk In Ref #22	Nick Krasinski	08/10/12 14:14	Retrieve from Storage
MC12986-5.3	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.5	Walk In Ref #22	Nick Krasinski	08/10/12 14:14	Retrieve from Storage
MC12986-5.5	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.7	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-5.7	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-5.7	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-5.7	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/09/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC12986-5.8	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-5.8	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-5.8	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-5.8	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-5.11	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-5.11	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-5.11	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-5.11	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-5.13	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-5.13	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.15	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-5.15	Nick Krasinski		08/16/12 21:49	Depleted
MC12986-5.16	VOC Ref #4	Jaime Maslowski	08/21/12 09:53	Retrieve from Storage
MC12986-5.16	Jaime Maslowski	GCMSP	08/21/12 09:53	Load on Instrument
MC12986-5.16	GCMSP	Tomasz Torski	08/22/12 09:21	Unload from Instrument
MC12986-5.16	Tomasz Torski	VOC Ref #4	08/22/12 09:21	Return to Storage
MC12986-5.17	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC12986-5.17	Nick Krasinski		08/16/12 21:49	Depleted

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

9

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-MB	P63675.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-MB	P63675.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-MB	P63675.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	123%	70-130%

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

6.1.1

Blank Spike Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-BS	P63673.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	47.0	94	70-130
107-02-8	Acrolein	250	242	97	70-130
107-13-1	Acrylonitrile	50	47.3	95	70-130
71-43-2	Benzene	50	44.2	88	70-130
108-86-1	Bromobenzene	50	48.6	97	70-130
74-97-5	Bromochloromethane	50	50.0	100	70-130
75-27-4	Bromodichloromethane	50	47.0	94	70-130
75-25-2	Bromoform	50	43.5	87	70-130
74-83-9	Bromomethane	50	42.9	86	70-130
78-93-3	2-Butanone (MEK)	50	44.7	89	70-130
104-51-8	n-Butylbenzene	50	52.0	104	70-130
135-98-8	sec-Butylbenzene	50	55.0	110	70-130
98-06-6	tert-Butylbenzene	50	55.0	110	70-130
75-15-0	Carbon disulfide	50	37.9	76	70-130
56-23-5	Carbon tetrachloride	50	45.6	91	70-130
108-90-7	Chlorobenzene	50	50.6	101	70-130
75-00-3	Chloroethane	50	40.8	82	70-130
110-75-8	2-Chloroethyl vinyl ether	50	35.9	72	70-130
67-66-3	Chloroform	50	46.9	94	70-130
74-87-3	Chloromethane	50	43.6	87	70-130
95-49-8	o-Chlorotoluene	50	52.2	104	70-130
106-43-4	p-Chlorotoluene	50	54.2	108	70-130
124-48-1	Dibromochloromethane	50	47.6	95	70-130
95-50-1	1,2-Dichlorobenzene	50	52.5	105	70-130
541-73-1	1,3-Dichlorobenzene	50	51.4	103	70-130
106-46-7	1,4-Dichlorobenzene	50	49.4	99	70-130
75-71-8	Dichlorodifluoromethane	50	39.3	79	70-130
75-34-3	1,1-Dichloroethane	50	46.0	92	70-130
107-06-2	1,2-Dichloroethane	50	47.6	95	70-130
75-35-4	1,1-Dichloroethene	50	40.9	82	70-130
156-59-2	cis-1,2-Dichloroethene	50	44.7	89	70-130
156-60-5	trans-1,2-Dichloroethene	50	42.3	85	70-130
78-87-5	1,2-Dichloropropane	50	48.4	97	70-130
142-28-9	1,3-Dichloropropaue	50	49.2	98	70-130
594-20-7	2,2-Dichloropropane	50	40.7	81	70-130
563-58-6	1,1-Dichloropropene	50	48.9	98	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-BS	P63673.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	43.0	86	70-130
10061-02-6	trans-1,3-Dichloropropene	50	45.5	91	70-130
123-91-1	1,4-Dioxane	250	224	90	70-130
97-63-2	Ethyl methacrylate	50	45.4	91	77-137
100-41-4	Ethylbenzene	50	48.7	97	70-130
87-68-3	Hexachlorobutadiene	50	48.7	97	70-130
591-78-6	2-Hexanone	50	52.9	106	70-130
98-82-8	Isopropylbenzene	50	54.5	109	70-130
99-87-6	p-Isopropyltoluene	50	53.1	106	70-130
1634-04-4	Methyl Tert Butyl Ether	50	44.2	88	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	48.9	98	70-130
74-95-3	Methylene bromide	50	48.1	96	70-130
75-09-2	Methylene chloride	50	42.0	84	70-130
103-65-1	n-Propylbenzene	50	54.3	109	70-130
100-42-5	Styrene	50	50.8	102	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	51.2	102	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.8	104	70-130
127-18-4	Tetrachloroethene	50	49.4	99	70-130
108-88-3	Toluene	50	47.4	95	70-130
87-61-6	1,2,3-Trichlorobenzene	50	50.6	101	70-130
120-82-1	1,2,4-Trichlorobenzene	50	47.4	95	70-130
71-55-6	1,1,1-Trichloroethaue	50	46.0	92	70-130
79-00-5	1,1,2-Trichloroethane	50	50.6	101	70-130
79-01-6	Trichloroethene	50	46.9	94	70-130
75-69-4	Trichlorofluoromethane	50	41.4	83	70-130
96-18-4	1,2,3-Trichloropropane	50	49.0	98	70-130
95-63-6	1,2,4-Trimethylbenzeue	50	49.0	98	70-130
108-67-8	1,3,5-Trimethylbenzene	50	48.8	98	70-130
108-05-4	Vinyl Acetate	50	47.2	94	70-130
75-01-4	Vinyl chloride	50	38.9	78	70-130
	m,p-Xylene	100	102	102	70-130
95-47-6	o-Xylene	50	52.9	106	70-130
1330-20-7	Xylene (total)	150	155	103	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2074-BS	P63673.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	91%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	109%	70-130%

6.2.1

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12986-5MS	P63695.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5MSD	P63696.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5 [a]	P63693.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	37.0		50	65.9	58* b	60.1	46* b	9	70-130/30
107-02-8	Acrolein	ND		250	ND	0* b	ND	0* b	nc	70-130/30
107-13-1	Acrylonitrile	ND		50	52.4	105	51.3	103	2	70-130/30
71-43-2	Benzene	6.9		50	52.9	92	52.6	91	1	70-130/30
108-86-1	Bromobenzene	ND		50	51.4	103	52.3	105	2	70-130/30
74-97-5	Bromochloromethane	ND		50	52.1	104	52.8	106	1	70-130/30
75-27-4	Bromodichloromethane	ND		50	51.6	103	50.7	101	2	70-130/30
75-25-2	Bromoform	ND		50	46.0	92	46.2	92	0	70-130/30
74-83-9	Bromomethane	ND		50	15.4	31* b	15.3	31* b	1	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	44.8	90	42.6	85	5	70-130/30
104-51-8	n-Butylbenzene	ND		50	54.6	109	55.3	111	1	70-130/30
135-98-8	sec-Butylbenzene	ND		50	58.4	117	59.1	118	1	70-130/30
98-06-6	tert-Butylbenzene	ND		50	58.9	118	59.8	120	2	70-130/30
75-15-0	Carbon disulfide	ND		50	40.3	81	41.1	82	2	70-130/30
56-23-5	Carbon tetrachloride	ND		50	50.5	101	50.2	100	1	70-130/30
108-90-7	Chlorobenzene	ND		50	54.4	109	54.2	108	0	70-130/30
75-00-3	Chloroethane	ND		50	45.7	91	70.1	140* b	42* c	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	36.2	72	33.3	67* b	8	70-130/30
67-66-3	Chloroform	ND		50	52.6	105	51.0	102	3	70-130/30
74-87-3	Chloromethane	ND		50	47.6	95	57.5	115	19	70-130/30
95-49-8	o-Chlorotoluene	ND		50	55.7	111	56.1	112	1	70-130/30
106-43-4	p-Chlorotoluene	ND		50	56.8	114	57.8	116	2	70-130/30
124-48-1	Dibromochloromethane	ND		50	51.0	102	50.7	101	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	54.2	108	55.6	111	3	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	53.8	108	54.7	109	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	50.3	101	51.8	104	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	41.3	83	39.1	78	5	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	51.1	102	49.9	100	2	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	52.1	104	50.2	100	4	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	45.4	91	45.0	90	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	49.2	98	48.2	96	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	46.9	94	46.0	92	2	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	52.5	105	51.8	104	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	53.1	106	51.9	104	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	38.9	78	38.5	77	1	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	54.2	108	53.1	106	2	70-130/30

* = Outside of Control Limits.

6.3.1

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12986-5MS	P63695.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5MSD	P63696.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5 [a]	P63693.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	9.6	19* b	8.8	18* b	9	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	26.8	54* b	25.8	52* b	4	70-130/30
123-91-1	1,4-Dioxane	ND		250	262	105	287	115	9	70-130/30
97-63-2	Ethyl methacrylate	ND		50	48.2	96	46.4	93	4	72-139/30
100-41-4	Ethylbenzene	ND		50	53.1	106	52.7	105	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	51.6	103	53.5	107	4	70-130/30
591-78-6	2-Hexanone	ND		50	66.3	133* b	62.9	126	5	70-130/30
98-82-8	Isopropylbenzene	ND		50	58.3	117	58.5	117	0	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	55.5	111	56.5	113	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	13.3		50	47.0	67* b	45.9	65* b	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	52.9	106	50.2	100	5	70-130/30
74-95-3	Methylene bromide	ND		50	52.1	104	51.6	103	1	70-130/30
75-09-2	Methylene chloride	ND		50	45.8	92	45.3	91	1	70-130/30
103-65-1	n-Propylbenzene	ND		50	58.0	116	58.2	116	0	70-130/30
100-42-5	Styrene	ND		50	41.3	83	40.7	81	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	56.8	114	55.9	112	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	57.0	114	56.3	113	1	70-130/30
127-18-4	Tetrachloroethene	ND		50	53.5	107	53.6	107	0	70-130/30
108-88-3	Toluene	ND		50	52.6	105	52.1	104	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	54.0	108	55.2	110	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	49.3	99	51.3	103	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	51.1	102	50.5	101	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	55.0	110	53.3	107	3	70-130/30
79-01-6	Trichloroethene	ND		50	51.0	102	50.6	101	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	45.9	92	44.7	89	3	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	45.6	91	44.9	90	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	51.5	103	52.1	104	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	52.1	104	52.2	104	0	70-130/30
108-05-4	Vinyl Acetate	ND		50	50.1	100	49.4	99	1	70-130/30
75-01-4	Vinyl chloride	ND		50	40.1	80	40.8	82	2	70-130/30
	m,p-Xylene	ND		100	111	111	110	110	1	70-130/30
95-47-6	o-Xylene	ND		50	57.7	115	56.6	113	2	70-130/30
1330-20-7	Xylene (total)	ND		150	169	113	166	111	2	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC12986-5MS	P63695.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5MSD	P63696.D	1	08/21/12	TT	n/a	n/a	MSP2074
MC12986-5 [a]	P63693.D	1	08/21/12	TT	n/a	n/a	MSP2074

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

MC12986-1, MC12986-3, MC12986-4, MC12986-5

CAS No.	Surrogate Recoveries	MS	MSD	MC12986-5	Limits
1868-53-7	Dibromofluoromethane	108%	107%	101%	70-130%
2037-26-5	Toluene-D8	109%	109%	100%	70-130%
460-00-4	4-Bromofluorobenzene	133%* [d]	133%* [d]	130%	70-130%

(a) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.
(d) Outside control limits due to possible matrix interference. Confirmed by MS/MSD.

* = Outside of Control Limits.

6.3.1

Volatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSP2074-CC2072	Injection Date:	08/21/12
Lab File ID:	P63672.D	Injection Time:	09:21
Instrument ID:	GCMSP	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	567022	8.25	896361	9.09	462161	12.31	391608	14.87	142778	5.93
Upper Limit [a]	1134044	8.75	1792722	9.59	924322	12.81	783216	15.37	285556	6.43
Lower Limit [b]	283511	7.75	448181	8.59	231081	11.81	195804	14.37	71389	5.43
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSP2074-BS	621947	8.25	988635	9.09	513638	12.31	437316	14.87	155988	5.93
MSP2074-MB	553166	8.25	877446	9.10	427152	12.32	333580	14.87	146827	5.95
MC12986-1	574232	8.25	914867	9.10	445195	12.32	351368	14.87	159086	5.95
MC12986-4 [c]	570133	8.25	913172	9.10	448665	12.32	353415	14.87	169410	5.95
ZZZZZZ	576579	8.25	914397	9.10	447641	12.32	350474	14.87	159538	5.96
ZZZZZZ	548510	8.25	874498	9.10	426751	12.32	334003	14.87	138531	5.96
ZZZZZZ	541037	8.25	852492	9.10	418580	12.32	322521	14.87	144312	5.95
ZZZZZZ	544540	8.25	863925	9.10	426124	12.32	330161	14.87	137876	5.95
ZZZZZZ	520993	8.25	821520	9.10	399967	12.32	310188	14.87	129202	5.95
ZZZZZZ	520920	8.25	824894	9.10	408416	12.32	318014	14.87	128001	5.95
ZZZZZZ	534174	8.25	839055	9.10	423956	12.32	328105	14.87	139705	5.96
ZZZZZZ	505224	8.25	802240	9.10	394488	12.32	303006	14.87	133377	5.95
ZZZZZZ	496205	8.25	787846	9.10	392716	12.32	303361	14.87	130122	5.94
ZZZZZZ	503606	8.25	797112	9.10	398815	12.32	307185	14.87	142834	5.94
ZZZZZZ	487210	8.25	771782	9.10	385031	12.32	298039	14.87	122485	5.95
MC12986-3	504349	8.25	802286	9.10	404682	12.32	314503	14.87	143641	5.95
MC12986-5 [c]	521870	8.25	830937	9.10	415854	12.32	335860	14.87	148383	5.95
ZZZZZZ	578367	8.25	907461	9.10	461083	12.31	401664	14.87	213980	5.95
MC12986-5MS	571762	8.25	900753	9.10	473217	12.31	411128	14.87	142712	5.96
MC12986-5MSD	602191	8.25	948563	9.10	493028	12.31	422009	14.87	137007	5.96

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

(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) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

Volatile Surrogate Recovery Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC12986-1	P63676.D	89.0	95.0	116.0
MC12986-3	P63692.D	105.0	103.0	109.0
MC12986-4	P63677.D	90.0	93.0	112.0
MC12986-5	P63693.D	101.0	100.0	130.0
MC12986-5MS	P63695.D	108.0	109.0	133.0* [a]
MC12986-5MSD	P63696.D	107.0	109.0	133.0* [a]
MSP2074-BS	P63673.D	91.0	97.0	109.0
MSP2074-MB	P63675.D	95.0	101.0	123.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzeue	70-130%

(a) Outside control limits due to possible matrix interference. Confirmed by MS/MSD.

6.5.1

6

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-MB	W3830.D	1	08/10/12	KR	08/09/12	OP29977	MSW175

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	0.56	5.0	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-MB	W3830.D	1	08/10/12	KR	08/09/12	OP29977	MSW175

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ng/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ng/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ng/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	48%	15-110%
4165-62-2	Phenol-d5	32%	15-110%
118-79-6	2,4,6-Tribromophenol	87%	15-110%
4165-60-0	Nitrobenzene-d5	89%	30-130%
321-60-8	2-Fluorobiphenyl	78%	30-130%
1718-51-0	Terphenyl-d14	107%	30-130%

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

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29989-MB	W4222.D	1	08/23/12	KR	08/09/12	OP29989	MSW192

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	87%	30-130%
321-60-8	2-Fluorohiphenyl	71%	30-130%
1718-51-0	Terphenyl-d14	109%	30-130%

Blank Spike Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29989-BS	W4223.D	1	08/23/12	KR	08/09/12	OP29989	MSW192

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	39.0	78	40-140
208-96-8	Acenaphthylene	50	33.2	66	40-140
120-12-7	Anthracene	50	49.9	100	40-140
56-55-3	Benzo(a)anthracene	50	52.4	105	40-140
50-32-8	Benzo(a)pyrene	50	39.9	80	40-140
205-99-2	Benzo(b)fluoranthene	50	53.1	106	40-140
191-24-2	Benzo(g,h,i)perylene	50	53.6	107	40-140
207-08-9	Benzo(k)fluoranthene	50	50.3	101	40-140
218-01-9	Chrysene	50	43.8	88	40-140
53-70-3	Dibenzo(a,b)anthracene	50	54.3	109	40-140
206-44-0	Fluoranthene	50	50.8	102	40-140
86-73-7	Fluorene	50	46.4	93	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	54.4	109	40-140
90-12-0	1-Methylnaphthalene	50	32.1	64	40-140
91-57-6	2-Methylnaphthalene	50	34.6	69	40-140
91-20-3	Naphtbalene	50	36.4	73	40-140
85-01-8	Phenanthrene	50	48.9	98	40-140
129-00-0	Pyrene	50	48.8	98	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	92%	30-130%
321-60-8	2-Fluorobiphenyl	67%	30-130%
1718-51-0	Terphenyl-d14	113%	30-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-BS	W3831.D	1	08/10/12	KR	08/09/12	OP29977	MSW175
OP29977-BSD	W3832.D	1	08/10/12	KR	08/09/12	OP29977	MSW175

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	100	32.7	33	33.7	34	3	30-130/20
95-57-8	2-Chlorophenol	100	80.8	81	78.9	79	2	30-130/20
59-50-7	4-Chloro-3-methyl phenol	100	84.0	84	84.7	85	1	30-130/20
120-83-2	2,4-Dichlorophenol	100	83.9	84	85.7	86	2	30-130/20
105-67-9	2,4-Dimethylphenol	100	80.9	81	79.1	79	2	30-130/20
51-28-5	2,4-Dinitrophenol	100	83.7	84	86.8	87	4	30-130/20
534-52-1	4,6-Dinitro-o-cresol	100	107	107	109	109	2	30-130/20
95-48-7	2-Methylphenol	100	70.9	71	69.7	70	2	30-130/20
	3&4-Methylphenol	200	136	68	133	67	2	30-130/20
88-75-5	2-Nitrophenol	100	90.5	91	91.7	92	1	30-130/20
100-02-7	4-Nitrophenol	100	43.2	43	42.7	43	1	30-130/20
87-86-5	Pentachlorophenol	100	87.0	87	87.8	88	1	30-130/20
108-95-2	Phenol	100	39.1	39	37.8	38	3	30-130/20
95-95-4	2,4,5-Trichlorophenol	100	91.2	91	92.7	93	2	30-130/20
88-06-2	2,4,6-Trichlorophenol	100	89.2	89	90.5	91	1	30-130/20
62-53-3	Aniline	50	18.2	36* a	18.7	37* a	3	40-140/20
101-55-3	4-Bromophenyl phenyl ether	50	46.4	93	47.6	95	3	40-140/20
85-68-7	Butyl benzyl phthalate	50	51.3	103	52.0	104	1	40-140/20
100-51-6	Benzyl Alcohol	50	33.6	67	34.2	68	2	40-140/20
91-58-7	2-Chloronaphthalene	50	40.4	81	43.0	86	6	40-140/20
106-47-8	4-Chloroaniline	50	33.4	67	34.6	69	4	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	50	47.6	95	48.9	98	3	40-140/20
111-44-4	bis(2-Chloroethyl)ether	50	47.4	95	47.9	96	1	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	50	54.8	110	55.5	111	1	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	50	46.6	93	48.4	97	4	40-140/20
122-66-7	1,2-Diphenylhydrazine	50	53.2	106	54.9	110	3	40-140/20
121-14-2	2,4-Dinitrotoluene	50	48.2	96	49.3	99	2	40-140/20
606-20-2	2,6-Dinitrotoluene	50	47.5	95	48.5	97	2	40-140/20
91-94-1	3,3'-Dichlorobenzidine	50	49.4	99	50.7	101	3	40-140/20
132-64-9	Dibenzofuran	50	41.6	83	43.5	87	4	40-140/20
84-74-2	Di-n-bntyl phthalate	50	51.2	102	51.9	104	1	40-140/20
117-84-0	Di-n-octyl phthalate	50	52.9	106	53.8	108	2	40-140/20
84-66-2	Diethyl phthalate	50	49.7	99	51.6	103	4	40-140/20
131-11-3	Dimethyl phthalate	50	47.4	95	48.4	97	2	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	50	52.4	105	52.1	104	1	40-140/20
118-74-1	Hexachlorobenzene	50	48.5	97	49.4	99	2	40-140/20

* = Outside of Control Limits.

7.3.1

7

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-BS	W3831.D	1	08/10/12	KR	08/09/12	OP29977	MSW175
OP29977-BSD	W3832.D	1	08/10/12	KR	08/09/12	OP29977	MSW175

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	50	9.4	19* a	10.5	21* a	11	40-140/20
67-72-1	Hexachloroethane	50	29.9	60	31.9	64	6	40-140/20
78-59-1	Isophorone	50	45.5	91	46.7	93	3	40-140/20
88-74-4	2-Nitroaniline	50	47.5	95	48.5	97	2	40-140/20
99-09-2	3-Nitroaniline	50	38.2	76	39.5	79	3	40-140/20
100-01-6	4-Nitroaniline	50	36.3	73	38.6	77	6	40-140/20
98-95-3	Nitrobenzene	50	47.8	96	49.1	98	3	40-140/20
62-75-9	n-Nitrosodimethylamine	50	28.1	56	28.8	58	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	50	52.4	105	52.7	105	1	40-140/20
86-30-6	N-Nitrosodiphenylamine	50	49.2	98	50.0	100	2	40-140/20
110-86-1	Pyridine	50	22.8	46	24.0	48	5	40-140/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Flnorophenol	54%	52%	15-110%
4165-62-2	Phenol-d5	36%	35%	15-110%
118-79-6	2,4,6-Tribromophenol	98%	98%	15-110%
4165-60-0	Nitrobenzene-d5	92%	95%	30-130%
321-60-8	2-Fluorobiphenyl	74%	79%	30-130%
1718-51-0	Terphenyl-d14	108%	108%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-MS	W3930.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
OP29977-MSD	W3931.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
MC12986-5	W3932.D	1	08/14/12	KR	08/09/12	OP29977	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

7.4.1

7

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		104	42.6	41	40.7	39	5	30-130/20
95-57-8	2-Chlorophenol	ND		104	77.4	74	75.4	72	3	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		104	88.8	85	85.0	82	4	30-130/20
120-83-2	2,4-Dichlorophenol	ND		104	82.9	80	80.0	77	4	30-130/20
105-67-9	2,4-Dimethylphenol	ND		104	88.2	85	84.6	81	4	30-130/20
51-28-5	2,4-Dinitrophenol	ND		104	87.8	84	86.3	83	2	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		104	107	103	106	102	1	30-130/20
95-48-7	2-Methylphenol	ND		104	78.3	75	72.4	70	8	30-130/20
	3&4-Methylphenol	ND		208	158	76	141	68	11	30-130/20
88-75-5	2-Nitrophenol	ND		104	86.6	83	84.6	81	2	30-130/20
100-02-7	4-Nitrophenol	ND		104	9.5	9* a	55.4	53	141* b	30-130/20
87-86-5	Pentachlorophenol	ND		104	99.7	96	94.7	91	5	30-130/20
108-95-2	Phenol	ND		104	47.0	45	40.7	39	14	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		104	88.7	85	85.6	82	4	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		104	86.7	83	85.5	82	1	30-130/20
62-53-3	Aniline	ND		52.1	13.4	26* a	17.8	34* a	28* b	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		52.1	48.0	92	47.6	91	1	40-140/20
85-68-7	Butyl benzyl phthalate	ND		52.1	47.1	90	49.1	94	4	40-140/20
100-51-6	Benzyl Alcohol	ND		52.1	34.3	66	35.5	68	3	40-140/20
91-58-7	2-Chloronaphthalene	ND		52.1	46.7	90	45.4	87	3	40-140/20
106-47-8	4-Chloroaniline	ND		52.1	21.6	41	24.5	47	13	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		52.1	46.7	90	46.8	90	0	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		52.1	46.2	89	47.0	90	2	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		52.1	52.8	101	52.6	101	0	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		52.1	50.4	97	49.7	95	1	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		52.1	51.6	99	54.1	104	5	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		52.1	50.5	97	49.1	94	3	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		52.1	50.4	97	48.8	94	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		52.1	ND	0* a	ND	0* a	nc	40-140/20
132-64-9	Dibenzofuran	ND		52.1	44.1	85	43.9	84	0	40-140/20
84-74-2	Di-n-butyl phthalate	ND		52.1	49.9	96	50.0	96	0	40-140/20
117-84-0	Di-n-octyl phthalate	ND		52.1	47.5	91	47.7	92	0	40-140/20
84-66-2	Diethyl phthalate	ND		52.1	48.6	93	50.3	97	3	40-140/20
131-11-3	Dimethyl phthalate	ND		52.1	47.2	91	47.1	90	0	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		52.1	46.3	89	47.2	91	2	40-140/20
118-74-1	Hexachlorobenzene	ND		52.1	47.0	90	46.5	89	1	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29977-MS	W3930.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
OP29977-MSD	W3931.D	1	08/14/12	KR	08/09/12	OP29977	MSW178
MC12986-5	W3932.D	1	08/14/12	KR	08/09/12	OP29977	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC12986-3, MC12986-4, MC12986-5

7.4.1

7

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		52.1	11.6	22* a	11.7	22* a	1	40-140/20
67-72-1	Hexachloroethane	ND		52.1	36.3	70	35.7	69	2	40-140/20
78-59-1	Isophorone	ND		52.1	44.9	86	44.6	86	1	40-140/20
88-74-4	2-Nitroaniline	ND		52.1	46.0	88	49.2	94	7	40-140/20
99-09-2	3-Nitroaniline	ND		52.1	26.5	51	30.3	58	13	40-140/20
100-01-6	4-Nitroaniline	ND		52.1	28.4	55	31.5	60	10	40-140/20
98-95-3	Nitrobenzene	ND		52.1	46.3	89	47.0	90	2	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		52.1	26.0	50	27.8	53	7	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		52.1	51.8	99	52.3	100	1	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		52.1	48.4	93	47.9	92	1	40-140/20
110-86-1	Pyridine	ND		52.1	14.1	27* a	25.4	49	57* b	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12986-5	Limits
367-12-4	2-Fluorophenol	49%	47%	42%	15-110%
4165-62-2	Phenol-d5	44%	37%	30%	15-110%
118-79-6	2,4,6-Tribromophenol	94%	91%	89%	15-110%
4165-60-0	Nitrobenzene-d5	88%	89%	81%	30-130%
321-60-8	2-Fluorobiphenyl	81%	80%	77%	30-130%
1718-51-0	Terphenyl-d14	70%	77%	73%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP29989-MS	U9243.D	1	08/15/12	NS	08/09/12	OP29989	MSU510
OP29989-MSD	U9244.D	1	08/15/12	NS	08/09/12	OP29989	MSU510
MC12986-5	U9245.D	1	08/15/12	NS	08/09/12	OP29989	MSU510

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.10	J	52.1	43.7	84	43.1	83	1	40-140/20
208-96-8	Acenaphthylene	0.19		52.1	30.8	59	30.5	58	1	40-140/20
120-12-7	Anthracene	0.063	J	52.1	41.3	79	40.7	78	1	40-140/20
56-55-3	Benzo(a)anthracene	ND		52.1	42.7	82	42.7	82	0	40-140/20
50-32-8	Benzo(a)pyrene	ND		52.1	38.5	74	38.7	74	1	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		52.1	46.1	89	45.5	87	1	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		52.1	39.0	75	38.8	74	1	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		52.1	46.0	88	45.6	88	1	40-140/20
218-01-9	Chrysene	ND		52.1	39.9	77	39.5	76	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		52.1	40.1	77	39.6	76	1	40-140/20
206-44-0	Fluoranthene	ND		52.1	42.9	82	42.0	81	2	40-140/20
86-73-7	Fluorene	ND		52.1	43.2	83	43.0	83	0	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		52.1	40.7	78	40.2	77	1	40-140/20
90-12-0	1-Methylnaphthalene	0.21		52.1	42.2	81	41.2	79	2	40-140/20
91-57-6	2-Methylnaphthalene	0.14	J	52.1	39.4	75	38.8	74	2	40-140/20
91-20-3	Naphthalene	1.3		52.1	39.7	74	38.9	72	2	40-140/20
85-01-8	Phenanthrene	ND		52.1	42.7	82	42.9	82	0	40-140/20
129-00-0	Pyrene	ND		52.1	41.5	80	41.0	79	1	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC12986-5	Limits
4165-60-0	Nitrobenzene-d5	88%	87%	80%	30-130%
321-60-8	2-Fluorobiphenyl	80%	80%	78%	30-130%
1718-51-0	Terphenyl-d14	72%	78%	72%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU510-CC486	Injection Date:	08/15/12
Lab File ID:	U9224.D	Injection Time:	12:00
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	89118	3.69	256402	4.67	142706	6.08	267055	7.39	180402	10.17	319169	11.60
Upper Limit [a]	178236	4.19	512804	5.17	285412	6.58	534110	7.89	360804	10.67	638338	12.10
Lower Limit [b]	44559	3.19	128201	4.17	71353	5.58	133528	6.89	90201	9.67	159585	11.10
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
ZZZZZZ	69592	3.69	202099	4.67	114452	6.08	215080	7.39	149874	10.16	222192	11.60
ZZZZZZ	76525	3.69	214728	4.67	119898	6.08	214151	7.39	141566	10.17	208040	11.60
OP30002-MS	66852	3.69	191724	4.67	105730	6.08	195864	7.39	138542	10.17	241536	11.60
OP30002-MSD	72387	3.69	201213	4.67	109388	6.08	198277	7.39	132748	10.17	232425	11.60
MC13051-5	69816	3.69	199574	4.67	107655	6.08	197953	7.39	140363	10.17	247207	11.60
ZZZZZZ	69836	3.69	202309	4.67	110358	6.08	204418	7.39	144437	10.17	259591	11.60
ZZZZZZ	67349	3.69	191475	4.67	104796	6.08	192625	7.39	135888	10.17	242327	11.60
ZZZZZZ	68070	3.69	194978	4.67	105156	6.08	192036	7.39	137254	10.17	243273	11.61
OP30017-MB	61672	3.69	177972	4.67	98443	6.08	182955	7.39	128418	10.16	223603	11.60
OP30023-MB	61672	3.69	177972	4.67	98443	6.08	182955	7.39	128418	10.16	223603	11.60
OP30017-BS	61469	3.69	178107	4.67	97831	6.08	183546	7.39	124439	10.17	226260	11.60
OP30023-BS	61469	3.69	178107	4.67	97831	6.08	183546	7.39	124439	10.17	226260	11.60
ZZZZZZ	59102	3.69	175521	4.67	99410	6.08	189124	7.39	137728	10.17	244525	11.60
ZZZZZZ	65516	3.69	185346	4.67	101522	6.08	184686	7.39	129471	10.16	228734	11.60
ZZZZZZ	65313	3.69	186120	4.67	103730	6.08	189012	7.39	130394	10.17	231959	11.60
ZZZZZZ	65447	3.69	185330	4.67	102631	6.08	187721	7.39	129436	10.17	230924	11.60
ZZZZZZ	63593	3.69	179818	4.67	98699	6.08	180885	7.39	127979	10.17	232657	11.60
ZZZZZZ	62198	3.69	178641	4.67	96975	6.08	181054	7.39	127460	10.16	225907	11.60
ZZZZZZ	70342	3.69	207485	4.67	109743	6.08	202008	7.39	140593	10.17	246967	11.60
ZZZZZZ	93819	3.69	265088	4.67	143936	6.08	262775	7.39	123823	10.17	166830	11.60
OP29989-MS	65697	3.69	187382	4.67	100818	6.09	212042	7.39	130720	10.17	237764	11.61
OP29989-MSD	62728	3.69	179626	4.67	97558	6.09	204601	7.39	128716	10.17	230490	11.61
MC12986-5	67602	3.69	196200	4.67	106986	6.08	225108	7.39	142968	10.17	254887	11.61
MC12986-3	71268	3.69	205949	4.67	136412	6.08	239967	7.39	150967	10.17	259917	11.60
MC12986-4	72738	3.69	210520	4.67	139627	6.08	243203	7.39	154162	10.17	271471	11.60
ZZZZZZ	70161	3.69	200150	4.67	126595	6.08	220838	7.39	132208	10.16	182179	11.60

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.

7.5.1

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU510-CC486	Injection Date:	08/15/12
Lab File ID:	U9224.D	Injection Time:	12:00
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

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

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minntes.

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW175-CC129	Injection Date:	08/10/12
Lab File ID:	W3823.D	Injection Time:	10:11
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	496162	3.80	1893871	4.79	1164398	6.21	2151188	7.54	2603437	10.44	2268465	12.01
Upper Limit [a]	992324	4.30	3787742	5.29	2328796	6.71	4302376	8.04	5206874	10.94	4536930	12.51
Lower Limit [b]	248081	3.30	946936	4.29	582199	5.71	1075594	7.04	1301719	9.94	1134233	11.51
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
OP29977-MB	466651	3.80	1756255	4.79	1052444	6.21	1883902	7.54	2176322	10.43	2209366	12.00
OP29977-BS	395734	3.80	1476131	4.79	879353	6.21	1522482	7.54	1821926	10.43	1752192	12.00
OP29977-BSD	402865	3.80	1480350	4.79	881677	6.21	1535880	7.54	1828013	10.43	1738447	12.00
ZZZZZZ	380757	3.80	1430128	4.78	851950	6.21	1520155	7.54	1747099	10.43	1792889	12.00
ZZZZZZ	380447	3.80	1430110	4.78	848670	6.21	1521915	7.54	1742001	10.43	1796961	12.00
ZZZZZZ	371091	3.79	1497708	4.78	938662	6.21	1681517	7.54	1840705	10.43	1647102	12.00
ZZZZZZ	545300	3.80	2015448	4.78	1210358	6.21	2076165	7.54	2280616	10.43	2466698	12.01
ZZZZZZ	373529	3.79	1396874	4.78	839389	6.21	1491120	7.53	1731958	10.42	1770205	12.00
ZZZZZZ	382868	3.80	1424944	4.78	847145	6.21	1487230	7.54	1692226	10.43	1739145	12.00
ZZZZZZ	454135	3.79	1685115	4.78	1014756	6.21	1786102	7.54	2087732	10.43	2158877	12.00
ZZZZZZ	370586	3.80	1378978	4.78	822505	6.21	1475184	7.54	1680631	10.43	1728933	12.00
ZZZZZZ	384860	3.79	1400269	4.78	840960	6.21	1497964	7.53	1723127	10.42	1798946	12.00
ZZZZZZ	391150	3.80	1450921	4.78	866908	6.21	1515972	7.54	1734765	10.43	1800494	12.00
ZZZZZZ	371216	3.80	1378327	4.78	833854	6.21	1466877	7.54	1698387	10.43	1722033	12.00
ZZZZZZ	434000	3.80	1614239	4.78	953044	6.21	1699795	7.54	1943983	10.43	1978125	12.00
ZZZZZZ	386781	3.80	1461319	4.79	894819	6.21	1623838	7.54	1859419	10.43	1864807	12.00
ZZZZZZ	454073	3.80	1698104	4.79	1025571	6.21	1803202	7.54	2090086	10.43	2088956	12.01
ZZZZZZ	391904	3.80	1468691	4.79	879324	6.21	1583043	7.54	1827593	10.43	1835365	12.00
ZZZZZZ	373117	3.79	1393535	4.78	824222	6.21	1475914	7.54	1684712	10.43	1704574	12.00
ZZZZZZ	372004	3.79	1395804	4.78	841918	6.21	1489082	7.53	1682278	10.42	1727449	12.00
ZZZZZZ	402136	3.80	1478503	4.78	869886	6.21	1493105	7.54	1667514	10.43	1640000	12.00
ZZZZZZ	460797	3.81	1341521	4.80	969447	6.21	1674152	7.54	1834306	10.43	1778841	12.00
ZZZZZZ	403416	3.80	1545409	4.78	937089	6.21	1626893	7.54	1735651	10.43	1791350	12.00
ZZZZZZ	390799	3.80	1461892	4.79	902465	6.21	1609587	7.54	1824526	10.43	1861237	12.01

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: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW177-CC138	Injection Date:	08/14/12
Lab File ID:	W3907.D	Injection Time:	11:40
Instrument ID:	GCMSW	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	506589	3.78	1904580	4.77	1182344	6.19	2170726	7.51	2697161	10.40	2407116	11.98
Upper Limit [a]	1013178	4.28	3809160	5.27	2364688	6.69	4341452	8.01	5394322	10.90	4814232	12.48
Lower Limit [b]	253295	3.28	952290	4.27	591172	5.69	1085363	7.01	1348581	9.90	1203558	11.48
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
OP29925-MB	431604	3.78	1610614	4.76	973175	6.19	1745495	7.51	1951330	10.39	1304015	11.97
ZZZZZZ	444681	3.78	1643227	4.76	999933	6.19	1803542	7.51	2003799	10.39	1292311	11.97
OP30001-MB	397062	3.78	1466879	4.76	882299	6.19	1619750	7.51	1890645	10.39	1890794	11.97
OP30001-BS	428206	3.78	1583220	4.76	946540	6.19	1670746	7.51	2094745	10.40	1975620	11.97
OP30001-MS	408764	3.78	1523911	4.76	924344	6.19	1637055	7.51	2029490	10.40	1912323	11.97
OP30001-MSD	414363	3.78	1532391	4.76	917143	6.19	1662337	7.51	2056791	10.40	1882973	11.97
MC13051-5	481081	3.78	1787474	4.76	1099613	6.19	1981892	7.51	2396778	10.40	2350117	11.97
ZZZZZZ	418364	3.78	1545313	4.76	956696	6.19	1702504	7.51	2053660	10.39	2022744	11.97
ZZZZZZ	415296	3.78	1512393	4.76	921281	6.19	1663976	7.51	2012786	10.39	1961711	11.97
ZZZZZZ	451872	3.78	1690023	4.76	1038511	6.19	1880124	7.51	2309163	10.40	2226134	11.97
ZZZZZZ	409853	3.78	1526329	4.76	933333	6.19	1687115	7.51	2005069	10.39	1982973	11.97
OP30009-MB	439096	3.78	1636280	4.76	982487	6.19	1749280	7.51	2080789	10.39	2130498	11.97
OP30009-BS	471604	3.78	1731924	4.76	1054861	6.19	1842643	7.51	2217334	10.40	2149677	11.97
OP30009-BSD	467569	3.78	1741673	4.76	1044075	6.19	1840018	7.51	2201923	10.40	2164485	11.97
OP30009-MS	465495	3.78	1716306	4.76	1014782	6.19	1803918	7.51	2115885	10.40	2083002	11.97
OP30009-MSD	451440	3.78	1666733	4.76	1005400	6.19	1754381	7.51	2110880	10.40	2093585	11.97
MC13050-1	454723	3.78	1696875	4.76	1029087	6.19	1846037	7.51	2159391	10.39	2253254	11.97
ZZZZZZ	435406	3.78	1625378	4.76	967202	6.19	1712632	7.51	2032549	10.39	2070467	11.97
ZZZZZZ	444262	3.78	1636657	4.76	988099	6.19	1762935	7.51	2134962	10.40	2168011	11.97
ZZZZZZ	430359	3.78	1619750	4.76	973351	6.19	1716539	7.51	2090633	10.39	2184984	11.97
ZZZZZZ	447502	3.78	1661276	4.76	1004284	6.19	1794604	7.51	2133974	10.40	2265623	11.97
ZZZZZZ	441067	3.78	1616965	4.76	1038996	6.19	1815524	7.51	2128362	10.39	2114007	11.97
OP29977-MS	400061	3.78	1492075	4.76	921740	6.19	1625878	7.51	2051071	10.40	1990209	11.98
OP29977-MSD	389924	3.78	1472297	4.76	913913	6.19	1629896	7.51	2036617	10.40	1997544	11.98
MC12986-5	412295	3.78	1515000	4.76	948865	6.19	1707407	7.51	2107907	10.40	2127459	11.98
MC12986-3	419940	3.78	1564834	4.76	942766	6.19	1744648	7.51	2068227	10.39	2086928	11.97
MC12986-4	414568	3.78	1550014	4.76	953515	6.19	1730626	7.51	2056863	10.39	2065094	11.97
ZZZZZZ	412821	3.78	848768[c]	4.79	969058	6.19	1877625	7.53	2341846	10.43	2271389	12.00

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

7.5.3

7

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW177-CC138	Injection Date:	08/14/12
Lab File ID:	W3907.D	Injection Time:	11:40
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW178-CC129	Injection Date:	08/14/12
Lab File ID:	W3907A.D	Injection Time:	11:40
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	506589	3.78	1904580	4.77	1182344	6.19	2171753	7.51	2697161	10.40	2407116	11.98
Upper Limit [a]	1013178	4.28	3809160	5.27	2364688	6.69	4343506	8.01	5394322	10.90	4814232	12.48
Lower Limit [b]	253295	3.28	952290	4.27	591172	5.69	1085877	7.01	1348581	9.90	1203558	11.48
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
OP29925-MB	431604	3.78	1610614	4.76	973175	6.19	1745495	7.51	1951330	10.39	1304015	11.97
ZZZZZZ	444681	3.78	1643227	4.76	999933	6.19	1803542	7.51	2003799	10.39	1292311	11.97
OP30001-MB	397062	3.78	1466879	4.76	882299	6.19	1619750	7.51	1890645	10.39	1890794	11.97
OP30001-BS	428206	3.78	1583220	4.76	946540	6.19	1670746	7.51	2094745	10.40	1975620	11.97
OP30001-MS	408764	3.78	1523911	4.76	924344	6.19	1637055	7.51	2029490	10.40	1912323	11.97
OP30001-MSD	414363	3.78	1532391	4.76	917143	6.19	1662337	7.51	2056791	10.40	1882973	11.97
MC13051-5	481081	3.78	1787474	4.76	1099613	6.19	1981892	7.51	2396778	10.40	2350117	11.97
ZZZZZZ	418364	3.78	1545313	4.76	956696	6.19	1702504	7.51	2053660	10.39	2022744	11.97
ZZZZZZ	415296	3.78	1512393	4.76	921281	6.19	1663976	7.51	2012786	10.39	1961711	11.97
ZZZZZZ	451872	3.78	1690023	4.76	1038511	6.19	1880124	7.51	2309163	10.40	2226134	11.97
ZZZZZZ	409853	3.78	1526329	4.76	933333	6.19	1687115	7.51	2005069	10.39	1982973	11.97
OP30009-MB	439096	3.78	1636280	4.76	982487	6.19	1749280	7.51	2080789	10.39	2130498	11.97
OP30009-BS	471604	3.78	1731924	4.76	1054861	6.19	1842643	7.51	2217334	10.40	2149677	11.97
OP30009-BSD	467569	3.78	1741673	4.76	1044075	6.19	1840018	7.51	2201923	10.40	2164485	11.97
OP30009-MS	465495	3.78	1716306	4.76	1014782	6.19	1803918	7.51	2115885	10.40	2083002	11.97
OP30009-MSD	451440	3.78	1666733	4.76	1005400	6.19	1754381	7.51	2110880	10.40	2093585	11.97
MC13050-1	454723	3.78	1696875	4.76	1029087	6.19	1846037	7.51	2159391	10.39	2253254	11.97
ZZZZZZ	435406	3.78	1625378	4.76	967202	6.19	1712632	7.51	2032549	10.39	2070467	11.97
ZZZZZZ	444262	3.78	1636657	4.76	988099	6.19	1762935	7.51	2134962	10.40	2168011	11.97
ZZZZZZ	430359	3.78	1619750	4.76	973351	6.19	1716539	7.51	2090633	10.39	2184984	11.97
ZZZZZZ	447502	3.78	1661276	4.76	1004284	6.19	1794604	7.51	2133974	10.40	2265623	11.97
ZZZZZZ	441067	3.78	1616965	4.76	1038996	6.19	1815524	7.51	2128362	10.39	2114007	11.97
OP29977-MS	400061	3.78	1492075	4.76	921740	6.19	1625878	7.51	2051071	10.40	1990209	11.98
OP29977-MSD	389924	3.78	1472297	4.76	913913	6.19	1629896	7.51	2036617	10.40	1997544	11.98
MC12986-5	412295	3.78	1515000	4.76	948865	6.19	1707407	7.51	2107907	10.40	2127459	11.98
MC12986-3	419940	3.78	1564834	4.76	942766	6.19	1744648	7.51	2068227	10.39	2086928	11.97
MC12986-4	414568	3.78	1550014	4.76	953515	6.19	1730626	7.51	2056863	10.39	2065094	11.97
ZZZZZZ	412821	3.78	848768[c]	4.79	969058	6.19	1877625	7.53	2341846	10.43	2271389	12.00

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

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW178-CC129	Injection Date:	08/14/12
Lab File ID:	W3907A.D	Injection Time:	11:40
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Internal Standard Area Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW192-CC72	Injection Date:	08/23/12
Lab File ID:	W4221.D	Injection Time:	15:35
Instrument ID:	GCMSW	Method:	SW846 8270C BY SIM

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	847642	4.15	3366054	5.I3	1845807	6.57	3036916	7.94	3141674	10.72	4388733	12.19
Upper Limit [a]	1695284	4.65	6732108	5.63	3691614	7.07	6073832	8.44	6283348	11.22	8777466	12.69
Lower Limit [b]	423821	3.65	1683027	4.63	922904	6.07	1518458	7.44	1570837	10.22	2194367	11.69
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
OP29989-MB	890246	4.15	3425755	5.13	1860994	6.57	3038769	7.94	3111002	10.71	4428686	12.19
OP29989-BS	918536	4.15	3539144	5.13	1897202	6.57	2976866	7.94	3136326	10.72	4294644	12.19

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 Surrogate Recovery Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC12986-3	W3933.D	39.0	27.0	82.0	80.0	76.0	86.0
MC12986-4	W3934.D	40.0	28.0	83.0	80.0	76.0	87.0
MC12986-5	W3932.D	42.0	30.0	89.0	81.0	77.0	73.0
OP29977-BS	W3831.D	54.0	36.0	98.0	92.0	74.0	108.0
OP29977-BSD	W3832.D	52.0	35.0	98.0	95.0	79.0	108.0
OP29977-MB	W3830.D	48.0	32.0	87.0	89.0	78.0	107.0
OP29977-MS	W3930.D	49.0	44.0	94.0	88.0	81.0	70.0
OP29977-MSD	W3931.D	47.0	37.0	91.0	89.0	80.0	77.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC12986-3	U9246.D	78.0	63.0	85.0
MC12986-4	U9247.D	78.0	63.0	85.0
MC12986-5	U9245.D	80.0	78.0	72.0
OP29989-BS	W4223.D	92.0	67.0	113.0
OP29989-MB	W4222.D	87.0	71.0	109.0
OP29989-MS	U9243.D	88.0	80.0	72.0
OP29989-MSD	U9244.D	87.0	80.0	78.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30031-MB	BK16050.D	1	08/15/12	AP	08/14/12	OP30031	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC12986-2, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	71%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

Blank Spike Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30031-BS	BK16051.D	1	08/15/12	AP	08/14/12	OP30031	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC12986-2, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.071	100	60-140
106-93-4	1,2-Dibromoethane	0.071	0.072	101	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	105%	36-173%
460-00-4	Bromofluorobenzene (S)	121%	36-173%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30031-MS	BK16053.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
OP30031-MSD	BK16054.D	1	08/15/12	AP	08/14/12	OP30031	GBK608
MC12986-5	BK16058.D	1	08/15/12	AP	08/14/12	OP30031	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC12986-2, MC12986-3, MC12986-4, MC12986-5

CAS No.	Compound	MC12986-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.0762	0.069	91	0.066	95	4	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.0762	0.075	98	0.080	115	6	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC12986-5	Limits
460-00-4	Bromofluorobenzene (S)	153%	165%	161%	36-173%
460-00-4	Bromofluorobenzene (S)	73%	82%	76%	36-173%

8.3.1

8

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC12986-2	BK16055.D	110.0	107.0
MC12986-3	BK16056.D	84.0	93.0
MC12986-4	BK16057.D	90.0	102.0
MC12986-5	BK16058.D	161.0	76.0
OP30031-BS	BK16051.D	105.0	121.0
OP30031-MB	BK16050.D	71.0	75.0
OP30031-MS	BK16053.D	153.0	73.0
OP30031-MSD	BK16054.D	165.0	82.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC12986
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK608-ICC608	Injection Date:	08/15/12
Lab File ID:	BK16044.D	Injection Time:	15:15
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.30	5.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK16049.D	08/15/12	17:16	4.30	5.20
OP30031-MB	BK16050.D	08/15/12	17:40	4.30	5.20
OP30032-MB	BK16050A.D	08/15/12	17:40	4.30	5.20
OP30031-BS	BK16051.D	08/15/12	18:05	4.30	5.20
OP30032-BS	BK16051A.D	08/15/12	18:05	4.30	5.20
OP30032-BSD	BK16052.D	08/15/12	18:29	4.30	5.20
OP30031-MS	BK16053.D	08/15/12	18:53	4.30	5.20
OP30031-MSD	BK16054.D	08/15/12	19:18	4.30	5.20
MC12986-2	BK16055.D	08/15/12	19:42	4.30	5.20
MC12986-3	BK16056.D	08/15/12	20:06	4.30	5.20
MC12986-4	BK16057.D	08/15/12	20:30	4.30	5.20
MC12986-5	BK16058.D	08/15/12	20:54	4.30	5.20

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retentiou time from GC sigual #1
(b) Retention time from GC signal #2

8.5.1

Roxana Groundwater Quarterly – 3rd Quarter 2012 Data Review

Laboratory SDG: MC13051

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 9/12/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-080912-HCL	TB-080912-ST
P93A-ROX-080912	P93B-ROX-080912
P93C-ROX-080912	P114-ROX-080912

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that VOC and SVOC LCS recoveries were outside evaluation criteria. VOC surrogate recovery of 4-bromofluorobenzene in sample P114-ROX-080912 Run #2 was outside evaluation criteria. VOC and SVOC MS/MSD recoveries and SVOC RPDs in sample P93C-ROX-080912 were outside evaluation criteria. Although not indicated in the laboratory case narrative, acetone was detected in the trip blank, and diethyl phthalate was detected in the method blank. Samples P93A-ROX-080912 and P93B-ROX-080912 were diluted due to high levels of VOCs and SVOCs. Professional judgment was used to qualify acetone in samples P93A-ROX-080912, P93B-ROX-080912, and P114-ROX-080912.

The cooler receipt form indicated samples were received by the laboratory at a temperature of 1.7ºC which is outside the 4ºC ± 2ºC criteria. Samples were received in good condition; therefore, no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/ Amount
TB-080912-HCL	VOCs	Acetone	3.7 ug/L
OP30001-MB	SVOCs	Diethyl phthalate	0.47 ug/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common lab contaminants) did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P93C-ROX-080912	VOCs	Acetone	5.6 ug/L	**U**
P93B-ROX-080912	SVOCs	Diethyl phthalate	-	**U**
P93C-ROX-080912	SVOCs	Diethyl phthalate	-	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS	Parameter	Analyte	LCS Recovery	LCS Criteria
MSV449-BS	VOCs	Acrylonitrile	**492**	70-130
MSV449-BS	VOCs	Bromomethane	**134**	70-130
MSV449-BS	VOCs	Carbon disulfide	**154**	70-130
MSV449-BS	VOCs	Dichlorodifluoromethane	**218**	70-130
OP30001-BS	SVOCs	Hexachlorocyclopentadiene	**37**	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
P93A-ROX-080912	SVOCs	Hexachlorocyclopentadiene	**UJ**
P93B-ROX-080912	SVOCs	Hexachlorocyclopentadiene	**UJ**
P93C-ROX-080912	SVOCs	Hexachlorocyclopentadiene	**UJ**
P114-ROX-080912	SVOCs	Hexachlorocyclopentadiene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery	Criteria
P114-ROX-080912 Run #2	VOCs	4-Bromofluorobenzene	**157**	70-130

Results for sample P114-ROX-080912 were reported from Run #1. Analytical data reported as non-detect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples analyzed as part of this SDG?

Yes, sample P93C-ROX-080912 was spiked and analyzed for VOCs, SVOCs, PAHs, and 8011 VOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD	MS/MSD/ RPD Criteria
P93C-ROX-080912	VOCs	Acetone	**46**/**44**	2	70-130/30
P93C-ROX-080912	VOCs	Acrolein	**69**/**68**	2	70-130/30
P93C-ROX-080912	VOCs	Acrylonitrile	**404**/**412**	2	70-130/30
P93C-ROX-080912	VOCs	2-Butanone (MEK)	70/**69**	1	70-130/30
P93C-ROX-080912	VOCs	Carbon disulfide	123/**133**	8	70-130/30
P93C-ROX-080912	VOCs	Dichlorodifluoromethane	**179**/**179**	0	70-130/30
P93C-ROX-080912	VOCs	1,4-Dioxane	**66**/**68**	2	70-130/30
P93C-ROX-080912	VOCs	4-Methyl-2-pentanone (MIBK)	**69**/70	1	70-130/30
P93C-ROX-080912	VOCs	Vinyl acetate	**69**/71	3	70-130/30
P93C-ROX-080912	SVOCs	Aniline	52/**9**	**140**	40-140/20
P93C-ROX-080912	SVOCs	4-Chloroaniline	66/**16**	**122**	40-140/20
P93C-ROX-080912	SVOCs	3,3'-Dichlorobenzidine	**12**/**0**	**200**	40-140/20
P93C-ROX-080912	SVOCs	3-Nitroaniline	65/**30**	**75**	40-140/20
P93C-ROX-080912	SVOCs	4-Nitroaniline	78/63	**22**	40-140/20
P93C-ROX-080912	SVOCs	Pyridine	44/**0**	**200**	40-140/20

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria with the exception of compounds listed and qualified as appropriate in Section 5.0 of this data review. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

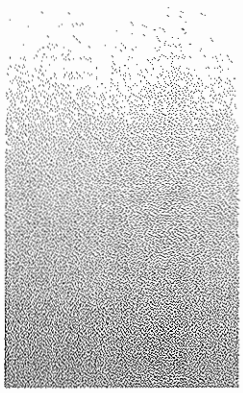
Were additional qualifications applied?

Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (>2X) the reporting limit (RL), since acetone is not representative of site conditions.

Sample ID	Analyte	New RL	Qualification	Comment
P93A-ROX-080912	Acetone	1630 ug/L	**U**	Professional Judgment
P93B-ROX-080912	Acetone	67.2 ug/L	**U**	Professional Judgment
P114-ROX-080912	Acetone	75.6 ug/L	**U**	Professional Judgment

New England ACCUTEST LABORATORIES

08/31/12



Technical Report for

Shell Oil

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana,

Accutest Job Number: MC13051

Sampling Date: 08/09/12

Report to:

URS Corporation

elizabeth.kunkel@URS.com

ATTN: Elizabeth Kunkel

Total number of pages in report: **91**

Reviewed on 9/12/2012

Reza Pand
Lab Director

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.

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) ISO 17025:2005 (L2235)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

Table of Contents

Sections: 1 2 3 4 5 6 7 8

-1-

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **8**
4.1: MC13051-1: TB-080912-HCL 9
4.2: MC13051-2: TB-080912-ST 12
4.3: MC13051-3: P93A-ROX-080912 13
4.4: MC13051-4: P93B-ROX-080912 20
4.5: MC13051-5: P93C-ROX-080912 27
4.6: MC13051-6: P114-ROX-080912 34
Section 5: Misc. Forms **41**
5.1: Chain of Custody 42
5.2: Sample Tracking Chronicle 44
5.3: Internal Chain of Custody 46
Section 6: GC/MS Volatiles - QC Data Summaries **49**
6.1: Method Blank Summary 50
6.2: Blank Spike Summary 54
6.3: Matrix Spike/Matrix Spike Duplicate Summary 58
6.4: Internal Standard Area Summaries 62
6.5: Surrogate Recovery Summaries 64
Section 7: GC/MS Semi-volatiles - QC Data Summaries **65**
7.1: Method Blank Summary 66
7.2: Blank Spike Summary 69
7.3: Matrix Spike/Matrix Spike Duplicate Summary 72
7.4: Internal Standard Area Summaries 75
7.5: Surrogate Recovery Summaries 83
Section 8: GC Volatiles - QC Data Summaries **85**
8.1: Method Blank Summary 86
8.2: Blank Spike/Blank Spike Duplicate Summary 87
8.3: Matrix Spike/Matrix Spike Duplicate Summary 88
8.4: Surrogate Recovery Summaries 89
8.5: GC Surrogate Retention Time Summaries 90

Sample Summary

Shell Oil

Job No: MC13051

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC13051-1	08/09/12	00:00	DMCW	08/10/12	AQ	Trip Blank Water	TB-080912-HCL
MC13051-2	08/09/12	00:00	DMCW	08/10/12	AQ	Trip Blank Water	TB-080912-ST
MC13051-3	08/09/12	10:10	DMCW	08/10/12	AQ	Ground Water	P93A-ROX-080912
MC13051-4	08/09/12	11:15	DMCW	08/10/12	AQ	Ground Water	P93B-ROX-080912
MC13051-5	08/09/12	12:40	DMCW	08/10/12	AQ	Ground Water	P93C-ROX-080912
MC13051-5D	08/09/12	12:40	DMCW	08/10/12	AQ	Water Dup/MSD	P93C-ROX-080912
MC13051-5S	08/09/12	12:40	DMCW	08/10/12	AQ	Water Matrix Spike	P93C-ROX-080912
MC13051-6	08/09/12	15:45	DMCW	08/10/12	AQ	Ground Water	P114-ROX-080912

ACCUTEST LABORATORIES

N

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Shell Oil	Job No	MC13051
Site:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central	Report Date	8/27/2012 3:01:40 PM

4 Sample(s), 2 Trip Blank(s) were collected on 08/09/2012 and were received at Accutest on 08/10/2012 properly preserved, at 2.2 Deg. C and intact. These Samples received an Accutest job number of MC13051. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report. 1-Chlorohexane, Benzenethiol, Dibenz(a,h)acridine, Indene, and Quinoline were searched in the library search and reported only if detections were found.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: MSN2518

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13089-9MS, MC13089-9MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MS/MSD Recovery(s) for Benzene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC13051-6 for 4-Bromofluorobenzene: Outside control limits. Results confirmed by reanalysis.

Matrix AQ	Batch ID: MSV449

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13051-5MS, MC13051-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC13051-3 have compounds reported with "E" qualifiers indicating estimated value exceeding calibration range.
- Blank Spike Recovery(s) for Bromomethane, Carbon disulfide are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 1,2-Dibromo-3-chloropropane, 1,4-Dioxane, 2-Chloroethyl vinyl ether, 4-Methyl-2-pentanone (MIBK), Acetone, Acrolein, Dichlorodifluoromethane, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 1,4-Dioxane, 2-Butanone (MEK), 2-Chloroethyl vinyl ether, Acetone, Acrolein, Carbon disulfide, Dichlorodifluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MSV449-BS for Acrylonitrile, Dichlorodifluoromethane: Outside control limits. Associated samples are non-detect for this compound.
- MC13051-5MS/MSD for Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP30001

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13051-5MS, MC13051-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 3,3'-Dichlorobenzidine are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, Aniline, Pyridine are outside control limits. Outside control limits due to possible matrix interferenee. Refer to Blank Spike.
- RPD(s) for MSD for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitroaniline, Aniline, Pyridine are outside control limits for sample OP30001-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Calibration standard MSW138-ICC138, MSW138-ICV138, MSW177-CC138 not associated with this job.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP30002

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC13051-5MS, MC13051-5MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP30032

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC13051-5MS, MC13051-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC13051).

Summary of Hits

Job Number: MC13051
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/09/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC13051-1	TB-080912-HCL					
Acetone		3.7 J	5.0	3.0	ug/l	SW846 8260B
MC13051-2	TB-080912-ST					
No hits reported in this sample.						
MC13051-3	P93A-ROX-080912					
Acetone		1630 E	5.0	3.0	ug/l	SW846 8260B
Benzene		87000	5000	2400	ug/l	SW846 8260B
n-Butylbenzene		2.7 J	5.0	0.68	ug/l	SW846 8260B
sec-Butylbenzene		4.8 J	5.0	0.55	ug/l	SW846 8260B
tert-Butylbenzene		12.8	5.0	0.64	ug/l	SW846 8260B
Ethylbenzene		225	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene		12.6	5.0	0.50	ug/l	SW846 8260B
p-Isopropyltoluene		2.2 J	5.0	0.57	ug/l	SW846 8260B
Methyl Tert Butyl Ether		48.5	1.0	0.41	ug/l	SW846 8260B
n-Propylbenzene		13.7	5.0	0.58	ug/l	SW846 8260B
Toluene		9.1	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		145	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		27.3	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene		436	1.0	0.73	ug/l	SW846 8260B
o-Xylene		64.2	1.0	0.58	ug/l	SW846 8260B
Xylene (total)		500	1.0	0.58	ug/l	SW846 8260B
Benzoic Acid		3.2 J	11	1.2	ug/l	SW846 8270C
3&4-Methylphenol		0.96 J	11	0.81	ug/l	SW846 8270C
Phenol		208	54	10	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate		15.3	2.2	0.40	ug/l	SW846 8270C
Acenaphthene		0.15	0.11	0.015	ug/l	SW846 8270C BY SIM
Anthracene		0.048 J	0.11	0.019	ug/l	SW846 8270C BY SIM
Fluorene		0.21	0.11	0.050	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		9.7	0.22	0.15	ug/l	SW846 8270C BY SIM
2-Methylnaphthalene		13.0	0.22	0.056	ug/l	SW846 8270C BY SIM
Naphthalene		49.6	0.11	0.038	ug/l	SW846 8270C BY SIM
Phenanthrene		0.25	0.054	0.014	ug/l	SW846 8270C BY SIM
MC13051-4	P93B-ROX-080912					
Acetone		67.2	5.0	3.0	ug/l	SW846 8260B
Benzene		317000	5000	2400	ug/l	SW846 8260B
Ethylbenzene		74.1	1.0	0.51	ug/l	SW846 8260B
Isopropylbenzene		26.6	5.0	0.50	ug/l	SW846 8260B
n-Propylbenzene		40.6	5.0	0.58	ug/l	SW846 8260B

Summary of Hits

Job Number: MC13051
Account: Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Collected: 08/09/12

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Toluene	78.6	1.0	0.51	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	37.2	5.0	0.35	ug/l	SW846 8260B
1,3,5-Trimethylbenzene	10.7	5.0	0.47	ug/l	SW846 8260B
m,p-Xylene	245	1.0	0.73	ug/l	SW846 8260B
o-Xylene	46.8	1.0	0.58	ug/l	SW846 8260B
Xylene (total)	292	1.0	0.58	ug/l	SW846 8260B
Phenol	178	54	10	ug/l	SW846 8270C
Diethyl phthalate	0.51 J	5.4	0.20	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate	3.6	2.2	0.40	ug/l	SW846 8270C
Acenaphthylene	0.087 J	0.11	0.014	ug/l	SW846 8270C BY SIM
Naphthalene	4.9	0.11	0.038	ug/l	SW846 8270C BY SIM
MC13051-5 P93C-ROX-080912					
Acetone	5.6	5.0	3.0	ug/l	SW846 8260B
Benzene	0.84	0.50	0.24	ug/l	SW846 8260B
Methyl Tert Butyl Ether	5.3	1.0	0.41	ug/l	SW846 8260B
Diethyl phthalate	0.46 J	5.2	0.19	ug/l	SW846 8270C
bis(2-Ethylhexyl)phthalate	4.3	2.1	0.39	ug/l	SW846 8270C
Acenaphthene	0.089 J	0.10	0.014	ug/l	SW846 8270C BY SIM
Acenaphthylene	0.022 J	0.10	0.014	ug/l	SW846 8270C BY SIM
Naphthalene	0.065 J	0.10	0.037	ug/l	SW846 8270C BY SIM
MC13051-6 P114-ROX-080912					
Acetone	75.6	5.0	3.0	ug/l	SW846 8260B
Methyl Tert Butyl Ether	0.83 J	1.0	0.41	ug/l	SW846 8260B
1,2,4-Trimethylbenzene	0.39 J	5.0	0.35	ug/l	SW846 8260B
bis(2-Ethylhexyl)phthalate	3.9	2.0	0.38	ug/l	SW846 8270C
Acenaphthylene	0.029 J	0.10	0.013	ug/l	SW846 8270C BY SIM

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-080912-HCL		
Lab Sample ID:	MC13051-1	Date Sampled:	08/09/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Aveuue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10790.D	1	08/22/12	AMY	n/a	n/a	MSV449
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	3.7	5.0	3.0	ug/l	J
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ng/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Bntylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ng/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ng/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotolnene	ND	5.0	0.65	ng/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ng/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobeuzene	ND	1.0	0.64	ng/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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 componnd

Report of Analysis

Client Sample ID:	TB-080912-HCL		
Lab Sample ID:	MC13051-1	Date Sampled:	08/09/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropaue	ND	5.0	1.6	ug/l	
563-58-6	1,I-Dichloropropeue	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
1006I-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styreue	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	og/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	og/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	TB-080912-HCL		
Lab Sample ID:	MC13051-1	**Date Sampled:**	08/09/12
Matrix:	AQ - Trip Blank Water	**Date Received:**	08/10/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Ceutral Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobeuzene	99%		70-130%

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

Report of Analysis

Client Sample ID:	TB-080912-ST		
Lab Sample ID:	MC13051-2	Date Sampled:	08/09/12
Matrix:	AQ - Trip Blank Water	Date Received:	08/10/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16062.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	35.4 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dihromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromoflnorobenzene (S)	113%		36-173%
460-00-4	Bromofluorobenzene (S)	118%		36-173%

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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10796.D	1	08/22/12	AMY	n/a	n/a	MSV449
Run #2	N66955.D	10000	08/23/12	JM	n/a	n/a	MSN2518

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	1630	5.0	3.0	ug/l	E
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ng/l	
71-43-2	Benzene	87000 [a]	5000	2400	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ng/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	2.7	5.0	0.68	ug/l	J
135-98-8	sec-Butylbenzene	4.8	5.0	0.55	ug/l	J
98-06-6	tert-Butylbenzene	12.8	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxaua 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ng/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	225	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	12.6	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	2.2	5.0	0.57	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	48.5	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanoue (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	13.7	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	9.1	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	145	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	27.3	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	436	1.0	0.73	ug/l	
95-47-6	o-Xylene	64.2	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	500	1.0	0.58	ng/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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%	100%	70-130%
2037-26-5	Toluene-D8	97%	120%	70-130%
460-00-4	4-Bromofluorobenzene	95%	88%	70-130%

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

(a) Result is from Run# 2

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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3915.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
Run #2	F57072.D	10	08/23/12	KR	08/12/12	OP30001	MSF2706

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2	930 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	3.2	11	1.2	ug/l	J
95-57-8	2-Chlorophenol	ND	5.4	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	ND	11	0.65	ug/l	
	3&4-Methylphenol	0.96	11	0.81	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND	22	3.0	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	208 [a]	54	10	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND	11	2.2	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.68	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.96	ug/l	
132-64-9	Dibenzofuran	ND	2.2	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.4	0.39	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.4	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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.4	0.20	ug/l	
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	15.3	2.2	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.4	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%	38%	15-110%
4165-62-2	Phenol-d5	46%	38%	15-110%
118-79-6	2,4,6-Tribromophenol	93%	69%	15-110%
4165-60-0	Nitrobenzene-d5	85%	65%	30-130%
321-60-8	2-Fluorobiphenyl	74%	64%	30-130%
1718-51-0	Terphenyl-d14	73%	60%	30-130%

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

(a) Result is from Run# 2

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:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9230.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.15	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.014	ug/l	
120-12-7	Anthracene	0.048	0.11	0.019	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.054	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.063	ug/l	
218-01-9	Chrysene	ND	0.11	0.078	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	0.21	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	9.7	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	13.0	0.22	0.056	ug/l	
91-20-3	Naphthalene	49.6	0.11	0.038	ug/l	
85-01-8	Phenanthrene	0.25	0.054	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	69%		30-130%

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 evideuce of a compouud

Report of Analysis

Client Sample ID:	P93A-ROX-080912		
Lab Sample ID:	MC13051-3	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16063.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	35.8 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	108%		36-173%
460-00-4	Bromofluorobenzene (S)	131%		36-173%

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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10798.D	1	08/22/12	AMY	n/a	n/a	MSV449
Run #2	N66956.D	10000	08/23/12	JM	n/a	n/a	MSN2518

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~67.2~~ U	~~5.0~~ 6/12	3.0	ug/l	U
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	317000 [a]	5000	2400	ng/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	74.1	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	26.6	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	40.6	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	78.6	1.0	0.51	ng/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	37.2	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	10.7	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	245	1.0	0.73	ug/l	
95-47-6	o-Xylene	46.8	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	292	1.0	0.58	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates valne 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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	76%	110%	70-130%
2037-26-5	Toluene-D8	99%	112%	70-130%
460-00-4	4-Bromofluorobenzene	93%	80%	70-130%

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

(a) Result is from Run# 2

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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	u/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3916.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
Run #2	F57073.D	10	08/23/12	KR	08/12/12	OP30001	MSF2706

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ul
Run #2	930 ml	1.0 ul

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	1.2	ug/l	
95-57-8	2-Chloropheuol	ND	5.4	0.43	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.40	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.40	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.9	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	1.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	ND	11	0.65	ug/l	
	3&4-Methylphenol	ND	11	0.81	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.51	ug/l	
100-02-7	4-Nitrophenol	ND	22	3.0	ug/l	
87-86-5	Pentachlorophenol	ND	11	0.68	ug/l	
108-95-2	Phenol	178 [a]	54	10	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.53	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.38	ug/l	
62-53-3	Aniline	ND	11	2.2	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.28	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.28	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.19	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.68	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.23	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.40	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.31	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.31	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.23	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	2.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.22	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	0.96	ug/l	
132-64-9	Dibenzofuran	ND	2.2	0.23	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.4	0.39	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.4	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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.51 UJ	5.4	0.20	ug/l	J UJ
131-11-3	Dimethyl phthalate	ND	5.4	5.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.6	2.2	0.40	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.27	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	11	5.4	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.4	2.2	ug/l	
78-59-1	Isophorone	ND	5.4	0.34	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.27	ug/l	
100-01-6	4-Nitroaniline	ND	11	2.2	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.26	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	0.64	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.30	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.47	ug/l	
110-86-1	Pyridine	ND	11	5.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%	33%	15-110%
4165-62-2	Phenol-d5	44%	34%	15-110%
118-79-6	2,4,6-Tribromophenol	87%	64%	15-110%
4165-60-0	Nitrobenzene-d5	79%	61%	30-130%
321-60-8	2-Fluorobiphenyl	68%	56%	30-130%
1718-51-0	Terphenyl-d14	69%	55%	30-130%

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

(a) Result is from Rnn# 2

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:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9231.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenapbthene	ND	0.11	0.015	ug/l	
208-96-8	Acenaphthylene	0.087	0.11	0.014	ug/l	J
120-12-7	Anthracene	ND	0.11	0.019	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.054	0.032	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.019	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.041	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.063	ug/l	
218-01-9	Chrysene	ND	0.11	0.078	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.045	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.035	ug/l	
86-73-7	Fluorene	ND	0.11	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.049	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.22	0.15	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.22	0.056	ug/l	
91-20-3	Naphthalene	4.9	0.11	0.038	ug/l	
85-01-8	Phenanthrene	ND	0.054	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	64%		30-130%

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 evideuce of a compound

Report of Analysis

Client Sample ID:	P93B-ROX-080912		
Lab Sample ID:	MC13051-4	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16064.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	35.6 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	90%		36-173%
460-00-4	Bromofluorobenzene (S)	93%		36-173%

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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10791.D	1	08/22/12	AMY	n/a	n/a	MSV449
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~5.6~~ u	~~5.0~~ 5.6	3.0	ug/l	u
107-02-8	Acroleiu	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	0.84	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration rauge
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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	5.3	1.0	0.41	ng/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

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

ND = Not detected MDL - Method Detectiou 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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3914.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.42	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.39	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.39	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.8	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.62	ug/l	
	3&4-Methylphenol	ND	10	0.78	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.49	ug/l	
100-02-7	4-Nitrophenol	ND	21	2.8	ug/l	
87-86-5	Peutachlorophenol	ND	10	0.66	ug/l	
108-95-2	Phenol	ND	5.2	0.96	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.51	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.36	ug/l	
62-53-3	Aniline	ND	10	2.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.27	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.65	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.39	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.29	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.30	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.22	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	0.92	ug/l	
132-64-9	Dibenzofuran	ND	2.1	0.22	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.37	ng/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	0.24	ng/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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.46	5.2	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.2	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	4.3	2.1	0.39	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.26	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	5.2	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.2	2.1	ug/l	
78-59-1	Isophorone	ND	5.2	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.26	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.1	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.25	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	0.61	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.45	ug/l	
110-86-1	Pyridine	ND	10	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	94%		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	76%		30-130%

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

Report of Analysis

Client Sample ID:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9229.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.089	0.10	0.014	ug/l	J
208-96-8	Acenaphthylene	0.022	0.10	0.014	ug/l	J
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.031	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.018	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.039	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.060	ug/l	
218-01-9	Chrysene	ND	0.10	0.075	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.043	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.034	ug/l	
86-73-7	Fluorene	ND	0.10	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.047	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.21	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.054	ug/l	
91-20-3	Naphthalene	0.065	0.10	0.037	ug/l	J
85-01-8	Phenanthrene	ND	0.052	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	71%		30-130%

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:	P93C-ROX-080912		
Lab Sample ID:	MC13051-5	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16065.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	34.6 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	94%		36-173%
460-00-4	Bromofluorobenzene (S)	108%		36-173%

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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V10797.D	1	08/22/12	AMY	n/a	n/a	MSV449
Run #2	N66954.D	1	08/23/12	JM	n/a	n/a	MSN2518

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	~~75.6~~ u	~~5.0~~ 75.6	3.0	ug/l	u
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND [a]	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ng/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorudifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.83	1.0	0.41	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.39	5.0	0.35	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8260B	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%	86%	70-130%
2037-26-5	Toluene-D8	98%	95%	70-130%
460-00-4	4-Bromofluorobenzene	97%	157% [b]	70-130%

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

(a) Result is from Run# 2
(b) Outside control limits. Results confirmed by reanalysis.

Report of Analysis

Client Sample ID:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W3917.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
Run #2							

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

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ng/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.0	0.19	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.9	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND UJ	10	5.0	ug/l	UJ
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluoropbenol	47%		15-110%
4165-62-2	Pheuol-d5	45%		15-110%
118-79-6	2,4,6-Tribromophenol	102%		15-110%
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	78%		30-130%
1718-51-0	Terphenyl-d14	72%		30-130%

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 rauge
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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8270C BY SIM SW846 3510C	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U9232.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	0.029	0.10	0.013	ug/l	J
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ng/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluorene	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	85%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	69%		30-130%

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:	P114-ROX-080912		
Lab Sample ID:	MC13051-6	Date Sampled:	08/09/12
Matrix:	AQ - Ground Water	Date Received:	08/10/12
Method:	SW846 8011 SW846 8011	Percent Solids:	n/a
Project:	URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxaua, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK16066.D	1	08/16/12	AP	08/14/12	OP30032	GBK608
Run #2							

	Initial Volume	Final Volume
Run #1	35.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	97%		36-173%
460-00-4	Bromofluorobenzene (S)	108%		36-173%

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

New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs, 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200))
☐ Lab Vendor # (_____)
☐ SPL (_____)

Lab Vendor #

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:

☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ PETIVA SOBCH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name: Erik Arthur

PO #

INCIDENT # (ENV SERVICES): 9 7 2 1 5 6 4 0

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE 8/9/12

PAGE 1 of 1

SAMPLING COMPANY: URS CORPORATION

LOG CODE:

SITE ADDRESS - Street and City: 900 South Central Ave, ROXANA

State: IL

GLOBAL ID NO:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST LOUIS, MO 63110

LST DELIVERABLE TO (Name, Company, Office Location):

PHONE NO:

E-MAIL:

CONSULTANT PROJECT NO: Roxana Quarterly GW / 21662735.00008

PROJECT CONTACT (Hardcopy or PDF Reporting): Erik Arthur

TELEPHONE: 314-265-1553

FAX: 314-429-0462

BILL TO CONTACT NAME: [illegible]

SAMPLER NAME(S) (PRINT): D. Mattingly, C. Williams

LAB USE ONLY: MC13051

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
Please include "J" values on Reports
Please provide sample receipt upon login.

☐ FIELD CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 6260B SL+TICS	VOC 8011	SVOC 8270C SL+TICS	PAH 8270LL	PID (ppm)	Container PID Readings or Laboratory Notes
-1	TB-080912-HCl	8/9/12	00:00	water	2					2	X				0	
-2	TB-080912-ST		00:00						2	2		X				
-3	P93A-ROX-080912		10:10		2			2	2	6	X	X	X	X		
-4	P93B-ROX-080912		11:15		2			2	2	6	X	X	X	X		
-5	P93C-ROX-080912		12:40		2			2	2	6	X	X	X	X		
-5S	P93C-ROX-080912-MS		12:40		2			2	2	6	X	X	X	X		16D, 4N6
-5SD	P93C-ROX-080912-MSD		12:40		2			2	2	6	X	X	X	X		
-6	P114-ROX-080912		15:45		2			2	2	6	X	X	X	X		

Relinquished by (Signature)	Received by (Signature)	Date	Time
[signature]	FED EX	8/9/12	1800
FEDEX	[signature]	8/10/12	09:30

05/08 Revision

Rec 1.7, 2.2

5.1

5

MC13051: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC13051 Client: URS Immediate Client Services Action Required: No

Date / Time Received: 8/10/2012 Delivery Method: Client Service Action Required at Login: No

Project: 900 SOUTH CENTRAL AVE No. Coolers: 2 Airbill #'s:

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

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

Quality Control Preservatio	Y	or	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	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

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

Sample Integrity - Instructions	Y	or	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 508.481.6200
495 Technology Center West, Bldg One
F 508.481.7753
Marlborough, MA
www.accutest.com

5.1

5J

MC13051: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC13051

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC13051-1 Collected: 09-AUG-12 00:00 By: DMCW Received: 10-AUG-12 By: TB-080912-HCL						
MC13051-1	SW846 8260B	22-AUG-12 15:50	AMY			V8260SL+
MC13051-2 Collected: 09-AUG-12 00:00 By: DMCW Received: 10-AUG-12 By: TB-080912-ST						
MC13051-2	SW846 8011	15-AUG-12 22:33	AP	14-AUG-12	MT	V8011SL
MC13051-3 Collected: 09-AUG-12 10:10 By: DMCW Received: 10-AUG-12 By: P93A-ROX-080912						
MC13051-3	SW846 8270C	14-AUG-12 14:40	KR	12-AUG-12	FC	AB8270SL+
MC13051-3	SW846 8270C BY SIM	15-AUG-12 14:17	NS	12-AUG-12	FC	B8270SIMPAH
MC13051-3	SW846 8011	15-AUG-12 22:57	AP	14-AUG-12	MT	V8011SL
MC13051-3	SW846 8260B	22-AUG-12 18:47	AMY			V8260SL+
MC13051-3	SW846 8260B	23-AUG-12 10:04	JM			V8260SL+
MC13051-3	SW846 8270C	23-AUG-12 16:41	KR	12-AUG-12	FC	AB8270SL+
MC13051-4 Collected: 09-AUG-12 11:15 By: DMCW Received: 10-AUG-12 By: P93B-ROX-080912						
MC13051-4	SW846 8270C	14-AUG-12 15:03	KR	12-AUG-12	FC	AB8270SL+
MC13051-4	SW846 8270C BY SIM	15-AUG-12 14:40	NS	12-AUG-12	FC	B8270SIMPAH
MC13051-4	SW846 8011	15-AUG-12 23:21	AP	14-AUG-12	MT	V8011SL
MC13051-4	SW846 8260B	22-AUG-12 19:46	AMY			V8260SL+
MC13051-4	SW846 8260B	23-AUG-12 10:32	JM			V8260SL+
MC13051-4	SW846 8270C	23-AUG-12 17:03	KR	12-AUG-12	FC	AB8270SL+
MC13051-5 Collected: 09-AUG-12 12:40 By: DMCW Received: 10-AUG-12 By: P93C-ROX-080912						
MC13051-5	SW846 8270C	14-AUG-12 14:18	KR	12-AUG-12	FC	AB8270SL+
MC13051-5	SW846 8270C BY SIM	15-AUG-12 13:54	NS	12-AUG-12	FC	B8270SIMPAH
MC13051-5	SW846 8011	15-AUG-12 23:45	AP	14-AUG-12	MT	V8011SL
MC13051-5	SW846 8260B	22-AUG-12 16:20	AMY			V8260SL+

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC13051

URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC13051-6 Collected: 09-AUG-12 15:45 By: DMCW Received: 10-AUG-12 By: P114-ROX-080912						
MC13051-6	SW846 8270C	14-AUG-12 15:25	KR	12-AUG-12	FC	AB8270SL+
MC13051-6	SW846 8270C BY SIM	15-AUG-12 15:03	NS	12-AUG-12	FC	B8270SIMPAH
MC13051-6	SW846 8011	16-AUG-12 00:09	AP	14-AUG-12	MT	V8011SL
MC13051-6	SW846 8260B	22-AUG-12 19:16	AMY			V8260SL+
MC13051-6	SW846 8260B	23-AUG-12 09:36	JM			V8260SL+

Accutest Internal Chain of Custody

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/10/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC13051-1.2	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-1.2	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-1.2	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-1.2	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-2.2	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-2.2	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-3.1	Walk In Ref #22	Amirhossein Farvardin	08/12/12 09:40	Retrieve from Storage
MC13051-3.1	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-3.3	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-3.3	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-3.5	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-3.5	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-3.5	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-3.5	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-3.6	VOC Ref #4	Jaime Maslowski	08/23/12 08:26	Retrieve from Storage
MC13051-3.6	Jaime Maslowski	GCMSN	08/23/12 08:26	Load on Instrument
MC13051-3.6	GCMSN	Jaime Maslowski	08/23/12 16:02	Unload from Instrument
MC13051-3.6	Jaime Maslowski	VOC Ref #4	08/23/12 16:03	Return to Storage
MC13051-4.1	Walk In Ref #22	Amirhossein Farvardin	08/12/12 09:40	Retrieve from Storage
MC13051-4.1	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-4.3	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-4.3	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-4.5	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-4.5	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-4.5	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrnment
MC13051-4.5	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-4.6	VOC Ref #4	Jaime Maslowski	08/23/12 08:26	Retrieve from Storage
MC13051-4.6	Jaime Maslowski	GCMSN	08/23/12 08:26	Load on Instrument
MC13051-4.6	GCMSN	Jaime Maslowski	08/23/12 16:02	Unload from Instrument
MC13051-4.6	Jaime Maslowski	VOC Ref #4	08/23/12 16:03	Return to Storage
MC13051-5.1	Walk In Ref #22	Amirhossein Farvardin	08/12/12 09:40	Retrieve from Storage
MC13051-5.1	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-5.3	Walk In Ref #22	Amirhossein Farvardin	08/12/12 09:40	Retrieve from Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxaua 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/10/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC13051-5.3	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-5.4	Walk In Ref #22	Amirhosseiu Farvardiu	08/12/12 09:40	Retrieve from Storage
MC13051-5.4	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-5.7	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-5.7	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-5.8	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-5.8	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-5.9	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-5.9	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-5.13	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-5.13	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-5.13	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-5.13	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-5.14	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-5.14	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-5.14	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-5.14	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-5.15	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-5.15	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-5.15	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-5.15	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-5.16	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-5.16	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-5.16	GCMSV	Amy Min Yang	08/26/12 09:45	Unload from Instrument
MC13051-5.16	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage
MC13051-6.1	Walk In Ref #22	Amirhossein Farvardin	08/12/12 09:40	Retrieve from Storage
MC13051-6.1	Amirhossein Farvardin		08/17/12 17:32	Depleted
MC13051-6.3	VOC Ref #4	Nick Krasinski	08/14/12 14:49	Retrieve from Storage
MC13051-6.3	Nick Krasinski		08/16/12 21:49	Depleted
MC13051-6.4	VOC Ref #4	Jaime Maslowski	08/23/12 08:26	Retrieve from Storage
MC13051-6.4	Jaime Maslowski	GCMSN	08/23/12 08:26	Load on Instrument
MC13051-6.4	GCMSN	Jaime Maslowski	08/23/12 16:02	Unload from Instrument
MC13051-6.4	Jaime Maslowski	VOC Ref #4	08/23/12 16:03	Return to Storage

5.3

Accutest Internal Chain of Custody

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL
Received: 08/10/12

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC13051-6.5	VOC Ref #4	Amy Min Yang	08/22/12 15:02	Retrieve from Storage
MC13051-6.5	Amy Min Yang	GCMSV	08/22/12 15:02	Load on Instrument
MC13051-6.5	GCMSV	Amy Min Yaug	08/26/12 09:45	Unload from Instrument
MC13051-6.5	Amy Min Yang	VOC Ref #4	08/26/12 09:45	Return to Storage

5.3

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-MB	V10789.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.0	ug/l	
107-02-8	Acrolein	ND	25	10	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.2	ug/l	
71-43-2	Benzene	ND	0.50	0.24	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.62	ug/l	
74-97-5	Bromochloromethane	ND	5.0	1.2	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.58	ug/l	
75-25-2	Bromoform	ND	1.0	0.78	ug/l	
74-83-9	Bromomethane	ND	2.0	1.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.4	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.68	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.55	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.64	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.61	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.87	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.47	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.78	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	0.73	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.65	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.53	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.93	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.45	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.64	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.7	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.62	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.63	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.41	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.95	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.72	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.64	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.6	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.91	ug/l	

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-MB	V10789.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.45	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.20	ug/l	
123-91-1	1,4-Dioxane	ND	25	15	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.51	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	2.1	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ng/l	
98-82-8	Isopropylbenzene	ND	5.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.57	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.41	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	2.9	ug/l	
74-95-3	Methylene bromide	ND	5.0	1.1	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.83	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.58	ug/l	
100-42-5	Styrene	ND	5.0	0.45	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.57	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.42	ug/l	
108-88-3	Toluene	ND	1.0	0.51	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.3	ng/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.85	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ng/l	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.29	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.85	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.35	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.47	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.63	ug/l	
	m,p-Xylene	ND	1.0	0.73	ug/l	
95-47-6	o-Xylene	ND	1.0	0.58	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/l	

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-MB	V10789.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

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

6.1.1

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2518-MB	N66943.D	1	08/23/12	JM	n/a	n/a	MSN2518

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

MC13051-3, MC13051-4, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	70-130%
2037-26-5	Toluene-D8	93%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-BS	V10787.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	36.3	73	70-130
107-02-8	Acrolein	250	212	85	70-130
107-13-1	Acrylonitrile	50	246	492* [a]	70-130
71-43-2	Benzene	50	48.9	98	70-130
108-86-1	Bromobenzene	50	56.3	113	70-130
74-97-5	Bromochloromethane	50	49.4	99	70-130
75-27-4	Bromodichloromethane	50	48.5	97	70-130
75-25-2	Bromoform	50	47.1	94	70-130
74-83-9	Bromomethane	50	66.8	134* [b]	70-130
78-93-3	2-Butanone (MEK)	50	41.6	83	70-130
104-51-8	n-Butylbenzene	50	58.5	117	70-130
135-98-8	sec-Butylbenzene	50	61.1	122	70-130
98-06-6	tert-Butylbenzene	50	59.5	119	70-130
75-15-0	Carbon disulfide	50	76.8	154* [b]	70-130
56-23-5	Carbon tetrachloride	50	49.1	98	70-130
108-90-7	Chlorobenzene	50	57.3	115	70-130
75-00-3	Chloroethane	50	61.6	123	70-130
110-75-8	2-Chloroethyl vinyl ether	50	46.3	93	70-130
67-66-3	Chloroform	50	50.7	101	70-130
74-87-3	Chloromethane	50	64.8	130	70-130
95-49-8	o-Chlorotoluene	50	56.0	112	70-130
106-43-4	p-Chlorotoluene	50	57.1	114	70-130
124-48-1	Dibromochloromethane	50	46.0	92	70-130
95-50-1	1,2-Dichlorobenzene	50	57.9	116	70-130
541-73-1	1,3-Dichlorobenzene	50	58.0	116	70-130
106-46-7	1,4-Dichlorobenzene	50	53.0	106	70-130
75-71-8	Dichlorodifluoromethane	50	109	218* [a]	70-130
75-34-3	1,1-Dichloroethane	50	48.8	98	70-130
107-06-2	1,2-Dichloroethane	50	46.0	92	70-130
75-35-4	1,1-Dichloroethene	50	58.8	118	70-130
156-59-2	cis-1,2-Dichloroethene	50	49.8	100	70-130
156-60-5	trans-1,2-Dichloroethene	50	51.5	103	70-130
78-87-5	1,2-Dichloropropane	50	48.6	97	70-130
142-28-9	1,3-Dichloropropane	50	49.5	99	70-130
594-20-7	2,2-Dichloropropane	50	53.0	106	70-130
563-58-6	1,1-Dichloropropene	50	53.9	108	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-BS	V10787.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	42.1	84	70-130
10061-02-6	trans-1,3-Dichloropropene	50	41.7	83	70-130
123-91-1	1,4-Dioxane	250	207	83	70-130
97-63-2	Ethyl methacrylate	50	41.9	84	77-137
100-41-4	Ethylbenzene	50	55.6	111	70-130
87-68-3	Hexachlorobutadiene	50	55.8	112	70-130
591-78-6	2-Hexanone	50	41.1	82	70-130
98-82-8	Isopropylbenzene	50	60.0	120	70-130
99-87-6	p-Isopropyltoluene	50	58.7	117	70-130
1634-04-4	Methyl Tert Butyl Ether	50	46.0	92	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	39.0	78	70-130
74-95-3	Methylene bromide	50	51.3	103	70-130
75-09-2	Methylene chloride	50	49.0	98	70-130
103-65-1	n-Propylbenzene	50	60.4	121	70-130
100-42-5	Styrene	50	55.8	112	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	49.3	99	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	46.1	92	70-130
127-18-4	Tetrachloroethene	50	54.7	109	70-130
108-88-3	Toluene	50	50.2	100	70-130
87-61-6	1,2,3-Trichlorobenzene	50	55.3	111	70-130
120-82-1	1,2,4-Trichlorobeuzene	50	56.3	113	70-130
71-55-6	1,1,1-Trichloroethane	50	52.0	104	70-130
79-00-5	1,1,2-Trichloroethane	50	48.6	97	70-130
79-01-6	Trichloroethene	50	51.0	102	70-130
75-69-4	Trichlorofluoromethane	50	63.6	127	70-130
96-18-4	1,2,3-Trichloropropane	50	38.2	76	70-130
95-63-6	1,2,4-Trimethylbenzene	50	53.1	106	70-130
108-67-8	1,3,5-Trimethylbenzene	50	53.7	107	70-130
108-05-4	Vinyl Acetate	50	44.7	89	70-130
75-01-4	Vinyl chloride	50	58.0	116	70-130
	m,p-Xylene	100	111	111	70-130
95-47-6	o-Xylene	50	57.9	116	70-130
1330-20-7	Xylene (total)	150	169	113	70-130

* = Outside of Control Limits.

6.2.1

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV449-BS	V10787.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

(a) Outside control limits. Associated samples are non-detect for this compound.
(b) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2518-BS	N66941.D	1	08/23/12	JM	n/a	n/a	MSN2518

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

MC13051-3, MC13051-4, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.0	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	92%	70-130%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	87%	70-130%

6.2.2

6

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13051-5MS	V10809.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5MSD	V10810.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5	V10791.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	5.6		50	28.4	46* a	27.8	44* a	2	70-130/30
107-02-8	Acrolein	ND		250	173	69* a	170	68* a	2	70-130/30
107-13-1	Acrylonitrile	ND		50	202	404* b	206	412* b	2	70-130/30
71-43-2	Benzene	0.84		50	49.7	98	50.2	99	1	70-130/30
108-86-1	Bromobenzene	ND		50	56.3	113	56.8	114	1	70-130/30
74-97-5	Bromochloromethane	ND		50	45.9	92	46.4	93	1	70-130/30
75-27-4	Bromodichloromethane	ND		50	42.9	86	44.8	90	4	70-130/30
75-25-2	Bromoform	ND		50	44.6	89	46.3	93	4	70-130/30
74-83-9	Bromomethane	ND		50	54.5	109	53.5	107	2	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	34.9	70	34.6	69* a	1	70-130/30
104-51-8	n-Butylbenzene	ND		50	52.7	105	53.3	107	1	70-130/30
135-98-8	sec-Butylbenzene	ND		50	57.7	115	58.9	118	2	70-130/30
98-06-6	tert-Butylbenzene	ND		50	55.3	111	56.5	113	2	70-130/30
75-15-0	Carbon disulfide	ND		50	61.5	123	66.4	133* a	8	70-130/30
56-23-5	Carbon tetrachloride	ND		50	44.4	89	47.3	95	6	70-130/30
108-90-7	Chlorobenzene	ND		50	59.2	118	60.0	120	1	70-130/30
75-00-3	Chloroethane	ND		50	46.7	93	45.5	91	3	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* a	ND	0* a	nc	70-130/30
67-66-3	Chloroform	ND		50	44.0	88	44.8	90	2	70-130/30
74-87-3	Chloromethane	ND		50	49.5	99	49.2	98	1	70-130/30
95-49-8	o-Chlorotoluene	ND		50	52.3	105	52.8	106	1	70-130/30
106-43-4	p-Chlorotoluene	ND		50	53.3	107	53.9	108	1	70-130/30
124-48-1	Dibromochloromethane	ND		50	42.8	86	44.7	89	4	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	56.4	113	57.4	115	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	57.2	114	58.1	116	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	52.6	105	52.8	106	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	89.4	179* a	89.7	179* a	0	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	41.9	84	42.6	85	2	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	41.4	83	42.0	84	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	53.8	108	54.8	110	2	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	45.2	90	45.9	92	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	46.8	94	47.4	95	1	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	44.9	90	45.5	91	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	49.0	98	49.5	99	1	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	42.9	86	45.2	90	5	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	50.7	101	51.9	104	2	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13051-5MS	V10809.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5MSD	V10810.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5	V10791.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-1, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	38.5	77	39.9	80	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	38.7	77	40.2	80	4	70-130/30
123-91-1	1,4-Dioxane	ND		250	165	66* a	169	68* a	2	70-130/30
97-63-2	Ethyl methacrylate	ND		50	40.1	80	40.9	82	2	72-139/30
100-41-4	Ethylbenzene	ND		50	55.6	111	56.4	113	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	55.7	111	58.8	118	5	70-130/30
591-78-6	2-Hexanone	ND		50	38.6	77	38.8	78	1	70-130/30
98-82-8	Isopropylbenzene	ND		50	57.0	114	57.8	116	1	70-130/30
99-87-6	p-Isopropyltolnene	ND		50	56.3	113	57.2	114	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	5.3		50	47.4	84	48.0	85	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	34.6	69* a	34.9	70	1	70-130/30
74-95-3	Methylene bromide	ND		50	46.9	94	48.0	96	2	70-130/30
75-09-2	Methylene chloride	ND		50	43.8	88	43.9	88	0	70-130/30
103-65-1	n-Propylbenzene	ND		50	55.9	112	56.5	113	1	70-130/30
100-42-5	Styrene	ND		50	56.9	114	57.6	115	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	49.5	99	51.4	103	4	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	41.4	83	42.3	85	2	70-130/30
127-18-4	Tetrachloroethene	ND		50	59.7	119	61.2	122	2	70-130/30
108-88-3	Toluene	ND		50	48.9	98	49.5	99	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	46.7	93	56.5	113	19	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	53.6	107	57.6	115	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	45.7	91	47.6	95	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	45.5	91	46.6	93	2	70-130/30
79-01-6	Trichloroethene	ND		50	49.5	99	50.6	101	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	51.0	102	53.4	107	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	36.6	73	37.5	75	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	50.1	100	50.6	101	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	50.8	102	51.5	103	1	70-130/30
108-05-4	Vinyl Acetate	ND		50	34.5	69* a	35.6	71	3	70-130/30
75-01-4	Vinyl chloride	ND		50	46.4	93	47.1	94	1	70-130/30
	m,p-Xylene	ND		100	115	115	117	117	2	70-130/30
95-47-6	o-Xylene	ND		50	59.8	120	60.8	122	2	70-130/30
1330-20-7	Xylene (total)	ND		150	175	117	178	119	2	70-130/30

* = Outside of Control Limits.

6.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13051-5MS	V10809.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5MSD	V10810.D	1	08/23/12	AMY	n/a	n/a	MSV449
MC13051-5	V10791.D	1	08/22/12	AMY	n/a	n/a	MSV449

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

MC13051-I, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Surrogate Recoveries	MS	MSD	MC13051-5	Limits
1868-53-7	Dibromofluoromethane	90%	91%	95%	70-130%
2037-26-5	Toluene-D8	97%	97%	99%	70-130%
460-00-4	4-Bromofluorobenzene	93%	93%	100%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Ontside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 Sonth Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC13089-9MS	N66961.D	5	08/23/12	JM	n/a	n/a	MSN2518
MC13089-9MSD	N66962.D	5	08/23/12	JM	n/a	n/a	MSN2518
MC13089-9 [a]	N66951.D	1	08/23/12	JM	n/a	n/a	MSN2518

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

MC13051-3, MC13051-4, MC13051-6

CAS No.	Compound	MC13089-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	19.6		250	457	175* [b]	452	173* [b]	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	MC13089-9	Limits
1868-53-7	Dibromofluoromethane	94%	88%	93%	70-130%
2037-26-5	Tolnene-D8	95%	76%	97%	70-130%
460-00-4	4-Bromofluorobenzene	108%	125%	93%	70-130%

(a) The pH of the sample aliquot for VOA analysis was > 2 at time of analysis.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

6.3.2

Volatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSN2518-CC2468	Injection Date:	08/23/12
Lab File ID:	N66941.D	Injection Time:	03:26
Instrument ID:	GCMSN	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	135660	9.02	205201	9.89	105743	13.14	105770	15.70	57473	6.56
Upper Limit [a]	271320	9.52	410402	10.39	211486	13.64	211540	16.20	114946	7.06
Lower Limit [b]	67830	8.52	102601	9.39	52872	12.64	52885	15.20	28737	6.06
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSN2518-BS	135660	9.02	205201	9.89	105743	13.14	105770	15.70	57473	6.56
MSN2518-MB	116312	9.02	185174	9.89	89658	13.15	75929	15.70	50705	6.57
ZZZZZZ	49316*	9.02	133932	9.89	59831	13.14	33708[c]	15.70	27436[c]	6.58
ZZZZZZ	93444	9.02	137563	9.89	42798[c]	13.15	28288[c]	15.71	41271	6.57
ZZZZZZ	45598[c]	9.02	144231	9.89	47278[c]	13.15	27103[c]	15.70	24537[c]	6.57
ZZZZZZ	75429	9.02	71278[c]	9.89	36943[c]	13.15	36052[c]	15.70	39783	6.57
ZZZZZZ	57397[c]	9.01	80108[c]	9.89	65475	13.15	32303[c]	15.70	19975[c]	6.57
ZZZZZZ	100650	9.02	161472	9.89	70879	13.15	29180[c]	15.70	38493	6.57
ZZZZZZ	91582	9.02	83384[c]	9.89	58372	13.14	102075	15.70	29168	6.57
MC13089-9	141219	9.02	217103	9.89	115526	13.15	108464	15.70	62693	6.56
ZZZZZZ	123233	9.02	135122	9.89	80770	13.14	65193	15.70	58517	6.57
ZZZZZZ	129348	9.02	165864	9.89	72467	13.14	60212	15.70	55043	6.57
MC13051-6	150086	9.02	223996	9.89	108781	13.14	91069	15.70	60580	6.57
MC13051-3	87768	9.02	123746	9.89	103131	13.15	72110	15.70	42674	6.57
MC13051-4	101156	9.02	120014	9.89	66773	13.15	73448	15.70	34171	6.57
ZZZZZZ	81155	9.02	128443	9.89	82373	13.14	48290[c]	15.70	39544	6.57
ZZZZZZ	89409	9.02	182149	9.89	66885	13.14	54956	15.70	38333	6.57
ZZZZZZ	126517	9.02	180414	9.89	64969	13.14	57015	15.70	46828	6.57
ZZZZZZ	104069	9.02	173155	9.89	62048	13.15	76120	15.70	28820	6.57
MC13089-9MS	116294	9.02	175669	9.89	80892	13.14	68258	15.70	54777	6.56
MC13089-9MSD	103849	9.02	200976	9.89	85309	13.14	78357	15.70	34986	6.56
ZZZZZZ	104358	9.02	147137	9.89	85531	13.14	68265	15.71	40154	6.56

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

(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) Outside control limits. Results confirmed by reanalysis.

6.4.1

Volatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSV449-CC436	Injection Date:	08/22/12
Lab File ID:	V10786.D	Injection Time:	13:54
Instrument ID:	GCMSV	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	609913	6.52	1022136	7.71	533533	11.07	434851	13.30	149850	3.48
Upper Limit [a]	1219826	7.02	2044272	8.21	1067066	11.57	869702	13.80	299700	3.98
Lower Limit [b]	304957	6.02	511068	7.21	266767	10.57	217426	12.80	74925	2.98
Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV449-BS	605657	6.53	1021512	7.71	540055	11.07	435493	13.30	152040	3.49
MSV449-MB	602705	6.52	1028208	7.71	530558	11.07	422882	13.30	138763	3.49
MC13051-1	602182	6.52	1022782	7.71	532256	11.07	420633	13.30	126804	3.48
MC13051-5	594493	6.53	1013699	7.71	523106	11.07	414637	13.31	127794	3.49
ZZZZZZ	589940	6.53	1009298	7.72	524962	11.07	417709	13.31	116620	3.49
ZZZZZZ	591468	6.53	1004480	7.71	526867	11.07	417185	13.31	122650	3.49
ZZZZZZ	580574	6.53	996791	7.71	518717	11.07	410496	13.31	127499	3.49
ZZZZZZ	578452	6.52	994733	7.71	522391	11.07	411401	13.30	127196	3.48
MC13051-3	593398	6.56	1164579	7.73	570723	11.07	473511	13.31	136105	3.50
MC13051-6	682824	6.53	1122749	7.72	577131	11.07	489803	13.31	134999	3.50
MC13051-4	694341	6.67	1353020	7.77	676430	11.07	594251	13.30	179316	3.52
ZZZZZZ	864874	6.52	1363686	7.71	687231	11.07	610856	13.31	182987	3.48
ZZZZZZ	854195	6.53	1337403	7.72	679038	11.07	593160	13.30	197477	3.49
ZZZZZZ	843903	6.53	1327681	7.71	684145	11.07	593225	13.30	229230	3.50
ZZZZZZ	840444	6.52	1330227	7.71	670174	11.07	591213	13.30	201279	3.49
MC13051-5MS	814600	6.53	1279047	7.71	642477	11.07	565416	13.30	181072	3.50
MC13051-5MSD	809162	6.52	1271176	7.71	642539	11.07	566018	13.30	174582	3.49

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

(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.

6.4.2

Volatile Surrogate Recovery Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC13051-1	V10790.D	95.0	99.0	99.0
MC13051-3	V10796.D	95.0	97.0	95.0
MC13051-3	N66955.D	100.0	120.0	88.0
MC13051-4	V10798.D	76.0	99.0	93.0
MC13051-4	N66956.D	110.0	112.0	80.0
MC13051-5	V10791.D	95.0	99.0	100.0
MC13051-6	V10797.D	86.0	98.0	97.0
MC13051-6	N66954.D	86.0	95.0	157.0* [a]
MC13051-5MS	V10809.D	90.0	97.0	93.0
MC13051-5MSD	V10810.D	91.0	97.0	93.0
MC13089-9MS	N66961.D	94.0	95.0	108.0
MC13089-9MSD	N66962.D	88.0	76.0	125.0
MSN2518-BS	N66941.D	92.0	95.0	87.0
MSN2518-MB	N66943.D	97.0	93.0	96.0
MSV449-BS	V10787.D	100.0	99.0	99.0
MSV449-MB	V10789.D	96.0	98.0	99.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

(a) Outside control limits. Results confirmed by reanalysis.

6.5.1

New England 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
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-MB	W3910.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	1.2	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.40	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.38	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.37	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	1.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.60	ug/l	
	3&4-Methylphenol	ND	10	0.75	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.47	ug/l	
100-02-7	4-Nitrophenol	ND	20	2.8	ug/l	
87-86-5	Pentachlorophenol	ND	10	0.64	ug/l	
108-95-2	Phenol	ND	5.0	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.49	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.35	ug/l	
62-53-3	Aniline	ND	10	2.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.27	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.26	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.18	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.22	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.38	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.28	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.29	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.21	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	2.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.21	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.89	ug/l	
132-64-9	Dibenzofuran	ND	2.0	0.21	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.24	ug/l	
84-66-2	Diethyl phthalate	0.47	5.0	0.19	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.38	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.25	ug/l	

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-MB	W3910.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	5.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	2.0	ug/l	
78-59-1	Isophorone	ND	5.0	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.23	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.25	ug/l	
100-01-6	4-Nitroaniline	ND	10	2.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.24	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	0.59	ng/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.28	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.44	ug/l	
110-86-1	Pyridine	ND	10	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	46%	15-110%
4165-62-2	Phenol-d5	32%	15-110%
118-79-6	2,4,6-Tribromophenol	90%	15-110%
4165-60-0	Nitrobenzene-d5	88%	30-130%
321-60-8	2-Fluorobiphenyl	74%	30-130%
1718-51-0	Terphenyl-d14	107%	30-130%

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

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30002-MB	U9218.D	1	08/14/12	NS	08/12/12	OP30002	MSU509

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.014	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.013	ug/l	
120-12-7	Anthracene	ND	0.10	0.018	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.030	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.017	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.038	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.059	ug/l	
218-01-9	Chrysene	ND	0.10	0.073	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.042	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.033	ug/l	
86-73-7	Fluoreue	ND	0.10	0.046	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.046	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.20	0.14	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.052	ng/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.036	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	72%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	99%	30-130%

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-BS	W3911.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	33.3	33	30-130
95-57-8	2-Chlorophenol	100	72.7	73	30-130
59-50-7	4-Chloro-3-methyl phenol	100	78.2	78	30-130
120-83-2	2,4-Dichlorophenol	100	79.0	79	30-130
105-67-9	2,4-Dimethylphenol	100	74.4	74	30-130
51-28-5	2,4-Dinitrophenol	100	83.2	83	30-130
534-52-1	4,6-Dinitro-o-cresol	100	106	106	30-130
95-48-7	2-Methylphenol	100	64.5	65	30-130
	3&4-Methylphenol	200	124	62	30-130
88-75-5	2-Nitrophenol	100	83.1	83	30-130
100-02-7	4-Nitrophenol	100	40.1	40	30-130
87-86-5	Pentachlorophenol	100	75.2	75	30-130
108-95-2	Phenol	100	36.3	36	30-130
95-95-4	2,4,5-Trichlorophenol	100	85.2	85	30-130
88-06-2	2,4,6-Trichlorophenol	100	84.5	85	30-130
62-53-3	Aniline	50	28.5	57	40-140
101-55-3	4-Bromophenyl phenyl ether	50	42.7	85	40-140
85-68-7	Butyl benzyl phthalate	50	47.2	94	40-140
100-51-6	Benzyl Alcohol	50	33.8	68	40-140
91-58-7	2-Chloronaphthalene	50	40.7	81	40-140
106-47-8	4-Chloroaniline	50	40.1	80	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	38.4	77	40-140
111-44-4	bis(2-Chloroethyl)ether	50	37.9	76	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	48.3	97	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	45.2	90	40-140
122-66-7	1,2-Diphenylhydrazine	50	49.1	98	40-140
121-14-2	2,4-Dinitrotolnene	50	46.8	94	40-140
606-20-2	2,6-Dinitrotolnene	50	44.3	89	40-140
91-94-1	3,3'-Dichlorobenzidine	50	44.1	88	40-140
132-64-9	Dibenzofuran	50	42.4	85	40-140
84-74-2	Di-n-butyl phthalate	50	46.7	93	40-140
117-84-0	Di-n-octyl phthalate	50	48.5	97	40-140
84-66-2	Diethyl phthalate	50	46.1	92	40-140
131-11-3	Dimethyl phthalate	50	44.0	88	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	46.5	93	40-140
118-74-1	Hexachlorobenzene	50	45.6	91	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-BS	W3911.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	18.4	37* a	40-140
67-72-1	Hexachloroethane	50	30.2	60	40-140
78-59-1	Isophorone	50	44.5	89	40-140
88-74-4	2-Nitroaniline	50	46.2	92	40-140
99-09-2	3-Nitroaniline	50	41.5	83	40-140
100-01-6	4-Nitroaniline	50	38.0	76	40-140
98-95-3	Nitrobenzene	50	44.2	88	40-140
62-75-9	n-Nitrosodimethylamine	50	25.6	51	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	47.5	95	40-140
86-30-6	N-Nitrosodiphenylamine	50	47.1	94	40-140
110-86-1	Pyridine	50	21.9	44	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	49%	15-110%
4165-62-2	Phenol-d5	34%	15-110%
118-79-6	2,4,6-Tribromophenol	93%	15-110%
4165-60-0	Nitrobenzene-d5	87%	30-130%
321-60-8	2-Fluorobiphenyl	71%	30-130%
1718-51-0	Terphenyl-d14	102%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenne, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30002-BS	U9219.D	1	08/14/12	NS	08/12/12	OP30002	MSU509

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	39.8	80	40-140
208-96-8	Acenaphthylene	50	35.7	71	40-140
120-12-7	Anthracene	50	40.5	81	40-140
56-55-3	Benzo(a)anthracene	50	44.2	88	40-140
50-32-8	Benzo(a)pyrene	50	42.1	84	40-140
205-99-2	Benzo(b)fluoranthene	50	47.1	94	40-140
191-24-2	Benzo(g,h,i)perylene	50	40.3	81	40-140
207-08-9	Benzo(k)fluoranthene	50	48.7	97	40-140
218-01-9	Chrysene	50	40.7	81	40-140
53-70-3	Dibenzo(a,h)anthracene	50	41.5	83	40-140
206-44-0	Fluoranthene	50	43.5	87	40-140
86-73-7	Fluorene	50	40.0	80	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.9	84	40-140
90-12-0	1-Methylnaphthalene	50	40.7	81	40-140
91-57-6	2-Methylnaphthalene	50	36.2	72	40-140
91-20-3	Naphthalene	50	34.7	69	40-140
85-01-8	Phenanthrene	50	40.4	81	40-140
129-00-0	Pyrene	50	41.7	83	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	89%	30-130%
321-60-8	2-Fluorobiphenyl	66%	30-130%
1718-51-0	Terphenyl-d14	103%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-MS	W3912.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
OP30001-MSD	W3913.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
MC13051-5	W3914.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND		100	37.0	37	39.2	39	6	30-130/20
95-57-8	2-Chlorophenol	ND		100	73.4	73	75.6	76	3	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		100	80.3	80	82.5	83	3	30-130/20
120-83-2	2,4-Dichlorophenol	ND		100	79.1	79	81.5	82	3	30-130/20
105-67-9	2,4-Dimethylphenol	ND		100	80.2	80	82.3	82	3	30-130/20
51-28-5	2,4-Dinitrophenol	ND		100	87.6	88	93.5	94	7	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		100	106	106	111	111	5	30-130/20
95-48-7	2-Methylphenol	ND		100	68.3	68	68.4	68	0	30-130/20
	3&4-Methylphenol	ND		200	131	66	131	66	0	30-130/20
88-75-5	2-Nitrophenol	ND		100	84.2	84	86.9	87	3	30-130/20
100-02-7	4-Nitrophenol	ND		100	44.3	44	48.1	48	8	30-130/20
87-86-5	Pentachlorophenol	ND		100	88.0	88	93.3	93	6	30-130/20
108-95-2	Phenol	ND		100	38.0	38	36.8	37	3	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		100	85.0	85	88.5	89	4	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		100	83.4	83	88.1	88	5	30-130/20
62-53-3	Aniline	ND		50	26.1	52	4.6	9* a	140* b	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		50	41.3	83	44.8	90	8	40-140/20
85-68-7	Butyl benzyl phthalate	ND		50	44.8	90	46.6	93	4	40-140/20
100-51-6	Benzyl Alcohol	ND		50	32.3	65	34.7	69	7	40-140/20
91-58-7	2-Chloronaphthalene	ND		50	41.4	83	44.7	89	8	40-140/20
106-47-8	4-Chloroaniline	ND		50	32.8	66	8.0	16* a	122* b	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		50	37.2	74	39.3	79	5	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		50	37.0	74	38.8	78	5	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	47.9	96	49.8	100	4	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	43.9	88	47.9	96	9	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		50	47.0	94	48.6	97	3	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		50	45.8	92	48.7	97	6	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		50	43.0	86	47.3	95	10	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	5.9	12* a	ND	0* a	200* b	40-140/20
132-64-9	Dibenzofuran	ND		50	41.9	84	44.6	89	6	40-140/20
84-74-2	Di-n-butyl phthalate	ND		50	45.1	90	46.9	94	4	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	44.1	88	49.8	100	12	40-140/20
84-66-2	Diethyl phthalate	0.46	J	50	45.1	89	47.9	95	6	40-140/20
131-11-3	Dimethyl phthalate	ND		50	42.3	85	45.6	91	8	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	4.3		50	50.6	93	54.2	100	7	40-140/20
118-74-1	Hexachlorobenzene	ND		50	42.8	86	45.8	92	7	40-140/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30001-MS	W3912.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
OP30001-MSD	W3913.D	1	08/14/12	KR	08/12/12	OP30001	MSW178
MC13051-5	W3914.D	1	08/14/12	KR	08/12/12	OP30001	MSW178

The QC reported here applies to the following samples: Method: SW846 8270C

MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		50	21.4	43	25.3	51	17	40-140/20
67-72-1	Hexachloroethane	ND		50	31.7	63	35.4	71	11	40-140/20
78-59-1	Isophorone	ND		50	43.6	87	46.3	93	6	40-140/20
88-74-4	2-Nitroaniline	ND		50	43.8	88	46.7	93	6	40-140/20
99-09-2	3-Nitroaniline	ND		50	32.7	65	14.8	30* a	75* b	40-140/20
100-01-6	4-Nitroaniline	ND		50	39.1	78	31.4	63	22* b	40-140/20
98-95-3	Nitrobenzene	ND		50	43.2	86	45.9	92	6	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	26.2	52	27.8	56	6	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	47.4	95	49.2	98	4	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	45.1	90	46.2	92	2	40-140/20
110-86-1	Pyridine	ND		50	22.2	44	ND	0* a	200* b	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC13051-5	Limits
367-12-4	2-Fluorophenol	48%	50%	43%	15-110%
4165-62-2	Phenol-d5	35%	36%	30%	15-110%
118-79-6	2,4,6-Tribromophenol	91%	96%	94%	15-110%
4165-60-0	Nitrobenzene-d5	86%	91%	82%	30-130%
321-60-8	2-Fluorobiphenyl	78%	82%	72%	30-130%
1718-51-0	Terphenyl-d14	61%	76%	76%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30002-MS	U9227.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
OP30002-MSD	U9228.D	1	08/15/12	NS	08/12/12	OP30002	MSU510
MC13051-5	U9229.D	1	08/15/12	NS	08/12/12	OP30002	MSU510

The QC reported here applies to the following samples: Method: SW846 8270C BY SIM

MC13051-3, MC13051-4, MC13051-5, MC13051-6

7.3.2

7

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.089	J	50	39.2	78	41.7	83	6	40-140/20
208-96-8	Acenaphthylene	0.022	J	50	34.5	69	36.4	73	5	40-140/20
120-12-7	Anthracene	ND		50	39.1	78	41.4	83	6	40-140/20
56-55-3	Benzo(a)anthracene	ND		50	38.6	77	42.4	85	9	40-140/20
50-32-8	Benzo(a)pyrene	ND		50	37.2	74	39.6	79	6	40-140/20
205-99-2	Benzo(b)fluoranthene	ND		50	43.2	86	46.8	94	8	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND		50	37.3	75	41.7	83	11	40-140/20
207-08-9	Benzo(k)fluoranthene	ND		50	44.7	89	49.1	98	9	40-140/20
218-01-9	Chrysene	ND		50	35.5	71	40.0	80	12	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	38.0	76	42.9	86	12	40-140/20
206-44-0	Fluoranthene	ND		50	37.2	74	40.6	81	9	40-140/20
86-73-7	Fluorene	ND		50	39.6	79	41.7	83	5	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	38.4	77	43.1	86	12	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	34.3	69	35.8	72	4	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	36.2	72	38.3	77	6	40-140/20
91-20-3	Naphthalene	0.065	J	50	35.1	70	37.9	76	8	40-140/20
85-01-8	Phenanthrene	ND		50	39.5	79	41.8	84	6	40-140/20
129-00-0	Pyrene	ND		50	35.3	71	38.9	78	10	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC13051-5	Limits
4165-60-0	Nitrobenzene-d5	86%	90%	82%	30-130%
321-60-8	2-Fluorobiphenyl	76%	79%	73%	30-130%
1718-51-0	Terphenyl-d14	61%	77%	71%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSF2706-CC2682	Injection Date:	08/23/12
Lab File ID:	F57051.D	Injection Time:	08:48
Instrument ID:	GCMSF	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	290888	3.87	1080068	4.86	703212	6.29	1311935	7.63	1327706	10.40	1260081	11.86
Upper Limit [a]	581776	4.37	2160136	5.36	1406424	6.79	2623870	8.13	2655412	10.90	2520162	12.36
Lower Limit [b]	145444	3.37	540034	4.36	351606	5.79	655968	7.13	663853	9.90	630041	11.36
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
ZZZZZZ	317056	3.88	1176728	4.86	749134	6.28	1374384	7.62	1385676	10.40	1474196	11.85
OP30110-MB	356531	3.87	1306952	4.86	822904	6.28	1500737	7.62	1458363	10.40	1568347	11.86
OP30110-BS	345484	3.87	1261713	4.86	804108	6.28	1473451	7.62	1435094	10.41	1481763	11.86
OP30110-BSD	362736	3.88	1324815	4.86	826677	6.28	1520188	7.62	1431395	10.40	1532487	11.85
ZZZZZZ	315143	3.87	1161021	4.86	730376	6.28	1371548	7.62	1367678	10.40	1500481	11.85
ZZZZZZ	357434	3.88	1299794	4.86	834907	6.28	1528894	7.62	1479545	10.40	1607510	11.85
ZZZZZZ	295646	3.88	1082365	4.86	655583	6.28	1235336	7.62	1272440	10.40	1495855	11.85
ZZZZZZ	333109	3.87	1208348	4.86	780166	6.28	1432272	7.62	1428285	10.40	1544574	11.86
OP30110-MS	348450	3.88	1252703	4.86	797898	6.29	1470003	7.62	1411551	10.40	1485924	11.85
OP30110-MSD	392632	3.88	1451019	4.86	905366	6.29	1644558	7.62	1540709	10.40	1690349	11.85
MC13203-6	341244	3.88	1263341	4.86	789931	6.28	1449376	7.62	1382919	10.40	1523187	11.85
OP30116-MB	318226	3.87	1168098	4.86	753752	6.28	1407758	7.62	1403636	10.40	1661582	11.85
OP30116-BS	323894	3.88	1161955	4.86	745202	6.29	1400769	7.62	1417731	10.40	1519332	11.85
ZZZZZZ	307113	3.87	1135556	4.86	715591	6.28	1343601	7.62	1341068	10.40	1517140	11.85
ZZZZZZ	304567	3.87	1118904	4.86	716650	6.28	1338607	7.62	1329343	10.40	1618852	11.85
ZZZZZZ	307136	3.87	1117723	4.86	686330	6.28	1274537	7.62	1300137	10.40	1539155	11.85
ZZZZZZ	304709	3.87	1140437	4.86	724436	6.28	1327269	7.62	1345331	10.40	1592703	11.86
OP30116-MS	328554	3.88	1189476	4.86	760579	6.28	1389249	7.62	1332425	10.40	1371130	11.85
OP30116-MSD	318530	3.87	1162330	4.86	737015	6.28	1387482	7.62	1365503	10.40	1607429	11.86
MC13248-1	297955	3.87	1112716	4.86	719036	6.28	1320459	7.62	1318411	10.40	1506482	11.85
MC13051-3	310587	3.87	1179488	4.86	734772	6.28	1385265	7.62	1383144	10.40	1627116	11.85
MC13051-4	317142	3.87	1181692	4.86	758053	6.28	1412960	7.62	1458864	10.40	1651654	11.85
ZZZZZZ	311473	3.87	1144614	4.86	724577	6.28	1338142	7.62	1337898	10.40	1513875	11.85
ZZZZZZ	311472	3.87	1152300	4.86	746507	6.28	1388425	7.62	1398486	10.40	1652078	11.85
ZZZZZZ	301421	3.87	1103168	4.86	704781	6.28	1290000	7.62	1299722	10.40	1471148	11.85

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: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxaua, IL

Check Std:	MSU509-CC486	Injection Date:	08/14/12
Lab File ID:	U9203.D	Injection Time:	12:38
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	63460	3.74	187772	4.72	107534	6.14	208136	7.44	142873	10.22	262268	11.66
Upper Limit [a]	126920	4.24	375544	5.22	215068	6.64	416272	7.94	285746	10.72	524536	12.16
Lower Limit [b]	31730	3.24	93886	4.22	53767	5.64	104068	6.94	71437	9.72	131134	11.16
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
OP30003-MS	57274	3.74	169152	4.72	93977	6.14	179570	7.44	126434	10.22	225399	11.66
OP30003-MSD	55580	3.74	166692	4.72	91880	6.14	197443	7.44	123656	10.22	213299	11.67
MC12980-2	57474	3.74	173227	4.72	109639	6.14	201766	7.44	131049	10.22	227041	11.66
ZZZZZZ	57478	3.74	170645	4.72	109681	6.14	201900	7.44	129817	10.22	226034	11.66
ZZZZZZ	57043	3.74	166599	4.72	96578	6.14	203742	7.44	130900	10.22	226097	11.66
ZZZZZZ	55540	3.74	165618	4.72	93135	6.14	176738	7.44	128944	10.22	226057	11.66
ZZZZZZ	54257	3.74	159905	4.72	91314	6.14	195123	7.44	127040	10.22	219862	11.66
ZZZZZZ	56735	3.74	168991	4.72	111819	6.14	207096	7.44	133206	10.22	236006	11.66
ZZZZZZ	55440	3.74	167088	4.72	111998	6.13	204895	7.44	134399	10.22	233941	11.66
ZZZZZZ	55733	3.74	165774	4.72	108569	6.14	200460	7.44	129018	10.22	227602	11.66
ZZZZZZ	53927	3.74	161558	4.72	109484	6.13	198429	7.44	126405	10.22	222161	11.66
ZZZZZZ	53971	3.74	159753	4.72	105283	6.13	193964	7.44	124352	10.22	216207	11.66
ZZZZZZ	53815	3.74	191723	4.72	105544	6.13	193738	7.44	125043	10.22	217637	11.66
ZZZZZZ	56452	3.74	201492	4.72	110919	6.13	202732	7.44	130463	10.22	222859	11.66
OP30003-MB	54855	3.74	199880	4.72	109306	6.13	200965	7.44	128855	10.22	225309	11.66
OP30002-MB	54855	3.74	199880	4.72	109306	6.13	200965	7.44	128855	10.22	225309	11.66
OP29999-MB	54855	3.74	199880	4.72	109306	6.13	200965	7.44	128855	10.22	225309	11.66
OP30003-BS	5687I	3.74	166126	4.72	112716	6.14	205313	7.45	127969	10.23	226947	11.67
OP30002-BS	56871	3.74	166126	4.72	112716	6.14	205313	7.45	127969	10.23	226947	11.67
OP29999-BS	5687I	3.74	166126	4.72	112716	6.14	205313	7.45	127969	10.23	226947	11.67

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 cbeck standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU510-CC486	Injection Date:	08/15/12
Lab File ID:	U9224.D	Injection Time:	12:00
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

	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	89118	3.69	256402	4.67	142706	6.08	267055	7.39	180402	10.17	319169	11.60
Upper Limit [a]	178236	4.19	512804	5.17	285412	6.58	534110	7.89	360804	10.67	638338	12.10
Lower Limit [b]	44559	3.19	128201	4.17	71353	5.58	133528	6.89	90201	9.67	159585	11.10
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
ZZZZZZ	69592	3.69	202099	4.67	114452	6.08	215080	7.39	149874	10.16	222192	11.60
ZZZZZZ	76525	3.69	214728	4.67	119898	6.08	214151	7.39	141566	10.17	208040	11.60
OP30002-MS	66852	3.69	191724	4.67	105730	6.08	195864	7.39	138542	10.17	241536	11.60
OP30002-MSD	72387	3.69	201213	4.67	109388	6.08	198277	7.39	132748	10.17	232425	11.60
MC13051-5	69816	3.69	199574	4.67	107655	6.08	197953	7.39	140363	10.17	247207	11.60
MC13051-3	69836	3.69	202309	4.67	110358	6.08	204418	7.39	144437	10.17	259591	11.60
MC13051-4	67349	3.69	191475	4.67	104796	6.08	192625	7.39	135888	10.17	242327	11.60
MC13051-6	68070	3.69	194978	4.67	105156	6.08	192036	7.39	137254	10.17	243273	11.61
OP30017-MB	61672	3.69	177972	4.67	98443	6.08	182955	7.39	128418	10.16	223603	11.60
OP30023-MB	61672	3.69	177972	4.67	98443	6.08	182955	7.39	128418	10.16	223603	11.60
OP30017-BS	61469	3.69	178107	4.67	97831	6.08	183546	7.39	124439	10.17	226260	11.60
OP30023-BS	61469	3.69	178107	4.67	97831	6.08	183546	7.39	124439	10.17	226260	11.60
ZZZZZZ	59102	3.69	175521	4.67	99410	6.08	189124	7.39	137728	10.17	244525	11.60
ZZZZZZ	65516	3.69	185346	4.67	101522	6.08	184686	7.39	129471	10.16	228734	11.60
ZZZZZZ	65313	3.69	186120	4.67	103730	6.08	189012	7.39	130394	10.17	231959	11.60
ZZZZZZ	65447	3.69	185330	4.67	102631	6.08	187721	7.39	129436	10.17	230924	11.60
ZZZZZZ	63593	3.69	179818	4.67	98699	6.08	180885	7.39	127979	10.17	232657	11.60
ZZZZZZ	62198	3.69	178641	4.67	96975	6.08	181054	7.39	127460	10.16	225907	11.60
ZZZZZZ	70342	3.69	207485	4.67	109743	6.08	202008	7.39	140593	10.17	246967	11.60
ZZZZZZ	93819	3.69	265088	4.67	143936	6.08	262775	7.39	123823	10.17	166830	11.60
OP29989-MS	65697	3.69	187382	4.67	100818	6.09	212042	7.39	130720	10.17	237764	11.61
OP29989-MSD	62728	3.69	179626	4.67	97558	6.09	204601	7.39	128716	10.17	230490	11.61
MC12986-5	67602	3.69	196200	4.67	106986	6.08	225108	7.39	142968	10.17	254887	11.61
ZZZZZZ	71268	3.69	205949	4.67	136412	6.08	239967	7.39	150967	10.17	259917	11.60
ZZZZZZ	72738	3.69	210520	4.67	139627	6.08	243203	7.39	154162	10.17	271471	11.60
ZZZZZZ	70161	3.69	200150	4.67	126595	6.08	220838	7.39	132208	10.16	182179	11.60

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.

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSU510-CC486	Injection Date:	08/15/12
Lab File ID:	U9224.D	Injection Time:	12:00
Instrument ID:	GCMSU	Method:	SW846 8270C BY SIM

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

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW177-CC138	Injection Date:	08/14/12
Lab File ID:	W3907.D	Injection Time:	11:40
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	506589	3.78	1904580	4.77	1182344	6.19	2170726	7.51	2697161	10.40	2407116	11.98
Upper Limit [a]	1013178	4.28	3809160	5.27	2364688	6.69	4341452	8.01	5394322	10.90	4814232	12.48
Lower Limit [b]	253295	3.28	952290	4.27	591172	5.69	1085363	7.01	1348581	9.90	1203558	11.48
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
OP29925-MB	431604	3.78	1610614	4.76	973175	6.19	1745495	7.51	1951330	10.39	1304015	11.97
ZZZZZZ	444681	3.78	1643227	4.76	999933	6.19	1803542	7.51	2003799	10.39	1292311	11.97
OP30001-MB	397062	3.78	1466879	4.76	882299	6.19	1619750	7.51	1890645	10.39	1890794	11.97
OP30001-BS	428206	3.78	1583220	4.76	946540	6.19	1670746	7.51	2094745	10.40	1975620	11.97
OP30001-MS	408764	3.78	1523911	4.76	924344	6.19	1637055	7.51	2029490	10.40	1912323	11.97
OP30001-MSD	414363	3.78	1532391	4.76	917143	6.19	1662337	7.51	2056791	10.40	1882973	11.97
MC13051-5	481081	3.78	1787474	4.76	1099613	6.19	1981892	7.51	2396778	10.40	2350117	11.97
MC13051-3	418364	3.78	1545313	4.76	956696	6.19	1702504	7.51	2053660	10.39	2022744	11.97
MC13051-4	415296	3.78	1512393	4.76	921281	6.19	1663976	7.51	2012786	10.39	1961711	11.97
MC13051-6	451872	3.78	1690023	4.76	1038511	6.19	1880124	7.51	2309163	10.40	2226134	11.97
ZZZZZZ	409853	3.78	1526329	4.76	933333	6.19	1687115	7.51	2005069	10.39	1982973	11.97
OP30009-MB	439096	3.78	1636280	4.76	982487	6.19	1749280	7.51	2080789	10.39	2130498	11.97
OP30009-BS	471604	3.78	1731924	4.76	1054861	6.19	1842643	7.51	2217334	10.40	2149677	11.97
OP30009-BSD	467569	3.78	1741673	4.76	1044075	6.19	1840018	7.51	2201923	10.40	2164485	11.97
OP30009-MS	465495	3.78	1716306	4.76	1014782	6.19	1803918	7.51	2115885	10.40	2083002	11.97
OP30009-MSD	451440	3.78	1666733	4.76	1005400	6.19	1754381	7.51	2110880	10.40	2093585	11.97
MC13050-1	454723	3.78	1696875	4.76	1029087	6.19	1846037	7.51	2159391	10.39	2253254	11.97
ZZZZZZ	435406	3.78	1625378	4.76	967202	6.19	1712632	7.51	2032549	10.39	2070467	11.97
ZZZZZZ	444262	3.78	1636657	4.76	988099	6.19	1762935	7.51	2134962	10.40	2168011	11.97
ZZZZZZ	430359	3.78	1619750	4.76	973351	6.19	1716539	7.51	2090633	10.39	2184984	11.97
ZZZZZZ	447502	3.78	1661276	4.76	1004284	6.19	1794604	7.51	2133974	10.40	2265623	11.97
ZZZZZZ	441067	3.78	1616965	4.76	1038996	6.19	1815524	7.51	2128362	10.39	2114007	11.97
OP29977-MS	400061	3.78	1492075	4.76	921740	6.19	1625878	7.51	2051071	10.40	1990209	11.98
OP29977-MSD	389924	3.78	1472297	4.76	913913	6.19	1629896	7.51	2036617	10.40	1997544	11.98
MC12986-5	412295	3.78	1515000	4.76	948865	6.19	1707407	7.51	2107907	10.40	2127459	11.98
ZZZZZZ	419940	3.78	1564834	4.76	942766	6.19	1744648	7.51	2068227	10.39	2086928	11.97
ZZZZZZ	414568	3.78	1550014	4.76	953515	6.19	1730626	7.51	2056863	10.39	2065094	11.97
ZZZZZZ	412821	3.78	848768[c]	4.79	969058	6.19	1877625	7.53	2341846	10.43	2271389	12.00

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

7.4.4

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW177-CC138	Injection Date:	08/14/12
Lab File ID:	W3907.D	Injection Time:	11:40
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW178-CC129	Injection Date:	08/14/12
Lab File ID:	W3907A.D	Injection Time:	11:40
Instrument ID:	GCMSW	Method:	SW846 8270C

	IS 1		IS 2		1S 3		1S 4		1S 5		1S 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	506589	3.78	1904580	4.77	1182344	6.19	2171753	7.51	2697161	10.40	2407116	11.98
Upper Limit [a]	1013178	4.28	3809160	5.27	2364688	6.69	4343506	8.01	5394322	10.90	4814232	12.48
Lower Limit [b]	253295	3.28	952290	4.27	591172	5.69	1085877	7.01	1348581	9.90	1203558	11.48
Lab Sample ID	1S 1 AREA	RT	1S 2 AREA	RT	1S 3 AREA	RT	1S 4 AREA	RT	IS 5 AREA	RT	1S 6 AREA	RT
OP29925-MB	431604	3.78	1610614	4.76	973175	6.19	1745495	7.51	1951330	10.39	1304015	11.97
ZZZZZZ	444681	3.78	1643227	4.76	999933	6.19	1803542	7.51	2003799	10.39	1292311	11.97
OP30001-MB	397062	3.78	1466879	4.76	882299	6.19	1619750	7.51	1890645	10.39	1890794	11.97
OP30001-BS	428206	3.78	1583220	4.76	946540	6.19	1670746	7.51	2094745	10.40	1975620	11.97
OP30001-MS	408764	3.78	1523911	4.76	924344	6.19	1637055	7.51	2029490	10.40	1912323	11.97
OP30001-MSD	414363	3.78	1532391	4.76	917143	6.19	1662337	7.51	2056791	10.40	1882973	11.97
MC13051-5	481081	3.78	1787474	4.76	1099613	6.19	1981892	7.51	2396778	10.40	2350117	11.97
MC13051-3	418364	3.78	1545313	4.76	956696	6.19	1702504	7.51	2053660	10.39	2022744	11.97
MC13051-4	415296	3.78	1512393	4.76	921281	6.19	1663976	7.51	2012786	10.39	1961711	11.97
MC13051-6	451872	3.78	1690023	4.76	1038511	6.19	1880124	7.51	2309163	10.40	2226134	11.97
ZZZZZZ	409853	3.78	1526329	4.76	933333	6.19	1687115	7.51	2005069	10.39	1982973	11.97
OP30009-MB	439096	3.78	1636280	4.76	982487	6.19	1749280	7.51	2080789	10.39	2130498	11.97
OP30009-BS	471604	3.78	1731924	4.76	1054861	6.19	1842643	7.51	2217334	10.40	2149677	11.97
OP30009-BSD	467569	3.78	1741673	4.76	1044075	6.19	1840018	7.51	2201923	10.40	2164485	11.97
OP30009-MS	465495	3.78	1716306	4.76	1014782	6.19	1803918	7.51	2115885	10.40	2083002	11.97
OP30009-MSD	451440	3.78	1666733	4.76	1005400	6.19	1754381	7.51	2110880	10.40	2093585	11.97
MC13050-1	454723	3.78	1696875	4.76	1029087	6.19	1846037	7.51	2159391	10.39	2253254	11.97
ZZZZZZ	435406	3.78	1625378	4.76	967202	6.19	1712632	7.51	2032549	10.39	2070467	11.97
ZZZZZZ	444262	3.78	1636657	4.76	988099	6.19	1762935	7.51	2134962	10.40	2168011	11.97
ZZZZZZ	430359	3.78	1619750	4.76	973351	6.19	1716539	7.51	2090633	10.39	2184984	11.97
ZZZZZZ	447502	3.78	1661276	4.76	1004284	6.19	1794604	7.51	2133974	10.40	2265623	11.97
ZZZZZZ	441067	3.78	1616965	4.76	1038996	6.19	1815524	7.51	2128362	10.39	2114007	11.97
OP29977-MS	400061	3.78	1492075	4.76	921740	6.19	1625878	7.51	2051071	10.40	1990209	11.98
OP29977-MSD	389924	3.78	1472297	4.76	913913	6.19	1629896	7.51	2036617	10.40	1997544	11.98
MC12986-5	412295	3.78	1515000	4.76	948865	6.19	1707407	7.51	2107907	10.40	2127459	11.98
ZZZZZZ	419940	3.78	1564834	4.76	942766	6.19	1744648	7.51	2068227	10.39	2086928	11.97
ZZZZZZ	414568	3.78	1550014	4.76	953515	6.19	1730626	7.51	2056863	10.39	2065094	11.97
ZZZZZZ	412821	3.78	848768[c]	4.79	969058	6.19	1877625	7.53	2341846	10.43	2271389	12.00

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

Semivolatile Internal Standard Area Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	MSW178-CC129	Injection Date:	08/14/12
Lab File ID:	W3907A.D	Injection Time:	11:40
Instrument ID:	GCMSW	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

(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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Semivolatile Surrogate Recovery Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8270C Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC13051-3	F57072.D	38.0	38.0	69.0	65.0	64.0	60.0
MC13051-3	W3915.D	45.0	46.0	93.0	85.0	74.0	73.0
MC13051-4	F57073.D	33.0	34.0	64.0	61.0	56.0	55.0
MC13051-4	W3916.D	42.0	44.0	87.0	79.0	68.0	69.0
MC13051-5	W3914.D	43.0	30.0	94.0	82.0	72.0	76.0
MC13051-6	W3917.D	47.0	45.0	102.0	86.0	78.0	72.0
OP30001-BS	W3911.D	49.0	34.0	93.0	87.0	71.0	102.0
OP30001-MB	W3910.D	46.0	32.0	90.0	88.0	74.0	107.0
OP30001-MS	W3912.D	48.0	35.0	91.0	86.0	78.0	61.0
OP30001-MSD	W3913.D	50.0	36.0	96.0	91.0	82.0	76.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

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
MC13051-3	U9230.D	82.0	74.0	69.0
MC13051-4	U9231.D	78.0	68.0	64.0
MC13051-5	U9229.D	82.0	73.0	71.0
MC13051-6	U9232.D	85.0	77.0	69.0
OP30002-BS	U9219.D	89.0	66.0	103.0
OP30002-MB	U9218.D	72.0	72.0	99.0
OP30002-MS	U9227.D	86.0	76.0	61.0
OP30002-MSD	U9228.D	90.0	79.0	77.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries

Method Blank Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30032-MB	BK16050A.D	1	08/15/12	AP	08/14/12	OP30032	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC13051-2, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.013	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.010	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	71%	36-173%
460-00-4	Bromofluorobenzene (S)	75%	36-173%

8.1.1

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30032-BS	BK16051A.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
OP30032-BSD	BK16052.D	1	08/15/12	AP	08/14/12	OP30032	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC13051-2, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.071	100	0.076	107	7	60-140/30
106-93-4	1,2-Dibromoethane	0.071	0.072	101	0.072	101	0	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	Bromofluorobenzene (S)	105%	113%	36-173%
460-00-4	Bromofluorobenzene (S)	121%	115%	36-173%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP30032-MS	BK16060.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
OP30032-MSD	BK16061.D	1	08/15/12	AP	08/14/12	OP30032	GBK608
MC13051-5	BK16065.D	1	08/15/12	AP	08/14/12	OP30032	GBK608

The QC reported here applies to the following samples: Method: SW846 8011

MC13051-2, MC13051-3, MC13051-4, MC13051-5, MC13051-6

CAS No.	Compound	MC13051-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.0706	0.062	88	0.063	90	2	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.0706	0.072	102	0.073	104	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC13051-5	Limits
460-00-4	Bromofluorobenzene (S)	89%	91%	94%	36-173%
460-00-4	Bromofluorobenzene (S)	101%	103%	108%	36-173%

8.3.1

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Method: SW846 8011 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC13051-2	BK16062.D	113.0	118.0
MC13051-3	BK16063.D	108.0	131.0
MC13051-4	BK16064.D	90.0	93.0
MC13051-5	BK16065.D	94.0	108.0
MC13051-6	BK16066.D	97.0	108.0
OP30032-BS	BK16051A.D	105.0	121.0
OP30032-BSD	BK16052.D	113.0	115.0
OP30032-MB	BK16050A.D	71.0	75.0
OP30032-MS	BK16060.D	89.0	101.0
OP30032-MSD	BK16061.D	91.0	103.0

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

8.4.1

GC Surrogate Retention Time Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK608-ICC608	Injection Date:	08/15/12
Lab File ID:	BK16044.D	Injection Time:	15:15
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.30	5.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BK16049.D	08/15/12	17:16	4.30	5.20
OP30031-MB	BK16050.D	08/15/12	17:40	4.30	5.20
OP30032-MB	BK16050A.D	08/15/12	17:40	4.30	5.20
OP30031-BS	BK16051.D	08/15/12	18:05	4.30	5.20
OP30032-BS	BK16051A.D	08/15/12	18:05	4.30	5.20
OP30032-BSD	BK16052.D	08/15/12	18:29	4.30	5.20
OP30031-MS	BK16053.D	08/15/12	18:53	4.30	5.20
OP30031-MSD	BK16054.D	08/15/12	19:18	4.30	5.20
ZZZZZZ	BK16055.D	08/15/12	19:42	4.30	5.20
ZZZZZZ	BK16056.D	08/15/12	20:06	4.30	5.20
ZZZZZZ	BK16057.D	08/15/12	20:30	4.30	5.20
MC12986-5	BK16058.D	08/15/12	20:54	4.30	5.20

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.1

GC Surrogate Retention Time Summary

Job Number: MC13051
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 3Q12 GW/ 21562735.00008 900 South Central Avenue, Roxana, IL

Check Std:	GBK608-CC608	Injection Date:	08/15/12
Lab File ID:	BK16059.D	Injection Time:	21:19
Instrument ID:	GCBK	Method:	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.30	5.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP30032-MS	BK16060.D	08/15/12	21:43	4.30	5.20
OP30032-MSD	BK16061.D	08/15/12	22:08	4.30	5.20
MC13051-2	BK16062.D	08/15/12	22:33	4.30	5.20
MC13051-3	BK16063.D	08/15/12	22:57	4.30	5.20
MC13051-4	BK16064.D	08/15/12	23:21	4.30	5.20
MC13051-5	BK16065.D	08/15/12	23:45	4.30	5.20
MC13051-6	BK16066.D	08/16/12	00:09	4.30	5.20
ZZZZZZ	BK16067.D	08/16/12	00:34	4.30	5.20
ZZZZZZ	BK16068.D	08/16/12	00:59	4.30	5.20
GBK608-ECC608	BK16069.D	08/16/12	01:24	4.30	5.20

Surrogate Compounds

S1 = Bromofluorobenzene (S)

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

8.5.2