

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 County: Madison
Street Address: 900 South Central Ave. Site No. (IEPA): 1191150002
City: Roxana, IL 62084 Site No. (USEPA): ILD 080 012 305

2.0 OWNER INFORMATION

Name: Not Applicable

Mailing Address: _____

Contact Name: _____

Contact Title: _____

Phone No.: _____

3.0 OPERATOR INFORMATION

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

17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Kevin Dyer

Principal Program Manager

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 – 2nd Quarter 2011

Date of Submittal July 15, 2011

IEPA Permit Log No. _____

Date of Last IEPA Letter
on Project 6/16/11

Log No. of Last IEPA

Letter on Project B-43R-CA-1; CA-3; CA5; CA-6; CA-7; CA-8;
CA-10; CA-11; and PS11-032

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 2nd quarter 2011 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 – 2nd Quarter 2011, dated July 15, 2011

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.

IEPA RCRA Corrective Action Certification

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

Date of Submission: 7/15/2011

Page 2

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. Dejeu

7/14/11

(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 B. Billman

7/14/11

Date:

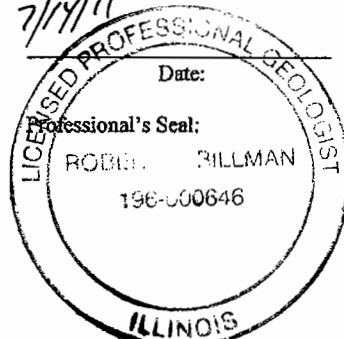
Professional's Name: Robert B. Billman

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

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



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 _____

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

Reza Tand 6/30/11

Signature of Laboratory
Responsible Officer

Date

Reza Tand, Lab director

Name and Title of Laboratory Responsible Officer



July 15, 2011

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 – 2nd Quarter 2011
Roxana, Illinois
119115002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43-CA-1; CA-3; CA-5; CA-6; CA-7; CA-8; CA-10; CA-11; PS11-032**

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 project manager, at kevin.dyer@shell.com (618/288-7237), or me at bob_billman@urscorp.com (314/743-4108).

Sincerely,

Robert B. Billman
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

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

R E P O R T

GROUNDWATER SAMPLING –
2ND QUARTER 2011

Roxana, Illinois

Prepared for:

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

July 2011



URS Corporation
1001 Highlands Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project 21562593

Certification RCRA Corrective Action Form

SECTION 1 INTRODUCTION 1-1

SECTION 2 GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES 2-1

 2.1 Additional Activities 2-1

 2.2 Groundwater Gauging and Sampling 2-1

 2.3 Health & Safety, Decontamination, and IDW 2-2

 2.4 Sample Handling and Laboratory Testing 2-4

 2.5 Data Quality Review and Data Management 2-4

SECTION 3 GROUNDWATER SAMPLING RESULTS 3-1

 3.1 Groundwater Gauging and Sampling Results 3-1

 3.2 Data Quality Review Results 3-1

 3.3 Analytical Results and Discussion 3-2

SECTION 4 CONCLUSIONS 4-1

SECTION 5 REFERENCES 5-1

List of Tables

Table 1 Cumulative Groundwater Gauging Results

Table 2 Cumulative Summary of Groundwater Field Parameters

Table 3 Cumulative Summary of Groundwater Monitoring Well Analytical Detections and Exceedances

List of Figures

Figure 1 Investigation Area Location Map

Figure 2 Groundwater Sampling Locations

Figure 3 Groundwater Contours Second Quarter 2011

Figure 4 2Q11 Groundwater Monitoring Well Analytical Results Summary

List of Appendices

Appendix A Groundwater Sampling Data Sheets

Appendix B Data Review Sheets and Laboratory Analytical Reports



URS Corporation (URS) is submitting this report on behalf of Shell Oil Products US (SOPUS) for the 2nd Quarter 2011 (2Q11) gauging and groundwater sampling activities conducted in the Village of Roxana, Illinois (**Figure 1**). Some wells within the WRB Refining LP Wood River Refinery (WRR) were also sampled as part of this event. The area within the Village of Roxana is generally bounded by Illinois Route 111 and the west property boundary (aka west fenceline) of the WRR. Activities within the refinery were conducted in cooperation with ConocoPhillips Company (COP). The combined area is collectively referred to as the “Investigation Area” in this report.

In a letter from the Illinois Environmental Protection Agency (IEPA) to Shell dated August 5, 2010, the Agency requested various site characterization, monitoring activities, and initiation of an interim groundwater monitoring program. This program began in the 4th quarter 2010, and the first report was submitted on January 14, 2011. On March 3, 2011, a call was held between representatives of SOPUS, IEPA and URS to discuss the groundwater monitoring program and IEPA’s general comments on the 4th quarter 2010 monitoring report. Modifications based on some of these comments were incorporated during the 1st quarter 2011 and due to the timing of that 1st quarter report it was agreed in that call that additional comments would be addressed in this 2011 2nd quarter. The IEPA identified these items as part of a June 16, 2011 letter. Due to the timing of the June letter with respect to development of this report, the balance of the information requested will be addressed in future reports, such as:

- Isoconcentration map(s) for key constituents; and
- Subsurface cross sections depicting well construction and constituent concentrations.

Groundwater samples were collected and analyzed during the 2nd quarter to meet the requirements of the interim groundwater monitoring program. **Figure 2** shows the monitoring wells that are part of the interim monitoring well network.

SECTION TWO

The monitoring well gauging and sampling activities discussed in this section are part of the interim groundwater monitoring program, as outlined in the IEPA's letter date August 5, 2010.

2.1 ADDITIONAL ACTIVITIES

This section describes other activities performed in conjunction with the monitoring program for the 2nd quarter event.

- Weekly gauging of a subset of the refinery and Village monitoring wells has continued to date, related to the partial loss of groundwater control at the WRR. These data have been reviewed for this report.
- The scope of work proposed in the *Additional Information Regarding the 2/7/11 Notification of Free Product* letter dated March 14, 2011, was performed during the 2nd quarter 2011 (ROST-4 area investigation). The results of this investigation will be included in a separate report.
- The P-93D replacement well, which was installed in the 1st quarter 2011, was incorporated into the monitoring program during the 2nd quarter 2011.

2.2 GROUNDWATER GAUGING AND SAMPLING

Groundwater Gauging

A comprehensive round of gauging was conducted on April 25 and 26, 2011 in conjunction with the quarterly gauging event for the WRR to evaluate groundwater flow direction and identify separate phase product in the Investigation Area.

Low Flow Purging and Sampling

Low-flow purging and sampling procedures were followed for most wells during the sampling event. Prior to sampling, the initial water level was measured and recorded on the field sheets.

Monitoring wells MW-1 through MW-13¹ and P-54 were purged and sampled using a stainless steel submersible bladder pump and bonded designated polyethylene tubing.² The submersible bladder pump was powered by the QED Sample Pro controller unit. A new bladder was used at each monitoring well. The submersible bladder pump with the proper length of designated

¹ Well MW-13 was installed at the end of 4th quarter 2010 and was sampled for the first time during this 1st quarter 2011 sampling event.

² "Designated" tubing is used for multiple sampling events, and is stored in a sealed bag designated for the particular well between sampling events.

SECTION TWO

polyethylene tubing was slowly lowered into the monitoring well to be sampled and set with the pump intake near the midpoint of monitoring well screen. The tubing from the pump was connected to a flow-through cell, which discharged into a 5-gallon plastic bucket. Pumping was performed at a low flow rate (≤ 200 mL/minute) so as to not create drawdown of the water level within the monitoring well. During groundwater purging, water quality parameters (pH, temperature, conductivity, turbidity, dissolved oxygen (DO) and oxidation-reduction (ORP)) were measured and recorded on the field sheets after every flow-through cell volume. Purging continued until a minimum of three flow-through cell volumes of water were removed and the water quality parameters stabilized. Once stabilization was achieved, the groundwater flow was diverted from the flow-through cell and groundwater samples were collected for volatile organic compound (VOC) and semivolatile organic compound (SVOC) analysis. Groundwater sampling data sheets are included in **Appendix A**.

Well Wizard® Purging and Sampling

Monitoring wells P-93A, P-93B, P-93C in the WRR North Property were purged and sampled using a dedicated stainless steel QED Well Wizard® groundwater sampling pump. These wells are part of the WRR monitoring program, and the sampling procedures for these wells are different than those in Roxana. The Well Wizard® pump and associated tubing is dedicated to each well and remains in place between sampling events. The 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. The depth to water measurement at each well is used to calculate well volume of each well. Purging of each of these wells continued until a minimum of three well volumes of water was removed from the well. Water quality parameters (i.e., pH, temperature, conductivity and turbidity) were then measured and groundwater samples were collected for VOC and SVOC analysis. Well P-93D was sampled using a submersible pump and dedicated tubing using the same purge criteria. Groundwater sampling data sheets are included in **Appendix A**.

2.3 HEALTH & SAFETY, DECONTAMINATION, AND INVESTIGATIVE DERIVED WASTE (IDW)

The quarterly sampling activities were performed in general accordance with the investigation area Health and Safety Plans (HASPs).

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.

SECTION TWO

URS field personnel primarily 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) probe, combustible gas indicator (CGI), and individual Hydrogen Sulfide gas detectors (for locations inside WRR) were used during the field activities to monitor air quality for health and safety purposes. Field instruments were calibrated prior to use each day in accordance with the manufacturer's specifications.

Health and safety related information was primarily recorded in field logbooks.

A low energy work permit was also issued each day as needed by COP operators for groundwater sampling activities within the WRR. COP personnel inspected the work areas and monitored the ambient air, as necessary, prior to the issuance of daily work permits.

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. Non-disposable (reusable) 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. Personnel and small equipment decontamination was performed at the sample locations.

Investigative derived waste (IDW), such as purge water and decontamination water, generated during monitoring well sampling activities was collected, stored and disposed properly. Expendable materials (e.g., disposable sampling equipment such as gloves and tubing) having a low probability of impact were collected in trash bags and disposed as municipal waste.

Decontamination fluids and purge water from wells at the Public Works facility (i.e., MW-7, MW-8) were collected in 55-gallon steel drums staged at the Public Works Yard. This material is managed as hazardous waste based on prior characterization and was disposed at the Heritage Environmental Disposal Facility in East Liverpool, Ohio.

Decontamination fluids and purge water from wells in the other areas of the Village of Roxana were collected in a 6,900-gallon double-walled polyethylene tank staged at the Public Works Yard. This material is managed as non-hazardous waste based on prior characterization and was solidified and landfilled at the Waste Management, Inc. Milam Recycling and Disposal Facility (Milam) in Fairmont City, Illinois.

SECTION TWO

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

2.4 SAMPLE HANDLING AND LABORATORY TESTING

Samples were collected in laboratory-supplied containers, labeled in the field and information was recorded on the chain of custody (COC) forms at the time of sampling. The sample ID format used, starting with 1st quarter 2011, is "well ID-ROX-date". The COCs can be found with the analytical reports in **Appendix B**. After collection, the samples were placed on ice, packaged to prevent damage during shipment, and cooled to approximately 4°C. The samples were then delivered, 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 PAHs via USEPA Method 8270LL. The 8011 method for VOCs and 8270LL method for PAHs were not used prior to this quarter, but were introduced during this quarter in order to achieve lower reporting limits for 1,2-dibromoethane (EDB) and PAHs, respectively. The lower reporting limits are specified in the WRR Part B permit, and per direction from IEPA the interim groundwater monitoring program should be consistent with the permit

A total of 29 groundwater samples (21 investigative samples, 3 field duplicates, 3 equipment blanks, and 2 MS/MSD) were prepared and analyzed for VOCs, SVOCs, and PAHs. A trip blank was included in every cooler which contained samples for VOC analysis. A total of 5 trip blanks were analyzed for VOCs for the groundwater sampling event.

2.5 DATA QUALITY REVIEW AND DATA MANAGEMENT

Laboratory data were provided in electronic form, and were independently reviewed and qualified by URS through a Level III 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 (e.g., dilutions). Data qualifiers were also added by URS, as appropriate, and are included on the data table and the laboratory result pages (**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.

SECTION TWO

The following documentation was completed and supplements the COC records:

- Field logbooks
- Field sample collection sheets
- Safety documentation

This section presents the results of the 2nd quarter 2011 groundwater sampling event.

3.1 GROUNDWATER GAUGING AND SAMPLING RESULTS

Table 1 presents cumulative information from the gauging events for the subject monitoring wells and piezometers. Water levels were above the top of the screens in many of the wells gauged for this event, consistent with the past several quarters. **Figure 3** illustrates the potentiometric surface observed during this gauging. **Table 2** presents cumulative information on groundwater field parameters obtained during sampling. Product was measured in the following wells in the 2nd quarter: P-55 (0.02 ft); P-59 (0.01 ft); P-60 (0.46 ft); P-60S (0.08 ft) and P-60-13 (0.30 ft). The product was above the top of the screens in wells P-59, P-60, and P-60-13.

3.2 DATA QUALITY REVIEW RESULTS

Twenty-one investigative groundwater samples, three pairs of field duplicates, two matrix spike/matrix spike duplicates (MS/MSDs), five trip blanks, and three equipment blanks were collected in the first quarter of 2011. Data review procedures followed those contained in USEPA's Contract Laboratory Program National Functional guidelines for Superfund Organic Methods Data Review (USEPA, 2008). URS data qualifiers were added, as appropriate, and are included on the laboratory results pages in **Appendix B**. Qualifiers provided by Accutest are also included on the laboratory result pages.

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. Compounds detected in blanks are specified in the data reviews (Appendix B). Due to method blank contamination, several different phthalate compounds (di-N-butyl phthalate, bis(2-ethylhexyl)phthalate, and/or diethylphthalate) were qualified non-detect (**U**) in twenty-one investigative samples. The PAH compound, benzo(a)anthracene was qualified non-detect (**U**) in one sample and the PAH, naphthalene was qualified non-detect (**U**) in another sample.

Based on LCS/LCSD, MS/MSD, surrogate, and field duplicate criteria, groundwater results reported were accepted for their intended use, except for one PAH compound in two samples. Analytical data for the compound, 1-methylnaphthalene in samples from wells MW-10 and MW-1- were rejected due to low LCS/LCSD recoveries (**0%**).

3.3 ANALYTICAL RESULTS AND DISCUSSION

The laboratory analytical detections for the groundwater samples collected during this event are presented in **Table 3**³.

The following petroleum hydrocarbons were reported at concentrations above the laboratory reporting limit in groundwater samples during the 2nd Quarter 2011 sampling event.

<i>Acetone</i>	Methyl tert-Butyl Ether (MTBE)	2,4-Dimethylphenol
Benzene	n-Propylbenzene	bis(2-Ethylhexyl)phthalate
sec-Butylbenzene	Toluene	<i>Fluorene</i>
tert-Butylbenzene	1,2,4-Trimethylbenzene	2-Methylnaphthalene
Ethylbenzene	1,3,5-Trimethylbenzene	3 & 4-Methylphenol (m & p-Cresol)
Isopropylbenzene	m,p-Xylene	Naphthalene
	o-Xylenes	<i>Phenanthrene</i>
		Phenol

Eighteen of these 21 constituents were also detected during the 1st quarter 2011 groundwater sampling event. The newly detected constituents, indicated in italics in the list above, were present at low part per billion (ppb) levels. The analytical detections were compared with the TACO Class 1 Groundwater Quality Standards (GQS'), and the results of this comparison are presented in **Table 3**. Screening values were not available for the following analytes that were detected at concentrations above the reporting limits: sec-butylbenzene, tert-butylbenzene, and 1,2,4-trimethylbenzene.

The analytical results for benzene, ethylbenzene, MTBE, toluene, and 1,3,5-trimethylbenzene exceeded the respective groundwater screening criteria in one or more samples. The analytical results from these groundwater samples are shown on **Figure 4**. The analytes listed in the spider boxes in this figure are those with concentrations that exceeded one or more of the indicated screening criteria in one or more of the quarterly sampling events since the 4th quarter 2010.

These analytical results and extent of the dissolved phase plume are generally consistent with the results observed in the 1st quarter 2011. One exception to this was observed in benzene detections in wells MW-1, MW-3 and MW-5. Benzene concentrations exceeded the screening

³ The P-93 nested wells are required to be sampled as part of both the WRR and the Roxana/Route 111 groundwater monitoring programs. These programs currently require different laboratory analyses and therefore two different samples were collected. These samples are collected at the same time and using the same protocols. The analytical results between the two groundwater monitoring programs may vary slightly.

criterion in these wells. Benzene was detected in wells MW-3 and MW-5 in the 1st quarter 2011 but at concentrations below the screening criterion. The trends in these wells will be monitored to determine if additional delineation may be necessary.

URS conducted the interim groundwater monitoring, as required, for the 2nd quarter 2011. The following conclusions are based on the data and information collected as part of this program.

- Groundwater analytical results and the areal extent of the dissolved-phase plume were generally consistent with the results of prior sampling events. This is the third sampling event for this program, and a more detailed evaluation of the spatial and temporal distribution of key constituents will be performed as the data set increases.
- COP continues to pump groundwater production wells near the west fenceline at the highest rates feasible. As a result, groundwater beneath the subject investigation area is within the capture zone of these production wells.
- Field work associated with the investigation of LNAPL near ROST-4-PZ was performed this quarter. Further discussion of these efforts and results will be submitted in a separate report.
- Future reports will also include additional information as described in IEPA's June 16, 2011 letter.

- 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 (IEPA), 2011; (IEPA 2011); *Letter regarding Corrective Action Conditions*. Issued to Shell Oil Products US (SOPUS), dated June 16, 2011.
- URS Corporation (URS), 2011 (URS, 2011a); *Groundwater Flow Control Notification letter*. Issued to IEPA, dated February 4, 2011.
- URS Corporation (URS), 2011 (URS, 2011b); *Notification of Free Product Observation letter*. Issued to IEPA, dated February 7, 2011.
- URS Corporation (URS), 2011 (URS, 2011c); *30-Day Report for Groundwater Flow Control*; dated March 4, 2011.
- URS Corporation (URS), 2011 (URS, 2011d); *Additional Information regarding the 2/7/11 Notification of Free Product letter*. Issued to IEPA, dated March 14, 2011.
- URS Corporation (URS), 2011 (URS, 2011e); *Groundwater Sampling Report for 1st Quarter 2011 for Roxana, Illinois*; dated April 2011.
- URS Corporation (URS), 2010 (URS, 2010a); *Route 111/Rand Avenue Vicinity Investigation Health and Safety Plan – Roxana, Illinois*; dated August 2010.
- URS Corporation (URS), 2010 (URS, 2010b); *ConocoPhillips Environmental and Geotechnical Work 2010 Health and Safety Plan – WRB Refining LLC Wood River Refinery*; dated March 2010.
- US Environmental Protection Agency (USEPA), 2008; *Contract Laboratory Program National Functional Guidelines for Organic Methods Data Review*

**TABLE 1
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
MW-1 Screened Interval Elevation: 399.45 - 384.45									
4Q10	442.86	11/12/2010	NE	36.91	NA	NA	NA	405.95	*
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	*
MW-2 Screened Interval Elevation: 396.74 - 381.74									
4Q10	443.93	11/12/2010	NE	38.12	NA	NA	NA	405.81	*
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	*
MW-3 Screened Interval Elevation: 399.38 - 384.38									
4Q10	430.36	11/12/2010	NE	24.05	NA	NA	NA	406.31	*
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	405.44	*
MW-4 Screened Interval Elevation: 398.95 - 383.95									
4Q10	441.58	11/12/2010	NE	35.38	NA	NA	NA	406.20	*
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	*
MW-5 Screened Interval Elevation: 398.60 - 383.60									
4Q10	429.73	11/12/2010	NE	23.32	NA	NA	NA	406.41	*
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	*
MW-6A Screened Interval Elevation: 400.11 - 385.44									
4Q10	432.42	11/12/2010	NE	25.62	NA	NA	NA	406.80	*
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	*
MW-6B Screened Interval Elevation: 368.24 - 363.24									
4Q10	432.29	11/12/2010	NE	25.47	NA	NA	NA	406.82	*
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	*
MW-6C Screened Interval Elevation: 347.16 - 342.16									
4Q10	432.11	11/12/2010	NE	25.25	NA	NA	NA	406.86	*
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	*
MW-6D Screened Interval Elevation: 327.27 - 322.27									
4Q10	431.99	11/12/2010	NE	25.13	NA	NA	NA	406.86	*
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	*
MW-7 Screened Interval Elevation: 400.18 - 390.18									
4Q10	443.10	11/12/2010	NE	36.93	NA	NA	NA	406.17	*
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	*
MW-8 Screened Interval Elevation: 400.51 - 390.51									
4Q10	434.11	11/12/2010	NE	27.84	NA	NA	NA	406.27	*
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	*

**TABLE 1
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
MW-9 Screened Interval Elevation: 398.75 - 388.75									
4Q10	445.20	11/12/2010	NE	39.00	NA	NA	NA	406.2	*
1Q11	445.20	1/13/2011	NE	39.62	NA	NA	NA	405.58	*
2Q11	445.20	4/25/2011	NE	NG	NA	NA	NA	NA	Area flooded; unable to access to well
MW-10 Screened Interval Elevation: 400.60 - 390.60									
4Q10	445.03	11/12/2010	NE	38.97	NA	NA	NA	406.06	*
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	*
MW-11 Screened Interval Elevation: 400.67 - 390.67									
4Q10	442.33	11/12/2010	NE	36.39	NA	NA	NA	405.94	*
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	*
MW-12 Screened Interval Elevation: 400.68 - 390.68									
4Q10	442.60	11/12/2010	NE	36.63	NA	NA	NA	405.97	*
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	*
MW-13 Screened Interval Elevation: 405.22 - 395.22									
4Q10	NI	11/12/2010	NI	NI	NI	NI	NI	NI	Well not installed during gauging event.
1/Q11	430.27	1/13/2011	NE	24.28	NA	NA	NA	405.99	*
2Q11	430.27	4/25/2011	NE	24.47	NA	NA	NA	405.80	*
P-54 Screened Interval Elevation: 404.18 - 397.18									
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	*
P-55 Screened Interval Elevation: 405.50 - 380.50									
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	404.42	
P-57 Screened Interval Elevation: 406.07 - 381.07									
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	
P-58 Screened Interval Elevation: 404.70 - 379.70									
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	*
2Q11	444.92	4/25/2011	NE	39.78	NA	NA	NA	405.14	*
P-59 Screened Interval Elevation: 398.87 - 373.87									
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	*
2Q11	446.78	4/25/2011	43.25	43.26	403.52	403.53	0.01	403.53	*
P-60 Screened Interval Elevation: 398.61 - 378.61									
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	403.73	*

**TABLE 1
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
P-60-11 Screened Interval Elevation: 413.53 - 383.53									
4Q10	446.18	11/11/2010	NE	40.91	NA	NA	NA	405.27	
1Q11	446.18	1/14/2011	NE	41.14	NA	NA	NA	405.04	
2Q11	446.18	4/25/2011	NE	42.22	NA	NA	NA	403.96	
P-60-12S Screened Interval Elevation: 429.49 - 419.49									
4Q10	443.33	11/11/2010	NE	23.36	NA	NA	NA	419.97	
1Q11	443.33	1/14/2011	NE	NE	NA	NA	NA	NA	
2Q11	443.33	4/25/2011	NE	21.84	NA	NA	NA	421.49	
P-60-12 Screened Interval Elevation: 383.31 - 373.31									
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	*
P-60-13S Screened Interval Elevation: 432.39 - 422.39									
4Q10	442.39	11/11/2010	NE	13.36	NA	NA	NA	429.03	
1Q11	442.39	1/14/2011	NE	NE	NA	NA	NA	NA	
2Q11	442.39	4/25/2011	NE	17.45	NA	NA	NA	424.94	
P-60-13 Screened Interval Elevation: 402.43 - 382.43									
4Q10	442.43	11/11/2010	37.50	37.87	404.56	404.93	0.37	404.83	*
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	403.55	*
P-66 Screened Interval Elevation: 401.98 - 376.98									
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	*
P-68 Screened Interval Elevation: 399.81 - 374.81									
4Q10	445.07	11/12/2010	39.32	43.42	401.65	405.75	4.10	404.68	*
1Q11	445.07	1/13/2011	39.15	43.18	401.89	405.92	4.03	404.87	*
2Q11	445.07	4/25/2011	NG	NG	NA	NA	NA	NA	Area flooded; unable to access to well
P-74 Screened Interval Elevation: 398.20 - 373.20									
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	*
P-93A Screened Interval Elevation: 398.41 - 383.41									
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	*
P-93B Screened Interval Elevation: 372.44 - 370.44									
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	*
P-93C Screened Interval Elevation: 352.26 - 350.26									
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	*

**TABLE 1
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
P-93D Screened Interval Elevation: 320.92 - 318.92									
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	*
P-114 Screened Interval Elevation: 399.73 - 379.73									
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	*
GP-9-PZ Screened Interval Elevation: 404.81 - 394.81									
4Q10	442.41	11/11/2010	NE	37.38	NA	NA	NA	405.03	*
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	*
ROST-3-PZ Screened Interval Elevation: 402.29 - 392.29									
4Q10	442.29	11/12/2010	NE	36.60	NA	NA	NA	405.69	*
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	*
ROST-4-PZ Screened Interval Elevation: 407.20 - 397.20									
4Q10	442.27	11/12/2010	NE	36.48	NA	NA	NA	405.79	*
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	*
ROST-4-PZ(A) Screened Interval Elevation: 407.34 - 397.34									
2Q11	442.11	4/25/2011	NE	37.18	NA	NA	NA	404.93	*
ROST-4-PZ(B) Screened Interval Elevation: 404.27 - 394.27									
2Q11	442.38	4/25/2011	NE	37.80	NA	NA	NA	404.58	*
ROST-4-PZ(C) Screened Interval Elevation: 407.33 - 397.33									
2Q11	442.66	4/25/2011	NE	38.52	NA	NA	NA	404.14	*
ROST-4-PZ(D) Screened Interval Elevation: 408.01 - 398.01									
2Q11	442.98	4/25/2011	NE	38.41	NA	NA	NA	404.57	*
ROST-4-PZ(E) Screened Interval Elevation: 407.21 - 397.21									
2Q11	442.96	4/25/2011	NE	37.63	NA	NA	NA	405.33	*
ROST-4-PZ(F) Screened Interval Elevation: 407.59 - 397.59									
2Q11	442.12	4/25/2011	NE	37.87	NA	NA	NA	404.25	*
ROST-4-PZ(G) Screened Interval Elevation: 407.85 - 397.85									
2Q11	442.13	4/25/2011	NE	38.08	NA	NA	NA	404.05	*
ROST-5-PZ Screened Interval Elevation: 429.02 - 419.02									
4Q10	442.22	11/12/2010	NE	NE	NA	NA	NA	NA	
1Q11	442.22	1/13/2011	NE	NE	NA	NA	NA	NA	
2Q11	442.22	4/25/2011	NE	NE	NA	NA	NA	NA	
ROST-7-PZ Screened Interval Elevation: 422.19 - 412.19									
4Q10	442.19	11/12/2010	NE	22.93	NA	NA	NA	419.26	
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	

**TABLE 1
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
ROST-10-PZ Screened Interval Elevation: 434.51 - 424.51									
4Q10	444.51	11/12/2010	NE	NE	NA	NA	NA	NA	
1Q11	444.51	1/13/2011	NE	NE	NA	NA	NA	NA	
2Q11	444.51	4/25/2011	NE	NE	NA	NA	NA	NA	
ROST-21-PZ Screened Interval Elevation: 433.72 - 423.72									
4Q10	443.72	11/12/2010	NE	19.30	NA	NA	NA	424.42	
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	
T-6 Screened Interval Elevation: 394.79 - 380.54									
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	*
T-12 Screened Interval Elevation: 398.54 - 372.54									
4Q10	444.49	11/12/2010	NE	40.35	NA	NA	NA	404.14	*
1Q11	444.49	1/13/2011	NE	40.30	NA	NA	NA	404.19	*
2Q11	444.49	4/25/2011	NE	41.40	NA	NA	NA	403.09	*

NOTES:

- 1) The Corrected W.L. Elevations presented in this table were corrected by a specific gravity of 0.74 for the wells in which product was identified.
- 2) Elevations presented in this table are relative to the 1988 USGS datum.
- 3) **NA** = Not Applicable; **NE** = Not Encountered; **NG** = Not Gauged; **NI** = Not Installed
- 4) * Indicates that the product and/or water level is above the top of the screened zone of the well.

**TABLE 2
SUMMARY OF CUMULATIVE GROUNDWATER FIELD PARAMETERS**

Well ID	Depth to Water (ft btoc)	pH	Temp (C)	Specific Cond (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (Mv)	General Notes
MW-1								
4Q10	36.98	8.04	20.53	1.449	3.9	8.99	93	
1Q11	37.35	6.76	5.93	1.189	1.0	0.08	102	
2Q11	38.37	6.69	27.11	1.459	138.1	1.03	157	
MW-2								
4Q10	38.27	7.24	18.38	1.066	41.0	8.90	-113	
1Q11	38.26	6.72	15.19	2.048	8.0	0.97	-69	
2Q11	39.14	6.75	20.82	1.313	168.5	0.09	-69	
MW-3								
4Q10	24.11	6.88	21.59	1.157	6.5	0.32	-146	
1Q11	24.77	6.88	22.83	2.349	2.0	0.26	-89	
2Q11	24.79	6.91	23.40	1.268	54.0	0.00	-74	
MW-4								
4Q10	35.91	6.76	19.51	0.854	7.7	4.88	-59	
1Q11	38.89	6.83	10.24	2.352	9.6	0.86	-51	
2Q11	36.19	6.73	24.20	1.106	7.3	0.15	-57	
MW-5								
4Q10	23.32	6.77	19.39	0.801	2.9	0.17	-112	
1Q11	24.06	6.82	19.51	2.051	2.8	0.95	-66	
2Q11	23.98	6.78	22.82	4.743	41	0.18	-68	
MW-6A								
4Q10	25.57	6.74	21.87	1.535	5.4	0.01	-127	
1Q11	26.40	6.80	10.99	2.274	7.4	0.34	-75	
2Q11	26.10	6.72	17.98	1.049	8.2	0.07	-61	
MW-6B								
4Q10	25.37	6.80	17.14	1.113	17.5	0.14	-77	
1Q11	26.23	6.73	15.90	2.138	1.4	0.22	-46	
2Q11	25.95	6.76	19.87	0.630	2.1	0.17	-54	
MW-6C								
4Q10	25.12	6.86	17.87	1.132	5.5	0.16	-104	
1Q11	26.07	6.87	13.90	0.981	4.2	0.13	-66	
2Q11	25.76	6.84	18.93	0.713	2.1	0.43	-72	
MW-6D								
4Q10	25.06	6.94	17.42	1.342	5.90	0.05	-112	
1Q11	26.01	7.05	13.66	1.330	1.30	0.14	-74	
2Q11	25.60	6.86	18.82	0.614	13.20	0.09	-61	
MW-7								
4Q10	37.12	6.48	17.80	1.097	59.9	0.05	-32	
1Q11	37.58	6.53	14.40	1.869	3.2	0.74	-6	
2Q11	37.50	6.81	18.18	0.560	30.0	1.10	-53	
MW-8								
4Q10	28.04	6.41	17.17	1.133	61.5	0.04	-54	
1Q11	28.70	6.37	16.21	2.065	18.0	0.80	-14	
2Q11	28.35	6.55	19.98	0.791	20.4	0.06	-64	

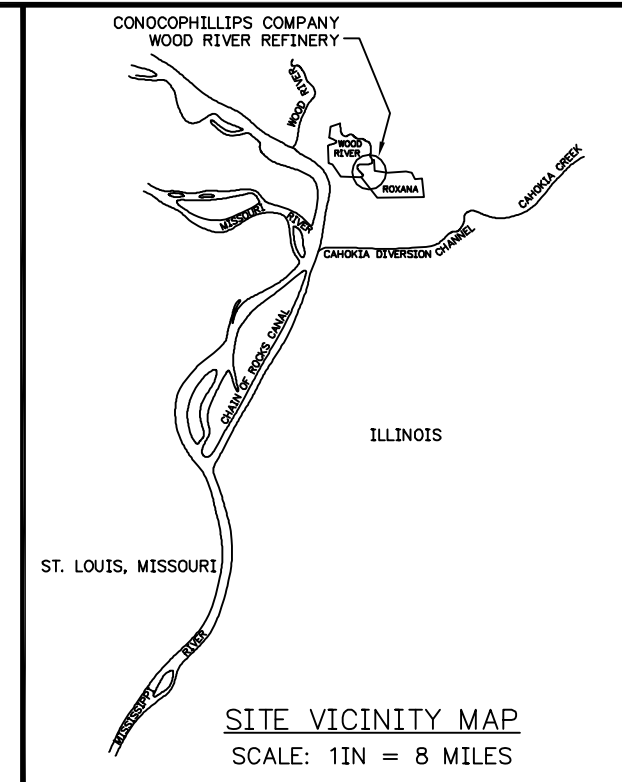
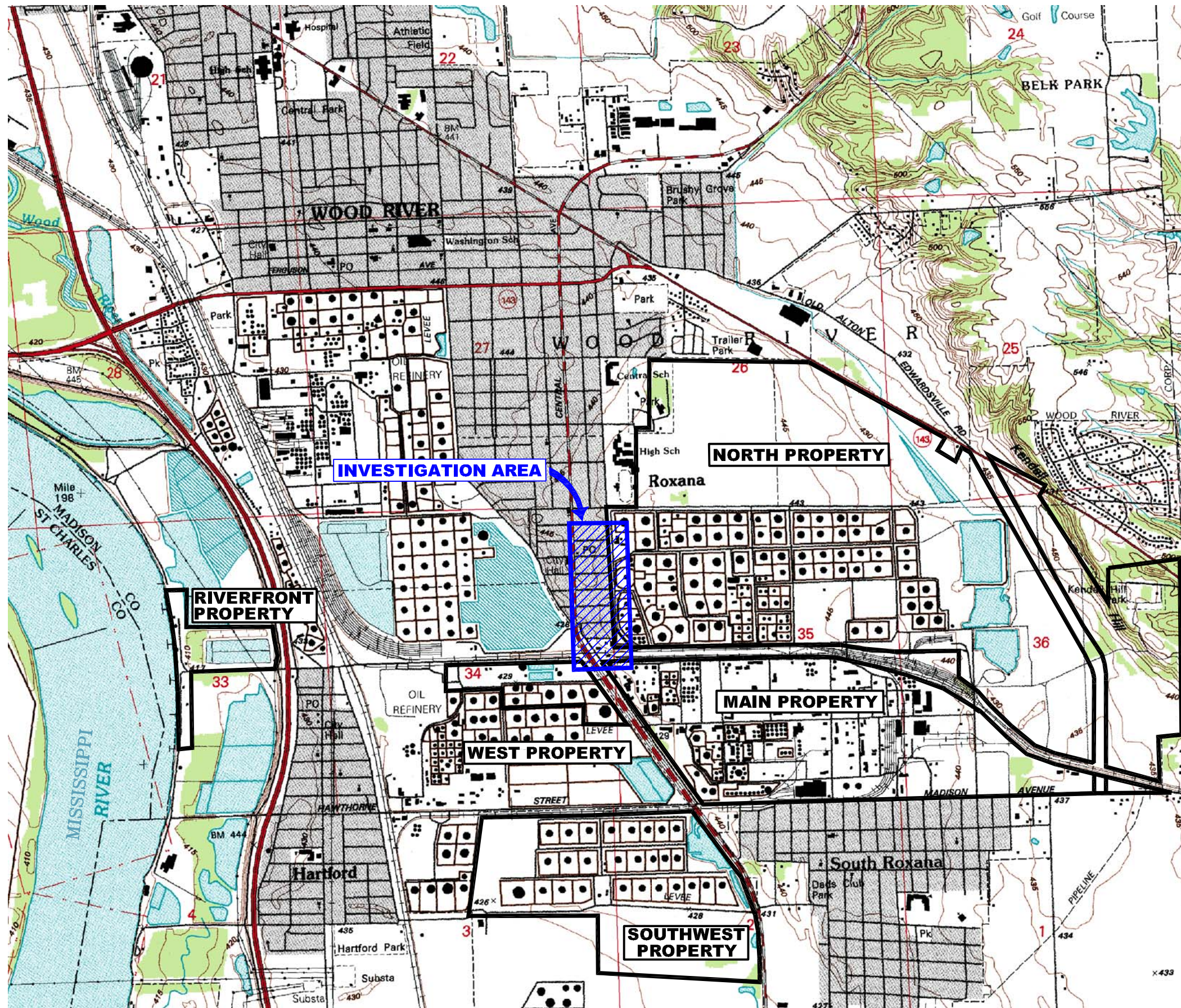
TABLE 2
SUMMARY OF CUMULATIVE GROUNDWATER FIELD PARAMETERS

Well ID	Depth to Water (ft btoc)	pH	Temp (C)	Specific Cond (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (Mv)	General Notes
MW-9								
4Q10	39.05	6.72	16.98	0.919	48.3	1.72	-45	
1Q11	39.65	6.73	12.97	1.524	17.2	0.03	-34	
2Q11	40.12	6.73	18.14	1.138	15.0	0.05	-58	
MW-10								
4Q10	39.01	6.72	18.75	1.284	35.0	0.64	-78	
1Q11	39.38	6.72	13.08	1.344	4.3	0.35	-48	
1Q11	40.20	6.92	18.28	0.546	17.5	1.89	-48	
MW-11								
4Q10	36.75	6.59	15.28	1.023	25.5	0.01	-76	
1Q11	37.24	6.59	14.34	1.276	8.8	0.05	-59	
2Q11	37.60	6.75	17.51	1.284	21.9	0.05	-90	
MW-12								
4Q10	36.76	6.72	14.87	1.328	62.4	0.45	212	
1Q11	37.49	6.66	14.98	1.196	9.2	0.16	159	
2Q11	37.58	6.80	19.51	0.958	5.4	0.01	132	
MW-13								
4Q10	NI	NI	NI	NI	NI	NI	NI	Well not installed during sampling event.
1Q11	24.55	6.52	17.78	1.379	19.2	0.10	-82	
2Q11	23.65	6.79	21.28	0.713	48.0	0.07	-71	
P-54								
4Q10	36.66	6.71	14.70	0.870	68.6	1.74	140	
1Q11	37.32	6.69	14.47	0.970	25.4	1.29	56	
2Q11	37.37	6.74	17.70	0.885	48.0	1.62	-66	
P-93A								
4Q10	40.48	6.81	17.70	1.259	23.0	NM	NM	
1Q11	41.22	6.68	16.16	2.517	12.8	NM	NM	
2Q11	41.77	6.65	17.90	0.662	8.4	NM	NM	
P-93B								
4Q10	40.53	7.10	18.10	1.150	0.0	NM	NM	
1Q11	41.27	6.69	16.44	1.377	1.2	NM	NM	
2Q11	41.82	6.63	18.70	0.750	0.1	NM	NM	
P-93C								
4Q10	40.42	7.28	17.50	1.057	0.0	NM	NM	
1Q11	41.16	7.14	16.51	1.832	0.5	NM	NM	
2Q11	41.62	6.78	18.50	0.697	0.6	NM	NM	
P-93D								
4Q10	40.34	7.13	18.50	1.211	0.0	NM	NM	
1Q11	41.07	NM	NM	NM	NM	NM	NM	
2Q11	41.81	6.89	16.70	0.710	0.2	NM	NM	

NOTES:

- 1) Field parameters were collected using the Troll 9500 except at P-93(A-D) where the Oakton pH/Con10 and LaMotte Turbidimeter were used.
- 2) NM = Not Measured; NI = Not Installed

Fig. P: ENVIRONMENTAL SHELL OIL PRODUCT US-B-ROXANA-ROUTE 111\2156XXX-ROXANA INVESTIGATION & ASSESSMENT\QUARTERLY GWA\2011\2ND QUARTER 2011\FIGURES\FIGURE 1 INVESTIGATION AREA LOCATION MAP.DWG Last edited: 06/21/11 @ 11:37 a.m. © WCC-ST. LOUIS






LEGEND
 WOOD RIVER REFINERY PROPERTY BOUNDARY
 INVESTIGATION AREA

SOURCE: MAP TAKEN FROM ELECTRONIC USGS DIGITAL RASTER GRAPHIC 7.5 MINUTE TOPOGRAPHIC MAP OF WOOD RIVER, ILL-MO REVISED 1994.

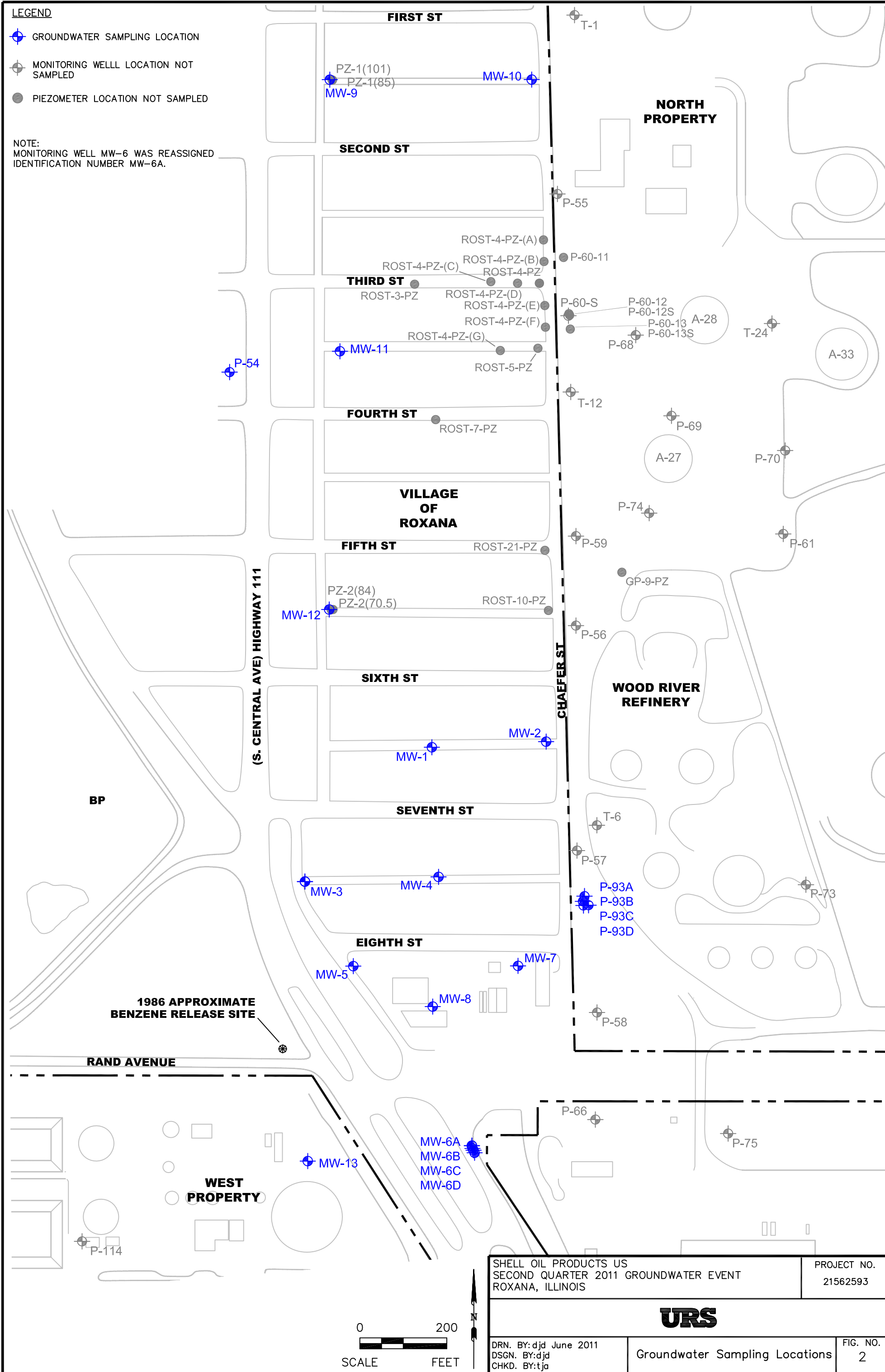
CONTOUR INTERVAL = 5 FT
 0 2000
 SCALE FEET


SHELL OIL PRODUCTS US SECOND QUARTER 2011 GROUNDWATER EVENT ROXANA, ILLINOIS	PROJECT NO. 21562593
DRN. BY: djd June 2011 DSGN. BY: djd CHKD. BY: wmp	Investigation Area Location Map FIG. NO. 1

LEGEND

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

NOTE:
MONITORING WELL MW-6 WAS REASSIGNED
IDENTIFICATION NUMBER MW-6A.



SHELL OIL PRODUCTS US SECOND QUARTER 2011 GROUNDWATER EVENT ROXANA, ILLINOIS		PROJECT NO. 21562593
		
DRN. BY: djd June 2011 DSGN. BY: djd CHKD. BY: tja	Groundwater Sampling Locations	FIG. NO. 2

NOTES:

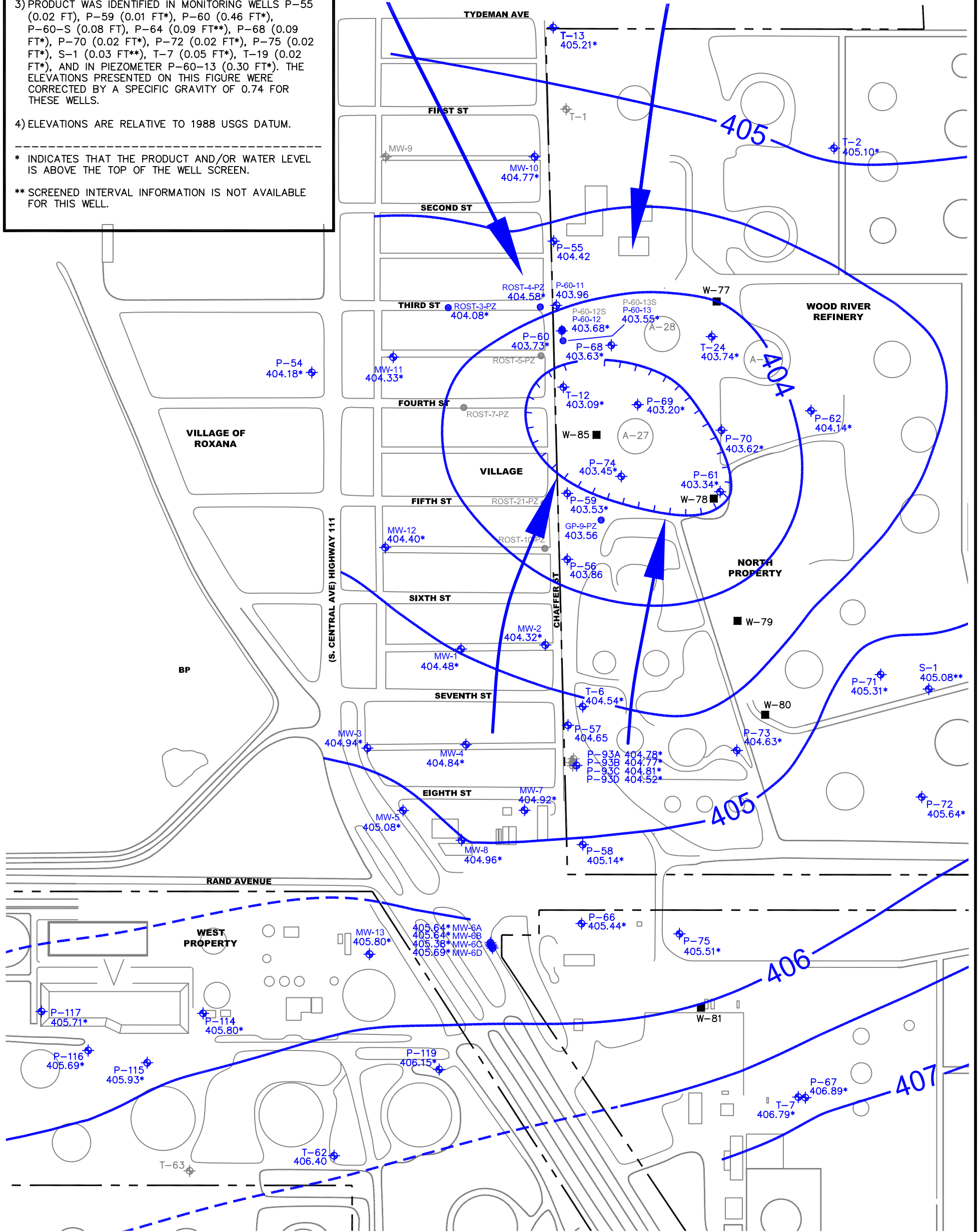
- 1) WATER LEVELS WERE OBTAINED DURING THE SECOND QUARTER 2011 GAUGING EVENT ON APRIL 25-26, 2011.
- 2) CONTOUR LINES PRIMARILY GENERATED BY SURFER VERSION 8 MODELING OF GROUNDWATER ELEVATIONS. SOME INTERPRETATION WAS DONE UTILITZING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND.
- 3) PRODUCT WAS IDENTIFIED IN MONITORING WELLS P-55 (0.02 FT), P-59 (0.01 FT*), P-60 (0.46 FT*), P-60-S (0.08 FT), P-64 (0.09 FT**), P-68 (0.09 FT*), P-70 (0.02 FT*), P-72 (0.02 FT*), P-75 (0.02 FT*), S-1 (0.03 FT**), T-7 (0.05 FT*), T-19 (0.02 FT*), AND IN PIEZOMETER P-60-13 (0.30 FT*). THE ELEVATIONS PRESENTED ON THIS FIGURE WERE CORRECTED BY A SPECIFIC GRAVITY OF 0.74 FOR THESE WELLS.
- 4) ELEVATIONS ARE RELATIVE TO 1988 USGS DATUM.

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

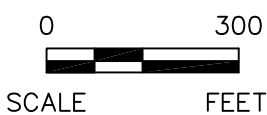
** SCREENED INTERVAL INFORMATION IS NOT AVAILABLE FOR THIS WELL.

LEGEND

- ◆ PIEZOMETER OR MONITORING WELL LOCATION GAUGED (USED FOR CONTOURING)
- ◆ PIEZOMETER OR MONITORING WELL LOCATION NOT USED FOR CONTOURING
- GROUNDWATER PRODUCTION WELL LOCATION
- 406 — GROUNDWATER ELEVATION CONTOUR, 0.5 FOOT CONTOUR INTERVAL
- ← GROUNDWATER FLOW DIRECTION



SHELL OIL PRODUCTS US SECOND QUARTER 2011 GROUNDWATER EVENT ROXANA, ILLINOIS		PROJECT NO. 21562593
URS		
DRN. BY: wmp June 2011 DSGN. BY: wmp CHKD. BY: tj & b3	Groundwater Contours Second Quarter 2011	FIG. NO. 3



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. SATAM/C. KRETZER/T. ANDREWS

DATE: 04/28/2011 WEATHER: 46° SUNNY

MONITORING WELL ID: MW-1

SAMPLE ID: ~~MW-1-042811~~ MW1-ROX-042811

INITIAL DATA

Well Diameter: 1 in
 Total Well Depth (btoc): 58.41 ft
 Depth to Water (btoc): 38.37 ft
 Depth to LNAPL/DNAPL (btoc): — ft
 Depth to Top of Screen (btoc): 43.41 ft
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): ~~5.10~~ 5.04 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) = 35.91 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0 ppm
 Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
000	0941	38.37	TURBID	NONE	6.72	18.62	1199	118.7	0.88	153
1400	0951	38.37			6.70	17.69	1192	96.7	0.49	168
2400	1001	38.37			6.69	17.58	1186	73.7	0.34	160
3200	1011	38.37								
4000	1021				6.68	18.89	1204	48.9	0.32	143
4800	1031				6.68	19.20	1207	48.4	0.25	140
5600	1041									
6400	1051									
7200	1101									
8000	1111				6.69	23.20	1316	70	0.66	145
8800	1121				6.68	23.27	1315	78.4	0.57	148
9600	1131				6.68	26.46	1433	108.9	0.85	149
10400	1228				6.69	28.86	1512	128.1	1.08	150
11200	1236	38.37			6.69	27.11	1459	138.1	1.03	157

Start Time: 0923

Elapsed Time (min): 193

Water Quality Meter ID: TROLL 9500

Stop Time: 1236

Average Purge Rate (mL/min): 80

Date Calibrated: 04/29/2011

SAMPLING DATA

Sample Date: 04/29/2011

Sample Time: ~~0923~~ 1240

Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow

Sample Flow Rate (mL/min): 80

QA/QC Samples: N/A

VOA Vials, No Headspace Initials: CAK/NS

COMMENTS:

1007 - Compressor overheated; missed reading; resumed pumping at 1011
 1031-1057 - Compressor overheated; Resumed pumping with new compressor at 1057
 1127 - Pump overheated Resumed at 1146

Total Purge Volume: 10400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: M. Johnson, N. Salams

DATE: 5/10/11 WEATHER: N 80 F, overcast / rain

MONITORING WELL ID: MW-2 SAMPLE ID: MW2-Rox-051011

INITIAL DATA

Well Diameter: 1 in Water Column Height (do not include LNAPL or DNAPL): 23.05 ft btoc
 Total Well Depth (btoc): 62.19 ft If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet, Volume of Flow Through Cell: 800 mL
 Depth to Water (btoc): 39.14 ft Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 54.69 ft btoc Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Depth to LNAPL/DNAPL (btoc): - ft If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft, Ambient PID/FID Reading: 0 ppm
 Depth to Top of Screen (btoc): 47.19 ft Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc Wellbore PID/FID Reading: 39.31.5 ppm
 Screen Length: 15 ft If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	0945	NM	Clear	hydrocarbon	6.76	19.84	1249	2.8	0.37	-69
1600	0955	NM	Clear		6.76	19.82	1254	9.1	0.27	-69
2400	1005				6.76	19.88	1263	25.5	0.22	-69
3200	1016				6.77	19.84	1268	54.3	0.17	-69
4000	1026				6.76	19.95	1299	67.8	0.15	-69
4800	1035				6.76	20.07	1328	80.0	0.13	-69
5600	1045				6.76	21.50	1364	131.6	0.07	-69
6400	1055				6.75	21.47	1344	129.5	0.08	-69
7200	1105	39.14	↓	↓	6.75	20.82	1313	168.5	0.07	-69

Start Time: 0925 Elapsed Time (min): 110 105 Water Quality Meter ID: TROLL 9500
 Stop Time: 1110 Average Purge Rate (mL/min): 80+00 mL/min Date Calibrated: 5/10/11

SAMPLING DATA

Sample Date: 5/10/11 Sample Time: 1110 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 80 mL/min QA/QC Samples: MW2-Rox-051011 EB
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Issues w/ turbidity sensor & troll. Water appeared to be visibly very clear. However turbidity readings were very high. very fine bubbles (effervescence) observed inside flow through cell
 Total Purge Volume: 7200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: M. Johnson, N. Satam

DATE: 5/10/11 WEATHER: NWS, overcast

MONITORING WELL ID: MW-3 SAMPLE ID: MWD3-Rox-051011

INITIAL DATA

Well Diameter: 1 in
 Total Well Depth (btoc): 45.98 ft
 Depth to Water (btoc): 24.79 ft
 Depth to LNAPL/DNAPL (btoc): — ft
 Depth to Top of Screen (btoc): 30.98 ft
 Screen Length): 15 ft

Water Column Height (do not include LNAPL or DNAPL): 21.19 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) = 39.48 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): 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 0.1 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1415	24.79	Clear	hydrocarbon	6.87	23.85	1190	3.5	0.41	-70
1600	1425	NM	↓	↑	6.88	23.85	1188	13.0	0.19	-70
2400	1435	↓	↓	↑	6.89	23.93	1203	29.0	0.10	-72
3200	1445	↓	↓	↑	6.89	23.05	1247	40.8	0.06	-72
4000	1455	↓	↓	↑	6.89	23.88	1247	51.0	0.04	-72
4800	1503	↓	↓	↑	6.90	24.24	1278	67.3	0.02	-73
5600	1515	↓	↓	↑	6.90	23.37	1222	61.0	0.01	-74
6200	1525	24.77	↓	↑	6.91	23.40	1268	54.0	0.00	-74

Start Time: 1355 Elapsed Time (min): 90 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1530 Average Purge Rate (mL/min): 80ml/min Date Calibrated: 5/10/11

SAMPLING DATA

Sample Date: 5/10/11 Sample Time: 1530 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 80ml/min QA/QC Samples: —
 VOA Vials, No Headspace Initials: NWS

COMMENTS:

100
 Water level post sampling 24.77
 Issues w/ turbidity. Water appeared visibly very clear however deep flow reading was high. Fine bubble obscured inside the flow through cell
 Total Purge Volume: 6200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Satam, M. Johnson

DATE: 5/11/11 WEATHER: ~80 F, sunny

MONITORING WELL ID: MW-4 SAMPLE ID: MW04-05111

INITIAL DATA

Well Diameter: 1 in
 Total Well Depth (btoc): 57.63 ft
 Depth to Water (btoc): 36.19 ft
 Depth to LNAPL/DNAPL (btoc): - ft
 Depth to Top of Screen (btoc): 42.63 ft
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): 21.44 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) = 50.13 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): 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0 ppm
 Wellbore PID/FID Reading: 5.5 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
600	10:50	36.19	clear	hydrocarbon	6.74	23.56	1111	6.2	0.08	-58
1000	11:00	↓	↓	↓	6.76	24.88	1122	6.8	0.05	-58
2400	11:10	↓	↓	↓	6.75	26.29	1180	7.9	0.01	-58
3200	11:20	↓	↓	↓	6.73	24.06	1080	5.3	0.26	-58
400	11:30	↓	↓	↓	6.74	24.33	977	4.2	0.207	-57
4600	11:40	↓	↓	↓	6.74	24.14	998	6.6	0.16	-57
5600	11:50	↓	↓	↓	6.73	24.20	1106	7.3	0.15	-57

Start Time: 1035 Elapsed Time (min): 90 Water Quality Meter ID: TROLL 9500
 Stop Time: 1155 Average Purge Rate (mL/min): 80 ml/min Date Calibrated: 5/11/11

SAMPLING DATA

Sample Date: 5/11/11 Sample Time: 1155 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 80 ml/min QA/QC Samples: -
 VOA Vials, No Headspace Initials: NS

COMMENTS:

36.16 - Post sampling water level

Total Purge Volume: 5600 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Satam / M. Johnson

DATE: 5/12/11 WEATHER: N 80°F, Sunny

MONITORING WELL ID: MW-5 SAMPLE ID: MW05-ROX-05/12/11

INITIAL DATA

Well Diameter: 1 in Water Column Height (do not include LNAPL or DNAPL): 22.5 ft btoc
 Total Well Depth (btoc): 46.13 ft If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet, Volume of Flow Through Cell): 800 mL
 Depth to Water (btoc): 23.98 ft Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 38.63 ft btoc Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Depth to LNAPL/DNAPL (btoc): ft If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft, Ambient PID/FID Reading: 0.0 ppm
 Depth to Top of Screen (btoc): 31.13 ft Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = ft btoc Wellbore PID/FID Reading: 0.2 ppm
 Screen Length): 15 ft If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = ft btoc

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)			
800	1448	NM	Clear	hydrocarbon	6.75	75.87	481.9	6.9	0.39	-608			
1600	1456	↓	↓	OH	6.75	74.70	479.0	7.7	0.24	-609			
2400	1504				6.76	74.63	483.5	12.2	0.15	-609			
3200	1512				6.76	74.64	487.1	18.7	0.18	-609			
4000	1520				6.76	74.80	491.0	27.0	0.09	-609			
4800	1528				6.76	74.18	486.0	41.0	0.18	-609			
5600	1536				6.77	74.01	485.1	33.0	0.19	-608			
6400	1544				6.77	73.84	478.9	39.3	0.19	-608			
7200	1552				6.78	73.08	474.3	71.0	0.18	-608			

Start Time: 1425 Elapsed Time (min): 90 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1555 Average Purge Rate (mL/min): 100 mL/min Date Calibrated: 5/12/11

SAMPLING DATA

Sample Date: 5/12/11 Sample Time: 1555 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 100 mL/min QA/QC Samples:
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Water level post sampling 23.98
 Water was visibly clear but turbidity readings were very high
 Very fine air bubbles appeared to be aligned along the sensors of the water quality equipment
 Total Purge Volume: 7200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: B. Ereen, N. Salam

DATE: 5/16/11 WEATHER: N 60°F, Sunny

MONITORING WELL ID: MW-6A SAMPLE ID: MWGA-051611

INITIAL DATA

Well Diameter: 1 in
 Total Well Depth (btoc): 46.98 ft
 Depth to Water (btoc): 26.10 ft
 Depth to LNAPL/DNAPL (btoc): - ft
 Depth to Top of Screen (btoc): 31.98 ft
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): 20.88 ft btoc
 If Depth to Top of Screen is > Depth to Water AND Screen Length is \geq 4 feet, Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 39.48 ft btoc
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are \geq 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 20.8 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	µS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1028	NA	Clear	Hydrocarbon	6.70	17.47	1049	8.7	0.13	+61
1600	1029/1036	NA	Clear	"	6.71	17.55	1032	8.5	0.12	+61
2400	1044	NA	Clear	"	6.71	17.51	1030	7.3	0.09	+61
3200	1052	NA	Clear	"	6.72	17.66	1040	7.8	0.07	+61
4000	1100	NA	Clear	"	6.72	17.98	1049	8.2	0.07	+61

Start Time: 1015 Elapsed Time (min): 45 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1100 Average Purge Rate (mL/min): 100ml/min Date Calibrated: 5/16/11

SAMPLING DATA

Sample Date: 5/16/11 Sample Time: 1100 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 100ml/min QA/QC Samples: None
 VOA Vials, No Headspace Initials: BE

COMMENTS:

Total Purge Volume: 4000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: B. Exceen, N. Salam

DATE: 5-16-11 WEATHER: N 60°F - Sunny

MONITORING WELL ID: MW-6B SAMPLE ID: MW6B-Rox-051611

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 69.38 ft
 Depth to Water (btoc): 25.95 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): 44.0 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) = 64.38 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 20.0 ppm
 Wellbore PID/FID Reading: 20.0 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS (mS/cm))	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
1600	1354	29.95	clear	none	6.80	20.40	583	3.2	0.41	0.54
2400	1358	29.95	11	11	6.78	20.07	597.3	2.3	0.30	0.54
3000	1402	29.95	11	11	6.77	19.98	608.7	2.4	0.21	0.54
3400	1406	29.95	11	11	6.77	19.98	616.8	6.6	0.17	0.54
4600	1410	29.95	11	11	6.77	20.07	627.3	6.3	0.13	0.54
5400	1414	29.95	11	11	6.76	19.87	629.9	2.1	0.17	0.54

Start Time: 1346 Elapsed Time (min): 40 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1414 Average Purge Rate (mL/min): 200 Date Calibrated: 5/16/11

SAMPLING DATA

Sample Date: 5/16/11 Sample Time: 1450 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 QA/QC Samples: MW6B-Rox-051611 D
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 5400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: B. Ezean, N. Salam

DATE: 5/16/11 WEATHER: ~60 F. Sunny

MONITORING WELL ID: MW-6C SAMPLE ID: MW6C-051611

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 90.28 ft
 Depth to Water (btoc): 85.76 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): 64.52 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) = 85.28 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 28.0 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	MS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1128	25.76	Clear	hydrocarbon	6.88	19.13	685.5	7.1	1.34	0.74
1600	1132	25.76	↓	↓	6.84	18.97	706.0	2.7	0.57	0.73
2400	1136	25.76	↓	↓	6.83	18.90	710.0	2.6	0.91	0.73
3200	1140	25.76	↓	↓	6.83	18.97	712.0	2.3	0.92	0.72
4000	1144	25.76	↓	↓	6.84	18.93	713.0	2.1	0.43	0.72

Start Time: 1120 Elapsed Time (min): 30 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1144 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 5/16/11

SAMPLING DATA

Sample Date: 5/16/11 Sample Time: 1145 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: —
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 4000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: B. Eversh, N. Salom

DATE: 5-16-11 WEATHER: N 60°F Sunny

MONITORING WELL ID: MW-6D SAMPLE ID: MW6D-Rox-051611

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 110.05 ft
 Depth to Water (btoc): 25.60 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): 84.45 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) = 105.05 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): 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 30.1 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
1400	1617	25.65	Clear	None	7.20	20.47	530.2	56.3	1.22	660
2200	1621	25.65	11	11	6.95	19.40	560.1	44.2	0.56	601
3000	1625	25.65	11	11	6.90	19.07	571.5	29.9	0.34	661
3800	1629	25.65	11	11	6.89	18.91	582.4	21.5	0.24	661
4600	1633	25.65	11	11	6.88	18.85	586.4	17.4	0.20	661
5400	1637	25.65	11	11	6.87	18.74	593.5	15.2	0.16	661
6200	1641	25.65	11	11	6.87	18.84	599.9	13.5	0.14	661
7000	1645	25.65	11	11	6.87	18.82	603.5	12.4	0.12	661
7800	1649	25.65	11	11	6.86	18.81	607.6	12.6	0.10	661
8600	1653	25.65	11	11	6.86	18.82	613.5	13.2	0.09	661

Start Time: 1610 Elapsed Time (min): 45 min Water Quality Meter ID: TROLL 9500
 Stop Time: 1653 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 5/16/11

SAMPLING DATA

Sample Date: 5/16/11 Sample Time: 1655 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QCSamples:
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 8600 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Salem

DATE: 5/13/11 WEATHER: N 70°F, Sunny

MONITORING WELL ID: MW-7 SAMPLE ID: MW07-Rox-051311

INITIAL DATA

Well Diameter: 2 in Water Column Height (do not include LNAPL or DNAPL): 15 ft btoc
 Total Well Depth (btoc): 52.92 ft If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet, Volume of Flow Through Cell): 800 mL
 Depth to Water (btoc): 37.50 ft Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 47.92 ft btoc Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Depth to LNAPL/DNAPL (btoc): — ft If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft, Ambient PID/FID Reading: 0.0 ppm
 Depth to Top of Screen (btoc): 42.92 ft Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc Wellbore PID/FID Reading: 430 ppm
 Screen Length): 10 ft If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1500	37.50	Cloudy	hydrocarbon	6.78	19.88	574.9	110	1.75	-53
1600	1504	37.50			6.77	19.26	570.0	114	1.72	-53
2400	1508	37.50			6.78	18.87	565.0	121	1.71	-53
3200	1512	37.50			6.79	18.50	561.0	105	1.67	-53
4000	1516	37.50			6.79	18.38	560.5	94	1.64	-53
4800	1520	37.50			6.79	18.40	560.4	80	1.58	-53
5600	1524	37.50			6.79	18.37	562.0	55.0	1.33	-53
6400	1528	37.50			6.80	18.43	559.0	51.0	1.28	-53
7200	1532	37.50			6.80	18.32	558.0	41.0	1.23	-53
8000	1536	37.50	clearing		6.80	18.29	558.0	37.0	1.17	-53
8800	1540	37.50			6.80	18.24	559.0	32.0	1.10	-53
9600	1544	37.50			6.80	18.23	558.0	31.0	1.08	-53
11200	1548	37.50			6.81	18.18	560.0	30.0	1.10	-53
	1552									

Start Time: 1350 1450 Elapsed Time (min): 60 60 Water Quality Meter ID: TROLL 9500
 Stop Time: 1550 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 5/13/11

SAMPLING DATA

Sample Date: 5/13/11 Sample Time: 1550 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW07-Rox-051311 D
 VOA Vials, No Headspace Initials: NS Field Duplicate

COMMENTS:

Total Purge Volume: 11200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N - SATAM

DATE: 5/13/11 WEATHER: 1480 F, Sunny

MONITORING WELL ID: MW-8 SAMPLE ID: MW08-ROX-051311

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 43.60 ft
 Depth to Water (btoc): 24.8 28.35 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): 15.25 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 600 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1240	28.40	clear	hydrocarbon	6.53	21.15	800	35	0.24	-64
1600	1244	28.40			6.53	20.61	793.5	28	0.11	-63
2400	1248	28.40			6.53	20.23	787.0	30	-0.01	-64
3200	1252	28.40			6.53	20.15	786.5	32	-0.02	-64
4000	1256	28.40			6.53	20.10	785.0	25	-0.04	-64
4800	1300	28.40			6.53	20.02	789.6	30	-0.06	-64
5600	1304	28.40			6.54	20.05	790.0	18.5	-0.06	-64
6400	1308	28.40			6.55	20.13	793.2	18.6	-0.07	-64
7200	1312	28.40			6.55	20.20	789.8	19.9	-0.06	-64
8000	1316	28.40			6.55	19.98	791.0	20.4	-0.06	-64

Start Time: 1230 Elapsed Time (min): 50 Water Quality Meter ID: TROLL 9500
 Stop Time: 1320 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 5/13/11

SAMPLING DATA

Sample Date: 5/13/11 Sample Time: 1320 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW08-ROX-051311 D (Field Duplicate)
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 8000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: S. Voas

DATE: 5-6-11 WEATHER: 60°F Sunny

MONITORING WELL ID: MW-9 SAMPLE ID: MW9-05 ROX - 050611

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 56.78 ft
 Depth to Water (btoc): 40.12 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): 6.33 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) = 41.45 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0 ppm
 Wellbore PID/FID Reading: 0 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	MS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1155	40.12	Cloudy	hydrocarbon	6.72	18.10	1176.6-72	126	52.50	-58
1600	1200	40.12	↓	↓	6.72	18.00	1166	113	52.50	-58
2400	1205	40.12	↓	↓	6.72	18.08	1152	72	52.51	-58
3200	1210	40.12	↓	↓	6.72	18.09	1160	49	52.51	-58
4000	1215	40.12	↓	↓	6.72	18.00	1146	42	52.50	-58
4800	1220	40.12	↓	↓	6.73	17.91	1136	26	52.52	-58
5600	1225	40.12	Clearing	↓	6.73	17.99	1135	17	52.51	-58
6400	1230	40.12	↓	↓	6.73	18.04	1132	16	52.51	-58
7200	1235	40.12	↓	↓	6.73	18.14	1138	15	52.50	-58

Start Time: 11 45 Elapsed Time (min): 50 min Water Quality Meter ID: TROLL 9500
 Stop Time: 12 40 Average Purge Rate (mL/min): 200ml/min Date Calibrated: 5/6/11

SAMPLING DATA

Sample Date: 5/6/11 Sample Time: 1240 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200ml/min QA/QC Samples: —
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 7200 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. SATAM/ C. KRETEER/ T. ANDREWS

DATE: 04/28/2011 WEATHER: 54° PARTLY CLOUDY

MONITORING WELL ID: MW-10 SAMPLE ID: MW-10-042811 MW10-ROX-042811

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 54.76 ft
 Depth to Water (btoc): 40.20 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): 4.23 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) = 39.45 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): 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0 ppm
 Wellbore PID/FID Reading: 31 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	1433	40.20	CLEAR	Hydrocarbon	6.71	19.27	645.6	27.8	0.53	-45	
800	1437	40.20	CLEAR		6.82	18.31	596.6	23.4	1.10	-59	
1600	1441	↓	↓	↓	6.87	17.59	580.5	23.6	1.78	-56	
2400	1445				6.89	17.40	572.0	20.5	1.99	-54	
3200	1449				6.90	17.28	562.1	17.9	2.02	-52	
4000	1453				6.91	17.26	554.0	17.1	2.15	-50	
4800	1457				6.92	17.62	554.9	16.6	2.23	-49	
5600	1501				6.92	17.86	554.5	17.2	2.22	-47	
6400	1505				6.91	18.21	551.9	16.6	1.96	-48	
7200	1509				6.92	18.46	550.9	17.6	1.99	-48	
8000	1513				6.92	18.28	546.5	17.5	1.89	-48	
8800	1517ck										
9600	1521										
10400	1525										
11200	1529										
12000	1533										

Start Time: 1433 Elapsed Time (min): 40 Water Quality Meter ID: TROLL 9500
 Stop Time: 1513 Average Purge Rate (mL/min): 200 Date Calibrated: 04/28/2011

SAMPLING DATA

Sample Date: 04/28/2011 Sample Time: 1515 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 QA/QC Samples: N/A
 VOA Vials, No Headspace Initials: CAK

COMMENTS:

Temperature not stable due to varying ambient conditions.

Total Purge Volume: 8000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Satam, S. Voss

DATE: 5/6/11 WEATHER: 65°F, Sunny

MONITORING WELL ID: MW-11 SAMPLE ID: MW11-Rox-050611

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 51.99 ft
 Depth to Water (btoc): 37.60 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): 14.39 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) = 46.99 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 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)	MS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1400	37.60	clear	hydrocarbon	6.75	22.4	1364	14.3	52.5	-70
1600	1405	37.60	↓	↓	6.73	19.12	1343	13.9	52.5	-80
2400	1410	37.60	↓	↓	6.74	17.9	1292	23.1	52.9	-80
3200	1415	37.60	↓	↓	6.75	17.9	1262	22.5	52.9	-80
4000	1420	37.60	↓	↓	6.75	17.51	1284	21.9	52.5	-90
4800										

Start Time: 1350 Elapsed Time (min): 35 Water Quality Meter ID: TROLL 9500
 Stop Time: 1425 Average Purge Rate (mL/min): 200mL Date Calibrated: 5/6/11

SAMPLING DATA

Sample Date: 5/6/11 Sample Time: 1425 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200mL/min QA/QC Samples: MW11-Rox-050611 MS, MW11-Rox-050611 M&D
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 4000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Satam / M. Johnson

DATE: 5/12/11 WEATHER: NB6°F, Sunny

MONITORING WELL ID: MW-12 SAMPLE ID: MW12-ROX-051211

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 52.25 ft
 Depth to Water (btoc): 37.58 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): 14.67 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) = 42.25 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
 Ambient PID/FID Reading: 0 ppm
 Wellbore PID/FID Reading: 14.9 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800 225	1049	<u>37.57</u>	<u>Clear</u>	<u>None</u>	<u>6.80</u>	<u>66.44</u>	<u>974.2</u>	<u>40.5</u>	<u>-0.07</u>	<u>122</u>
1600 450	1053				<u>6.80</u>	<u>67.07</u>	<u>104.8</u>	<u>42.6</u>	<u>-0.02</u>	<u>124</u>
2400 675	1057				<u>6.81</u>	<u>66.60</u>	<u>959.0</u>	<u>38.1</u>	<u>0.06</u>	<u>126</u>
3200 900	1101				<u>6.81</u>	<u>66.30</u>	<u>954.1</u>	<u>32.3</u>	<u>0.07</u>	<u>128</u>
4000 1125	1105	<u>37.57</u>			<u>6.81</u>	<u>66.33</u>	<u>954.6</u>	<u>26.1</u>	<u>0.08</u>	<u>129</u>
4800 1350	1109				<u>6.81</u>	<u>66.40</u>	<u>956.8</u>	<u>20.9</u>	<u>0.08</u>	<u>130</u>
5600 1575	1113				<u>6.81</u>	<u>66.67</u>	<u>959.3</u>	<u>15.9</u>	<u>0.07</u>	<u>130</u>
6400 1800	1117				<u>6.81</u>	<u>66.82</u>	<u>962.0</u>	<u>11.0</u>	<u>0.06</u>	<u>131</u>
7200 2025	1121	<u>37.57</u>			<u>6.81</u>	<u>66.81</u>	<u>957.2</u>	<u>6.9</u>	<u>0.03</u>	<u>131</u>
8000 2250	1125	<u>37.57</u>			<u>6.81</u>	<u>66.93</u>	<u>957.7</u>	<u>6.1</u>	<u>0.02</u>	<u>132</u>
8800 2475	1129	<u>37.59</u>			<u>6.80</u>	<u>67.12</u>	<u>958.4</u>	<u>5.4</u>	<u>0.01</u>	<u>132</u>

Start Time: 1040 Elapsed Time (min): 80 Water Quality Meter ID: TROLL 9500
 Stop Time: 1130 Average Purge Rate (mL/min): 225 mL/min Date Calibrated: 5/12/11

SAMPLING DATA

Sample Date: 5/12/11 Sample Time: 1130 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 225 mL/min QA/QC Samples: MW12-ROX-051211/EB @830
 VOA Vials, No Headspace Initials: NS MW12-ROX-051211 MS
MW12-ROX-051211 MSD

COMMENTS:

PROJECT NAME: Roxana 2Q11 GW

PROJECT NUMBER: 21562593.00004

FIELD PERSONNEL: N. Salom

DATE: 5/13/11

WEATHER: N 85 F, Sunny

MONITORING WELL ID: MW-13

SAMPLE ID: MW13-Rox-051311

INITIAL DATA

Well Diameter: 2 in
Total Well Depth (btoc): 35.82 ft
Depth to Water (btoc): 23.65 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): 12.17 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4ft,
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 30.82 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: 800 mL
Minimum Purge Volume = (3 x Flow Cell Volume): 2400 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 1.8 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	MS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	0940	23.65	Cloudy	hydrocarbon	6.78	22.01	787.9	107	0.09	-71
1600	0944	23.65			6.77	21.12	740.9	127	0.04	-72
2400	0948	23.65			6.77	21.06	733.2	141	0.02	-74
3200	0952	23.65			6.78	21.06	721.0	143	-0.02	-76
4000	0956	23.65			6.78	21.09	727.0	128	-0.03	-71
4800	1000	23.65			6.78	21.12	716.9	116	-0.04	-71
5600	1004	23.65			6.78	21.07	716.3	103	-0.05	-71
6400	1008	23.65			6.79	21.15	720.0	88	-0.06	-71
7200	1012	23.65			6.78	21.31	718.0	66	-0.07	-71
8000	1016	23.65	Clear		6.78	21.28	714.0	52	-0.07	-71
8800	1020	23.65			6.78	21.25	714.0	48	-0.07	-71
9600	1024	23.65			6.79	21.16	710.0	47	-0.07	-71
10400	1028	23.65			6.79	21.28	713.0	48	-0.07	-71
11200	1032	23.65								

Start Time: 0940

Elapsed Time (min): 60 min

Water Quality Meter ID: TROLL 9500

Stop Time: 1030

Average Purge Rate (mL/min): 200 mL/min

Date Calibrated: 5/13/11

SAMPLING DATA

Sample Date: 5/13/11

Sample Time: 1030

Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow

Sample Flow Rate (mL/min): 200 mL/min

QA/QC Samples: MW13-Rox-051311 EB

VOA Vials, No Headspace Initials: NS

@ 0900 Equipment Blank

COMMENTS:

Total Purge Volume: 10400 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 2Q11 GW PROJECT NUMBER: 21562593.00004 FIELD PERSONNEL: N. Salarn / M. Johnson

DATE: 5/11/11 WEATHER: N 90°F, Sunny

MONITORING WELL ID: P-54 SAMPLE ID: M-50 P54-Rox-051111

INITIAL DATA

Well Diameter: 2 in
 Total Well Depth (btoc): 63.00 ft
 Depth to Water (btoc): 37.37 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): 25.63 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) = 50.5 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: 800 mL
 Minimum Purge Volume = (3 x Flow Cell Volume) 2400 mL
 Ambient PID/FID Reading: 0.0 ppm
 Wellbore PID/FID Reading: 0.1 ppm

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	MS Cond. (µS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
800	1525	37.37	Clear	hydrocarbon	6.76	21.50	902.5	30.0	2.22	-63
1600	1529	37.37			6.74	18.90	880.7	34.1	1.77	-65
2400	1533	37.37	↓	↓	6.74	18.14	872.0	40.1	1.66	-65
3200	1537	37.37			6.74	17.89	873.0	45.9	1.63	-65
4000	1541	↓	↓	↓	6.74	17.72	876.6	52.0	1.62	-66
4800	1545				6.74	17.73	880.7	53.0	1.62	-66
5600	1549	↓	↓	↓	6.74	17.70	885.0	48.0	1.62	-66

Start Time: 1530 Elapsed Time (min): 30 Water Quality Meter ID: TROLL 9500
 Stop Time: 1555 Average Purge Rate (mL/min): 230 mL/min Date Calibrated: 5/11/11

SAMPLING DATA

Sample Date: 5/11/11 Sample Time: 1555 Lab Analysis: VOC, SVOC
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 230 mL/min QA/QC Samples: _____
 VOA Vials, No Headspace Initials: NS

COMMENTS:

Total Purge Volume: 5600 mL

WELL WIZARD GROUNDWATER SAMPLING DATA SHEET

Well ID	Date	Well Diam. (inches)	DTB (ft btoc)	DTW (ft btoc)	Packer Depth (ft btoc)	Ht of H2O (ft) ¹	Well Volume (gal) ²	Minimum Purge Volume (gal) ³	Actual Purge Volume (gal)	Sample Time	pH	Temp (C)	Cond (µS/cm)	Turbidity (Ntu)	Analytical Collected		QA/QC Collected
															VOC	SVOC	
P-93A	5/5/11	2	63.17	41.77	N/A	21.40	3.48	10.46	11g	1000	6.65	17.9	662	8.42	X	X	
P-93B	5/5/11	2	76.60	41.82	N/A	28.78	4.69	14.07	15g	1110	6.63	18.7	750	0.13	X	X	
P-93C	5/6/11	2	96.26	41.62	80.90	15.96 54.64	8.40 2.60	26.71 7.00	27g	0950	6.78	18.5	697	0.55	X	X	
P-93D	5/5/11	2	128.00	41.81	N/A	86.19	14.04	42.14	43g	1018	6.89	18.7	710	0.16	X	X	

- 1) Ht of H2O = DTB - DTW
- 2) Well Volume (for 2" wls) = Ht of H2O * 0.163 gal/ft
- 3) Minimum Purge Volume = 3 * Well Volume

COMMENTS:

Roxana Groundwater Quarterly – 2nd Quarter 2011

Laboratory SDG: MC135

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 06/20/2011

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

Sample Identification	Sample Identification
TB-ROX-051011	MW02-ROX-051011
MW03-ROX-051011	MW04-ROX-051111
P54-ROX-05111	

1.0 Data Package Completeness

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

Yes, however the data package was re-issued to report PAHs by 8270C SIM; PAHs previously reported by both standard 8270C and 8270C SIM. No qualification of data was required.

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 the VOC LCS/LCSD recoveries were outside of evaluation criteria for several analytes. The VOC surrogate toluene-D8 was outside of evaluation criteria in sample P93A-ROX-050511. VOC sample MW02-ROX-051011 was diluted due to high levels of target analytes. Several SVOC target analytes were found in the associated method blank. PAH internal standard recoveries were outside of evaluation criteria. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at 1.5°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. The cooler receipt form indicated N/A for the quality control/preservation questions. Trip blank vials were present in cooler and listed on the COC. Trip blank analysis was completed.

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
OP24917-MB	SVOCs	Di-n-butyl phthalate	1.0 µg/L
OP24917-MB	SVOCs	bis(2-Ethylhexyl)phthalate	2.2 µg/L

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

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW02-ROX-051011	SVOCs	Di-n-butyl phthalate	--	U
MW02-ROX-051011	SVOCs	bis(2-Ethylhexyl)phthalate	2.9 µg/L	U
MW03-ROX-051011	SVOCs	Di-n-butyl phthalate	--	U
MW03-ROX-051011	SVOCs	bis(2-Ethylhexyl)phthalate	2.5 µg/L	U
MW04-ROX-051111	SVOCs	Di-n-butyl phthalate	--	U
MW04-ROX-051111	SVOCs	bis(2-Ethylhexyl)phthalate	2.3 µg/L	U
P54-ROX-051111	SVOCs	Di-n-butyl phthalate	--	U
P54-ROX-051111	SVOCs	bis(2-Ethylhexyl)phthalate	2.4 µg/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
MSN1996-BS/BSN	VOCs	Acrolein	284/289	2	70-130/25
MSN1996-BS/BSN	VOCs	Acrylonitrile	448/456	2	70-130/25
MSN1996-BS/BSN	VOCs	2-Chloroethyl vinyl ether	61/67	9	70-130/25
MSN1998-BS/BSN	VOCs	Acrolein	326/289	12	70-130/25
MSN1998-BS/BSN	VOCs	Acrylonitrile	512/462	10	70-130/25
MSN1998-BS/BSN	VOCs	2-Chloroethyl vinyl ether	69/64	7	70-130/25
OP24917-BS	SVOCs	Butyl benzyl phthalate	34	NA	40-140
OP24917-BS	SVOCs	Diethyl phthalate	16	NA	40-140

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery (%)	RPD	LCS/LCSD/ RPD Criteria
OP24917-BS	SVOCs	Dimethyl phthalate	2	NA	40-140
OP24917-BS	SVOCs	Hexachlorocyclopentadiene	26	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.

Field ID	Parameter	Analyte	Qualification
MW02-ROX-051011	VOCs	2-Chloroethyl vinyl ether	UJ
MW02-ROX-051011	SVOCs	Butyl benzyl phthalate	UJ
MW02-ROX-051011	SVOCs	Diethyl phthalate	J
MW02-ROX-051011	SVOCs	Dimethyl phthalate	UJ
MW02-ROX-051011	SVOCs	Hexachlorocyclopentadiene	UJ
MW03-ROX-051011	VOCs	2-Chloroethyl vinyl ether	UJ
MW03-ROX-051011	SVOCs	Butyl benzyl phthalate	J
MW03-ROX-051011	SVOCs	Diethyl phthalate	UJ
MW03-ROX-051011	SVOCs	Dimethyl phthalate	UJ
MW03-ROX-051011	SVOCs	Hexachlorocyclopentadiene	UJ
MW04-ROX-051111	VOCs	2-Chloroethyl vinyl ether	UJ
MW04-ROX-051111	SVOCs	Butyl benzyl phthalate	J
MW04-ROX-051111	SVOCs	Diethyl phthalate	UJ
MW04-ROX-051111	SVOCs	Dimethyl phthalate	UJ
MW04-ROX-051111	SVOCs	Hexachlorocyclopentadiene	UJ
P54-ROX-051111	VOCs	2-Chloroethyl vinyl ether	UJ
P54-ROX-051111	SVOCs	Butyl benzyl phthalate	UJ
P54-ROX-051111	SVOCs	Diethyl phthalate	UJ
P54-ROX-051111	SVOCs	Dimethyl phthalate	UJ
P54-ROX-051111	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 internal standard recoveries were outside evaluation criteria. Analytical data that required qualification based on IS data are included in the following table.

Sample ID	Parameter	Analyte	Qualification
MW02-ROX-051011	PAHs	PAH detects/non-detects	J/UJ
MW03-ROX-051011	PAHs	PAH detects/non-detects	J/UJ
MW04-ROX-051011	PAHs	PAH detects/non-detects	J/UJ
P54-ROX-05111	PAHs	PAH detects/non-detects	J/UJ

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected 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



Reissue #1
06/15/11

Technical Report for

Shell Oil

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
INC#97216640 SAP#340061

Accutest Job Number: MC135

Sampling Dates: 05/10/11 - 05/11/11

Report to:

URS Corporation
Elizabeth_Kunkel@URSCorp.com
ATTN: Elizabeth Kunkel

*Reviewed on
6/20/2011
WEB*

Total number of pages in report: 91



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.

Reza Fand
Reza Fand
Lab Director

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) 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.



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

June 14, 2011

Accutest Job MC135 (Revision 1)

Ms. Elizabeth Kunkel,

The report of Accutest job number MC135 has been revised to reflect the modified SVOC 8270C compound list. The request is per Elizabeth Kunkel's call on 06/13/2011.

Sincerely,

A handwritten signature in black ink, appearing to read "Wendy Zhang".

Wendy Zhang
Accutest Laboratories of New England, Inc.

Table of Contents

Sections:



-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Sample Results	8
3.1: MC135-1: TB-ROX-051011	9
3.2: MC135-2: MW02-ROX-051011	13
3.3: MC135-3: MW03-ROX-051011	20
3.4: MC135-4: MW04-ROX-051111	27
3.5: MC135-5: P54-ROX-051111	34
Section 4: Misc. Forms	41
4.1: Chain of Custody	42
4.2: Sample Tracking Chronicle	44
4.3: Internal Chain of Custody	45
Section 5: GC/MS Volatiles - QC Data Summaries	47
5.1: Method Blank Summary	48
5.2: Blank Spike/Blank Spike Duplicate Summary	54
5.3: Matrix Spike/Matrix Spike Duplicate Summary	60
5.4: Internal Standard Area Summaries	66
5.5: Surrogate Recovery Summaries	68
Section 6: GC/MS Semi-volatiles - QC Data Summaries	69
6.1: Method Blank Summary	70
6.2: Blank Spike Summary	73
6.3: Matrix Spike/Matrix Spike Duplicate Summary	76
6.4: Internal Standard Area Summaries	79
6.5: Surrogate Recovery Summaries	83
Section 7: GC Volatiles - QC Data Summaries	85
7.1: Method Blank Summary	86
7.2: Blank Spike Summary	87
7.3: Matrix Spike/Matrix Spike Duplicate Summary	88
7.4: Surrogate Recovery Summaries	89
7.5: GC Surrogate Retention Time Summaries	90



Sample Summary

Shell Oil

Job No: MC135

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Project No: INC#97216640 SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
MC135-1	05/10/11	00:00 NSMJ	05/12/11	AQ	Trip Blank Water	TB-ROX-051011
MC135-2	05/10/11	11:10 NSMJ	05/12/11	AQ	Ground Water	MW02-ROX-051011
MC135-3	05/10/11	15:30 NSMJ	05/12/11	AQ	Ground Water	MW03-ROX-051011
MC135-4	05/11/11	11:55 NSMJ	05/12/11	AQ	Ground Water	MW04-ROX-051111
MC135-5	05/11/11	15:58 NSMJ	05/12/11	AQ	Ground Water	P54-ROX-051111

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil **Job No** MC135
Site: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central **Report Date** 5/27/2011 4:28:13 PM

4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 05/10/2011 and 05/11/2011 and were received at Accutest on 05/12/2011 properly preserved, at 1.5 Deg. C and intact. These Samples received an Accutest job number of MC135. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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:	MSN1996
--------	----	-----------	---------

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC170-10MS, MC170-10MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- BS/BSD Recovery(s) for 2-Chloroethyl vinyl ether are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 2-Chloroethyl vinyl ether, Acetone are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 2-Butanone (MEK), 2-Chloroethyl vinyl ether, Acetone are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MSN1996-BS/BSD/MS/MSD for Acrolein, Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Matrix	AQ	Batch ID:	MSN1998
--------	----	-----------	---------

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC230-2MS, MC230-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- BS/BSD Recovery(s) for 2-Chloroethyl vinyl ether are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for Acetone, 4-Methyl-2-pentanone (MIBK), Toluene, 2-Chloroethyl vinyl ether are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for MSD for Acetone are outside control limits for sample MC230-2MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MSN1998-BS/BSD/MS/MSD for Acrolein, Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP24917
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC148-2MS, MC148-2MSD were used as the QC samples indicated.
- Sample(s) MC135-2, MC135-3, MC135-4, MC135-5 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Blank Spike Recovery(s) for Butyl benzyl phthalate, Diethyl phthalate, Dimethyl phthalate, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Pentachlorophenol, Aniline, Benzoic Acid, Phenol are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 1,2-Diphenylhydrazine, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 2-Chloronaphthalene, 2-Chlorophenol, 2-Methylphenol, 2-Nitroaniline, 2-Nitrophenol, 3&4-Methylphenol, 4,6-Dinitro-o-cresol, 4-Bromophenyl phenyl ether, 4-Chlorophenyl phenyl ether, 4-Nitroaniline, 4-Nitrophenol, Aniline, Benzoic Acid, Benzyl Alcohol, bis(2-Chloroethoxy)methane, bis(2-Chloroethyl)ether, bis(2-Chloroisopropyl)ether, Di-n-butyl phthalate, Di-n-octyl phthalate, Dibenzo furan, Hexachloroethane, Isophorone, N-Nitroso-di-n-propylamine, n-Nitrosodimethylamine, N-Nitrosodiphenylamine, Nitrobenzene, Phenol, Pyridine are outside control limits for sample OP24917-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD(s) for OP24917-MSD for Dimethyl phthalate, Hexachlorocyclopentadiene, Diethyl phthalate: Outside control limits. Blank Spike meets program technical requirements.
- OP24917-MS/MSD for Diethyl phthalate, Dimethyl phthalate: Outside control limits. Blank Spike meets program technical requirements.
- OP24917-MSD Recovery(s), RPD(s) for OP24917-MSD for 1-Methylnaphthalene: Outside control limits due to high level in sample relative to spike amount.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP24918
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC571-1MS, MC571-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Duplicate Recovery(s) for 2-Methylnaphthalene are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD(s) for MSD for 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene are outside control limits for sample OP24918-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- OP24918-MSD Recovery(s) for Benzo(a)pyrene, Benzo(k)fluoranthene: Outside control limits due to possible matrix interference. Refer to Blank Spike.
- OP24918-MB/BS/MS/MSD, MC135-2, 3, 4, 5 has internal standards outside control limits. Internal standard spiked at 10x concentration.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP24963
------------------	--------------------------

- 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) MC19-7MS, MC19-7MSD were used as the QC samples indicated.

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(MC135).



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TB-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-1	Date Received: 05/12/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52913.D	1	05/23/11	JP	n/a	n/a	MSN1996
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-1	Date Received: 05/12/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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

3.1
3

Client Sample ID: TB-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-1	Date Received: 05/12/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	108%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

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

3.1
3

Client Sample ID: TB-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-1	Date Received: 05/12/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2991.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

	Initial Volume	Final Volume
Run #1	31.3 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0078	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	114%		36-173%
460-00-4	Bromofluorobenzene (S)	112%		36-173%

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

Report of Analysis

Client Sample ID: MW02-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-2	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52915.D	1	05/23/11	JP	n/a	n/a	MSN1996
Run #2	N52971.D	50	05/24/11	JP	n/a	n/a	MSN1998

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	1180 ^a	25	23	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	2.9	5.0	0.37	ug/l	J
98-06-6	tert-Butylbenzene	1.2	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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:	MW02-ROX-051011	Date Sampled:	05/10/11
Lab Sample ID:	MC135-2	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	1240 ^a	50	40	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	53.9	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	2.7	5.0	0.45	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	100	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	66.9	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	3510 ^a	50	30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	339	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	103	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	2050 ^a	50	45	ug/l	
95-47-6	o-Xylene	549 ^a	50	16	ug/l	
1330-20-7	Xylene (total)	2600 ^a	50	16	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

3.2
3

Client Sample ID: MW02-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-2	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	105%	70-130%
2037-26-5	Toluene-D8	106%	110%	70-130%
460-00-4	4-Bromofluorobenzene	101%	104%	70-130%

(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 compound

Report of Analysis

Client Sample ID:	MW02-ROX-051011	Date Sampled:	05/10/11
Lab Sample ID:	MC135-2	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24037.D	1	05/18/11	PR	05/13/11	OP24917	MSS1020
Run #2							

Run #	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	0.79	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.59	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	6.2	10	0.49	ug/l	J
	3&4-Methylphenol	11.9	10	0.65	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.68	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	5.7	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.42	ug/l	W
100-51-6	Benzyl Alcohol	1.9	10	0.79	ug/l	J
91-58-7	2-Chloronaphthalene	ND	5.2	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.63	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.30	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	5.2	0.35	ug/l	W W
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	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:	MW02-ROX-051011	Date Sampled:	05/10/11
Lab Sample ID:	MC135-2	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.6	5.2	0.63	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	LS
117-81-7	bis(2-Ethylhexyl)phthalate	2.9	2.1	0.50	ug/l	LS
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	LS
67-72-1	Hexachloroethane	ND	5.2	0.44	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
90-12-0	1-Methylnaphthalene	4.9	5.2	0.57	ug/l	J
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	2.6	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.63	ug/l	
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		15-110%
4165-62-2	Phenol-d5	26%		15-110%
118-79-6	2,4,6-Tribromophenol	49%		15-110%
4165-60-0	Nitrobenzene-d5	65%		30-130%
321-60-8	2-Fluorobiphenyl	60%		30-130%
1718-51-0	Terphenyl-d14	58%		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

3.2
3

Client Sample ID: MW02-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-2	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53001.D	1	05/24/11	KR	05/13/11	OP24918	MSF2559
Run #2							

Run #	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	0.012	ug/l	N ↓ J J J J J J J J J J J J J
208-96-8	Acenaphthylene	ND	0.10	0.029	ug/l	
120-12-7	Anthracene	ND	0.10	0.027	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.0099	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.012	ug/l	
218-01-9	Chrysene	ND	0.10	0.013	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.017	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	0.013	ug/l	
91-57-6	2-Methylnaphthalene	11.8	0.21	0.012	ug/l	
91-20-3	Naphthalene	54.5	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.052	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.021	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	61%		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 found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.2
3

Client Sample ID: MW02-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-2	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2992.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.8 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0079	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	107%		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: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52970.D	1	05/24/11	JP	n/a	n/a	MSN1998
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	13.0	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	

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

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.6	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	2.2	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	2.2	1.0	0.32	ug/l	

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 RL = Reporting Limit
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 N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

ND = Not detected MDL - Method Detection Limit
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N = Indicates presumptive evidence of a compound

Report of Analysis

3.3
3

Client Sample ID: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24038.D	1	05/18/11	PR	05/13/11	OP24917	MSS1020
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	6.4	5.0	0.41	ug/l	J
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.4	5.0	0.34	ug/l	J B U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	B
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	B
117-81-7	bis(2-Ethylhexyl)phthalate	2.5	2.0	0.49	ug/l	B
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	E
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	42%		15-110%
4165-60-0	Nitrobenzene-d5	55%		30-130%
321-60-8	2-Fluorobiphenyl	49%		30-130%
1718-51-0	Terphenyl-d14	54%		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

33
3

Client Sample ID: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53002.D	1	05/24/11	KR	05/13/11	OP24918	MSF2559
Run #2							

Run #	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	0.012	ug/l	u3
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	0.19	0.20	0.012	ug/l	J
91-20-3	Naphthalene	0.11	0.10	0.011	ug/l	N
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	N
129-00-0	Pyrene	ND	0.10	0.020	ug/l	N

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	53%		30-130%
1718-51-0	Terphenyl-d14	67%		30-130%

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

Report of Analysis

3.3
3

Client Sample ID: MW03-ROX-051011	Date Sampled: 05/10/11
Lab Sample ID: MC135-3	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2993.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	32.3 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0075	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	132%		36-173%		
460-00-4	Bromofluorobenzene (S)	130%		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:	MW04-ROX-051111	Date Sampled:	05/11/11
Lab Sample ID:	MC135-4	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52967.D	1	05/24/11	JP	n/a	n/a	MSN1998
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	62.5	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	

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 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW04-ROX-051111	Date Sampled:	05/11/11
Lab Sample ID:	MC135-4	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	3.6	5.0	0.94	ug/l	J
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	9.6	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	3.7	5.0	0.89	ug/l	J
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	12.5	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	9.6	1.0	0.90	ug/l	
95-47-6	o-Xylene	1.6	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	11.1	1.0	0.32	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

3.4
3

Client Sample ID: MW04-ROX-051111		Date Sampled: 05/11/11
Lab Sample ID: MC135-4		Date Received: 05/12/11
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	108%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

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

3.4
3

Client Sample ID: MW04-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-4	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24039.D	1	05/18/11	PR	05/13/11	OP24917	MSS1020
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	6.3	5.0	0.41	ug/l	J
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.2	5.0	0.34	ug/l	JB N
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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:	MW04-ROX-051111	Date Sampled:	05/11/11
Lab Sample ID:	MC135-4	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	u5
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	u5
117-81-7	bis(2-Ethylhexyl)phthalate	2.3	2.0	0.49	ug/l	B.4
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	u5
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	64%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	65%		30-130%
1718-51-0	Terphenyl-d14	53%		30-130%

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

Report of Analysis

Client Sample ID: MW04-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-4	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53003.D	1	05/24/11	KR	05/13/11	OP24918	MSF2559
Run #2							

Run #	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	0.012	ug/l	45 ↓ NB ↓
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	0.33	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	65%		30-130%
1718-51-0	Terphenyl-d14	65%		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: MW04-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-4	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2994.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0079	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	103%		36-173%
460-00-4	Bromofluorobenzene (S)	103%		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-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52968.D	1	05/24/11	JP	n/a	n/a	MSN1998
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	UJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051111	Date Sampled:	05/11/11
Lab Sample ID:	MC135-5	Date Received:	05/12/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	108%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

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

3.5
3

Client Sample ID: P54-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24040.D	1	05/18/11	PR	05/13/11	OP24917	MSS1020
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	US
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.1	5.0	0.34	ug/l	JRU
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	WJ
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	WJ
117-81-7	bis(2-Ethylhexyl)phthalate	2.4	2.0	0.49	ug/l	B W
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	WJ
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	58%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	54%		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

3.5
3

Client Sample ID: P54-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53004.D	1	05/24/11	KR	05/13/11	OP24918	MSF2559
Run #2							

Run #	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	ND	0.11	0.012	ug/l	LS
208-96-8	Acenaphthylene	ND	0.11	0.030	ug/l	
120-12-7	Anthracene	ND	0.11	0.028	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.054	0.012	ug/l	↓
50-32-8	Benzo(a)pyrene	0.10	0.11	0.014	ug/l	J
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.010	ug/l	MS
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.012	ug/l	↓
218-01-9	Chrysene	0.019	0.11	0.013	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	MS
206-44-0	Fluoranthene	0.031	0.11	0.017	ug/l	J
86-73-7	Fluorene	ND	0.11	0.048	ug/l	MS
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.013	ug/l	MS
91-57-6	2-Methylnaphthalene	ND	0.22	0.013	ug/l	MS
91-20-3	Naphthalene	0.13	0.11	0.012	ug/l	J
85-01-8	Phenanthrene	ND	0.054	0.013	ug/l	MS
129-00-0	Pyrene	0.028	0.11	0.022	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	88%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	67%		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

3.5
3

Client Sample ID: P54-ROX-051111	Date Sampled: 05/11/11
Lab Sample ID: MC135-5	Date Received: 05/12/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2995.D	1	05/19/11	AP	05/19/11	OP24963	GBK120
Run #2							

	Initial Volume	Final Volume
Run #1	32.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	152%		36-173%		
460-00-4	Bromofluorobenzene (S)	145%		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

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

Shell Oil Products Chain Of Custody Record

URS

Lab Vendor #
 Lab Vendor #
 Lab Vendor #
 Lab Vendor #

Please Check Appropriate Box:

RETAIL SERVICES
 RETAIL ANALYSIS
 RETAIL REFILL
 RETAIL BENCH
 CONSULTANT
 LABS
 RETAIL PIPELINE
 OTHER

Print Bill To Contact Name: WENDY PENNINGTON

INCIDENT # (ENV SERVICES) 9 7 2 1 5 0 4 0

DATE: 5/11/11

PO #

SAP #

PAGE: 1 of 1

LABORATORY: URS CORPORATION
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110
 WENDY PENNINGTON
 314-743-4199 or 314-452-8928 314-423-0482
 DELIVERABLE: DEL. 1 DEL. 2 DEL. 3 DEL. 4 DEL. 5 (SPECIFY) EDD

CITY AND STATE: St. Louis, MO
 000 South Central Ave. ROXANA, ILL.
 N. SATAM, M. JOHNSON
 LAB USE ONLY: MC135

SPECIAL INSTRUCTIONS OR NOTES:
 * Please include "J" values on Report.
 * Please provide sample receipt upon login.

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING		DATE	TIME	BATCH	PRESERVATIVE						REL. OR IDENT.	VOC B2008	VOC B011	VOC B276C	PAH B270LL	PID (ppm)	FIELD NOTES:
		DATE	TIME				HEX	HEX	HEX	HEX	HEX	HEX							
-1	TB-ROX-051011 ✓	5/10	1110	1110	3		2	2	2	2	2	2	X	X	X	X	X		
-2	MW02-ROX-051011 ✓	5/10	1110	1110	3		2	2	2	2	2	2	X	X	X	X	X		
-3	MW03-ROX-051011 ✓	5/10	1530	1530	3		2	2	2	2	2	2	X	X	X	X	X		
-4	MW04-ROX-051111 ✓	5/11	1158	1158	3		2	2	2	2	2	2	X	X	X	X	X		
-5	P54-ROX-051111 ✓	5/11	1558	1558	3		2	2	2	2	2	2	X	X	X	X	X		

Prepared by: (Signature) Helan
 Received by: (Signature) F. FED EX
 Date: 5/11/11
 Time: 17:00

Prepared by: (Signature) F. F. F.
 Received by: (Signature) [Signature]
 Date: 5/11/11
 Time: 09:30

REC'D 5/11/11

4.1
4

MC135: Chain of Custody
Page 1 of 2



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC135 Client: URS Immediate Client Services Action Required: No
 Date / Time Received: 5/12/2011 Delivery Method: _____ Client Service Action Required at Login: No
 Project: 900 SOUTH CENTRAL AVE ROXANA IL No. Coolers: 1 Airbill #'s: N/A

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: Infrared 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

Accutest Laboratories V.506 481.6200 495 Technology Center West, Bldg One F. 508.481.7753 Marlborough, MA www.accutest.com

4.1
4

MC135: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC135

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

4.2
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC135-1 Collected: 10-MAY-11 00:00 By: NSMJ Received: 12-MAY-11 By: JB						
TB-ROX-051011						
MC135-1	SW846 8011	19-MAY-11 18:37	AP	18-MAY-11 FC		V8011EDB
MC135-1	SW846 8260B	23-MAY-11 14:07	JP			V8260SL
MC135-2 Collected: 10-MAY-11 11:10 By: NSMJ Received: 12-MAY-11 By: JB						
MW02-ROX-051011						
MC135-2	SW846 8270C	18-MAY-11 03:58	PR	13-MAY-11 MR		AB8270SL
MC135-2	SW846 8011	19-MAY-11 19:04	AP	18-MAY-11 FC		V8011EDB
MC135-2	SW846 8260B	23-MAY-11 15:03	JP			V8260SL
MC135-2	SW846 8270C BY SIM	24-MAY-11 13:38	KR	13-MAY-11 AF		B8270SIMPAAH
MC135-2	SW846 8260B	24-MAY-11 17:36	JP			V8260SL
MC135-3 Collected: 10-MAY-11 15:30 By: NSMJ Received: 12-MAY-11 By: JB						
MW03-ROX-051011						
MC135-3	SW846 8270C	18-MAY-11 04:28	PR	13-MAY-11 MR		AB8270SL
MC135-3	SW846 8011	19-MAY-11 19:31	AP	18-MAY-11 FC		V8011EDB
MC135-3	SW846 8270C BY SIM	24-MAY-11 15:07	KR	13-MAY-11 AF		B8270SIMPAAH
MC135-3	SW846 8260B	24-MAY-11 17:08	JP			V8260SL
MC135-4 Collected: 11-MAY-11 11:55 By: NSMJ Received: 12-MAY-11 By: JB						
MW04-ROX-051111						
MC135-4	SW846 8270C	18-MAY-11 04:57	PR	13-MAY-11 MR		AB8270SL
MC135-4	SW846 8011	19-MAY-11 19:57	AP	18-MAY-11 FC		V8011EDB
MC135-4	SW846 8270C BY SIM	24-MAY-11 15:41	KR	13-MAY-11 AF		B8270SIMPAAH
MC135-4	SW846 8260B	24-MAY-11 15:43	JP			V8260SL
MC135-5 Collected: 11-MAY-11 15:58 By: NSMJ Received: 12-MAY-11 By: JB						
P54-ROX-051111						
MC135-5	SW846 8270C	18-MAY-11 05:27	PR	13-MAY-11 MR		AB8270SL
MC135-5	SW846 8011	19-MAY-11 20:24	AP	19-MAY-11 FC		V8011EDB
MC135-5	SW846 8270C BY SIM	24-MAY-11 16:09	KR	13-MAY-11 AF		B8270SIMPAAH
MC135-5	SW846 8260B	24-MAY-11 16:11	JP			V8260SL

Accutest Internal Chain of Custody

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Received: 05/12/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC135-1.3	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC135-1.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC135-1.5	VOC Ref #2	Jugal Patel	05/23/11 13:15	Retrieve from Storage
MC135-1.5	Jugal Patel	GCMSN	05/23/11 13:15	Load on Instrument
MC135-1.5	GCMSN	Jugal Patel	05/24/11 11:25	Unload from Instrument
MC135-1.5	Jugal Patel	VOC Ref #2	05/24/11 11:26	Return to Storage
MC135-2.1	Walk In Ref #22	Mahmoud Afzali	05/19/11 09:48	Retrieve from Storage
MC135-2.1	Mahmoud Afzali		05/20/11 16:56	Depleted
MC135-2.2	Walk In Ref #22	Michael Rolo	05/13/11 17:25	Retrieve from Storage
MC135-2.2	Michael Rolo		05/17/11 00:42	Depleted
MC135-2.3	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC135-2.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC135-2.5	VOC Ref #2	Jugal Patel	05/23/11 13:15	Retrieve from Storage
MC135-2.5	Jugal Patel	GCMSN	05/23/11 13:15	Load on Instrument
MC135-2.5	GCMSN	Jugal Patel	05/24/11 11:25	Unload from Instrument
MC135-2.5	Jugal Patel	VOC Ref #2	05/24/11 11:26	Return to Storage
MC135-2.7	VOC Ref #2	Dana Tyron	05/24/11 17:19	Retrieve from Storage
MC135-2.7	Dana Tyron	GCMSN	05/24/11 17:19	Load on Instrument
MC135-2.7	GCMSN	Jugal Patel	05/26/11 10:10	Unload from Instrument
MC135-2.7	Jugal Patel	VOC Ref #2	05/26/11 10:10	Return to Storage
MC135-3.1	Walk In Ref #22	Mahmoud Afzali	05/19/11 09:48	Retrieve from Storage
MC135-3.1	Mahmoud Afzali		05/20/11 16:56	Depleted
MC135-3.2	Walk In Ref #22	Michael Rolo	05/13/11 17:25	Retrieve from Storage
MC135-3.2	Michael Rolo		05/17/11 00:42	Depleted
MC135-3.3	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC135-3.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC135-3.5	VOC Ref #2	Jugal Patel	05/23/11 13:15	Retrieve from Storage
MC135-3.5	Jugal Patel	GCMSN	05/23/11 13:15	Load on Instrument
MC135-3.5	GCMSN	Jugal Patel	05/24/11 11:25	Unload from Instrument
MC135-3.5	Jugal Patel	VOC Ref #2	05/24/11 11:26	Return to Storage
MC135-3.6	VOC Ref #2	Dana Tyron	05/24/11 17:19	Retrieve from Storage
MC135-3.6	Dana Tyron	GCMSN	05/24/11 17:19	Load on Instrument
MC135-3.6	GCMSN	Jugal Patel	05/26/11 10:10	Unload from Instrument

Accutest Internal Chain of Custody

Job Number: MC135
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/12/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC135-3.6	Jugal Patel	VOC Ref #2	05/26/11 10:10	Return to Storage
MC135-4.1	Walk In Ref #22	Mahmoud Afzali	05/19/11 09:48	Retrieve from Storage
MC135-4.1	Mahmoud Afzali		05/20/11 16:56	Depleted
MC135-4.2	Walk In Ref #22	Michael Rolo	05/13/11 17:25	Retrieve from Storage
MC135-4.2	Michael Rolo		05/17/11 00:42	Depleted
MC135-4.3	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC135-4.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC135-4.5	VOC Ref #2	Jugal Patel	05/23/11 13:15	Retrieve from Storage
MC135-4.5	Jugal Patel	GCMSN	05/23/11 13:15	Load on Instrument
MC135-4.5	GCMSN	Jugal Patel	05/26/11 10:10	Unload from Instrument
MC135-4.5	Jugal Patel	VOC Ref #2	05/26/11 10:10	Return to Storage
MC135-5.1	Walk In Ref #22	Mahmoud Afzali	05/19/11 09:48	Retrieve from Storage
MC135-5.1	Mahmoud Afzali		05/20/11 16:56	Depleted
MC135-5.2	Walk In Ref #22	Michael Rolo	05/13/11 17:25	Retrieve from Storage
MC135-5.2	Michael Rolo		05/17/11 00:42	Depleted
MC135-5.3	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC135-5.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC135-5.5	VOC Ref #2	Jugal Patel	05/23/11 13:15	Retrieve from Storage
MC135-5.5	Jugal Patel	GCMSN	05/23/11 13:15	Load on Instrument
MC135-5.5	GCMSN	Jugal Patel	05/26/11 10:10	Unload from Instrument
MC135-5.5	Jugal Patel	VOC Ref #2	05/26/11 10:10	Return to Storage

GC/MS Volatiles

5

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: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-MB	N52911.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

5.1.1
5

Method Blank Summary

Page 2 of 3

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-MB	N52911.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	ug/l	

5.1.1
5

Method Blank Summary

Page 3 of 3

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-MB	N52911.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	105%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

5.1.1
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Method Blank Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	

5.1.2
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Method Blank Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

Method Blank Summary

Page 3 of 3

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
2037-26-5	Toluene-D8	107%	70-130%
460-00-4	4-Bromofluorobenzene	103%	70-130%

5.1.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-BS	N52908.D	1	05/23/11	JP	n/a	n/a	MSN1996
MSN1996-BSD	N52909.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	38.2	76	35.8	72	6	70-130/25
107-02-8	Acrolein	250	711	284* a	722	289* a	2	70-130/25
107-13-1	Acrylonitrile	50	224	448* a	228	456* a	2	70-130/25
71-43-2	Benzene	50	53.8	108	52.9	106	2	70-130/25
108-86-1	Bromobenzene	50	57.6	115	56.7	113	2	70-130/25
74-97-5	Bromochloromethane	50	52.5	105	51.7	103	2	70-130/25
75-27-4	Bromodichloromethane	50	59.7	119	59.2	118	1	70-130/25
75-25-2	Bromoforn	50	52.3	105	53.3	107	2	70-130/25
74-83-9	Bromomethane	50	55.8	112	55.5	111	1	70-130/25
78-93-3	2-Butanone (MEK)	50	39.6	79	38.2	76	4	70-130/25
104-51-8	n-Butylbenzene	50	55.2	110	53.5	107	3	70-130/25
135-98-8	sec-Butylbenzene	50	52.6	105	51.8	104	2	70-130/25
98-06-6	tert-Butylbenzene	50	52.4	105	51.6	103	2	70-130/25
75-15-0	Carbon disulfide	50	52.5	105	51.2	102	3	70-130/25
56-23-5	Carbon tetrachloride	50	52.0	104	52.6	105	1	70-130/25
108-90-7	Chlorobenzene	50	53.9	108	53.4	107	1	70-130/25
75-00-3	Chloroethane	50	51.2	102	50.7	101	1	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	30.6	61* b	33.4	67* b	9	70-130/25
67-66-3	Chloroform	50	51.7	103	50.3	101	3	70-130/25
74-87-3	Chloromethane	50	53.7	107	52.1	104	3	70-130/25
95-49-8	o-Chlorotoluene	50	51.5	103	50.6	101	2	70-130/25
106-43-4	p-Chlorotoluene	50	54.1	108	53.2	106	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	47.8	96	49.1	98	3	70-130/25
124-48-1	Dibromochloromethane	50	54.9	110	55.1	110	0	70-130/25
106-93-4	1,2-Dibromoethane	50	55.2	110	55.4	111	0	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.6	109	53.7	107	2	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.6	111	54.8	110	1	70-130/25
106-46-7	1,4-Dichlorobenzene	50	53.4	107	52.7	105	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	50.9	102	49.5	99	3	70-130/25
75-34-3	1,1-Dichloroethane	50	49.7	99	49.1	98	1	70-130/25
107-06-2	1,2-Dichloroethane	50	53.4	107	54.1	108	1	70-130/25
75-35-4	1,1-Dichloroethene	50	52.3	105	50.2	100	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	50.0	100	49.0	98	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	51.8	104	51.0	102	2	70-130/25
78-87-5	1,2-Dichloropropane	50	52.0	104	52.2	104	0	70-130/25
142-28-9	1,3-Dichloropropane	50	52.0	104	51.8	104	0	70-130/25

5.2.1
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Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-BS	N52908.D	1	05/23/11	JP	n/a	n/a	MSN1996
MSN1996-BSD	N52909.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	46.1	92	46.0	92	0	70-130/25
563-58-6	1,1-Dichloropropene	50	56.0	112	54.1	108	3	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	50.0	100	50.9	102	2	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	52.3	105	53.7	107	3	70-130/25
123-91-1	1,4-Dioxane	250	229	92	247	99	8	70-130/25
97-63-2	Ethyl methacrylate	50	50.2	100	50.6	101	1	77-137/25
100-41-4	Ethylbenzene	50	55.1	110	53.9	108	2	70-130/25
87-68-3	Hexachlorobutadiene	50	58.7	117	57.0	114	3	70-130/25
591-78-6	2-Hexanone	50	45.2	90	43.4	87	4	70-130/25
98-82-8	Isopropylbenzene	50	62.5	125	61.0	122	2	70-130/25
99-87-6	p-Isopropyltoluene	50	55.7	111	54.4	109	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	49.9	100	50.4	101	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	46.0	92	46.9	94	2	70-130/25
74-95-3	Methylene bromide	50	53.7	107	53.9	108	0	70-130/25
75-09-2	Methylene chloride	50	49.3	99	48.8	98	1	70-130/25
91-20-3	Naphthalene	50	55.5	111	55.8	112	1	70-130/25
103-65-1	n-Propylbenzene	50	54.6	109	52.9	106	3	70-130/25
100-42-5	Styrene	50	60.3	121	57.4	115	5	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	61.4	123	61.1	122	0	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	51.5	103	51.7	103	0	70-130/25
127-18-4	Tetrachloroethene	50	59.2	118	57.5	115	3	70-130/25
108-88-3	Toluene	50	55.4	111	55.2	110	0	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	57.4	115	57.4	115	0	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	58.9	118	59.4	119	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	55.0	110	54.6	109	1	70-130/25
79-00-5	1,1,2-Trichloroethane	50	54.8	110	54.1	108	1	70-130/25
79-01-6	Trichloroethene	50	55.5	111	53.9	108	3	70-130/25
75-69-4	Trichlorofluoromethane	50	49.8	100	48.2	96	3	70-130/25
96-18-4	1,2,3-Trichloropropane	50	51.9	104	51.8	104	0	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.2	104	51.2	102	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	53.4	107	52.4	105	2	70-130/25
108-05-4	Vinyl Acetate	50	36.5	73	38.0	76	4	70-130/25
75-01-4	Vinyl chloride	50	52.1	104	51.0	102	2	70-130/25
	m,p-Xylene	100	113	113	112	112	1	70-130/25
95-47-6	o-Xylene	50	55.7	111	55.0	110	1	70-130/25
1330-20-7	Xylene (total)	150	169	113	167	111	1	70-130/25

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1996-BS	N52908.D	1	05/23/11	JP	n/a	n/a	MSN1996
MSN1996-BSD	N52909.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	101%	70-130%
2037-26-5	Toluene-D8	107%	108%	70-130%
460-00-4	4-Bromofluorobenzene	100%	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.

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	37.2	74	34.8	70	7	70-130/25
107-02-8	Acrolein	250	815	326* a	722	289* a	12	70-130/25
107-13-1	Acrylonitrile	50	256	512* a	231	462* a	10	70-130/25
71-43-2	Benzene	50	54.6	109	53.5	107	2	70-130/25
108-86-1	Bromobenzene	50	56.9	114	56.7	113	0	70-130/25
74-97-5	Bromochloromethane	50	54.4	109	53.5	107	2	70-130/25
75-27-4	Bromodichloromethane	50	61.2	122	60.4	121	1	70-130/25
75-25-2	Bromoform	50	53.8	108	51.0	102	5	70-130/25
74-83-9	Bromomethane	50	57.8	116	58.1	116	1	70-130/25
78-93-3	2-Butanone (MEK)	50	41.2	82	38.0	76	8	70-130/25
104-51-8	n-Butylbenzene	50	56.2	112	54.8	110	3	70-130/25
135-98-8	sec-Butylbenzene	50	53.6	107	52.0	104	3	70-130/25
98-06-6	tert-Butylbenzene	50	53.1	106	51.6	103	3	70-130/25
75-15-0	Carbon disulfide	50	54.5	109	52.5	105	4	70-130/25
56-23-5	Carbon tetrachloride	50	51.6	103	50.2	100	3	70-130/25
108-90-7	Chlorobenzene	50	53.8	108	53.0	106	1	70-130/25
75-00-3	Chloroethane	50	54.9	110	52.2	104	5	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	34.3	69* b	31.9	64* b	7	70-130/25
67-66-3	Chloroform	50	55.0	110	52.8	106	4	70-130/25
74-87-3	Chloromethane	50	55.3	111	51.7	103	7	70-130/25
95-49-8	o-Chlorotoluene	50	52.9	106	51.6	103	2	70-130/25
106-43-4	p-Chlorotoluene	50	55.1	110	54.1	108	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	51.4	103	47.1	94	9	70-130/25
124-48-1	Dibromochloromethane	50	55.7	111	54.1	108	3	70-130/25
106-93-4	1,2-Dibromoethane	50	58.4	117	55.9	112	4	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.5	109	54.3	109	0	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.3	111	54.4	109	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	53.2	106	52.8	106	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	51.4	103	49.4	99	4	70-130/25
75-34-3	1,1-Dichloroethane	50	52.7	105	50.8	102	4	70-130/25
107-06-2	1,2-Dichloroethane	50	56.2	112	54.6	109	3	70-130/25
75-35-4	1,1-Dichloroethene	50	53.7	107	52.1	104	3	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.1	104	51.2	102	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	54.2	108	52.2	104	4	70-130/25
78-87-5	1,2-Dichloropropane	50	52.7	105	51.9	104	2	70-130/25
142-28-9	1,3-Dichloropropane	50	54.6	109	52.0	104	5	70-130/25

5.2.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	47.4	95	45.5	91	4	70-130/25
563-58-6	1,1-Dichloropropene	50	56.2	112	54.7	109	3	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	51.2	102	49.8	100	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	54.2	108	52.5	105	3	70-130/25
123-91-1	1,4-Dioxane	250	272	109	231	92	16	70-130/25
97-63-2	Ethyl methacrylate	50	52.6	105	49.6	99	6	77-137/25
100-41-4	Ethylbenzene	50	55.8	112	53.9	108	3	70-130/25
87-68-3	Hexachlorobutadiene	50	55.0	110	54.1	108	2	70-130/25
591-78-6	2-Hexanone	50	44.7	89	40.4	81	10	70-130/25
98-82-8	Isopropylbenzene	50	63.7	127	62.2	124	2	70-130/25
99-87-6	p-Isopropyltoluene	50	56.1	112	54.2	108	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	54.1	108	51.2	102	6	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	50.4	101	46.1	92	9	70-130/25
74-95-3	Methylene bromide	50	55.7	111	54.8	110	2	70-130/25
75-09-2	Methylene chloride	50	54.0	108	53.3	107	1	70-130/25
91-20-3	Naphthalene	50	59.4	119	55.5	111	7	70-130/25
103-65-1	n-Propylbenzene	50	54.8	110	53.6	107	2	70-130/25
100-42-5	Styrene	50	58.1	116	57.4	115	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	61.9	124	60.3	121	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	58.3	117	54.5	109	7	70-130/25
127-18-4	Tetrachloroethene	50	57.5	115	55.1	110	4	70-130/25
108-88-3	Toluene	50	56.5	113	54.3	109	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	57.6	115	55.5	111	4	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	58.5	117	57.4	115	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	57.9	116	56.0	112	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	56.9	114	55.3	111	3	70-130/25
79-01-6	Trichloroethene	50	55.9	112	53.9	108	4	70-130/25
75-69-4	Trichlorofluoromethane	50	51.7	103	49.7	99	4	70-130/25
96-18-4	1,2,3-Trichloropropane	50	58.2	116	52.9	106	10	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.8	106	51.9	104	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	53.8	108	52.4	105	3	70-130/25
108-05-4	Vinyl Acetate	50	38.9	78	37.2	74	4	70-130/25
75-01-4	Vinyl chloride	50	54.3	109	49.3	99	10	70-130/25
	m,p-Xylene	100	113	113	110	110	3	70-130/25
95-47-6	o-Xylene	50	56.5	113	54.8	110	3	70-130/25
1330-20-7	Xylene (total)	150	169	113	165	110	2	70-130/25

5.2.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	104%	70-130%
2037-26-5	Toluene-D8	107%	107%	70-130%
460-00-4	4-Bromofluorobenzene	102%	102%	70-130%

- (a) Outside control limits. Associated samples are non-detect for this compound.
- (b) Outside control limits. Blank Spike meets program technical requirements.

5.2.2

5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC170-10MS	N52926.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10MSD	N52927.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10	N52925.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	MC170-10 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	27.1	54* a	26.7	53* a	1	70-130/30
107-02-8	Acrolein	ND	250	701	280* b	706	282* b	1	70-130/30
107-13-1	Acrylonitrile	ND	50	251	502* b	251	502* b	0	70-130/30
71-43-2	Benzene	ND	50	55.5	111	54.2	108	2	70-130/30
108-86-1	Bromobenzene	ND	50	56.7	113	57.5	115	1	70-130/30
74-97-5	Bromochloromethane	ND	50	55.0	110	53.1	106	4	70-130/30
75-27-4	Bromodichloromethane	ND	50	60.9	122	60.1	120	1	70-130/30
75-25-2	Bromoform	ND	50	53.7	107	52.6	105	2	70-130/30
74-83-9	Bromomethane	ND	50	53.3	107	57.2	114	7	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	35.6	71	34.7	69* a	3	70-130/30
104-51-8	n-Butylbenzene	ND	50	52.6	105	52.9	106	1	70-130/30
135-98-8	sec-Butylbenzene	ND	50	52.6	105	52.1	104	1	70-130/30
98-06-6	tert-Butylbenzene	ND	50	52.6	105	52.6	105	0	70-130/30
75-15-0	Carbon disulfide	ND	50	56.0	112	53.8	108	4	70-130/30
56-23-5	Carbon tetrachloride	ND	50	52.1	104	51.9	104	0	70-130/30
108-90-7	Chlorobenzene	ND	50	55.5	111	53.7	107	3	70-130/30
75-00-3	Chloroethane	ND	50	54.7	109	53.3	107	3	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	28.2	56* a	28.5	57* a	1	70-130/30
67-66-3	Chloroform	ND	50	54.4	109	52.8	106	3	70-130/30
74-87-3	Chloromethane	ND	50	54.4	109	52.9	106	3	70-130/30
95-49-8	o-Chlorotoluene	ND	50	52.1	104	51.8	104	1	70-130/30
106-43-4	p-Chlorotoluene	ND	50	54.5	109	53.8	108	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	48.6	97	50.7	101	4	70-130/30
124-48-1	Dibromochloromethane	ND	50	55.3	111	55.8	112	1	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	58.6	117	57.7	115	2	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	54.3	109	54.6	109	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	55.0	110	55.1	110	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	52.8	106	52.6	105	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	53.8	108	51.7	103	4	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	53.3	107	50.9	102	5	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	55.8	112	54.9	110	2	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	54.9	110	52.8	106	4	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	52.8	106	51.1	102	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	54.8	110	53.0	106	3	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	54.0	108	52.7	105	2	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	54.8	110	53.0	106	3	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC170-10MS	N52926.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10MSD	N52927.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10	N52925.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Compound	MC170-10 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	50	46.1	92	44.5	89	4	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	57.1	114	56.5	113	1	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	50.8	102	50.5	101	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	52.7	105	52.9	106	0	70-130/30
123-91-1	1,4-Dioxane	ND	250	260	104	265	106	2	70-130/30
97-63-2	Ethyl methacrylate	ND	50	52.3	105	52.5	105	0	72-139/30
100-41-4	Ethylbenzene	ND	50	56.6	113	55.0	110	3	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	53.8	108	56.2	112	4	70-130/30
591-78-6	2-Hexanone	ND	50	40.8	82	41.8	84	2	70-130/30
98-82-8	Isopropylbenzene	ND	50	63.1	126	62.4	125	1	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	54.0	108	53.8	108	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	53.8	108	53.3	107	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	50.6	101	50.6	101	0	70-130/30
74-95-3	Methylene bromide	ND	50	55.6	111	55.2	110	1	70-130/30
75-09-2	Methylene chloride	ND	50	54.1	108	52.0	104	4	70-130/30
91-20-3	Naphthalene	ND	50	54.6	109	58.1	116	6	70-130/30
103-65-1	n-Propylbenzene	ND	50	54.7	109	53.7	107	2	70-130/30
100-42-5	Styrene	ND	50	59.6	119	58.3	117	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	62.0	124	61.0	122	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	56.0	112	55.2	110	1	70-130/30
127-18-4	Tetrachloroethene	28.2	50	83.4	110	81.2	106	3	70-130/30
108-88-3	Toluene	ND	50	56.9	114	55.9	112	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	53.8	108	57.3	115	6	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	55.4	111	57.2	114	3	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	58.8	118	56.7	113	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	57.8	116	56.8	114	2	70-130/30
79-01-6	Trichloroethene	ND	50	56.9	114	55.5	111	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	52.4	105	51.0	102	3	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	54.8	110	54.6	109	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	52.0	104	51.4	103	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	53.2	106	52.3	105	2	70-130/30
108-05-4	Vinyl Acetate	ND	50	37.7	75	37.5	75	1	70-130/30
75-01-4	Vinyl chloride	ND	50	53.7	107	51.5	103	4	70-130/30
	m,p-Xylene	ND	100	116	116	113	113	3	70-130/30
95-47-6	o-Xylene	ND	50	57.8	116	56.1	112	3	70-130/30
1330-20-7	Xylene (total)	ND	150	174	116	169	113	3	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC170-10MS	N52926.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10MSD	N52927.D	1	05/23/11	JP	n/a	n/a	MSN1996
MC170-10	N52925.D	1	05/23/11	JP	n/a	n/a	MSN1996

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-1, MC135-2

CAS No.	Surrogate Recoveries	MS	MSD	MC170-10	Limits
1868-53-7	Dibromofluoromethane	104%	103%	100%	70-130%
2037-26-5	Toluene-D8	107%	107%	108%	70-130%
460-00-4	4-Bromofluorobenzene	99%	99%	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.

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC230-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	79.9	-408* a	58.6	-451* a	31* b		70-130/30
107-02-8	Acrolein	ND	250	664	266* c	672	269* c	1		70-130/30
107-13-1	Acrylonitrile	ND	50	232	464* c	232	464* c	0		70-130/30
71-43-2	Benzene	1.6	50	57.2	110	54.6	105	5		70-130/30
108-86-1	Bromobenzene	ND	50	57.1	114	57.6	115	1		70-130/30
74-97-5	Bromochloromethane	ND	50	53.9	108	52.7	105	2		70-130/30
75-27-4	Bromodichloromethane	ND	50	60.4	121	58.1	116	4		70-130/30
75-25-2	Bromoform	ND	50	53.0	106	53.6	107	1		70-130/30
74-83-9	Bromomethane	ND	50	48.1	96	53.6	107	11		70-130/30
78-93-3	2-Butanone (MEK)	ND	50	37.4	75	35.0	70	7		70-130/30
104-51-8	n-Butylbenzene	ND	50	50.6	101	52.4	105	3		70-130/30
135-98-8	sec-Butylbenzene	ND	50	52.9	106	52.0	104	2		70-130/30
98-06-6	tert-Butylbenzene	ND	50	53.0	106	52.5	105	1		70-130/30
75-15-0	Carbon disulfide	ND	50	52.5	105	50.3	101	4		70-130/30
56-23-5	Carbon tetrachloride	ND	50	53.7	107	51.1	102	5		70-130/30
108-90-7	Chlorobenzene	ND	50	55.0	110	53.5	107	3		70-130/30
75-00-3	Chloroethane	ND	50	53.9	108	51.0	102	6		70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	24.3	49* a	24.8	50* a	2		70-130/30
67-66-3	Chloroform	ND	50	53.1	106	51.5	103	3		70-130/30
74-87-3	Chloromethane	ND	50	53.8	108	50.3	101	7		70-130/30
95-49-8	o-Chlorotoluene	ND	50	52.5	105	52.1	104	1		70-130/30
106-43-4	p-Chlorotoluene	ND	50	54.5	109	54.1	108	1		70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	47.3	95	49.1	98	4		70-130/30
124-48-1	Dibromochloromethane	ND	50	56.0	112	54.7	109	2		70-130/30
106-93-4	1,2-Dibromoethane	ND	50	57.3	115	57.1	114	0		70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	54.5	109	54.3	109	0		70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	54.9	110	55.2	110	1		70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	52.1	104	52.3	105	0		70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	44.3	89	42.8	86	3		70-130/30
75-34-3	1,1-Dichloroethane	ND	50	51.4	103	49.5	99	4		70-130/30
107-06-2	1,2-Dichloroethane	ND	50	54.4	109	53.2	106	2		70-130/30
75-35-4	1,1-Dichloroethene	ND	50	52.2	104	50.9	102	3		70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	55.9	88	52.3	81	7		70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	53.4	107	51.3	103	4		70-130/30
78-87-5	1,2-Dichloropropane	ND	50	53.0	106	51.3	103	3		70-130/30
142-28-9	1,3-Dichloropropane	ND	50	53.8	108	52.8	106	2		70-130/30

5.3.2

5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC230-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	50	46.1	92	42.7	85	8	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	55.6	111	53.5	107	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	51.6	103	49.6	99	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	53.1	106	51.4	103	3	70-130/30
123-91-1	1,4-Dioxane	ND	250	269	108	252	101	7	70-130/30
97-63-2	Ethyl methacrylate	ND	50	52.5	105	52.8	106	1	72-139/30
100-41-4	Ethylbenzene	ND	50	57.7	107	55.5	103	4	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	52.7	105	55.8	112	6	70-130/30
591-78-6	2-Hexanone	ND	50	39.5	79	40.0	80	1	70-130/30
98-82-8	Isopropylbenzene	ND	50	63.5	127	62.7	125	1	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	54.2	108	54.6	109	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	53.6	107	52.2	104	3	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	53.0	61* a	50.8	56* a	4	70-130/30
74-95-3	Methylene bromide	ND	50	55.3	111	53.5	107	3	70-130/30
75-09-2	Methylene chloride	ND	50	51.1	102	49.4	99	3	70-130/30
91-20-3	Naphthalene	ND	50	52.7	105	57.9	116	9	70-130/30
103-65-1	n-Propylbenzene	ND	50	54.8	110	54.2	108	1	70-130/30
100-42-5	Styrene	ND	50	59.0	118	58.1	116	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	61.9	124	61.7	123	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	53.5	107	55.6	111	4	70-130/30
127-18-4	Tetrachloroethene	ND	50	59.2	115	57.1	111	4	70-130/30
108-88-3	Toluene	ND	50	68.3	47* a	60.6	32* a	12	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	51.5	103	55.6	111	8	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	53.2	106	57.3	115	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	58.3	117	55.2	110	5	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	56.0	112	54.4	109	3	70-130/30
79-01-6	Trichloroethene	ND	50	56.8	114	53.7	107	6	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	50.2	100	47.7	95	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	53.7	107	55.0	110	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	52.6	105	52.5	105	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	53.5	107	52.5	105	2	70-130/30
108-05-4	Vinyl Acetate	ND	50	40.2	80	39.1	78	3	70-130/30
75-01-4	Vinyl chloride	ND	50	51.6	103	47.1	94	9	70-130/30
	m,p-Xylene	ND	100	119	103	114	98	4	70-130/30
95-47-6	o-Xylene	ND	50	58.3	106	56.3	102	3	70-130/30
1330-20-7	Xylene (total)	ND	150	177	104	170	99	4	70-130/30

5.3.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Surrogate Recoveries	MS	MSD	MC230-2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	104%	70-130%
2037-26-5	Toluene-D8	108%	106%	107%	70-130%
460-00-4	4-Bromofluorobenzene	100%	101%	105%	70-130%

- (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.
- (c) Outside control limits. Associated samples are non-detect for this compound.

5.3.2
5

Volatile Internal Standard Area Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSN1996-CC1974	Injection Date:	05/23/11
Lab File ID:	N52907.D	Injection Time:	11:18
Instrument ID:	GCMSN	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	175988	8.60	281337	9.46	153468	12.70	127902	15.26	63907	6.18
Upper Limit ^a	351976	9.10	562674	9.96	306936	13.20	255804	15.76	127814	6.68
Lower Limit ^b	87994	8.10	140669	8.96	76734	12.20	63951	14.76	31954	5.68

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSN1996-BS	179820	8.60	288912	9.46	157984	12.70	127058	15.26	62877	6.18
MSN1996-BSD	177797	8.60	283554	9.46	156232	12.70	126942	15.26	62353	6.18
MSN1996-MB	171214	8.60	279868	9.46	143943	12.70	115745	15.26	60377	6.19
ZZZZZZ	170471	8.60	274130	9.46	142530	12.70	114412	15.26	62563	6.19
MC135-1	167945	8.60	275230	9.46	141893	12.70	113187	15.27	59085	6.18
ZZZZZZ	165701	8.60	273353	9.46	140938	12.70	111581	15.27	55845	6.19
MC135-2	176187	8.60	286844	9.46	154223	12.70	133170	15.26	62805	6.18
ZZZZZZ	179442	8.60	284858	9.46	147131	12.71	119193	15.26	61534	6.19
ZZZZZZ	176244	8.60	280696	9.46	146727	12.70	119673	15.26	63525	6.19
ZZZZZZ	179396	8.60	284055	9.46	146235	12.70	119356	15.26	79359	6.19
ZZZZZZ	178586	8.60	281674	9.46	144877	12.70	119905	15.26	67981	6.18
ZZZZZZ	179068	8.60	282080	9.46	145527	12.70	119890	15.26	67541	6.19
ZZZZZZ	179695	8.60	282184	9.46	145622	12.71	118614	15.27	66280	6.18
ZZZZZZ	174612	8.60	280205	9.46	145056	12.70	114925	15.26	67553	6.19
MC170-10	171766	8.60	280773	9.46	145757	12.70	114668	15.27	65074	6.19
MC170-10MS	172749	8.60	284050	9.46	154277	12.70	126050	15.26	66790	6.18
MC170-10MSD	175167	8.60	285118	9.46	156677	12.70	126567	15.26	71038	6.18
ZZZZZZ	172405	8.60	277642	9.46	144376	12.70	113759	15.26	71511	6.19
ZZZZZZ	170119	8.60	274835	9.46	144476	12.71	111723	15.26	69697	6.19
ZZZZZZ	168497	8.60	273358	9.46	143785	12.70	110228	15.26	70031	6.19
ZZZZZZ	165541	8.60	275036	9.46	141799	12.71	108600	15.26	64432	6.19

- 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.

5.4.1
5

Volatile Internal Standard Area Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSN1998-CC1974	Injection Date:	05/24/11
Lab File ID:	N52962.D	Injection Time:	13:22
Instrument ID:	GCMSN	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	157125	8.60	263476	9.46	147728	12.70	119469	15.26	63533	6.18
Upper Limit ^a	314250	9.10	526952	9.96	295456	13.20	238938	15.76	127066	6.68
Lower Limit ^b	78563	8.10	131738	8.96	73864	12.20	59735	14.76	31767	5.68

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSN1998-BS	164593	8.60	273142	9.46	150452	12.70	119473	15.26	68429	6.18
MSN1998-BSD	167925	8.60	276892	9.46	152482	12.70	120361	15.26	58411	6.18
MSN1998-MB	160970	8.60	268782	9.46	141631	12.70	110169	15.26	65759	6.18
MC135-4	164008	8.60	274470	9.46	145321	12.70	111269	15.27	69860	6.18
MC135-5	161020	8.60	268754	9.46	142132	12.70	106197	15.27	55041	6.19
ZZZZZZ	159947	8.60	267978	9.46	142890	12.70	108646	15.27	55904	6.19
MC135-3	164219	8.60	270634	9.46	142778	12.70	107482	15.26	54514	6.19
MC135-2	159970	8.60	264502	9.46	142599	12.70	108938	15.26	57475	6.19
ZZZZZZ	159495	8.60	267323	9.46	140270	12.70	104153	15.26	62634	6.19
ZZZZZZ	156196	8.60	263296	9.46	139044	12.70	102976	15.26	68859	6.18
ZZZZZZ	155239	8.60	259431	9.46	137633	12.70	104122	15.26	57643	6.19
ZZZZZZ	155021	8.60	261014	9.46	138798	12.70	101457	15.26	58018	6.19
ZZZZZZ	155158	8.60	261026	9.46	138238	12.71	104846	15.27	62699	6.19
ZZZZZZ	152692	8.60	254680	9.46	131640	12.71	89084	15.26	55760	6.19
ZZZZZZ	150324	8.60	256146	9.46	138029	12.70	101890	15.27	55969	6.19
ZZZZZZ	151569	8.60	252262	9.46	134682	12.70	101897	15.26	61502	6.19
ZZZZZZ	150443	8.60	252580	9.46	135824	12.70	101380	15.27	64935	6.19
ZZZZZZ	150229	8.60	256409	9.46	135114	12.71	98964	15.27	54744	6.19
MC230-2MS	176532	8.60	285271	9.46	155826	12.70	127197	15.26	63663	6.19
MC230-2MSD	181877	8.60	296206	9.46	159715	12.70	127937	15.26	66661	6.18

- 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.

5.4.2
5

Volatile Surrogate Recovery Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC135-1	N52913.D	101.0	108.0	100.0
MC135-2	N52971.D	105.0	110.0	104.0
MC135-2	N52915.D	100.0	106.0	101.0
MC135-3	N52970.D	102.0	109.0	107.0
MC135-4	N52967.D	105.0	108.0	106.0
MC135-5	N52968.D	105.0	108.0	105.0
MC170-10MS	N52926.D	104.0	107.0	99.0
MC170-10MSD	N52927.D	103.0	107.0	99.0
MC230-2MS	N52984.D	101.0	108.0	100.0
MC230-2MSD	N52985.D	102.0	106.0	101.0
MSN1996-BS	N52908.D	100.0	107.0	100.0
MSN1996-BSD	N52909.D	101.0	108.0	99.0
MSN1996-MB	N52911.D	101.0	105.0	100.0
MSN1998-BS	N52963.D	106.0	107.0	102.0
MSN1998-BSD	N52964.D	104.0	107.0	102.0
MSN1998-MB	N52966.D	105.0	107.0	103.0

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.5.1

5

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

Page 1 of 2

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-MB	S24019.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.2	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	

6.1.1

6

Method Blank Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-MB	S24019.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

6.1.1
6

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	59%	15-110%
4165-62-2	Phenol-d5	35%	15-110%
118-79-6	2,4,6-Tribromophenol	71%	15-110%
4165-60-0	Nitrobenzene-d5	89%	30-130%
321-60-8	2-Fluorobiphenyl	65%	30-130%
1718-51-0	Terphenyl-d14	86%	30-130%

Method Blank Summary

Job Number: MC135
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24918-MB	F52894.D	1	05/19/11	PR	05/13/11	OP24918	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	96%	30-130%
321-60-8	2-Fluorobiphenyl	69%	30-130%
1718-51-0	Terphenyl-d14	99%	30-130%

6.1.2
6

Blank Spike Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-BS	S24020.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	37.5	38	30-130
95-57-8	2-Chlorophenol	100	79.4	79	30-130
59-50-7	4-Chloro-3-methyl phenol	100	82.9	83	30-130
120-83-2	2,4-Dichlorophenol	100	82.0	82	30-130
105-67-9	2,4-Dimethylphenol	100	75.5	76	30-130
51-28-5	2,4-Dinitrophenol	100	73.8	74	30-130
534-52-1	4,6-Dinitro-o-cresol	100	81.3	81	30-130
95-48-7	2-Methylphenol	100	77.1	77	30-130
	3&4-Methylphenol	200	155	78	30-130
88-75-5	2-Nitrophenol	100	82.2	82	30-130
100-02-7	4-Nitrophenol	100	49.0	49	30-130
87-86-5	Pentachlorophenol	100	80.4	80	30-130
108-95-2	Phenol	100	37.0	37	30-130
95-95-4	2,4,5-Trichlorophenol	100	78.9	79	30-130
88-06-2	2,4,6-Trichlorophenol	100	79.7	80	30-130
62-53-3	Aniline	50	27.6	55	40-140
101-55-3	4-Bromophenyl phenyl ether	50	32.2	64	40-140
85-68-7	Butyl benzyl phthalate	50	17.2	34* a	40-140
100-51-6	Benzyl Alcohol	50	46.8	94	40-140
91-58-7	2-Chloronaphthalene	50	30.3	61	40-140
106-47-8	4-Chloroaniline	50	32.3	65	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	41.2	82	40-140
111-44-4	bis(2-Chloroethyl)ether	50	40.6	81	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	43.3	87	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	30.1	60	40-140
122-66-7	1,2-Diphenylhydrazine	50	44.7	89	40-140
121-14-2	2,4-Dinitrotoluene	50	40.4	81	40-140
606-20-2	2,6-Dinitrotoluene	50	38.5	77	40-140
91-94-1	3,3'-Dichlorobenzidine	50	34.2	68	40-140
132-64-9	Dibenzofuran	50	32.5	65	40-140
84-74-2	Di-n-butyl phthalate	50	26.2	52	40-140
117-84-0	Di-n-octyl phthalate	50	55.2	110	40-140
84-66-2	Diethyl phthalate	50	8.2	16* a	40-140
131-11-3	Dimethyl phthalate	50	0.73	2* a	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	53.4	107	40-140
118-74-1	Hexachlorobenzene	50	32.8	66	40-140

6.2.1

6

Blank Spike Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-BS	S24020.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	13.1	26* a	40-140
67-72-1	Hexachloroethane	50	29.9	60	40-140
78-59-1	Isophorone	50	41.3	83	40-140
90-12-0	1-Methylnaphthalene	50	29.7	59	40-140
88-74-4	2-Nitroaniline	50	42.4	85	40-140
99-09-2	3-Nitroaniline	50	29.5	59	40-140
100-01-6	4-Nitroaniline	50	34.3	69	40-140
98-95-3	Nitrobenzene	50	41.0	82	40-140
62-75-9	n-Nitrosodimethylamine	50	28.6	57	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	52.6	105	40-140
86-30-6	N-Nitrosodiphenylamine	50	40.2	80	40-140
110-86-1	Pyridine	50	24.8	50	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	60%	15-110%
4165-62-2	Phenol-d5	37%	15-110%
118-79-6	2,4,6-Tribromophenol	77%	15-110%
4165-60-0	Nitrobenzene-d5	88%	30-130%
321-60-8	2-Fluorobiphenyl	69%	30-130%
1718-51-0	Terphenyl-d14	85%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1
6

Blank Spike Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24918-BS	F52895.D	1	05/19/11	PR	05/13/11	OP24918	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	31.4	63	40-140
208-96-8	Acenaphthylene	50	26.7	53	40-140
120-12-7	Anthracene	50	35.4	71	40-140
56-55-3	Benzo(a)anthracene	50	47.4	95	40-140
50-32-8	Benzo(a)pyrene	50	26.5	53	40-140
205-99-2	Benzo(b)fluoranthene	50	33.7	67	40-140
191-24-2	Benzo(g,h,i)perylene	50	45.6	91	40-140
207-08-9	Benzo(k)fluoranthene	50	26.0	52	40-140
218-01-9	Chrysene	50	39.0	78	40-140
53-70-3	Dibenzo(a,h)anthracene	50	44.7	89	40-140
206-44-0	Fluoranthene	50	43.8	88	40-140
86-73-7	Fluorene	50	43.2	86	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	40.0	80	40-140
91-57-6	2-Methylnaphthalene	50	40.7	81	40-140
91-20-3	Naphthalene	50	36.4	73	40-140
85-01-8	Phenanthrene	50	37.2	74	40-140
129-00-0	Pyrene	50	41.7	83	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	96%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	101%	30-130%

6.2.2

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-MS	S24021.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020
OP24917-MSD	S24022.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020
MC148-2	S24024.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC148-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	13.4	104	37.5	23* a	20.4	7* a	59* b	30-130/20
95-57-8	2-Chlorophenol	ND	104	78.9	76	60.0	58	27* b	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	104	81.5	78	66.8	65	20	30-130/20
120-83-2	2,4-Dichlorophenol	ND	104	77.8	75	62.5	61	22* b	30-130/20
105-67-9	2,4-Dimethylphenol	ND	104	73.6	71	57.1	55	25* b	30-130/20
51-28-5	2,4-Dinitrophenol	ND	104	78.7	76	44.1	43	56* b	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	104	81.9	79	56.3	55	37* b	30-130/20
95-48-7	2-Methylphenol	ND	104	77.4	74	59.3	58	26* b	30-130/20
	3&4-Methylphenol	ND	208	155	74	118	57	27* b	30-130/20
88-75-5	2-Nitrophenol	ND	104	79.6	76	62.8	61	24* b	30-130/20
100-02-7	4-Nitrophenol	ND	104	51.2	49	40.1	39	24* b	30-130/20
87-86-5	Pentachlorophenol	ND	104	33.8	32	27.9	27* a	19	30-130/20
108-95-2	Phenol	ND	104	39.2	38	30.1	29* a	26* b	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	104	71.2	68	58.4	57	20	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	104	71.0	68	57.1	55	22* b	30-130/20
62-53-3	Aniline	ND	52.1	25.7	49	19.9	39* a	25* b	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	52.1	34.7	67	27.7	54	22* b	40-140/20
85-68-7	Butyl benzyl phthalate	ND	52.1	35.3	68	29.7	58	17	40-140/20
100-51-6	Benzyl Alcohol	ND	52.1	45.1	87	34.9	68	26* b	40-140/20
91-58-7	2-Chloronaphthalene	ND	52.1	35.7	69	27.9	54	25* b	40-140/20
106-47-8	4-Chloroaniline	ND	52.1	29.7	57	27.2	53	9	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	52.1	44.7	86	34.0	66	27* b	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	52.1	44.5	85	32.7	63	31* b	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	52.1	48.9	94	35.6	69	31* b	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	52.1	33.7	65	27.0	52	22* b	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND	52.1	49.0	94	38.7	75	23* b	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	52.1	46.7	90	35.6	69	27* b	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	52.1	42.5	82	33.0	64	25* b	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	52.1	27.5	53	29.3	57	6	40-140/20
132-64-9	Dibenzofuran	4.2	52.1	41.7	72	32.8	55	24* b	40-140/20
84-74-2	Di-n-butyl phthalate	1.2	52.1	44.9	84	36.4	68	21* b	40-140/20
117-84-0	Di-n-octyl phthalate	ND	52.1	42.9	82	34.2	66	23* b	40-140/20
84-66-2	Diethyl phthalate	1.0	52.1	33.9	63	26.7	50	24* c	40-140/20
131-11-3	Dimethyl phthalate	ND	52.1	15.0	29* c	12.0	23* c	22* c	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	2.5	B 52.1	43.7	79	36.4	66	18	40-140/20
118-74-1	Hexachlorobenzene	ND	52.1	31.1	60	25.4	49	20	40-140/20

6.3.1

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24917-MS	S24021.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020
OP24917-MSD	S24022.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020
MC148-2	S24024.D	1	05/17/11	PR	05/13/11	OP24917	MSS1020

The QC reported here applies to the following samples:

Method: SW846 8270C

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC148-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND	52.1	13.4	26* c	10.1	20* c	28* c	40-140/20
67-72-1	Hexachloroethane	ND	52.1	37.4	72	26.2	51	35* b	40-140/20
78-59-1	Isophorone	ND	52.1	44.0	84	34.3	67	25* b	40-140/20
90-12-0	1-Methylnaphthalene	175	52.1	231	108	169	-12* d	31* d	40-140/20
88-74-4	2-Nitroaniline	ND	52.1	50.2	96	38.0	74	28* b	40-140/20
99-09-2	3-Nitroaniline	ND	52.1	27.9	54	28.1	55	1	40-140/20
100-01-6	4-Nitroaniline	ND	52.1	40.0	77	31.4	61	24* b	40-140/20
98-95-3	Nitrobenzene	ND	52.1	51.8	99	39.1	76	28* b	40-140/20
62-75-9	n-Nitrosodimethylamine	ND	52.1	30.6	59	22.8	44	29* b	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	52.1	57.3	110	41.5	81	32* b	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	52.1	47.5	91	37.8	73	23* b	40-140/20
110-86-1	Pyridine	ND	52.1	29.7	57	21.1	41	34* b	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC148-2	Limits
367-12-4	2-Fluorophenol	58%	44%	55%	15-110%
4165-62-2	Phenol-d5	38%	30%	34%	15-110%
118-79-6	2,4,6-Tribromophenol	63%	51%	65%	15-110%
4165-60-0	Nitrobenzene-d5	89%	68%	91%	30-130%
321-60-8	2-Fluorobiphenyl	72%	56%	75%	30-130%
1718-51-0	Terphenyl-d14	61%	52%	69%	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.
- (c) Outside control limits. Blank Spike meets program technical requirements.
- (d) Outside control limits due to high level in sample relative to spike amount.

6.3.1
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24918-MS	F52896.D	1	05/19/11	PR	05/13/11	OP24918	MSF2555
OP24918-MSD	F52897.D	1	05/19/11	PR	05/13/11	OP24918	MSF2555
MC571-1	F52898.D	1	05/19/11	PR	05/13/11	OP24918	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC571-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	6.6	52.1	42.5	69	34.4	54	21* a	40-140/20
208-96-8	Acenaphthylene	ND	52.1	32.4	62	25.9	50	22* a	40-140/20
120-12-7	Anthracene	0.40	52.1	38.7	74	31.6	61	20	40-140/20
56-55-3	Benzo(a)anthracene	ND	52.1	43.1	83	35.2	68	20	40-140/20
50-32-8	Benzo(a)pyrene	ND	52.1	21.2	41	17.9	35* b	17	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	52.1	25.5	49	22.1	43	14	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	52.1	33.1	64	23.3	45	35* a	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	52.1	21.1	41	18.3	36* b	14	40-140/20
218-01-9	Chrysene	ND	52.1	34.3	66	29.0	56	17	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND	52.1	33.9	65	24.6	48	32* a	40-140/20
206-44-0	Fluoranthene	0.041	52.1	44.3	85	37.0	72	18	40-140/20
86-73-7	Fluorene	10.0	52.1	55.5	87	44.2	66	23* a	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	52.1	29.9	57	21.4	42	33* a	40-140/20
91-57-6	2-Methylnaphthalene	143	E 52.1	205	119	137	-12* c	40* a	40-140/20
91-20-3	Naphthalene	ND	52.1	47.3	91	37.0	72	24* a	40-140/20
85-01-8	Phenanthrene	7.6	52.1	46.2	74	37.5	58	21* a	40-140/20
129-00-0	Pyrene	0.062	52.1	40.6	78	31.7	61	25* a	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC571-1	Limits
4165-60-0	Nitrobenzene-d5	106%	78%	103%	30-130%
321-60-8	2-Fluorobiphenyl	72%	57%	73%	30-130%
1718-51-0	Terphenyl-d14	75%	63%	80%	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.

(c) Outside control limits due to high level in sample relative to spike amount.

6.3.2

6

Semivolatile Internal Standard Area Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2555-CC2545	Injection Date:	05/19/11
Lab File ID:	F52892.D	Injection Time:	12:11
Instrument ID:	GCMSF	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	18444	5.09	71649	6.33	43382	8.68	82445	11.14	93766	16.07	58701	18.57
Upper Limit ^a	36888	5.59	143298	6.83	86764	9.18	164890	11.64	187532	16.57	117402	19.07
Lower Limit ^b	9222	4.59	35825	5.83	21691	8.18	41223	10.64	46883	15.57	29351	18.07

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	167915 ^c	5.10	618534 ^c	6.33	368886 ^c	8.68	697854 ^c	11.15	816040 ^c	16.07	725917 ^c	18.58
OP24918-MB	151184 ^c	5.09	584649 ^c	6.33	333842 ^c	8.68	641380 ^c	11.15	711447 ^c	16.07	638178 ^c	18.58
OP24918-BS	207300 ^c	5.10	727337 ^c	6.35	451757 ^c	8.68	849974 ^c	11.15	887355 ^c	16.07	790440 ^c	18.59
OP24918-MS	210538 ^c	5.10	717182 ^c	6.34	447394 ^c	8.70	782200 ^c	11.15	854758 ^c	16.07	856290 ^c	18.59
OP24918-MSD	178398 ^c	5.10	604450 ^c	6.34	375413 ^c	8.70	665017 ^c	11.15	791582 ^c	16.08	743774 ^c	18.58
MC571-1	157040 ^c	5.10	542237 ^c	6.33	341833 ^c	8.68	642293 ^c	11.15	740994 ^c	16.07	677089 ^c	18.58
OP24929-MB	105820 ^c	5.09	398115 ^c	6.33	231101 ^c	8.68	433447 ^c	11.14	492289 ^c	16.07	453551 ^c	18.58
OP24929-BS	170488 ^c	5.10	596127 ^c	6.35	364123 ^c	8.68	691966 ^c	11.15	763884 ^c	16.07	736030 ^c	18.59
OP24929-MS	158395 ^c	5.10	537380 ^c	6.34	325547 ^c	8.68	641549 ^c	11.15	697541 ^c	16.07	691030 ^c	18.58
OP24929-MSD	153010 ^c	5.10	530824 ^c	6.33	334055 ^c	8.68	617128 ^c	11.15	677665 ^c	16.07	654898 ^c	18.58
MC167-5	136469 ^c	5.10	486180 ^c	6.33	292179 ^c	8.68	552730 ^c	11.15	638081 ^c	16.07	576664 ^c	18.58
ZZZZZZ	120639 ^c	5.10	451014 ^c	6.33	264594 ^c	8.68	499816 ^c	11.14	583646 ^c	16.07	533814 ^c	18.58
ZZZZZZ	125006 ^c	5.10	469527 ^c	6.33	276292 ^c	8.68	509533 ^c	11.14	591806 ^c	16.07	537104 ^c	18.58
ZZZZZZ	102199 ^c	5.10	388227 ^c	6.33	230641 ^c	8.68	421870 ^c	11.14	493924 ^c	16.07	506054 ^c	18.58
ZZZZZZ	129461 ^c	5.10	476545 ^c	6.33	289033 ^c	8.68	518260 ^c	11.14	596461 ^c	16.07	545386 ^c	18.58
OP24943-MB	152011 ^c	5.10	543561 ^c	6.33	295247 ^c	8.68	548184 ^c	11.14	625222 ^c	16.07	579134 ^c	18.58
OP24943-BS	196381 ^c	5.10	670840 ^c	6.33	369546 ^c	8.68	700916 ^c	11.15	774084 ^c	16.07	765289 ^c	18.58
OP24943-MS	180499 ^c	5.10	655327 ^c	6.33	397904 ^c	8.68	756242 ^c	11.15	816500 ^c	16.08	787380 ^c	18.58
OP24943-MSD	182229 ^c	5.10	634815 ^c	6.33	353583 ^c	8.68	662710 ^c	11.15	723012 ^c	16.07	722122 ^c	18.58
MC230-2	169247 ^c	5.09	679259 ^c	6.33	358287 ^c	8.68	622642 ^c	11.14	734499 ^c	16.07	664362 ^c	18.58

- 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 10x concentration.

6.4.1
6

Semivolatile Internal Standard Area Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2559-CC2545	Injection Date:	05/24/11
Lab File ID:	F52993.D	Injection Time:	09:34
Instrument ID:	GCMSF	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	22635	5.09	80324	6.33	47540	8.68	86596	11.14	98611	16.05	86862	18.56
Upper Limit ^a	45270	5.59	160648	6.83	95080	9.18	173192	11.64	197222	16.55	173724	19.06
Lower Limit ^b	11318	4.59	40162	5.83	23770	8.18	43298	10.64	49306	15.55	43431	18.06

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP25008-MB	13074	5.09	45820	6.33	24810	8.67	46559	11.12	51716	16.05	49350	18.56
OP25008-BS	14415	5.09	50670	6.33	30263	8.68	54216	11.14	62539	16.05	65404	18.56
OP25008-MS	14534	5.09	51971	6.33	30252	8.68	54232	11.14	63920	16.06	65485	18.56
OP25008-MSD	15964	5.09	57026	6.33	33672	8.68	60964	11.14	66006	16.06	73730	18.56
MC417-1	12989	5.09	44170	6.33	24201	8.67	45029	11.12	50703	16.05	45913	18.56
ZZZZZ	10137 ^c	5.09	33254 ^c	6.33	18773 ^c	8.68	35126 ^c	11.12	39705 ^c	16.05	40090 ^c	18.56
ZZZZZ	9831 ^c	5.09	33836 ^c	6.33	18893 ^c	8.68	34843 ^c	11.12	40265 ^c	16.05	42564 ^c	18.56
MC135-2	150249 ^d	5.09	529885 ^d	6.33	322532 ^d	8.68	577014 ^d	11.14	656535 ^d	16.06	675799 ^d	18.57
ZZZZZ	10570 ^c	5.09	34534 ^c	6.32	18920 ^c	8.67	36787 ^c	11.12	41575 ^c	16.05	43121 ^c	18.56
ZZZZZ	7845 ^c	5.09	26686 ^c	6.33	14788 ^c	8.68	28321 ^c	11.12	32905 ^c	16.05	36714 ^c	18.56
MC135-3	161741 ^d	5.09	564029 ^d	6.33	340780 ^d	8.68	622203 ^d	11.14	716330 ^d	16.06	892734 ^d	18.57
MC135-4	136227 ^d	5.09	464192 ^d	6.33	277511 ^d	8.68	500616 ^d	11.14	606253 ^d	16.06	699244 ^d	18.57
MC135-5	158188 ^d	5.09	557678 ^d	6.33	330880 ^d	8.68	606169 ^d	11.14	692149 ^d	16.06	824435 ^d	18.57
OP24956-MB	124783 ^d	5.09	469265 ^d	6.33	247793 ^d	8.68	458959 ^d	11.12	543072 ^d	16.05	669424 ^d	18.57
OP24956-BS	141762 ^d	5.09	547180 ^d	6.33	328778 ^d	8.68	571845 ^d	11.14	583599 ^d	16.06	758829 ^d	18.57
OP24956-MS	150250 ^d	5.09	561419 ^d	6.33	330758 ^d	8.68	570787 ^d	11.14	598617 ^d	16.06	776347 ^d	18.57
OP24956-MSD	154525 ^d	5.09	582683 ^d	6.33	346613 ^d	8.68	589277 ^d	11.14	612843 ^d	16.06	790728 ^d	18.58
MC308-2	106659 ^d	5.09	370175 ^d	6.33	215082 ^d	8.68	392533 ^d	11.12	456764 ^d	16.05	571158 ^d	18.57
ZZZZZ	9145 ^e	5.09	31546 ^e	6.33	17806 ^e	8.67	32266 ^e	11.12	35797 ^e	16.05	39326 ^e	18.56
ZZZZZ	12390	5.09	42129	6.33	25645	8.68	47392	11.12	57022	16.05	81667	18.56
ZZZZZ	15998	5.10	71430	6.33	33449	8.68	57925	11.14	58103	16.05	86665	18.56

- 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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- (d) Internal standard spiked at 10x concentration.
- (e) Outside control limits due to possible matrix interference.

6.4.2
6

Semivolatile Internal Standard Area Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1020-CC1009	Injection Date:	05/17/11
Lab File ID:	S24018.D	Injection Time:	18:30
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6						
	AREA	RT	AREA	RT	AREA	RT						
Check Std	184684	6.55	703081	7.95	407704	10.23	810941	12.47	994553	16.84	936423	19.08
Upper Limit ^a	369368	7.05	1406162	8.45	815408	10.73	1621882	12.97	1989106	17.34	1872846	19.58
Lower Limit ^b	92342	6.05	351541	7.45	203852	9.73	405471	11.97	497277	16.34	468212	18.58

Lab Sample ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
	AREA	RT	AREA	RT	AREA	RT
OP24917-MB	198750	6.56	742880	7.95	454977	10.22
OP24917-BS	213243	6.56	808352	7.95	474310	10.23
OP24917-MS	218293	6.56	862104	7.96	522750	10.23
OP24917-MSD	213828	6.56	828496	7.95	503706	10.23
ZZZZZZ	193659	6.56	738105	7.95	445006	10.22
MC148-2	189798	6.56	745626	7.95	471391	10.22
ZZZZZZ	198462	6.55	788957	7.95	499115	10.22
ZZZZZZ	188554	6.56	744592	7.95	457429	10.23
ZZZZZZ	193801	6.56	739494	7.95	451346	10.23
ZZZZZZ	198774	6.56	748983	7.95	470782	10.22
ZZZZZZ	179334	6.56	681867	7.95	416355	10.22
ZZZZZZ	171606	6.56	683639	7.95	460446	10.22
ZZZZZZ	191356	6.56	710934	7.95	428943	10.22
ZZZZZZ	186727	6.56	745884	7.95	451664	10.22
ZZZZZZ	170448	6.56	613366	7.95	376625	10.22
ZZZZZZ	162563	6.56	595590	7.96	359904	10.22
ZZZZZZ	187962	6.56	704639	7.95	435480	10.23
ZZZZZZ	185769	6.56	702560	7.95	435585	10.22
MC135-2	176966	6.56	689394	7.95	423340	10.23
MC135-3	184700	6.56	693844	7.95	444605	10.22
MC135-4	171317	6.56	655688	7.95	408441	10.22
MC135-5	178608	6.56	663490	7.95	409964	10.22
ZZZZZZ	186858	6.56	695555	7.95	430720	10.22
ZZZZZZ	181874	6.56	684014	7.95	434660	10.22
ZZZZZZ	180312	6.56	686758	7.95	426730	10.22
ZZZZZZ	180149	6.55	681785	7.95	415516	10.22
ZZZZZZ	214197	6.56	783322	7.95	462925	10.22
ZZZZZZ	206595	6.56	758243	7.95	448068	10.22

- 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

6.4.3
6

Semivolatile Internal Standard Area Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1020-CC1009	Injection Date:	05/17/11
Lab File ID:	S24018.D	Injection Time:	18:30
Instrument ID:	GCMSS	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.

6.4.3

6

Semivolatile Surrogate Recovery Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC135-2	S24037.D	44.0	26.0	49.0	65.0	60.0	58.0
MC135-3	S24038.D	35.0	25.0	42.0	55.0	49.0	54.0
MC135-4	S24039.D	54.0	34.0	64.0	75.0	65.0	53.0
MC135-5	S24040.D	49.0	29.0	58.0	73.0	63.0	54.0
OP24917-BS	S24020.D	60.0	37.0	77.0	88.0	69.0	85.0
OP24917-MB	S24019.D	59.0	35.0	71.0	89.0	65.0	86.0
OP24917-MS	S24021.D	58.0	38.0	63.0	89.0	72.0	61.0
OP24917-MSD	S24022.D	44.0	30.0	51.0	68.0	56.0	52.0

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%

6.5.1

6

Semivolatile Surrogate Recovery Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Method: SW846 8270C BY SIM	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC135-2	F53001.D	83.0	61.0	75.0
MC135-3	F53002.D	66.0	53.0	67.0
MC135-4	F53003.D	86.0	65.0	65.0
MC135-5	F53004.D	88.0	66.0	67.0
OP24918-BS	F52895.D	96.0	68.0	101.0
OP24918-MB	F52894.D	96.0	69.0	99.0
OP24918-MS	F52896.D	106.0	72.0	75.0
OP24918-MSD	F52897.D	78.0	57.0	63.0

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

6.5.2
6

GC Volatiles

QC Data Summaries

7

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: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-MB	BK2979.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC135-1, MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	Bromofluorobenzene (S)	108% 36-173%
460-00-4	Bromofluorobenzene (S)	105% 36-173%

7.1.1
7

Blank Spike Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-BS	BK2980.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC135-1, MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.069	97	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	97%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	36-173%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-MS	BK2981.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
OP24963-MSD	BK2982.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
MC19-7	BK2990.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC135-1, MC135-2, MC135-3, MC135-4, MC135-5

CAS No.	Compound	MC19-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND		0.0774	0.080	103	0.081	94	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC19-7	Limits
460-00-4	Bromofluorobenzene (S)	134%	94%	118%	36-173%
460-00-4	Bromofluorobenzene (S)	136%	91%	111%	36-173%

7.3.1

7

Volatile Surrogate Recovery Summary

Job Number: MC135

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC135-1	BK2991.D	114.0	112.0
MC135-2	BK2992.D	107.0	107.0
MC135-3	BK2993.D	132.0	130.0
MC135-4	BK2994.D	103.0	103.0
MC135-5	BK2995.D	152.0	145.0
OP24963-BS	BK2980.D	97.0	95.0
OP24963-MB	BK2979.D	108.0	105.0
OP24963-MS	BK2981.D	134.0	136.0
OP24963-MSD	BK2982.D	94.0	91.0

Surrogate Compounds **Recovery Limits**

S1 = Bromofluorobenzene (S) 36-173%

(a) Recovery from GC signal #1

(b) Recovery from GC signal #2

7.4.1
7

GC Surrogate Retention Time Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-ICC120	Injection Date:	05/19/11
Lab File ID:	BK2971.D	Injection Time:	09:46
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.90	5.48

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
ZZZZZZ	BK2978.D	05/19/11	12:52	4.91	5.48
OP24963-MB	BK2979.D	05/19/11	13:18	4.90	5.48
OP24963-BS	BK2980.D	05/19/11	13:45	4.91	5.49
OP24963-MS	BK2981.D	05/19/11	14:12	4.90	5.48
OP24963-MSD	BK2982.D	05/19/11	14:38	4.91	5.48
ZZZZZZ	BK2983.D	05/19/11	15:05	4.90	5.48
ZZZZZZ	BK2984.D	05/19/11	15:31	4.90	5.49
ZZZZZZ	BK2985.D	05/19/11	15:58	4.91	5.48
ZZZZZZ	BK2986.D	05/19/11	16:25	4.91	5.49
ZZZZZZ	BK2987.D	05/19/11	16:51	4.91	5.49

**Surrogate
Compounds**

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.1
7

GC Surrogate Retention Time Summary

Job Number: MC135
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-CC120	Injection Date:	05/19/11
Lab File ID:	BK2988.D	Injection Time:	17:18
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.91	5.49

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
ZZZZZZ	BK2989.D	05/19/11	17:44	4.91	5.49
MC19-7	BK2990.D	05/19/11	18:11	4.91	5.49
MC135-1	BK2991.D	05/19/11	18:37	4.91	5.49
MC135-2	BK2992.D	05/19/11	19:04	4.91	5.49
MC135-3	BK2993.D	05/19/11	19:31	4.91	5.49
MC135-4	BK2994.D	05/19/11	19:57	4.91	5.48
MC135-5	BK2995.D	05/19/11	20:24	4.91	5.49
OP24964-MB	BK2996.D	05/19/11	20:50	4.91	5.48
OP24964-BS	BK2997.D	05/19/11	21:16	4.91	5.48
OP24964-MS	BK2998.D	05/19/11	21:43	4.91	5.48

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.2
7

Roxana Groundwater Quarterly – 2nd Quarter 2011

Laboratory SDG: M99799

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 06/21/2011

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

Sample Identification	Sample Identification
MW10-ROX-042811	TB-ROX-042811
MW1-ROX-042911	MW2-ROX-042911EB

1.0 Data Package Completeness

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

Yes, however 1,2-dibromoethane and PAHs were analyzed by EPA Methods 8260 and 8270. Sample containers for analysis by EPA Methods 8011 and 8270 SIM were supplied subsequently. No qualification of data was required.

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 the VOC LCS/LCSD recoveries were outside of evaluation criteria for several analytes. The SVOC LCS/LCSD recoveries were outside of evaluation criteria for several analytes. Several SVOC target analytes were found in the method blank. Additionally, professional judgment was used to qualify acetone in samples MW10-ROX-042811 and MW1-ROX-042911. 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
OP24811-MB	SVOCs	Di-n-butyl phthalate	1.3 µg/L
OP24811-MB	SVOCs	Diethyl phthalate	0.77 µg/L
OP24811-MB	SVOCs	bis(2-Ethylhexyl)phthalate	0.54 µg/L

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

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW10-ROX-042811	SVOCs	Di-n-butyl phthalate	--	U
MW10-ROX-042811	SVOCs	bis(2-Ethylhexyl)phthalate	--	U
MW1-ROX-042911	SVOCs	Di-n-butyl phthalate	--	U
MW1-ROX-042911	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
MSL1751-BS/BSD	VOCs	Acrolein	301/300	0	70-130/25
MSL1751-BS/BSD	VOCs	Bromomethane	64/62	3	70-130/25
MSL1751-BS/BSD	VOCs	Dichlorodifluoromethane	60/58	3	70-130/25
MSL1751-BS/BSD	VOCs	1,2-Dichloroethane	130/136	5	70-130/25
OP24811-BS/BSD	SVOCs	Benzoic Acid	29/32	9	30-130/20
OP24811-BS/BSD	SVOCs	Phenol	24/27	15	30-130/20
OP24811-BS/BSD	SVOCs	3,3'-Dichlorobenzidine	36/43	18	40-140/20
OP24811-BS/BSD	SVOCs	Hexachlorocyclopentadiene	33/38	12	40-140/20
OP24811-BS/BSD	SVOCs	1-Methylnaphthalene	0/0	NA	40-140/20
OP24811-BS/BSD	SVOCs	n-Nitrosodimethylamine	35/35	1	40-140/20
OP24811-BS/BSD	SVOCs	Pyridine	34/35	3	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.

Field ID	Parameter	Analyte	Qualification
MW10-ROX-042811	VOCs	Bromomethane	UJ
MW10-ROX-042811	VOCs	Dichlorodifluoromethane	UJ
MW10-ROX-042811	SVOCs	Benzoic Acid	UJ
MW10-ROX-042811	SVOCs	Phenol	UJ
MW10-ROX-042811	SVOCs	3,3'-Dichlorobenzidine	UJ
MW10-ROX-042811	SVOCs	Hexachlorocyclopentadiene	UJ
MW10-ROX-042811	PAHs	1-Methylnaphthalene	R
MW10-ROX-042811	SVOCs	n-Nitrosodimethylamine	UJ
MW10-ROX-042811	SVOCs	Pyridine	UJ

Field ID	Parameter	Analyte	Qualification
MW1-ROX-042911	VOCs	Bromomethane	UJ
MW1-ROX-042911	VOCs	Dichlorodifluoromethane	UJ
MW1-ROX-042911	SVOCs	Benzoic Acid	UJ
MW1-ROX-042911	SVOCs	Phenol	UJ
MW1-ROX-042911	SVOCs	3,3'-Dichlorobenzidine	UJ
MW1-ROX-042911	SVOCs	Hexachlorocyclopentadiene	UJ
MW1-ROX-042911	PAHs	1-Methylnaphthalene	R
MW1-ROX-042911	SVOCs	n-Nitrosodimethylamine	UJ
MW1-ROX-042911	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?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected 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 a 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 (2X) the reporting limit (RL), since acetone is not representative of site conditions.

Sample ID	Analyte	New RL	Qualification	Comment
MW10-ROX-042811	Acetone	8.8 µg/L	U	Professional Judgment
MW1-ROX-042911	Acetone	14.5 µg/L	U	Professional Judgment



06/03/11

Technical Report for

Shell Oil

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

INC#97216640 SAP#340061

Accutest Job Number: M99799

Sampling Dates: 04/28/11 - 04/29/11

Report to:

URS Corporation

Elizabeth_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

*Reviewed
6/11/2011
Web*

Total number of pages in report: 57



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.

Reza Fand
Reza Fand
Lab Director

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) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.

Table of Contents

Sections:



Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Sample Results	6
3.1: M99799-1: MW10-ROX-042811	7
3.2: M99799-2: TB-ROX-042811	13
3.3: M99799-3: MW1-ROX-042911	16
3.4: M99799-4: MW2-ROX-042911 EB	22
Section 4: Misc. Forms	28
4.1: Chain of Custody	29
4.2: Sample Tracking Chronicle	30
4.3: Internal Chain of Custody	31
Section 5: GC/MS Volatiles - QC Data Summaries	32
5.1: Method Blank Summary	33
5.2: Blank Spike/Blank Spike Duplicate Summary	36
5.3: Matrix Spike/Matrix Spike Duplicate Summary	39
5.4: Internal Standard Area Summaries	42
5.5: Surrogate Recovery Summaries	43
Section 6: GC/MS Semi-volatiles - QC Data Summaries	44
6.1: Method Blank Summary	45
6.2: Blank Spike/Blank Spike Duplicate Summary	48
6.3: Matrix Spike/Matrix Spike Duplicate Summary	51
6.4: Internal Standard Area Summaries	54
6.5: Surrogate Recovery Summaries	57

Sample Summary

Shell Oil

Job No: M99799

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Project No: INC#97216640 SAP#340061

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M99799-1	04/28/11	15:15	NSTA 04/30/11	AQ	Ground Water	MW10-ROX-042811
M99799-2	04/28/11	00:00	NSTA 04/30/11	AQ	Trip Blank Water	TB-ROX-042811
M99799-3	04/29/11	12:40	NSTA 04/30/11	AQ	Ground Water	MW1-ROX-042911
M99799-4	04/29/11	15:00	NSTA 04/30/11	AQ	Equipment Blank	MW2-ROX-042911 EB

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil Job No M99799
 Site: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Report Date 5/17/2011 12:05:06 PM

3 Sample(s), 1 Trip Blank were collected on between 04/28/2011 and 04/29/2011 and were received at Accutest on 04/30/2011 properly preserved, at 2.1 Deg. C and intact. These Samples received an Accutest job number of M99799. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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: MSL1751
-----------	-------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) M99784-1MS, M99784-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Acrolein, Bromomethane, Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 1,2-Dichloroethane, 2-Chloroethyl vinyl ether, 4-Methyl-2-pentanone (MIBK), Bromomethane, Dichlorodifluoromethane, Isopropylbenzene, Methyl Tert Butyl EtHe are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 1,2-Dichloroethane, 4-Methyl-2-pentanone (MIBK), Dichlorodifluoromethane, 2-Chloroethyl vinyl ether are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 2-Chloroethyl vinyl ether are outside control limits for sample M99784-1MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MSL1751-BS/BS/MS/MS for Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- Blank Spike Duplicate Recovery(s) for 1-Methylnaphthalene, Hexachlorocyclopentadiene, n-Nitrosodimethylamine, Phenol, Pyridine are outside control limits. Blank Spike meets program technical requirements.
- Blank Spike Duplicate Recovery(s) for Bromomethane, Dichlorodifluoromethane, 1,2-Dichloroethane are outside control limits. Blank Spike meets program technical requirements.

Extractables by GCMS By Method SW846 8270C

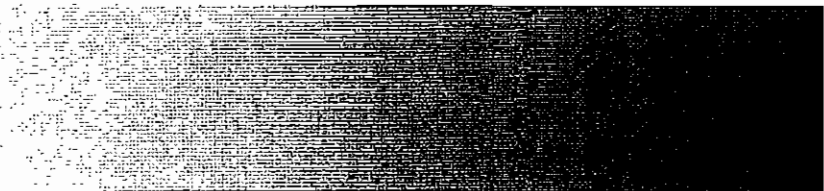
Matrix AQ	Batch ID: OP24811
-----------	-------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) M99844-2MS, M99844-2MSD were used as the QC samples indicated.
- Sample(s) M99799-1, M99799-3, M99799-4 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Blank Spike Recovery(s) for 1-Methylnaphthalene, 3,3'-Dichlorobenzidine, Benzoic Acid, Hexachlorocyclopentadiene, n-Nitrosodimethylamine, Phenol, Pyridine are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 1-Methylnaphthalene, 3,3'-Dichlorobenzidine, Phenol, Pyridine are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Duplicate Recovery(s) for 1-Methylnaphthalene, Phenol, 3,3'-Dichlorobenzidine are outside control limits. Blank Spike meets program technical requirements.
- RPD(s) for MSD for 3,3'-Dichlorobenzidine are outside control limits for sample OP24811-MSD. Blank Spike meets program technical requirements.
- Calibration standards MS12540-ICC2540, MS12540-ICV2540, MS12586-CC2540 are not associated with this job.

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(M99799).

Tuesday, May 17, 2011

Page 2 of 2



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW10-ROX-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L52595.D	1	05/12/11	AMY	n/a	n/a	MSL1751
Run #2							

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	8.8	5.0	4.6	ug/l	u
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	uJ
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	uJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL.:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	92%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

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-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72371.D	1	05/10/11	KR	05/04/11	OP24811	MSI2593
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.5	0.73	ug/l	UJ
95-57-8	2-Chlorophenol	ND	4.8	0.65	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.5	0.54	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.5	0.66	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.5	2.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	19	2.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	4.8	ug/l	
95-48-7	2-Methylphenol	ND	9.5	0.46	ug/l	
	3&4-Methylphenol	ND	9.5	0.60	ug/l	
88-75-5	2-Nitrophenol	ND	9.5	0.63	ug/l	
100-02-7	4-Nitrophenol	ND	19	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	9.5	3.2	ug/l	
108-95-2	Phenol	ND	4.8	2.0	ug/l	UJ
95-95-4	2,4,5-Trichlorophenol	ND	9.5	0.38	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.5	0.36	ug/l	
83-32-9	Acenaphthene	ND	4.8	0.32	ug/l	
208-96-8	Acenaphthylene	ND	4.8	1.2	ug/l	
62-53-3	Aniline	ND	9.5	0.43	ug/l	
120-12-7	Anthracene	ND	4.8	0.26	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.26	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.26	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.28	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.8	0.30	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.8	0.39	ug/l	
100-51-6	Benzyl Alcohol	ND	9.5	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.29	ug/l	
106-47-8	4-Chloroaniline	ND	9.5	0.55	ug/l	
218-01-9	Chrysene	ND	4.8	0.21	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.33	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.22	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-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.20	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.8	0.58	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	4.8	0.28	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.5	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.5	0.32	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	2.4	ug/l	W
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.24	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	0.61	4.8	0.32	ug/l	JW
117-84-0	Di-n-octyl phthalate	ND	4.8	0.32	ug/l	
84-66-2	Diethyl phthalate	ND	4.8	0.58	ug/l	
131-11-3	Dimethyl phthalate	ND	4.8	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	1.9	0.47	ug/l	JW
206-44-0	Fluoranthene	ND	4.8	0.21	ug/l	
86-73-7	Fluorene	ND	4.8	0.28	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.4	ug/l	W
67-72-1	Hexachloroethane	ND	4.8	0.41	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.27	ug/l	
78-59-1	Isophorone	ND	4.8	0.45	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.53	ug/l	R
91-57-6	2-Methylnaphthalene	ND	4.8	0.29	ug/l	
88-74-4	2-Nitroaniline	ND	9.5	0.32	ug/l	
99-09-2	3-Nitroaniline	ND	9.5	0.31	ug/l	
100-01-6	4-Nitroaniline	ND	9.5	0.32	ug/l	
91-20-3	Naphthalene	ND	4.8	0.31	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.29	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	4.8	2.4	ug/l	W
621-64-7	N-Nitroso-di-n-propylamine	ND	4.8	0.39	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.58	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.24	ug/l	
129-00-0	Pyrene	ND	4.8	0.24	ug/l	
110-86-1	Pyridine	ND	9.5	0.48	ug/l	W

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		15-110%
4165-62-2	Phenol-d5	24%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%

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

Report of Analysis

Client Sample ID:	MW10-ROX-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-1	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	106%		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:	TB-ROX-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-2	Date Received:	04/30/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L52586.D	1	05/12/11	AMY	n/a	n/a	MSL1751
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-ROX-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-2	Date Received:	04/30/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		


VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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

3.2


Client Sample ID:	TB-ROX-042811	Date Sampled:	04/28/11
Lab Sample ID:	M99799-2	Date Received:	04/30/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	89%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

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-042911	Date Sampled:	04/29/11
Lab Sample ID:	M99799-3	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L52596.D	1	05/12/11	AMY	n/a	n/a	MSL1751
Run #2							

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	14.5	5.0	4.6	ug/l	U
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	36.3	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	U
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	U
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-042911	Date Sampled:	04/29/11
Lab Sample ID:	M99799-3	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.7	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	1.6	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	1.6	1.0	0.56	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-042911	Date Sampled:	04/29/11
Lab Sample ID:	M99799-3	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	88%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

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-042911	Date Sampled:	04/29/11
Lab Sample ID:	M99799-3	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72372.D	1	05/10/11	KR	05/04/11	OP24811	MSI2593
Run #2							

Run #	Initial Volume	Final Volume
Run #1	800 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	13	0.96	ug/l	WJ
95-57-8	2-Chlorophenol	ND	6.3	0.85	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	13	0.72	ug/l	
120-83-2	2,4-Dichlorophenol	ND	13	0.87	ug/l	
105-67-9	2,4-Dimethylphenol	ND	13	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	3.1	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	13	6.3	ug/l	
95-48-7	2-Methylphenol	ND	13	0.60	ug/l	
	3&4-Methylphenol	ND	13	0.79	ug/l	
88-75-5	2-Nitrophenol	ND	13	0.82	ug/l	
100-02-7	4-Nitrophenol	ND	25	6.3	ug/l	
87-86-5	Pentachlorophenol	ND	13	4.1	ug/l	
108-95-2	Phenol	ND	6.3	2.6	ug/l	WJ
95-95-4	2,4,5-Trichlorophenol	ND	13	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	13	0.47	ug/l	
83-32-9	Acenaphthene	ND	6.3	0.42	ug/l	
208-96-8	Acenaphthylene	ND	6.3	1.6	ug/l	
62-53-3	Aniline	ND	13	0.57	ug/l	
120-12-7	Anthracene	ND	6.3	0.34	ug/l	
56-55-3	Benzo(a)anthracene	ND	6.3	0.34	ug/l	
50-32-8	Benzo(a)pyrene	ND	6.3	0.28	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	6.3	0.34	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	6.3	0.77	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	6.3	0.37	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	6.3	0.40	ug/l	
85-68-7	Butyl benzyl phthalate	ND	6.3	0.51	ug/l	
100-51-6	Benzyl Alcohol	ND	13	0.95	ug/l	
91-58-7	2-Chloronaphthalene	ND	6.3	0.38	ug/l	
106-47-8	4-Chloroaniline	ND	13	0.72	ug/l	
218-01-9	Chrysene	ND	6.3	0.28	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	6.3	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	6.3	0.29	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:	MW1-ROX-042911	Date Sampled:	04/29/11
Lab Sample ID:	M99799-3	Date Received:	04/30/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-60-1	bis(2-Chloroisopropyl)ether	ND	6.3	0.26	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	6.3	0.77	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	6.3	0.37	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	13	1.6	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	13	0.42	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	6.3	3.1	ug/l	WT
53-70-3	Dibenzo(a,h)anthracene	ND	6.3	0.31	ug/l	
132-64-9	Dibenzofuran	ND	6.3	0.39	ug/l	
84-74-2	Di-n-butyl phthalate	0.85	6.3	0.42	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	6.3	0.42	ug/l	
84-66-2	Diethyl phthalate	ND	6.3	0.77	ug/l	
131-11-3	Dimethyl phthalate	ND	6.3	1.6	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.77	2.5	0.61	ug/l	J U
206-44-0	Fluoranthene	ND	6.3	0.27	ug/l	
86-73-7	Fluorene	ND	6.3	0.36	ug/l	
118-74-1	Hexachlorobenzene	ND	6.3	0.20	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	13	3.1	ug/l	WT
67-72-1	Hexachloroethane	ND	6.3	0.54	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.3	0.36	ug/l	
78-59-1	Isophorone	ND	6.3	0.59	ug/l	
90-12-0	1-Methylnaphthalene	ND	6.3	0.70	ug/l	R
91-57-6	2-Methylnaphthalene	ND	6.3	0.38	ug/l	
88-74-4	2-Nitroaniline	ND	13	0.42	ug/l	
99-09-2	3-Nitroaniline	ND	13	0.40	ug/l	
100-01-6	4-Nitroaniline	ND	13	0.42	ug/l	
91-20-3	Naphthalene	ND	6.3	0.41	ug/l	
98-95-3	Nitrobenzene	ND	6.3	0.38	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	6.3	3.1	ug/l	WT
621-64-7	N-Nitroso-di-n-propylamine	ND	6.3	0.51	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	6.3	0.77	ug/l	
85-01-8	Phenanthrene	ND	6.3	0.32	ug/l	
129-00-0	Pyrene	ND	6.3	0.31	ug/l	
110-86-1	Pyridine	ND	13	0.63	ug/l	WT

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		15-110%
4165-62-2	Phenol-d5	26%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrobenzene-d5	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: MW1-ROX-042911	Date Sampled: 04/29/11
Lab Sample ID: M99799-3	Date Received: 04/30/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
321-60-8	2-Fluorobiphenyl	86%		30-130%
1718-51-0	Terphenyl-d14	74%		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:	MW2-ROX-042911 EB	Date Sampled:	04/29/11
Lab Sample ID:	M99799-4	Date Received:	04/30/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L52587.D	1	05/12/11	AMY	n/a	n/a	MSL1751
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-042911 EB	Date Sampled:	04/29/11
Lab Sample ID:	M99799-4	Date Received:	04/30/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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-042911 EB	Date Sampled:	04/29/11
Lab Sample ID:	M99799-4	Date Received:	04/30/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	86%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

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:	MW2-ROX-042911 EB	Date Sampled:	04/29/11
Lab Sample ID:	M99799-4	Date Received:	04/30/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72373.D	1	05/10/11	KR	05/04/11	OP24811	MSI2593
Run #2							

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.83	ug/l	
95-57-8	2-Chlorophenol	ND	5.4	0.73	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.75	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	ND	11	0.52	ug/l	
	3&4-Methylphenol	ND	11	0.68	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.71	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.4	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.6	ug/l	
108-95-2	Phenol	ND	5.4	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.43	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.41	ug/l	
83-32-9	Acenaphthene	ND	5.4	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.4	1.3	ug/l	
62-53-3	Aniline	ND	11	0.49	ug/l	
120-12-7	Anthracene	ND	5.4	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.4	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.4	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.4	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.4	0.66	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.4	0.32	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.4	0.44	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.82	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.33	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.62	ug/l	
218-01-9	Chrysene	ND	5.4	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.38	ug/l	
111-44-4	bis(2-Chloroethyl)ether	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:	MW2-ROX-042911 EB	Date Sampled:	04/29/11
Lab Sample ID:	M99799-4	Date Received:	04/30/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.22	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.66	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.32	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.36	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	2.7	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.4	0.27	ug/l	
132-64-9	Dibenzofuran	ND	5.4	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	0.55	5.4	0.36	ug/l	JBU
117-84-0	Di-n-octyl phthalate	ND	5.4	0.36	ug/l	
84-66-2	Diethyl phthalate	ND	5.4	0.66	ug/l	
131-11-3	Dimethyl phthalate	ND	5.4	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	0.53	ug/l	
206-44-0	Fluoranthene	ND	5.4	0.23	ug/l	
86-73-7	Fluorene	ND	5.4	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.4	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.4	0.46	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.4	0.31	ug/l	
78-59-1	Isophorone	ND	5.4	0.51	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.4	0.60	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.4	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.35	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
91-20-3	Naphthalene	ND	5.4	0.35	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.33	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.66	ug/l	
85-01-8	Phenanthrene	ND	5.4	0.27	ug/l	
129-00-0	Pyrene	ND	5.4	0.27	ug/l	
110-86-1	Pyridine	ND	11	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		15-110%
4165-62-2	Phenol-d5	22%		15-110%
118-79-6	2,4,6-Tribromophenol	83%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%

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

Report of Analysis

3.4


Client Sample ID: MW2-ROX-042911 EB	Date Sampled: 04/29/11
Lab Sample ID: M99799-4	Date Received: 04/30/11
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
321-60-8	2-Fluorobiphenyl	80%		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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

Shell Oil Products Chain Of Custody Record

URS

UNCO
 SCIENCE
 ENVIRONMENTAL
 WATER
 WASTE
 AIR
 SOIL
 OTHER

Please Check Appropriate Box:

RETAIL SERVICES
 RETAIL WHOLESALE
 RETAIL FULL SERVICE
 CONSULTANT
 OTHER

Print Bill To Contact Name: WENDY PENNINGTON

INCIDENT # (ENV SERVICES): 9 7 2 1 5 8 4 0

DATE: 04/21/2011

PAGE 1 of 1

URS CORPORATION
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

900 South Central Ave, ROMANA, MO 64454

CONTRACT PROJECT NO: Roxane 2011 GW / 2182593.00004

WENDY PENNINGTON
 314-743-4188 or 341-452-8828

SAMPLE ANALYST: NETA SATAM, TERRY ANDREWS, CINDY KEETZK

LAB USE ONLY: M99799

RESULTS NEEDED ON WEEKEND: YES NO

REQUESTED ANALYSIS

DELIVERABLES: DEL. 1 DEL. 2 DEL. 3 DEL. 4 PER (MPC/ST) EDO

FIELD NOTES:

SPECIAL INSTRUCTIONS OR NOTES:
 * Please include "J" values on Reports.
 * Please provide sample receipt upon login.

TEMPERATURE ON RECEIPT OF: Cooler #1, Cooler #2, Cooler #3

LAB LINE NO.	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					ML OF CONT.	VOC B2000	SYD00 BZTC	PID (ppm)	Container PID Reading or Laboratory Notes
		DATE	TIME		ML	INCL	SERIAL	HOME	OTHER					
1	MW10-ROX-042811 ✓	4/18/11	1545	WATER	3			2			5	X	X	
2	TB-ROX-042811 ✓	4/18/11		WATER	2						2	X		
3	MW1-ROX-042911 ✓	4/18/11	1240	WATER	3			2			5	X	X	
4	MW2-ROX-042911 ✓	4/18/11	1500	WATER	3			2			5	X	X	

Autorequested by (Signature): *Cynthia Keetz* Received by (Signature): FED EX Date: 04/21/2011 Time: 1600

Requester by (Signature): FedEx Received by (Signature): *[Signature]* Date: 4/20/11 Time: 1100

Repackaged by (Signature): Received by (Signature): Date: Time: 2.1"

4.1
4

Internal Sample Tracking Chronicle

Shell Oil

Job No: M99799

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M99799-1 Collected: 28-APR-11 15:15 By: NSTA Received: 30-APR-11 By: JB MW10-ROX-042811						
M99799-1	SW846 8270C	10-MAY-11 17:50	KR	04-MAY-11 AJ		AB8270SL
M99799-1	SW846 8260B	12-MAY-11 13:04	AMY			V8260SL
M99799-2 Collected: 28-APR-11 00:00 By: NSTA Received: 30-APR-11 By: JB TB-ROX-042811						
M99799-2	SW846 8260B	12-MAY-11 08:44	AMY			V8260SL
M99799-3 Collected: 29-APR-11 12:40 By: NSTA Received: 30-APR-11 By: JB MW1-ROX-042911						
M99799-3	SW846 8270C	10-MAY-11 18:23	KR	04-MAY-11 AJ		AB8270SL
M99799-3	SW846 8260B	12-MAY-11 13:34	AMY			V8260SL
M99799-4 Collected: 29-APR-11 15:00 By: NSTA Received: 30-APR-11 By: JB MW2-ROX-042911 EB						
M99799-4	SW846 8270C	10-MAY-11 18:57	KR	04-MAY-11 AJ		AB8270SL
M99799-4	SW846 8260B	12-MAY-11 09:12	AMY			V8260SL

4.2
4

Accutest Internal Chain of Custody

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Received: 04/30/11

4.3

4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M99799-1.1	Walk In Ref #22	Bijan Jafari	05/04/11 10:20	Retrieve from Storage
M99799-1.1	Bijan Jafari		05/09/11 10:14	Depleted
M99799-1.4	VOC Ref #1	Amy Min Yang	05/12/11 07:23	Retrieve from Storage
M99799-1.4	Amy Min Yang	GCM SL	05/12/11 07:24	Load on Instrument
M99799-1.4	GCM SL	Amy Min Yang	05/12/11 16:17	Unload from Instrument
M99799-1.4	Amy Min Yang	VOC Ref #1	05/12/11 16:17	Return to Storage
M99799-2.1	VOC Ref #1	Amy Min Yang	05/12/11 07:23	Retrieve from Storage
M99799-2.1	Amy Min Yang	GCM SL	05/12/11 07:24	Load on Instrument
M99799-2.1	GCM SL	Amy Min Yang	05/12/11 16:17	Unload from Instrument
M99799-2.1	Amy Min Yang	VOC Ref #1	05/12/11 16:17	Return to Storage
M99799-3.2	Walk In Ref #22	Bijan Jafari	05/04/11 10:20	Retrieve from Storage
M99799-3.2	Bijan Jafari		05/09/11 10:14	Depleted
M99799-3.4	VOC Ref #1	Amy Min Yang	05/12/11 07:23	Retrieve from Storage
M99799-3.4	Amy Min Yang	GCM SL	05/12/11 07:24	Load on Instrument
M99799-3.4	GCM SL	Amy Min Yang	05/12/11 16:17	Unload from Instrument
M99799-3.4	Amy Min Yang	VOC Ref #1	05/12/11 16:17	Return to Storage
M99799-4.1	Walk In Ref #22	Bijan Jafari	05/04/11 10:20	Retrieve from Storage
M99799-4.1	Bijan Jafari		05/09/11 10:14	Depleted
M99799-4.4	VOC Ref #1	Amy Min Yang	05/12/11 07:23	Retrieve from Storage
M99799-4.4	Amy Min Yang	GCM SL	05/12/11 07:24	Load on Instrument
M99799-4.4	GCM SL	Amy Min Yang	05/12/11 16:17	Unload from Instrument
M99799-4.4	Amy Min Yang	VOC Ref #1	05/12/11 16:17	Return to Storage

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: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-MB	L52584.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

5.1.1



Method Blank Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-MB	L52584.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	ug/l	

5.1.1
5

Method Blank Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-MB	L52584.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	93%	70-130%
2037-26-5	Toluene-D8	86%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

5.1.1



Blank Spike/Blank Spike Duplicate Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-BS	L52581.D	1	05/12/11	AMY	n/a	n/a	MSL1751
MSL1751-BSD	L52582.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	59.2	118	65.1	130	9	70-130/25
107-02-8	Acrolein	250	752	301* a	751	300* a	0	70-130/25
107-13-1	Acrylonitrile	50	51.2	102	52.6	105	3	70-130/25
71-43-2	Benzene	50	47.1	94	49.9	100	6	70-130/25
108-86-1	Bromobenzene	50	47.9	96	48.7	97	2	70-130/25
74-97-5	Bromochloromethane	50	48.8	98	48.8	98	0	70-130/25
75-27-4	Bromodichloromethane	50	58.4	117	60.3	121	3	70-130/25
75-25-2	Bromoform	50	47.3	95	46.9	94	1	70-130/25
74-83-9	Bromomethane	50	32.2	64* b	31.1	62* b	3	70-130/25
78-93-3	2-Butanone (MEK)	50	48.3	97	62.0	124	25	70-130/25
104-51-8	n-Butylbenzene	50	46.9	94	47.2	94	1	70-130/25
135-98-8	sec-Butylbenzene	50	50.3	101	52.6	105	4	70-130/25
98-06-6	tert-Butylbenzene	50	56.9	114	57.8	116	2	70-130/25
75-15-0	Carbon disulfide	50	38.9	78	39.5	79	2	70-130/25
56-23-5	Carbon tetrachloride	50	52.5	105	52.9	106	1	70-130/25
108-90-7	Chlorobenzene	50	40.9	82	40.9	82	0	70-130/25
75-00-3	Chloroethane	50	44.3	89	44.9	90	1	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	44.8	90	55.0	110	20	70-130/25
67-66-3	Chloroform	50	57.3	115	56.4	113	2	70-130/25
74-87-3	Chloromethane	50	41.8	84	40.5	81	3	70-130/25
95-49-8	o-Chlorotoluene	50	48.2	96	49.6	99	3	70-130/25
106-43-4	p-Chlorotoluene	50	51.2	102	51.1	102	0	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	50.7	101	54.2	108	7	70-130/25
124-48-1	Dibromochloromethane	50	50.3	101	53.8	108	7	70-130/25
106-93-4	1,2-Dibromoethane	50	42.3	85	44.3	89	5	70-130/25
95-50-1	1,2-Dichlorobenzene	50	45.5	91	47.7	95	5	70-130/25
541-73-1	1,3-Dichlorobenzene	50	48.0	96	48.2	96	0	70-130/25
106-46-7	1,4-Dichlorobenzene	50	45.9	92	46.9	94	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	29.8	60* b	28.8	58* b	3	70-130/25
75-34-3	1,1-Dichloroethane	50	58.1	116	58.5	117	1	70-130/25
107-06-2	1,2-Dichloroethane	50	64.8	130	67.8	136* b	5	70-130/25
75-35-4	1,1-Dichloroethene	50	47.1	94	44.7	89	5	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	50.5	101	54.5	109	8	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	45.0	90	45.7	91	2	70-130/25
78-87-5	1,2-Dichloropropane	50	53.1	106	56.4	113	6	70-130/25
142-28-9	1,3-Dichloropropane	50	43.3	87	46.0	92	6	70-130/25

5.2.1



Blank Spike/Blank Spike Duplicate Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-BS	L52581.D	1	05/12/11	AMY	n/a	n/a	MSL1751
MSL1751-BSD	L52582.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	39.0	78	40.9	82	5	70-130/25
563-58-6	1,1-Dichloropropene	50	50.1	100	54.9	110	9	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	48.0	96	50.6	101	5	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	52.4	105	54.5	109	4	70-130/25
123-91-1	1,4-Dioxane	250	215	86	274	110	24	70-130/25
97-63-2	Ethyl methacrylate	50	44.7	89	47.1	94	5	77-137/25
100-41-4	Ethylbenzene	50	43.0	86	43.2	86	0	70-130/25
87-68-3	Hexachlorobutadiene	50	45.9	92	48.9	98	6	70-130/25
591-78-6	2-Hexanone	50	45.5	91	50.3	101	10	70-130/25
98-82-8	Isopropylbenzene	50	58.2	116	58.6	117	1	70-130/25
99-87-6	p-Isopropyltoluene	50	50.0	100	50.9	102	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	58.4	117	58.6	117	0	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	59.8	120	65.0	130	8	70-130/25
74-95-3	Methylene bromide	50	59.1	118	61.4	123	4	70-130/25
75-09-2	Methylene chloride	50	44.4	89	48.0	96	8	70-130/25
91-20-3	Naphthalene	50	40.9	82	43.7	87	7	70-130/25
103-65-1	n-Propylbenzene	50	50.7	101	51.0	102	1	70-130/25
100-42-5	Styrene	50	45.4	91	47.6	95	5	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	46.2	92	49.0	98	6	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	44.1	88	42.8	86	3	70-130/25
127-18-4	Tetrachloroethene	50	40.7	81	43.0	86	5	70-130/25
108-88-3	Toluene	50	47.3	95	50.5	101	7	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	39.6	79	43.2	86	9	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	40.0	80	42.4	85	6	70-130/25
71-55-6	1,1,1-Trichloroethane	50	58.5	117	60.3	121	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	47.4	95	49.4	99	4	70-130/25
79-01-6	Trichloroethene	50	48.8	98	51.2	102	5	70-130/25
75-69-4	Trichlorofluoromethane	50	53.5	107	51.4	103	4	70-130/25
96-18-4	1,2,3-Trichloropropane	50	50.9	102	48.3	97	5	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	50.6	101	50.7	101	0	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	49.0	98	49.8	100	2	70-130/25
108-05-4	Vinyl Acetate	50	51.2	102	53.0	106	3	70-130/25
75-01-4	Vinyl chloride	50	36.1	72	36.8	74	2	70-130/25
	m,p-Xylene	100	83.6	84	87.1	87	4	70-130/25
95-47-6	o-Xylene	50	46.3	93	48.4	97	4	70-130/25
1330-20-7	Xylene (total)	150	130	87	135	90	4	70-130/25

5.2.1



Blank Spike/Blank Spike Duplicate Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1751-BS	L52581.D	1	05/12/11	AMY	n/a	n/a	MSL1751
MSL1751-BSD	L52582.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	97%	97%	70-130%
2037-26-5	Toluene-D8	89%	93%	70-130%
460-00-4	4-Bromofluorobenzene	91%	91%	70-130%

- (a) Outside control limits. Associated samples are non-detect for this compound.
- (b) Outside control limits. Blank Spike meets program technical requirements.

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99784-1MS	L52603.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1MSD	L52604.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1	L52588.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	M99784-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	312	125	290	116	7	70-130/30
107-02-8	Acrolein	ND	1250	3340	267* a	3160	253* a	6	70-130/30
107-13-1	Acrylonitrile	ND	250	291	116	291	116	0	70-130/30
71-43-2	Benzene	ND	250	274	110	255	102	7	70-130/30
108-86-1	Bromobenzene	ND	250	266	106	266	106	0	70-130/30
74-97-5	Bromochloromethane	ND	250	276	110	264	106	4	70-130/30
75-27-4	Bromodichloromethane	ND	250	324	130	305	122	6	70-130/30
75-25-2	Bromoform	ND	250	264	106	263	105	0	70-130/30
74-83-9	Bromomethane	ND	250	146	58* b	196	78	29	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	302	121	258	103	16	70-130/30
104-51-8	n-Butylbenzene	ND	250	262	105	262	105	0	70-130/30
135-98-8	sec-Butylbenzene	ND	250	273	109	282	113	3	70-130/30
98-06-6	tert-Butylbenzene	ND	250	303	121	307	123	1	70-130/30
75-15-0	Carbon disulfide	ND	250	248	99	235	94	5	70-130/30
56-23-5	Carbon tetrachloride	ND	250	277	111	256	102	8	70-130/30
108-90-7	Chlorobenzene	ND	250	222	89	231	92	4	70-130/30
75-00-3	Chloroethane	ND	250	326	130	280	112	15	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	250	675	270* b	166	66* b	121* c	70-130/30
67-66-3	Chloroform	ND	250	297	119	284	114	4	70-130/30
74-87-3	Chloromethane	ND	250	277	111	257	103	7	70-130/30
95-49-8	o-Chlorotoluene	ND	250	260	104	267	107	3	70-130/30
106-43-4	p-Chlorotoluene	ND	250	281	112	284	114	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	298	119	306	122	3	70-130/30
124-48-1	Dibromochloromethane	ND	250	275	110	281	112	2	70-130/30
106-93-4	1,2-Dibromoethane	ND	250	239	96	253	101	6	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	255	102	261	104	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	262	105	266	106	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	255	102	256	102	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	388	155* b	356	142* b	9	70-130/30
75-34-3	1,1-Dichloroethane	ND	250	307	123	289	116	6	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	358	143* b	328	131* b	9	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	258	103	254	102	2	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	279	112	277	111	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	257	103	242	97	6	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	293	117	291	116	1	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	238	95	242	97	2	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99784-1MS	L52603.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1MSD	L52604.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1	L52588.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Compound	M99784-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	250	246	98	252	101	2	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	287	115	271	108	6	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	268	107	268	107	0	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	302	121	288	115	5	70-130/30
123-91-1	1,4-Dioxane	ND	1250	1440	115	1630	130	12	70-130/30
97-63-2	Ethyl methacrylate	ND	250	270	108	256	102	5	72-139/30
100-41-4	Ethylbenzene	ND	250	236	94	230	92	3	70-130/30
87-68-3	Hexachlorobutadiene	ND	250	254	102	264	106	4	70-130/30
591-78-6	2-Hexanone	ND	250	260	104	288	115	10	70-130/30
98-82-8	Isopropylbenzene	ND	250	330	132* b	318	127	4	70-130/30
99-87-6	p-Isopropyltoluene	ND	250	275	110	279	112	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	3.4	250	343	136* b	328	130	4	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	353	141* b	350	140* b	1	70-130/30
74-95-3	Methylene bromide	ND	250	322	129	296	118	8	70-130/30
75-09-2	Methylene chloride	ND	250	265	106	260	104	2	70-130/30
91-20-3	Naphthalene	ND	250	232	93	240	96	3	70-130/30
103-65-1	n-Propylbenzene	ND	250	292	117	288	115	1	70-130/30
100-42-5	Styrene	ND	250	254	102	260	104	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	256	102	261	104	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	227	91	264	106	15	70-130/30
127-18-4	Tetrachloroethene	ND	250	230	92	231	92	0	70-130/30
108-88-3	Toluene	ND	250	289	116	262	105	10	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	250	227	91	225	90	1	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	250	235	94	236	94	0	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	250	307	123	296	118	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	250	267	107	256	102	4	70-130/30
79-01-6	Trichloroethene	ND	250	279	112	268	107	4	70-130/30
75-69-4	Trichlorofluoromethane	ND	250	304	122	285	114	6	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	250	290	116	300	120	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	250	273	109	279	112	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	250	271	108	274	110	1	70-130/30
108-05-4	Vinyl Acetate	ND	250	319	128	305	122	4	70-130/30
75-01-4	Vinyl chloride	ND	250	254	102	234	94	8	70-130/30
	m,p-Xylene	ND	500	466	93	483	97	4	70-130/30
95-47-6	o-Xylene	ND	250	245	98	249	100	2	70-130/30
1330-20-7	Xylene (total)	ND	750	712	95	731	97	3	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99784-1MS	L52603.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1MSD	L52604.D	5	05/12/11	AMY	n/a	n/a	MSL1751
M99784-1	L52588.D	1	05/12/11	AMY	n/a	n/a	MSL1751

The QC reported here applies to the following samples:

Method: SW846 8260B

M99799-1, M99799-2, M99799-3, M99799-4

CAS No.	Surrogate Recoveries	MS	MSD	M99784-1	Limits
1868-53-7	Dibromofluoromethane	94%	96%	95%	70-130%
2037-26-5	Toluene-D8	95%	89%	91%	70-130%
460-00-4	4-Bromofluorobenzene	92%	96%	92%	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.

5.3.1

5

Volatile Internal Standard Area Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSL1751-CC1731	Injection Date:	05/12/11
Lab File ID:	L52580.D	Injection Time:	05:52
Instrument ID:	GCMSL	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	49430	8.19	71024	9.02	47600	12.26	45597	14.82	20072	5.82
Upper Limit ^a	98860	8.69	142048	9.52	95200	12.76	91194	15.32	40144	6.32
Lower Limit ^b	24715	7.69	35512	8.52	23800	11.76	22799	14.32	10036	5.32

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSL1751-BS	52724	8.19	76147	9.02	49629	12.26	49204	14.82	22893	5.81
MSL1751-BSD	52934	8.19	73967	9.02	48292	12.26	48943	14.82	23281	5.82
MSL1751-MB	52205	8.19	75028	9.03	42796	12.27	42866	14.83	22911	5.86
ZZZZZ	50478	8.19	71699	9.03	42052	12.27	39272	14.83	19341	5.90
M99799-2	46887	8.19	70512	9.03	41943	12.27	39302	14.83	21560	5.86
M99799-4	46819	8.19	69319	9.03	39404	12.27	39004	14.83	21879	5.91
M99784-1	48379	8.19	67394	9.03	41836	12.27	37553	14.83	22305	5.87
ZZZZZ	47026	8.19	67265	9.03	39842	12.27	38223	14.83	20287	5.85
ZZZZZ	46307	8.19	65250	9.03	37863	12.27	35318	14.83	23059	5.90
ZZZZZ	42972	8.19	62729	9.03	37824	12.27	34502	14.83	19603	5.88
ZZZZZ	42500	8.19	61377	9.03	36066	12.27	35392	14.83	21651	5.86
ZZZZZ	44348	8.19	64920	9.02	38427	12.27	38355	14.82	21113	5.89
ZZZZZ	44977	8.19	63133	9.03	38625	12.27	36567	14.83	22877	5.86
M99799-1	43344	8.19	62948	9.02	38117	12.27	34988	14.83	21472	5.85
M99799-3	44652	8.19	62255	9.02	34350	12.27	33715	14.83	22445	5.84
ZZZZZ	44509	8.19	66735	9.02	39888	12.26	41351	14.82	20615	5.82
ZZZZZ	51602	8.19	74924	9.03	42896	12.26	44461	14.83	27133	5.82
ZZZZZ	49805	8.19	70945	9.03	42533	12.26	43437	14.83	26136	5.82
ZZZZZ	50734	8.19	70199	9.02	41789	12.26	42604	14.82	25820	5.82
ZZZZZ	55194	8.19	76841	9.02	44123	12.26	45067	14.83	29140	5.82
ZZZZZ	51267	8.19	76154	9.02	44286	12.26	48391	14.82	26642	5.87
M99784-1MS	58091	8.19	79811	9.02	53524	12.26	52608	14.82	27651	5.82
M99784-1MSD	59996	8.19	84879	9.02	52443	12.26	51452	14.82	30304	5.82

- 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.

5.4.1
5

Volatile Surrogate Recovery Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
M99799-1	L52595.D	101.0	92.0	92.0
M99799-2	L52586.D	106.0	89.0	86.0
M99799-3	L52596.D	95.0	88.0	102.0
M99799-4	L52587.D	106.0	86.0	91.0
M99784-1MS	L52603.D	94.0	95.0	92.0
M99784-1MSD	L52604.D	96.0	89.0	96.0
MSL1751-BS	L52581.D	97.0	89.0	91.0
MSL1751-BSD	L52582.D	97.0	93.0	91.0
MSL1751-MB	L52584.D	93.0	86.0	91.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.5.1



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: M99799
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-MB	I72223.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	

6.1.1


Method Blank Summary

Job Number: M99799
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-MB	I72223.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Compound	Result	RL	MDL	Units	Q
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.3	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	0.77	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.54	2.0	0.49	ug/l	J
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	48%	15-110%
4165-62-2	Phenol-d5	30%	15-110%
118-79-6	2,4,6-Tribromophenol	100%	15-110%

6.1.1



Method Blank Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-MB	I72223.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	102%	30-130%
321-60-8	2-Fluorobiphenyl	109%	30-130%
1718-51-0	Terphenyl-d14	109%	30-130%

6.1.1



Blank Spike/Blank Spike Duplicate Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-BS	I72224.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585
OP24811-BSD	I72225.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	71%	80%	30-130%
321-60-8	2-Fluorobiphenyl	74%	82%	30-130%
1718-51-0	Terphenyl-d14	74%	84%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1



Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M99799
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-MS	I72226.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585
OP24811-MSD	I72227.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585
M99844-2	I72228.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Compound	M99844-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
606-20-2	2,6-Dinitrotoluene	ND		50	45.5	91	45.6	91	0	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		50	10.4	21* ^a	16.6	33* ^a	46* ^a	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	44.6	89	46.6	93	4	40-140/20
132-64-9	Dibenzofuran	ND		50	41.9	84	42.6	85	2	40-140/20
84-74-2	Di-n-butyl phthalate	0.74		50	46.8	92	47.6	94	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND		50	55.6	111	59.1	118	6	40-140/20
84-66-2	Diethyl phthalate	ND		50	47.5	95	48.1	96	1	40-140/20
131-11-3	Dimethyl phthalate	ND		50	45.1	90	45.6	91	1	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	0.52		50	49.3	98	51.1	101	4	40-140/20
206-44-0	Fluoranthene	ND		50	44.6	89	46.3	93	4	40-140/20
86-73-7	Fluorene	ND		50	44.6	89	44.4	89	0	40-140/20
118-74-1	Hexachlorobenzene	ND		50	41.8	84	42.9	86	3	40-140/20
77-47-4	Hexachlorocyclopentadiene	ND		50	23.5	47	23.2	46	1	40-140/20
67-72-1	Hexachloroethane	ND		50	41.9	84	42.3	85	1	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	45.3	91	46.7	93	3	40-140/20
78-59-1	Isophorone	ND		50	39.9	80	40.9	82	2	40-140/20
90-12-0	1-Methylnaphthalene	ND		50	ND	0* ^a	ND	0* ^a	nc	40-140/20
91-57-6	2-Methylnaphthalene	ND		50	41.8	84	41.9	84	0	40-140/20
88-74-4	2-Nitroaniline	ND		50	45.9	92	46.7	93	2	40-140/20
99-09-2	3-Nitroaniline	ND		50	27.5	55	26.7	53	3	40-140/20
100-01-6	4-Nitroaniline	ND		50	40.4	81	40.6	81	0	40-140/20
91-20-3	Naphthalene	ND		50	42.9	86	43.0	86	0	40-140/20
98-95-3	Nitrobenzene	ND		50	41.3	83	41.8	84	1	40-140/20
62-75-9	n-Nitrosodimethylamine	ND		50	21.2	42	21.7	43	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		50	45.4	91	45.9	92	1	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		50	34.8	70	36.9	74	6	40-140/20
85-01-8	Phenanthrene	ND		50	42.8	86	43.6	87	2	40-140/20
129-00-0	Pyrene	ND		50	44.4	89	45.9	92	3	40-140/20
110-86-1	Pyridine	ND		50	19.3	39* ^a	21.2	42	9	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	M99844-2	Limits
367-12-4	2-Fluorophenol	44%	44%	36%	15-110%
4165-62-2	Phenol-d5	26%	27%	22%	15-110%
118-79-6	2,4,6-Tribromophenol	83%	87%	83%	15-110%

6.3.1
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24811-MS	I72226.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585
OP24811-MSD	I72227.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585
M99844-2	I72228.D	1	05/06/11	KR	05/04/11	OP24811	MSI2585

The QC reported here applies to the following samples:

Method: SW846 8270C

M99799-1, M99799-3, M99799-4

CAS No.	Surrogate Recoveries	MS	MSD	M99844-2	Limits
4165-60-0	Nitrobenzene-d5	85%	86%	80%	30-130%
321-60-8	2-Fluorobiphenyl	91%	91%	87%	30-130%
1718-51-0	Terphenyl-d14	79%	85%	85%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

6.3.1



Semivolatile Surrogate Recovery Summary

Job Number: M99799

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
M99799-1	I72371.D	39.0	24.0	79.0	75.0	69.0	106.0
M99799-3	I72372.D	36.0	26.0	72.0	69.0	86.0	74.0
M99799-4	I72373.D	37.0	22.0	83.0	75.0	80.0	85.0
OP24811-BS	I72224.D	37.0	22.0	71.0	71.0	74.0	74.0
OP24811-BSD	I72225.D	40.0	26.0	79.0	80.0	82.0	84.0
OP24811-MB	I72223.D	48.0	30.0	100.0	102.0	109.0	109.0
OP24811-MS	I72226.D	44.0	26.0	83.0	85.0	91.0	79.0
OP24811-MSD	I72227.D	44.0	27.0	87.0	86.0	91.0	85.0

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%

6.5.1
6

Roxana Groundwater Quarterly – 2nd Quarter 2011

Laboratory SDG: MC19

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 06/16/2011

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

Sample Identification	Sample Identification
P93A-ROX-050511	P93D-ROX-050511
P93B-ROX-050511	P93C-ROX-050611
TB-ROX-050611	MW09-ROX-050611
MW11-ROX-050611	

1.0 Data Package Completeness

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

Yes, however the data package was re-issued to report PAHs by 8270C SIM; PAHs previously reported by both standard 8270C and 8270C SIM. No qualification of data was required.

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 were outside of evaluation criteria for several analytes. VOC MS/MSD recoveries and RPDs were outside of evaluation criteria. The VOC surrogate toluene-D8 was outside of evaluation criteria for sample P93A-ROX-050511. Several samples were diluted due to high levels of target analytes. Sample P93A-ROX-050511 was re-analyzed due to benzene and ethylbenzene exceeding the calibration range of the instrument in the original analysis. The compounds, benzene and ethylbenzene were reported from the secondary run in which benzene was within calibration range; however, ethylbenzene was diluted out and reported as non-detect at an elevated reporting level. The compounds that had not exceeded the calibration range of the instrument were reported from the original analysis. SVOC MS/MSD recoveries and RPDs were outside of evaluation criteria. Several SVOC target analytes were found in the associated method blank. PAH MSD RPDs were outside evaluation criteria. Several PAH target analytes were found in the associated method blank. PAH internal standards for sample MW11-ROX-050611 were outside evaluation criteria. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated N/A for the quality control/preservation questions. Trip blank vials were present in cooler and listed on the COC. Trip blank analysis was completed.

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
OP24869-MB	SVOCs	Di-n-butyl phthalate	1.0 µg/L
OP24869-MB	SVOCs	Diethyl phthalate	0.85 µg/L
OP24869-MB	SVOCs	bis(2-Ethylhexyl)phthalate	2.3 µg/L
OP24870-MB	PAHs	Benzo(a)anthracene	0.025 µg/L

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

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P93A-ROX-050511	SVOCs	Di-n-butyl phthalate	--	U
P93A-ROX-050511	SVOCs	Diethyl phthalate	--	U
P93D-ROX-050511	SVOCs	Di-n-butyl phthalate	--	U
P93D-ROX-050511	SVOCs	bis(2-Ethylhexyl)phthalate	2.7 µg/L	U
P93B-ROX-050511	SVOCs	Di-n-butyl phthalate	--	U
P93C-ROX-050611	SVOCs	Di-n-butyl phthalate	--	U
P93C-ROX-050611	SVOCs	bis(2-Ethylhexyl)phthalate	2.2 µg/L	U
MW09-ROX-050611	SVOCs	Di-n-butyl phthalate	--	U
MW09-ROX-050611	SVOCs	Diethyl phthalate	--	U
MW11-ROX-050611	SVOCs	Di-n-butyl-phthalate	--	U
MW11-ROX-050611	SVOCs	Diethyl phthalate	--	U
MW11-ROX-050611	SVOCs	bis(2-Ethylhexyl)phthalate	2.8 µg/L	U
MW11-ROX-050611	PAHs	Benzo(a)anthracene	--	U

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS ID	Parameter	Analyte	LCS Recovery (%)	LCS Criteria
MSG4286-BS	VOCs	Acrolein	1248	70-130
MSG4286-BS	VOCs	2-Chloroethyl vinyl ether	474	70-130

LCS ID	Parameter	Analyte	LCS Recovery (%)	LCS Criteria
MSG4286-BS	VOCs	2-Hexanone	67	70-130
MSG4288-BS	VOCs	Acrolein	1220	70-130
MSG4288-BS	VOCs	2-Chloroethyl vinyl ether	490	70-130
MSG4288-BS	VOCs	Chloromethane	62	70-130
MSG4288-BS	VOCs	Dichlorodifluoromethane	54	70-130
MSG4288-BS	VOCs	2-Hexanone	54	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.

Field ID	Parameter	Analyte	Qualification
P93A-ROX-050511	VOCs	2-Hexanone	UJ
P93D-ROX-050511	VOCs	Chloromethane	UJ
P93D-ROX-050511	VOCs	Dichlorodifluoromethane	UJ
P93D-ROX-050511	VOCs	2-Hexanone	UJ
P93B-ROX-050511	VOCs	2-Hexanone	UJ
P93C-ROX-050611	VOCs	2-Hexanone	UJ
MW-09-ROX-050611	VOCs	Chloromethane	UJ
MW-09-ROX-050611	VOCs	Dichlorodifluoromethane	UJ
MW-09-ROX-050611	VOCs	2-Hexanone	UJ
MW-11-ROX-050611	VOCs	Chloromethane	UJ
MW-11-ROX-050611	VOCs	Dichlorodifluoromethane	UJ
MW-11-ROX-050611	VOCs	2-Hexanone	UJ

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery (%)	Criteria (%)
P93A-ROX-050511	VOCs	Toluene-D8	140	70-130

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

Sample ID	Parameter	Analyte	Qualification
P93A-ROX-050511	VOCs	sec-Butylbenzene	J
P93A-ROX-050511	VOCs	tert-Butylbenzene	J
P93A-ROX-050511	VOCs	Isopropylbenzene	J
P93A-ROX-050511	VOCs	p-Isopropyltoluene	J
P93A-ROX-050511	VOCs	Methyl Tert Butyl Ether	J
P93A-ROX-050511	VOCs	Naphthalene	J
P93A-ROX-050511	VOCs	n-Propylbenzene	J

Sample ID	Parameter	Analyte	Qualification
P93A-ROX-050511	VOCs	Toluene	J
P93A-ROX-050511	VOCs	1,2,4-Trimethylbenzene	J
P93A-ROX-050511	VOCs	1,3,5-Trimethylbenzene	J
P93A-ROX-050511	VOCs	m,p-Xylene	J
P93A-ROX-050511	VOCs	Toluene	J
P93A-ROX-050511	VOCs	1,2,4-Trimethylbenzene	J
P93A-ROX-050511	VOCs	1,3,5-Trimethylbenzene	J
P93A-ROX-050511	VOCs	m,p-Xylene	J
P93A-ROX-050511	VOCs	o-Xylene	J
P93A-ROX-050511	VOCs	Xylene (total)	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

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

Yes. Sample MW11-ROX-050611 was spiked and analyzed.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
MW11-ROX-050611	VOCs	Acetone	42/43	1	70-130/30
MW11-ROX-050611	VOCs	Acrolein	904/940	4	70-130/30
MW11-ROX-050611	VOCs	Chloromethane	63/60	4	70-130/30
MW11-ROX-050611	VOCs	Dichlorodifluoromethane	52/52	0	70-130/30
MW11-ROX-050611	VOCs	2-Hexanone	42/43	1	70-130/30
MW11-ROX-050611	SVOCs	Benzoic Acid	35/0	200	30-130/20
MW11-ROX-050611	SVOCs	2,4-Dimethylphenol	72/48	36	30-130/20
MW11-ROX-050611	SVOCs	2,4-Dinitrophenol	77/16	129	30-130/20
MW11-ROX-050611	SVOCs	Phenol	45/34	22	30-130/20
MW11-ROX-050611	SVOCs	1-Methylnaphthalene	74/88	21	30-130/20
MW11-ROX-050611	SVOCs	Pyridine	49/69	37	30-130/20
MW11-ROX-050611	PAHs	Indeno(1,2,3-cd)pyrene	81/111	32	30-130/20

Analytical results reported as nondetect 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 exceptions of acrolein, dichlorodifluoromethane, 2-hexanone, and chloromethane which were previously qualified due to LCS/LCSD recoveries outside of evaluation criteria. No further qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, internal standards for sample MW11-ROX-050611 were outside evaluation criteria. Analytical data that required qualification based on IS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
P93A-ROX-050511	PAHs	PAH detects/non-detetcs	J/UJ
P93D-ROX-050511	PAHs	PAH detects/non-detetcs	J/UJ
P93B-ROX-050511	PAHs	PAH detects/non-detetcs	J/UJ
P93C-ROX-050611	PAHs	PAH detects/non-detetcs	J/UJ
MW09-ROX-050611	PAHs	PAH detects/non-detetcs	J/UJ
MW11-ROX-050611	PAHs	PAH detects/non-detetcs	J/UJ

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected 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



Reissue #1
06/15/11

Technical Report for

Shell Oil

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

INC#97216640 SAP#340061

Accutest Job Number: MC19

Sampling Dates: 05/05/11 - 05/06/11

Report to:

URS Corporation

Elizabeth_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

*Reviewed on
6/16/2011
WEB*

Total number of pages in report: 110



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.

Reza Fard
Reza Fard
Lab Director

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) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.



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

June 14, 2011

Accutest Job MC19 (Revision 1)

Ms. Elizabeth Kunkel,

The report of Accutest job number MC19 has been revised to reflect the modified SVOC 8270C compound list. The request is per Elizabeth Kunkel's call on 06/13/2011.

Sincerely,

A handwritten signature in black ink, appearing to read "Wendy Zhang".

Wendy Zhang
Accutest Laboratories of New England, Inc.

Table of Contents

Sections:

1
2
3
4
5
6
7

-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Sample Results	7
3.1: MC19-1: P93A-ROX-050511	8
3.2: MC19-2: P93D-ROX-050511	15
3.3: MC19-3: P93B-ROX-050511	22
3.4: MC19-4: P93C-ROX-050611	29
3.5: MC19-5: TB-ROX-050611	36
3.6: MC19-6: MW09-ROX-050611	40
3.7: MC19-7: MW11-ROX-050611	47
Section 4: Misc. Forms	54
4.1: Chain of Custody	55
4.2: Sample Tracking Chronicle	59
4.3: Internal Chain of Custody	61
Section 5: GC/MS Volatiles - QC Data Summaries	65
5.1: Method Blank Summary	66
5.2: Blank Spike Summary	72
5.3: Matrix Spike/Matrix Spike Duplicate Summary	78
5.4: Internal Standard Area Summaries	84
5.5: Surrogate Recovery Summaries	86
Section 6: GC/MS Semi-volatiles - QC Data Summaries	87
6.1: Method Blank Summary	88
6.2: Blank Spike Summary	91
6.3: Matrix Spike/Matrix Spike Duplicate Summary	94
6.4: Internal Standard Area Summaries	97
6.5: Surrogate Recovery Summaries	102
Section 7: GC Volatiles - QC Data Summaries	104
7.1: Method Blank Summary	105
7.2: Blank Spike Summary	106
7.3: Matrix Spike/Matrix Spike Duplicate Summary	107
7.4: Surrogate Recovery Summaries	108
7.5: GC Surrogate Retention Time Summaries	109

Sample Summary

Shell Oil

Job No: MC19

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
MC19-1	05/05/11	10:00 EANS	05/07/11	AQ	Ground Water	P93A-ROX-050511
MC19-2	05/05/11	10:18 EANS	05/07/11	AQ	Ground Water	P93D-ROX-050511
MC19-3	05/05/11	11:10 EANS	05/07/11	AQ	Ground Water	P93B-ROX-050511
MC19-4	05/06/11	09:50 EANS	05/07/11	AQ	Ground Water	P93C-ROX-050611
MC19-5	05/06/11	00:00 EANS	05/07/11	AQ	Trip Blank Water	TB-ROX-050611
MC19-6	05/06/11	12:40 EANS	05/07/11	AQ	Ground Water	MW09-ROX-050611
MC19-7	05/06/11	14:25 EANS	05/07/11	AQ	Ground Water	MW11-ROX-050611
MC19-7D	05/06/11	14:25 EANS	05/07/11	AQ	Water Dup/MSD	MW11-ROX-050611
MC19-7S	05/06/11	14:25 EANS	05/07/11	AQ	Water Matrix Spike	MW11-ROX-050611

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil **Job No** MC19
Site: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central **Report Date** 5/24/2011 10:44:37 AM

6 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 05/05/2011 and 05/06/2011 and were received at Accutest on 05/07/2011 properly preserved, at 2.3 Deg. C and intact. These Samples received an Accutest job number of MC19. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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: MSG4286
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- All samples were analyzed within the recommended method holding time.
- Sample(s) M99920-IMS, M99920-IMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 2-Hexanone are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Chloroethyl vinyl ether, 2-Hexanone, Acetone are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 2-Chloroethyl vinyl ether are outside control limits for sample M99920-IMSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- M99920-IMS/IMSD for Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- MC19-1 for Toluene-D8: Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- MSG4286-BS for 2-Chloroethyl vinyl ether, Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- MSG4286-BS for 2-Chloroethyl vinyl ether: Outside control limits. Associated samples are non-detect for this compound.

Matrix AQ	Batch ID: MSG4288
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- All samples were analyzed within the recommended method holding time.
- Sample(s) MC19-7MS, MC19-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 2-Hexanone, Chloromethane, Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Hexanone, Acetone, Chloromethane, Dichlorodifluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC19-7MS/7MSD for Acrolein: Outside control limits. Associated samples are non-detect for this compound.
- MSG4288-BS for 2-Chloroethyl vinyl ether, Acrolein: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP24869
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC19-7MS, MC19-7MSD were used as the QC samples indicated.
- Sample(s) MC19-2, MC19-4, MC19-7 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Matrix Spike Duplicate Recovery(s) for 2,4-Dinitrophenol, Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 1-Methylnaphthalene, 2,4-Dimethylphenol, 2,4-Dinitrophenol, Benzoic Acid, Phenol, Pyridine are outside control limits for sample OP24869-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: OP24870
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC19-7MS, MC19-7MSD were used as the QC samples indicated.
- RPD(s) for MSD for Indeno(1,2,3-cd)pyrene are outside control limits for sample OP24870-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Sample(s) MC19-7 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- OP24870-MB/BS/MS/MSD, MC19-7 has internal standards outside control limits. Internal standard spiked at 2x concentration.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP24963
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC19-7MS, MC19-7MSD 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(MC19).





Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	P93A-ROX-050511	Date Sampled:	05/05/11
Lab Sample ID:	MC19-1	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106201.D	1	05/18/11	DFT	n/a	n/a	MSG4286
Run #2	G106217.D	5000	05/18/11	DFT	n/a	n/a	MSG4286

	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	551000 ^a	2500	1800	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	5.4	5.0	0.37	ug/l	J
98-06-6	tert-Butylbenzene	13.3	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-050511	Date Sampled:	05/05/11
Lab Sample ID:	MC19-1	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND ^a	5000	3100	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	20.6	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	3.4	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	68.4	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	86.4	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	22.8	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	71.8	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	169	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	29.3	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	628	1.0	0.62	ug/l	
95-47-6	o-Xylene	70.7	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	699	1.0	0.56	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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-1	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%	112%	70-130%
2037-26-5	Toluene-D8	140% ^b	111%	70-130%
460-00-4	4-Bromofluorobenzene	90%	109%	70-130%

(a) Result is from Run# 2

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

J = Indicates 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-050511	
Lab Sample ID:	MC19-1	Date Sampled: 05/05/11
Matrix:	AQ - Ground Water	Date Received: 05/07/11
Method:	SW846 8270C SW846 3510C	Percent Solids: n/a
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.73	5.0	0.61	ug/l	YU
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	17.2	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	50%	57%	15-110%
4165-62-2	Phenol-d5	47%	47%	15-110%
118-79-6	2,4,6-Tribromophenol	70%	63%	15-110%
4165-60-0	Nitrobenzene-d5	77%	92%	30-130%
321-60-8	2-Fluorobiphenyl	71%	77%	30-130%
1718-51-0	Terphenyl-d14	75%	76%	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 compound

Report of Analysis

Client Sample ID: P93A-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-1	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52883.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	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	0.26	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	0.035	0.10	0.026	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	0.019	0.10	0.016	ug/l	J
86-73-7	Fluorene	0.44	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	30.9	0.20	0.012	ug/l	
91-20-3	Naphthalene	79.5	0.10	0.011	ug/l	
85-01-8	Phenanthrene	0.40	0.050	0.012	ug/l	
129-00-0	Pyrene	0.026	0.10	0.020	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	92%		30-130%
321-60-8	2-Fluorobiphenyl	66%		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: P93A-ROX-050511		Date Sampled: 05/05/11
Lab Sample ID: MC19-1		Date Received: 05/07/11
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8011 SW846 8011		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2983.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	31.7 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	138%		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: P93D-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106251.D	1	05/19/11	DFT	n/a	n/a	MSG4288
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	28.7	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	WJ
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	WJ
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	uJ
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.4	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		70-130%
2037-26-5	Toluene-D8	114%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

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

J = Indicates 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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24060.D	1	05/18/11	PR	05/10/11	OP24869	MSS1021
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.1	5.0	0.34	ug/l	Xu
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	

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Report of Analysis

Client Sample ID: P93D-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.7	2.0	0.49	ug/l	BU
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		15-110%
4165-62-2	Phenol-d5	26%		15-110%
118-79-6	2,4,6-Tribromophenol	60%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	63%		30-130%
1718-51-0	Terphenyl-d14	74%		30-130%

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 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P93D-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52884.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	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	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	0.045	0.20	0.012	ug/l	J
91-20-3	Naphthalene	0.036	0.10	0.011	ug/l	J
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	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	85%		30-130%

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 N = Indicates presumptive evidence of a compound

Report of Analysis

3.2
3

Client Sample ID: P93D-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-2	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2984.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.5 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0080	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	114%		36-173%
460-00-4	Bromofluorobenzene (S)	112%		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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106203.D	1	05/18/11	DFT	n/a	n/a	MSG4286
Run #2	G106214.D	5000	05/18/11	DFT	n/a	n/a	MSG4286

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	134000 ^a	2500	1800	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromofom	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	4.5	5.0	0.37	ug/l	J
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-050511	Date Sampled:	05/05/11
Lab Sample ID:	MC19-3	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	16.9	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	WS
98-82-8	Isopropylbenzene	14.2	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	11.3	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	15.1	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	48.8	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	5.7	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.4	5.0	0.51	ug/l	J
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	50.2	1.0	0.62	ug/l	
95-47-6	o-Xylene	11.2	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	61.4	1.0	0.56	ug/l	

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID: P93B-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	108%	70-130%
2037-26-5	Toluene-D8	130%	110%	70-130%
460-00-4	4-Bromofluorobenzene	93%	107%	70-130%

(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 compound

Report of Analysis

Client Sample ID: P93B-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24061.D	1	05/18/11	PR	05/10/11	OP24869	MSS1021
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	93.3	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	5.0	0.34	ug/l	44
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	64%		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	71%		30-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
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J = Indicates 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-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52885.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	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	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	1.3	0.10	0.011	ug/l	
85-01-8	Phenanthrene	0.017	0.050	0.012	ug/l	J
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

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	85%		30-130%

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

33
3

Client Sample ID: P93B-ROX-050511	Date Sampled: 05/05/11
Lab Sample ID: MC19-3	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2985.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	32.7 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	146%		36-173%
460-00-4	Bromofluorobenzene (S)	142%		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-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-4	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106204.D	1	05/18/11	DFT	n/a	n/a	MSG4286
Run #2	G106215.D	1000	05/18/11	DFT	n/a	n/a	MSG4286

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	15700 ^a	500	350	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	

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J = Indicates 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-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	2.9	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	U
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	5.2	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	1.8	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	0.59	1.0	0.56	ug/l	J

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

J = Indicates 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-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%	112%	70-130%
2037-26-5	Toluene-D8	121%	111%	70-130%
460-00-4	4-Bromofluorobenzene	106%	107%	70-130%

(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 compound



Report of Analysis

Client Sample ID: P93C-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24062.D	1	05/18/11	PR	05/10/11	OP24869	MSS1021
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	14.4	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.1	5.0	0.34	ug/l	J U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
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J = Indicates an estimated value
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 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P93C-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.2	2.0	0.49	ug/l	Bu
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	64%		15-110%
4165-60-0	Nitrobenzene-d5	80%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	73%		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

Page 1 of 1

3.4

3

Client Sample ID: P93C-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52886.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	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	0.012	ug/l	
208-96-8	Acenaphthylene	0.041	0.10	0.028	ug/l	J
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	0.090	0.20	0.012	ug/l	J
91-20-3	Naphthalene	0.030	0.10	0.011	ug/l	J
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	85%		30-130%
321-60-8	2-Fluorobiphenyl	69%		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

3.4
3

Client Sample ID: P93C-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-4	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2986.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

	Initial Volume	Final Volume
Run #1	32.8 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	167%		36-173%
460-00-4	Bromofluorobenzene (S)	170%		36-173%

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

Report of Analysis

Client Sample ID:	TB-ROX-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-5	Date Received:	05/07/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106247.D	1	05/19/11	DFT	n/a	n/a	MSG4288
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-ROX-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-5	Date Received:	05/07/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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

3.5
3

Client Sample ID: TB-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-5	Date Received: 05/07/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	118%		70-130%
2037-26-5	Toluene-D8	115%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

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

3.5
3

Client Sample ID: TB-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-5	Date Received: 05/07/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2987.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	33.0 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	132%		36-173%
460-00-4	Bromofluorobenzene (S)	132%		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:	MW09-ROX-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-6	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106252.D	1	05/19/11	DFT	n/a	n/a	MSG4288
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	WS
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	WS
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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:	MW09-ROX-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-6	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	WJ
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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: MW09-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-6	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	120%		70-130%
2037-26-5	Toluene-D8	114%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

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

3.6
3

Client Sample ID: MW09-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-6	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72651A.D	1	05/18/11	KR	05/10/11	OP24869	MSI2607
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.7	0.75	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.66	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.7	0.56	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.7	0.67	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.7	2.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	19	2.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.7	4.9	ug/l	
95-48-7	2-Methylphenol	ND	9.7	0.47	ug/l	
	3&4-Methylphenol	ND	9.7	0.61	ug/l	
88-75-5	2-Nitrophenol	ND	9.7	0.64	ug/l	
100-02-7	4-Nitrophenol	ND	19	4.9	ug/l	
87-86-5	Pentachlorophenol	ND	9.7	3.2	ug/l	
108-95-2	Phenol	ND	4.9	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.7	0.39	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.7	0.37	ug/l	
62-53-3	Aniline	ND	9.7	0.44	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.9	0.31	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.9	0.40	ug/l	
100-51-6	Benzyl Alcohol	ND	9.7	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.30	ug/l	
106-47-8	4-Chloroaniline	ND	9.7	0.56	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.34	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.20	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.9	0.59	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	4.9	0.28	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.7	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.7	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.9	2.4	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.31	ug/l	
84-74-2	Di-n-butyl phthalate	0.46	4.9	0.33	ug/l	✓
117-84-0	Di-n-octyl phthalate	ND	4.9	0.33	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

3.6
3

Client Sample ID: MW09-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-6	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.8	4.9	0.59	ug/l	YU
131-11-3	Dimethyl phthalate	ND	4.9	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	0.47	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.7	2.4	ug/l	
67-72-1	Hexachloroethane	ND	4.9	0.42	ug/l	
78-59-1	Isophorone	ND	4.9	0.46	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.54	ug/l	
88-74-4	2-Nitroaniline	ND	9.7	0.32	ug/l	
99-09-2	3-Nitroaniline	ND	9.7	0.31	ug/l	
100-01-6	4-Nitroaniline	ND	9.7	0.32	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.30	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	4.9	2.4	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	4.9	0.39	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.59	ug/l	
110-86-1	Pyridine	ND	9.7	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	77%		15-110%
4165-60-0	Nitrobenzene-d5	72%		30-130%
321-60-8	2-Fluorobiphenyl	76%		30-130%
1718-51-0	Terphenyl-d14	80%		30-130%

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

Report of Analysis

3.6
3

Client Sample ID: MW09-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-6	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52887.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.097	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.097	0.027	ug/l	
120-12-7	Anthracene	ND	0.097	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.049	0.010	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.097	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.049	0.0093	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.097	0.014	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.097	0.011	ug/l	
218-01-9	Chrysene	ND	0.097	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.097	0.015	ug/l	
206-44-0	Fluoranthene	0.020	0.097	0.016	ug/l	J
86-73-7	Fluorene	ND	0.097	0.043	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.097	0.012	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.19	0.012	ug/l	
91-20-3	Naphthalene	ND	0.097	0.010	ug/l	
85-01-8	Phenanthrene	ND	0.049	0.012	ug/l	
129-00-0	Pyrene	ND	0.097	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	71%		30-130%
1718-51-0	Terphenyl-d14	98%		30-130%

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

Report of Analysis

Client Sample ID: MW09-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-6	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2989.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	31.6 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	113%		36-173%
460-00-4	Bromofluorobenzene (S)	123%		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-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-7	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106248.D	1	05/19/11	DFT	n/a	n/a	MSG4288
Run #2							

Run #	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	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	0.41	0.50	0.35	ug/l	J
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	u/s
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	u/s
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	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-050611	Date Sampled:	05/06/11
Lab Sample ID:	MC19-7	Date Received:	05/07/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	W
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	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-050611	
Lab Sample ID: MC19-7	Date Sampled: 05/06/11
Matrix: AQ - Ground Water	Date Received: 05/07/11
Method: SW846 8260B	Percent Solids: n/a
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%		70-130%
2037-26-5	Toluene-D8	110%		70-130%
460-00-4	4-Bromofluorobenzene	104%		70-130%

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-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-7	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S23930.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.5	0.73	ug/l	
95-57-8	2-Chlorophenol	ND	4.8	0.65	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.5	0.54	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.5	0.66	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.5	2.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	19	2.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	4.8	ug/l	
95-48-7	2-Methylphenol	ND	9.5	0.46	ug/l	
	3&4-Methylphenol	ND	9.5	0.60	ug/l	
88-75-5	2-Nitrophenol	ND	9.5	0.63	ug/l	
100-02-7	4-Nitrophenol	ND	19	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	9.5	3.2	ug/l	
108-95-2	Phenol	ND	4.8	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.5	0.38	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.5	0.36	ug/l	
62-53-3	Aniline	ND	9.5	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.8	0.30	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.8	0.39	ug/l	
100-51-6	Benzyl Alcohol	ND	9.5	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.29	ug/l	
106-47-8	4-Chloroaniline	ND	9.5	0.55	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.33	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.22	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.20	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.8	0.58	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	4.8	0.28	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.5	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.5	0.32	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	2.4	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	4.8	0.32	ug/l	u
117-84-0	Di-n-octyl phthalate	ND	4.8	0.32	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-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-7	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.90	4.8	0.58	ug/l	YU
131-11-3	Dimethyl phthalate	ND	4.8	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.8	1.9	0.47	ug/l	YU
118-74-1	Hexachlorobenzene	ND	4.8	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.4	ug/l	
67-72-1	Hexachloroethane	ND	4.8	0.41	ug/l	
78-59-1	Isophorone	ND	4.8	0.45	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.53	ug/l	
88-74-4	2-Nitroaniline	ND	9.5	0.32	ug/l	
99-09-2	3-Nitroaniline	ND	9.5	0.31	ug/l	
100-01-6	4-Nitroaniline	ND	9.5	0.32	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.29	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	4.8	2.4	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	4.8	0.39	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.58	ug/l	
110-86-1	Pyridine	ND	9.5	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	85%		15-110%
4165-60-0	Nitrobenzene-d5	96%		30-130%
321-60-8	2-Fluorobiphenyl	84%		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

3.7
3

Client Sample ID: MW11-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-7	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52882.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.095	0.011	ug/l	J
208-96-8	Acenaphthylene	ND	0.095	0.027	ug/l	J
120-12-7	Anthracene	ND	0.095	0.025	ug/l	J
56-55-3	Benzo(a)anthracene	0.042	0.048	0.010	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.095	0.012	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.025	0.048	0.0091	ug/l	J
191-24-2	Benzo(g,h,i)perylene	0.022	0.095	0.014	ug/l	J
207-08-9	Benzo(k)fluoranthene	0.014	0.095	0.011	ug/l	J
218-01-9	Chrysene	0.037	0.095	0.012	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	0.015	ug/l	J
206-44-0	Fluoranthene	0.026	0.095	0.015	ug/l	J
86-73-7	Fluorene	ND	0.095	0.042	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.015	0.095	0.012	ug/l	J
91-57-6	2-Methylnaphthalene	ND	0.19	0.011	ug/l	J
91-20-3	Naphthalene	ND	0.095	0.010	ug/l	J
85-01-8	Phenanthrene	0.025	0.048	0.012	ug/l	J
129-00-0	Pyrene	0.026	0.095	0.019	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	98%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	108%		30-130%

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

Report of Analysis

3.7
3

Client Sample ID: MW11-ROX-050611	Date Sampled: 05/06/11
Lab Sample ID: MC19-7	Date Received: 05/07/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK2990.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
Run #2							

	Initial Volume	Final Volume
Run #1	31.3 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0078	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	118%		36-173%
460-00-4	Bromofluorobenzene (S)	111%		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

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

Lab # _____
 Lab # _____
 Lab # _____
 Lab # _____
 Lab # _____
 Lab # _____



Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box:

<input type="checkbox"/> ENV SERVICES	<input type="checkbox"/> ENV RETAIL	<input type="checkbox"/> OIL RETAIL
<input type="checkbox"/> ENV SOURCE	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> OILS
<input type="checkbox"/> OIL FUELLINE	<input type="checkbox"/> OTHER	

Print Bill To Contact Name: WENDY PENNINGTON

INCIDENT # (ENV SERVICES) 07210840

DATE: 5/6/11

PO # _____

BAP # _____

PAGE 1 of 1

LABORATORY: URB CORPORATION

1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

WENDY PENNINGTON

314-743-4100 or 341-452-6028 314-428-0482

DELIVERABLE: DEL 1 DEL 2 DEL 3 DEL 4 PER (SPECIFY) EDC

TEMPERATURE ON RECEIPT: Cooler #1 _____ Cooler #2 _____ Cooler #3 _____

SPECIAL INSTRUCTIONS OR NOTES: _____

900 South Central Ave. ROXANA, VA

E. MATUR, R. RATAM

LAB USE ONLY: MC19

LAB USE ONLY	Field Sample Identification	SAMPLING		MAYBE	PRESERVATIVE						IN. OF CONT.	VOC 82508	VOC 8011	SVOC 8270C	PAH 8270LL	PID (ppm)	FIELD NOTES:
		DATE	TIME		HEX.	PHOS	ARSENIC	ALUM	OTHER								
	1 P93A-ROX-050511 ✓	5/5	1000	W	3			2	2	7	X	X	X	X	X	0	
	2 P93D-ROX-050511 ✓		1015								X	X	X	X	X	0	
	3 P93B-ROX-050511 ✓		1110								X	X	X	X	X	0	
	4 P93C-ROX-050611 ✓	5/6	0950								X	X	X	X	X	0	
	5 TB-ROX-050611 ✓	5/6			1					1	X	X				0	
	6 MW09-ROX-050611 ✓	5/6	1240		3			2	2	7	X	X	X	X	X		
	7 MW11-ROX-050611 ✓	5/6	1425		3			2	2	7	X	X	X	X	X		
	7MS MW11-ROX-050611MS ✓	5/6	1425		3			2	2	7	X	X	X	X	X		Loc: 2C4,
	7MS MW11-ROX-050611MS ✓	5/6	1425	water	3			2	2	7	X	X	X	X	X		16.0 2.3, 2.1, 2.1

Subscribed by (signature): <i>[Signature]</i>	Received by (signature): <i>[Signature]</i>	Date: 050611	Time: 1630
Subscribed by (signature): FEDX	Received by (signature): <i>[Signature]</i>	Date: 5-7-11	Time: 9:30

4.1
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Shell Oil Products Chain Of Custody Record

LAB (LOCATION) _____

AGENCY: CITY SERVICES CITY RETAIL CELL RETAIL
 CITY WASH CONSULTANT LUBES
 CELL FUELLINE OTHER _____

Lab Vendor # _____

Please Check Appropriate Box:

Print BSM To Contact Name: WENDY PENNINGTON

INCIDENT # (ENV SERVICES): 87210040

DATE: 5/6/11

PO # _____ SAP # _____

DATE RECEIVED: 5/6/11

LAB USE ONLY: 340081

CLIENT: URS CORPORATION
 ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

CONTACT: WENDY PENNINGTON
 PHONE: 314-743-4186 or 341-452-9828 / 314-420-0482

LAB ADDRESS: Shell Site only
 900 South Central Ave. ROXANA, IL
 CONTACT: E. MATUR, N. SATAM

VEHICLE INFORMATION: _____
 MAKE: _____ MODEL: _____ YEAR: _____

DELIVERABLES: DEL. 1 DEL. 2 DEL. 3 DEL. 4 OTHER (SPECIFY) EDD _____

TEMPERATURE ON RECEIPT: C1 _____ C2 _____ C3 _____

SPECIAL INSTRUCTIONS OR NOTES: _____

LAB USE ONLY	Field Sample Identification		SAMPLING		MATRIX	SUSCEPTIVE						NO. OF SAMPLES	VOL. (ML)	FOC	BET	SVOC	BZTC	PAH	SETROLL	PID (ppm)	FIELD NOTES: TEMPERATURE ON RECEIPT °C
	DATE	TIME	INCL	INSD		INCRK	INCRS	OTHER													
	P93A-Rox-050511	5/5	1000	W	3		2	2	7	X	X	X	X	X							
	P93D-Rox-050511		1018							X	X	X	X	X							
	P93B-Rox-050511		1110							X	X	X	X	X							
	P93C-Rox-050611	5/6	0950							X	X	X	X	X							
	TB-Rox-050611	5/6			1				1	X	X										
	MW09-Rox-050611	5/6	1240		3		2	2	7	X	X	X	X	X							
	MW11-Rox-050611	5/6	1425		3		2	2	7	X	X	X	X	X							
	MW11-Rox-050611MS	5/6	1425		3		2	2	7	X	X	X	X	X							
	MPW11-Rox-050611MS	5/6	1425		3		2	2	7	X	X	X	X	X							

DELIVERED BY (SIGNATURE): _____ DATE: _____

RECEIVED BY (SIGNATURE): _____ DATE: _____

DATE: 050611 TIME: 1630

FED EX

WJL/B Review

MC19: Chain of Custody
Page 2 of 4

LAB (LOCATION)



Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
 1234567890
 1234567890
 1234567890
 1234567890
 Lab Vendor #

Please Check Appropriate Box:

<input type="checkbox"/> ENV. SERVICES	<input type="checkbox"/> ENVIRONMENTAL	<input type="checkbox"/> WELL ANAL.
<input type="checkbox"/> ENVIRONMENTAL	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> OTHER
<input type="checkbox"/> WELL ANAL.	<input type="checkbox"/> OTHER	

Print Bill To Contact Name:
 WENDY PENNINGTON
 PO #
 INCIDENT # (ENV SERVICES) 0 7 2 1 0 8 4 0
 DATE 5/6/11
 SAP #
 3 4 0 0 8 1
 PAGE: 1 of 1

LABORATORY
 URS CORPORATION
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 302, ST. LOUIS, MO 63110
 WENDY PENNINGTON
 314-743-4199 or 341-452-8920
 DELIVERABLE: DEL. 1 DEL. 2 DEL. 3 DEL. 4 DEL. (SPECIFY) EDD
 SPECIAL INSTRUCTIONS OR NOTES:

CITY ADDRESS (Street and City)
 900 South Central Ave. ROXANA
 STATE (State)
 ZIP CODE (5 digit)
 E. MATUR, N. SATAM
 LAB USE ONLY
 PROJECT #
 ROXANA 2011 GW1
 2142293.0004

LAB USE ONLY	Field Sample Identification	SAMPLING		MATHS	PRESERVATION				NO. OF BOTT.	REQUESTED ANALYSIS				PID (ppm)	FIELD NOTES: TEMPERATURE ON RECEIPT °C Container PID Readings of Laboratory Note
		DATE	TIME		HCL	HNO3	H2SO4	OTHER		VOC 8080B	VOC 8011	SVOC 8270C	PAH 8270L		
	P93A-ROX-050511	5/5	1000	✓	3		2	2	7	x	x	x	x	0	
	P93D-ROX-050511		1015							x	x	x	x	0	
	P93B-ROX-050511		1110							x	x	x	x	0	
	P93C-ROX-050611	5/6	0950							x	x	x	x	0	
	TB-ROX-050611	5/6			1		1			x	x				
	MW09-ROX-050611	5/6	1240		3		2	2	7	x	x	x	x		
	MW11-ROX-050611	5/6	1425		3		2	2	7	x	x	x	x		
	MW11-ROX-050611MS	5/6	1425		3		2	2	7	x	x	x	x		
	MW11-ROX-050611MS	5/6	1425		3		2	2	7	x	x	x	x		

Released by (Signature) *[Signature]* Date: 5/6/11 Time: 1630
 Received by (Signature) *[Signature]* Date: 5/6/11 Time: 1630
 Released by (Signature) Date: Time:
 Received by (Signature) Date: Time:
 Released by (Signature) Date: Time:
 Received by (Signature) Date: Time:
 FED EX

4.1
4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC19

Client: URS

Immediate Client Services Action Required: No

Date / Time Received: 5/7/2011

Delivery Method:

Client Service Action Required at Login: No

Project:

No. Coolers: 3

Airbill #'s:

<u>Cooler Security</u>	<u>Y or N</u>	<u>Y or N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK: <input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Cooler temp verification:	Infrared gun
3. Cooler media:	Ice (bag)

<u>Quality Control Preservatio</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
2. Bottles received for unspecified tests:	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
5. Filling instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>

Comments

 4.1
4

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC19

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC19-1 Collected: 05-MAY-11 10:00 By: EANS Received: 07-MAY-11 By: JB						
P93A-ROX-050511						
MC19-1	SW846 8270C BY SIM	17-MAY-11 17:03	PR	10-MAY-11 CA		B8270SIMP AH
MC19-1	SW846 8260B	18-MAY-11 13:28	DFT			V8260SL
MC19-1	SW846 8270C	18-MAY-11 16:38	PR	10-MAY-11 CA		AB8270SL
MC19-1	SW846 8260B	18-MAY-11 20:56	DFT			V8260SL
MC19-1	SW846 8270C	19-MAY-11 13:54	PR	10-MAY-11 CA		AB8270SL
MC19-1	SW846 8011	19-MAY-11 15:05	AP	18-MAY-11 FC		V8011EDB
MC19-2 Collected: 05-MAY-11 10:18 By: EANS Received: 07-MAY-11 By: JB						
P93D-ROX-050511						
MC19-2	SW846 8270C BY SIM	17-MAY-11 17:37	PR	10-MAY-11 CA		B8270SIMP AH
MC19-2	SW846 8270C	18-MAY-11 17:08	PR	10-MAY-11 CA		AB8270SL
MC19-2	SW846 8260B	19-MAY-11 13:55	DFT			V8260SL
MC19-2	SW846 8011	19-MAY-11 15:31	AP	18-MAY-11 FC		V8011EDB
MC19-3 Collected: 05-MAY-11 11:10 By: EANS Received: 07-MAY-11 By: JB						
P93B-ROX-050511						
MC19-3	SW846 8270C BY SIM	17-MAY-11 18:08	PR	10-MAY-11 CA		B8270SIMP AH
MC19-3	SW846 8260B	18-MAY-11 14:23	DFT			V8260SL
MC19-3	SW846 8270C	18-MAY-11 17:38	PR	10-MAY-11 CA		AB8270SL
MC19-3	SW846 8260B	18-MAY-11 19:32	DFT			V8260SL
MC19-3	SW846 8011	19-MAY-11 15:58	AP	18-MAY-11 FC		V8011EDB
MC19-4 Collected: 06-MAY-11 09:50 By: EANS Received: 07-MAY-11 By: JB						
P93C-ROX-050611						
MC19-4	SW846 8270C BY SIM	17-MAY-11 18:37	PR	10-MAY-11 CA		B8270SIMP AH
MC19-4	SW846 8260B	18-MAY-11 14:51	DFT			V8260SL
MC19-4	SW846 8270C	18-MAY-11 18:08	PR	10-MAY-11 CA		AB8270SL
MC19-4	SW846 8260B	18-MAY-11 20:00	DFT			V8260SL
MC19-4	SW846 8011	19-MAY-11 16:25	AP	18-MAY-11 FC		V8011EDB
MC19-5 Collected: 06-MAY-11 00:00 By: EANS Received: 07-MAY-11 By: JB						
TB-ROX-050611						
MC19-5	SW846 8260B	19-MAY-11 12:04	DFT			V8260SL

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC19

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC19-5	SW846 8011	19-MAY-11 16:51	AP	18-MAY-11 FC		V8011EDB
MC19-6 Collected: 06-MAY-11 12:40 By: EANS Received: 07-MAY-11 By: JB MW09-ROX-050611						
MC19-6	SW846 8270C BY SIM	17-MAY-11 19:10	PR	10-MAY-11 CA		B8270SIMPAH
MC19-6	SW846 8270C	18-MAY-11 20:46	KR	10-MAY-11 CA		AB8270SL
MC19-6	SW846 8260B	19-MAY-11 14:23	DFT			V8260SL
MC19-6	SW846 8011	19-MAY-11 17:44	AP	18-MAY-11 FC		V8011EDB
MC19-7 Collected: 06-MAY-11 14:25 By: EANS Received: 07-MAY-11 By: JB MW11-ROX-050611						
MC19-7	SW846 8270C	15-MAY-11 13:05	KR	10-MAY-11 CA		AB8270SL
MC19-7	SW846 8270C BY SIM	17-MAY-11 16:35	PR	10-MAY-11 CA		B8270SIMPAH
MC19-7	SW846 8260B	19-MAY-11 12:32	DFT			V8260SL
MC19-7	SW846 8011	19-MAY-11 18:11	AP	18-MAY-11 FC		V8011EDB

4.2
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Accutest Internal Chain of Custody

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/07/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC19-1.1	VOC Ref #2	Dana Tyron	05/18/11 11:31	Retrieve from Storage
MC19-1.1	Dana Tyron	GCMMSG	05/18/11 11:31	Load on Instrument
MC19-1.1	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-1.1	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-1.5	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-1.5	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-1.6	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-1.6	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-2.1	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-2.1	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-2.1	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-2.1	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-2.3	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-2.3	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-2.3	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-2.3	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-2.4	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-2.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-2.6	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-2.6	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-3.1	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-3.1	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-3.1	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-3.1	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-3.5	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-3.5	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-3.7	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-3.7	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-4.3	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-4.3	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-4.3	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-4.3	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-4.5	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/07/11

4.3

4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC19-4.5	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-4.7	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-4.7	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-5.1	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-5.1	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-5.1	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-5.1	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-5.1	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-5.1	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-5.1	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-5.1	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-5.4	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-5.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-6.1	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-6.1	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-6.1	GCMMSG	Dana Tyron	05/18/11 11:30	Unload from Instrument
MC19-6.1	Dana Tyron	VOC Ref #2	05/18/11 11:30	Return to Storage
MC19-6.1	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-6.1	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-6.1	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-6.1	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-6.3	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-6.3	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-6.3	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-6.3	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-6.4	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-6.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-6.7	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-6.7	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-7.1	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-7.1	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-7.1	GCMMSG	Dana Tyron	05/19/11 09:56	Unload from Instrument
MC19-7.1	Dana Tyron	VOC Ref #2	05/19/11 09:56	Return to Storage
MC19-7.2	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-7.2	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument

Accutest Internal Chain of Custody

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/07/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC19-7.2	GCMMSG	Dana Tyron	05/18/11 17:11	Unload from Instrument
MC19-7.2	Dana Tyron	VOC Ref #2	05/18/11 17:11	Return to Storage
MC19-7.2	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-7.2	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-7.2	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-7.2	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-7.3	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-7.3	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-7.3	GCMMSG	Dana Tyron	05/18/11 17:11	Unload from Instrument
MC19-7.3	Dana Tyron	VOC Ref #2	05/18/11 17:11	Return to Storage
MC19-7.3	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-7.3	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-7.3	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-7.3	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-7.4	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-7.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-7.5	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-7.5	Francisco Castellanos		05/19/11 13:05	Depleted
MC19-7.6	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-7.6	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-7.7	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-7.7	Mahmoud Afzali		05/10/11 15:48	Depleted
MC19-7.8	VOC Ref #2	Dana Tyron	05/18/11 10:39	Retrieve from Storage
MC19-7.8	Dana Tyron	GCMMSG	05/18/11 10:39	Load on Instrument
MC19-7.8	GCMMSG	Dana Tyron	05/18/11 17:11	Unload from Instrument
MC19-7.8	Dana Tyron	VOC Ref #2	05/18/11 17:11	Return to Storage
MC19-7.8	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-7.8	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-7.8	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-7.8	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-7.12	VOC Ref #2	Dana Tyron	05/19/11 11:21	Retrieve from Storage
MC19-7.12	Dana Tyron	GCMMSG	05/19/11 11:21	Load on Instrument
MC19-7.12	GCMMSG	Dana Tyron	05/20/11 10:26	Unload from Instrument
MC19-7.12	Dana Tyron	VOC Ref #2	05/20/11 10:27	Return to Storage
MC19-7.15	VOC Ref #2	Francisco Castellanos	05/18/11 14:48	Retrieve from Storage
MC19-7.15	Francisco Castellanos		05/19/11 13:05	Depleted

Accutest Internal Chain of Custody

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/07/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC19-7.20	Walk In Ref #22	Mahmoud Afzali	05/10/11 11:35	Retrieve from Storage
MC19-7.20	Mahmoud Afzali		05/10/11 15:48	Depleted

GC/MS Volatiles

5

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

Page 1 of 3

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-MB	G106196.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

5.1.1
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Method Blank Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-MB	G106196.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	ug/l	

Method Blank Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-MB	G106196.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	110%	70-130%
2037-26-5	Toluene-D8	110%	70-130%
460-00-4	4-Bromofluorobenzene	109%	70-130%

5.1.1
5

Method Blank Summary

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-MB	G106245.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
107-02-8	Acrolein	ND	25	17	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.0	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	0.83	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

Method Blank Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-MB	G106245.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
123-91-1	1,4-Dioxane	ND	25	18	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.90	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
91-20-3	Naphthalene	ND	5.0	0.37	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	ug/l	

5.1.2
5

Method Blank Summary

Page 3 of 3

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-MB	G106245.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	113%	70-130%
2037-26-5	Toluene-D8	114%	70-130%
460-00-4	4-Bromofluorobenzene	103%	70-130%

5.1.2
5

Blank Spike Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-BS	G106195.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	41.2	82	70-130
107-02-8	Acrolein	250	3120	1248* a	70-130
107-13-1	Acrylonitrile	50	49.0	98	70-130
71-43-2	Benzene	50	53.6	107	70-130
108-86-1	Bromobenzene	50	50.3	101	70-130
74-97-5	Bromochloromethane	50	61.0	122	70-130
75-27-4	Bromodichloromethane	50	56.1	112	70-130
75-25-2	Bromoform	50	52.4	105	70-130
74-83-9	Bromomethane	50	54.0	108	70-130
78-93-3	2-Butanone (MEK)	50	49.6	99	70-130
104-51-8	n-Butylbenzene	50	52.6	105	70-130
135-98-8	sec-Butylbenzene	50	52.9	106	70-130
98-06-6	tert-Butylbenzene	50	50.1	100	70-130
75-15-0	Carbon disulfide	50	61.7	123	70-130
56-23-5	Carbon tetrachloride	50	57.3	115	70-130
108-90-7	Chlorobenzene	50	52.9	106	70-130
75-00-3	Chloroethane	50	57.8	116	70-130
110-75-8	2-Chloroethyl vinyl ether	50	237	474* a	70-130
67-66-3	Chloroform	50	58.0	116	70-130
74-87-3	Chloromethane	50	44.8	90	70-130
95-49-8	o-Chlorotoluene	50	48.3	97	70-130
106-43-4	p-Chlorotoluene	50	50.4	101	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	43.6	87	70-130
124-48-1	Dibromochloromethane	50	54.6	109	70-130
106-93-4	1,2-Dibromoethane	50	53.5	107	70-130
95-50-1	1,2-Dichlorobenzene	50	51.5	103	70-130
541-73-1	1,3-Dichlorobenzene	50	51.7	103	70-130
106-46-7	1,4-Dichlorobenzene	50	51.1	102	70-130
75-71-8	Dichlorodifluoromethane	50	44.3	89	70-130
75-34-3	1,1-Dichloroethane	50	55.4	111	70-130
107-06-2	1,2-Dichloroethane	50	51.1	102	70-130
75-35-4	1,1-Dichloroethene	50	60.0	120	70-130
156-59-2	cis-1,2-Dichloroethene	50	55.2	110	70-130
156-60-5	trans-1,2-Dichloroethene	50	57.4	115	70-130
78-87-5	1,2-Dichloropropane	50	53.6	107	70-130
142-28-9	1,3-Dichloropropane	50	50.4	101	70-130

5.2.1
5

Blank Spike Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-BS	G106195.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
594-20-7	2,2-Dichloropropane	50	59.1	118	70-130
563-58-6	1,1-Dichloropropene	50	56.2	112	70-130
10061-01-5	cis-1,3-Dichloropropene	50	55.6	111	70-130
10061-02-6	trans-1,3-Dichloropropene	50	60.3	121	70-130
123-91-1	1,4-Dioxane	250	225	90	70-130
97-63-2	Ethyl methacrylate	50	50.1	100	77-137
100-41-4	Ethylbenzene	50	53.2	106	70-130
87-68-3	Hexachlorobutadiene	50	57.0	114	70-130
591-78-6	2-Hexanone	50	33.6	67* b	70-130
98-82-8	Isopropylbenzene	50	58.8	118	70-130
99-87-6	p-Isopropyltoluene	50	54.5	109	70-130
1634-04-4	Methyl Tert Butyl Ether	50	53.5	107	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	43.3	87	70-130
74-95-3	Methylene bromide	50	57.2	114	70-130
75-09-2	Methylene chloride	50	57.3	115	70-130
91-20-3	Naphthalene	50	41.2	82	70-130
103-65-1	n-Propylbenzene	50	51.9	104	70-130
100-42-5	Styrene	50	54.4	109	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	53.5	107	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	47.2	94	70-130
127-18-4	Tetrachloroethene	50	55.5	111	70-130
108-88-3	Toluene	50	57.6	115	70-130
87-61-6	1,2,3-Trichlorobenzene	50	45.6	91	70-130
120-82-1	1,2,4-Trichlorobenzene	50	46.9	94	70-130
71-55-6	1,1,1-Trichloroethane	50	59.8	120	70-130
79-00-5	1,1,2-Trichloroethane	50	57.6	115	70-130
79-01-6	Trichloroethene	50	56.4	113	70-130
75-69-4	Trichlorofluoromethane	50	56.3	113	70-130
96-18-4	1,2,3-Trichloropropane	50	43.3	87	70-130
95-63-6	1,2,4-Trimethylbenzene	50	51.1	102	70-130
108-67-8	1,3,5-Trimethylbenzene	50	50.2	100	70-130
108-05-4	Vinyl Acetate	50	46.8	94	70-130
75-01-4	Vinyl chloride	50	51.6	103	70-130
	m,p-Xylene	100	109	109	70-130
95-47-6	o-Xylene	50	54.1	108	70-130
1330-20-7	Xylene (total)	150	164	109	70-130

Blank Spike Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4286-BS	G106195.D	1	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	112%	70-130%
2037-26-5	Toluene-D8	113%	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.

5.2.1
5

Blank Spike Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-BS	G106244.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	36.2	72	70-130
107-02-8	Acrolein	250	3050	1220* a	70-130
107-13-1	Acrylonitrile	50	46.5	93	70-130
71-43-2	Benzene	50	51.8	104	70-130
108-86-1	Bromobenzene	50	48.2	96	70-130
74-97-5	Bromochloromethane	50	61.3	123	70-130
75-27-4	Bromodichloromethane	50	54.5	109	70-130
75-25-2	Bromoform	50	54.1	108	70-130
74-83-9	Bromomethane	50	48.0	96	70-130
78-93-3	2-Butanone (MEK)	50	47.0	94	70-130
104-51-8	n-Butylbenzene	50	47.6	95	70-130
135-98-8	sec-Butylbenzene	50	48.8	98	70-130
98-06-6	tert-Butylbenzene	50	45.8	92	70-130
75-15-0	Carbon disulfide	50	55.7	111	70-130
56-23-5	Carbon tetrachloride	50	55.2	110	70-130
108-90-7	Chlorobenzene	50	51.5	103	70-130
75-00-3	Chloroethane	50	50.5	101	70-130
110-75-8	2-Chloroethyl vinyl ether	50	245	490* a	70-130
67-66-3	Chloroform	50	56.2	112	70-130
74-87-3	Chloromethane	50	30.9	62* b	70-130
95-49-8	o-Chlorotoluene	50	44.7	89	70-130
106-43-4	p-Chlorotoluene	50	46.6	93	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	40.6	81	70-130
124-48-1	Dibromochloromethane	50	54.7	109	70-130
106-93-4	1,2-Dibromoethane	50	53.8	108	70-130
95-50-1	1,2-Dichlorobenzene	50	49.3	99	70-130
541-73-1	1,3-Dichlorobenzene	50	48.9	98	70-130
106-46-7	1,4-Dichlorobenzene	50	48.1	96	70-130
75-71-8	Dichlorodifluoromethane	50	27.1	54* b	70-130
75-34-3	1,1-Dichloroethane	50	51.9	104	70-130
107-06-2	1,2-Dichloroethane	50	48.5	97	70-130
75-35-4	1,1-Dichloroethene	50	56.0	112	70-130
156-59-2	cis-1,2-Dichloroethene	50	53.6	107	70-130
156-60-5	trans-1,2-Dichloroethene	50	55.6	111	70-130
78-87-5	1,2-Dichloropropane	50	50.6	101	70-130
142-28-9	1,3-Dichloropropane	50	49.2	98	70-130

Blank Spike Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-BS	G106244.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
594-20-7	2,2-Dichloropropane	50	56.6	113	70-130
563-58-6	1,1-Dichloropropene	50	54.0	108	70-130
10061-01-5	cis-1,3-Dichloropropene	50	55.3	111	70-130
10061-02-6	trans-1,3-Dichloropropene	50	60.0	120	70-130
123-91-1	1,4-Dioxane	250	217	87	70-130
97-63-2	Ethyl methacrylate	50	49.0	98	77-137
100-41-4	Ethylbenzene	50	51.1	102	70-130
87-68-3	Hexachlorobutadiene	50	54.7	109	70-130
591-78-6	2-Hexanone	50	27.0	54* b	70-130
98-82-8	Isopropylbenzene	50	54.2	108	70-130
99-87-6	p-Isopropyltoluene	50	50.4	101	70-130
1634-04-4	Methyl Tert Butyl Ether	50	52.2	104	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	40.5	81	70-130
74-95-3	Methylene bromide	50	57.5	115	70-130
75-09-2	Methylene chloride	50	54.2	108	70-130
91-20-3	Naphthalene	50	39.0	78	70-130
103-65-1	n-Propylbenzene	50	47.1	94	70-130
100-42-5	Styrene	50	53.8	108	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	53.0	106	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	43.7	87	70-130
127-18-4	Tetrachloroethene	50	55.6	111	70-130
108-88-3	Toluene	50	55.9	112	70-130
87-61-6	1,2,3-Trichlorobenzene	50	43.2	86	70-130
120-82-1	1,2,4-Trichlorobenzene	50	44.7	89	70-130
71-55-6	1,1,1-Trichloroethane	50	57.6	115	70-130
79-00-5	1,1,2-Trichloroethane	50	56.7	113	70-130
79-01-6	Trichloroethene	50	55.3	111	70-130
75-69-4	Trichlorofluoromethane	50	51.1	102	70-130
96-18-4	1,2,3-Trichloropropane	50	41.1	82	70-130
95-63-6	1,2,4-Trimethylbenzene	50	47.6	95	70-130
108-67-8	1,3,5-Trimethylbenzene	50	46.5	93	70-130
108-05-4	Vinyl Acetate	50	43.2	86	70-130
75-01-4	Vinyl chloride	50	41.1	82	70-130
	m,p-Xylene	100	107	107	70-130
95-47-6	o-Xylene	50	52.8	106	70-130
1330-20-7	Xylene (total)	150	159	106	70-130

5.2.2
5

Blank Spike Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4288-BS	G106244.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	116%	70-130%
2037-26-5	Toluene-D8	114%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%

- (a) Outside control limits. Associated samples are non-detect for this compound.
- (b) Outside control limits. Blank Spike meets program technical requirements.

5.2.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99920-1MS	G106210.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1MSD	G106211.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106197.D	1	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106209.D	5	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	M99920-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	129	52* ^a	133	53* ^a	3	70-130/30
107-02-8	Acrolein	ND	1250	12600	1008* ^b	12700	1016* ^b	1	70-130/30
107-13-1	Acrylonitrile	ND	250	238	95	233	93	2	70-130/30
71-43-2	Benzene	ND	250	280	112	280	112	0	70-130/30
108-86-1	Bromobenzene	ND	250	255	102	258	103	1	70-130/30
74-97-5	Bromochloromethane	ND	250	307	123	309	124	1	70-130/30
75-27-4	Bromodichloromethane	ND	250	271	108	274	110	1	70-130/30
75-25-2	Bromoform	ND	250	236	94	238	95	1	70-130/30
74-83-9	Bromomethane	ND	250	252	101	260	104	3	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	180	72	175	70	3	70-130/30
104-51-8	n-Butylbenzene	ND	250	255	102	259	104	2	70-130/30
135-98-8	sec-Butylbenzene	ND	250	264	106	270	108	2	70-130/30
98-06-6	tert-Butylbenzene	ND	250	258	103	260	104	1	70-130/30
75-15-0	Carbon disulfide	ND	250	234	94	240	96	3	70-130/30
56-23-5	Carbon tetrachloride	ND	250	285	114	296	118	4	70-130/30
108-90-7	Chlorobenzene	ND	250	270	108	272	109	1	70-130/30
75-00-3	Chloroethane	ND	250	268	107	283	113	5	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	250	466	186* ^a	ND	0* ^a	200* ^c	70-130/30
67-66-3	Chloroform	ND	250	290	116	296	118	2	70-130/30
74-87-3	Chloromethane	ND	250	187	75	186	74	1	70-130/30
95-49-8	o-Chlorotoluene	ND	250	247	99	252	101	2	70-130/30
106-43-4	p-Chlorotoluene	ND	250	253	101	258	103	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	220	88	219	88	0	70-130/30
124-48-1	Dibromochloromethane	ND	250	255	102	260	104	2	70-130/30
106-93-4	1,2-Dibromoethane	ND	250	271	108	273	109	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	258	103	260	104	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	258	103	263	105	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	253	101	255	102	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	179	72	184	74	3	70-130/30
75-34-3	1,1-Dichloroethane	ND	250	275	110	275	110	0	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	263	105	264	106	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	291	116	302	121	4	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	278	111	279	112	0	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	284	114	290	116	2	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	265	106	266	106	0	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	254	102	254	102	0	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99920-1MS	G106210.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1MSD	G106211.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106197.D	1	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106209.D	5	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Compound	M99920-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	250	303	121	310	124	2	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	286	114	297	119	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	273	109	273	109	0	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	291	116	299	120	3	70-130/30
123-91-1	1,4-Dioxane	ND	1250	1020	82	1070	86	5	70-130/30
97-63-2	Ethyl methacrylate	ND	250	244	98	247	99	1	72-139/30
100-41-4	Ethylbenzene	2.4	250	273	108	278	110	2	70-130/30
87-68-3	Hexachlorobutadiene	ND	250	264	106	273	109	3	70-130/30
591-78-6	2-Hexanone	ND	250	115	46* ^a	112	45* ^a	3	70-130/30
98-82-8	Isopropylbenzene	ND	250	299	120	305	122	2	70-130/30
99-87-6	p-Isopropyltoluene	ND	250	271	108	279	112	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	887 ^d	250	1170	108	1170	108	0	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	213	85	206	82	3	70-130/30
74-95-3	Methylene bromide	ND	250	289	116	288	115	0	70-130/30
75-09-2	Methylene chloride	ND	250	279	112	275	110	1	70-130/30
91-20-3	Naphthalene	ND	250	199	80	204	82	2	70-130/30
103-65-1	n-Propylbenzene	ND	250	259	104	264	106	2	70-130/30
100-42-5	Styrene	ND	250	272	109	279	112	3	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	265	106	274	110	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	231	92	232	93	0	70-130/30
127-18-4	Tetrachloroethene	ND	250	289	116	294	118	2	70-130/30
108-88-3	Toluene	ND	250	289	116	295	118	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	250	207	83	216	86	4	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	250	219	88	224	90	2	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	250	303	121	314	126	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	250	287	115	287	115	0	70-130/30
79-01-6	Trichloroethene	ND	250	290	116	295	118	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	250	279	112	286	114	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	250	206	82	205	82	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	22.9	250	281	103	286	105	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	9.6	250	264	102	267	103	1	70-130/30
108-05-4	Vinyl Acetate	ND	250	236	94	233	93	1	70-130/30
75-01-4	Vinyl chloride	ND	250	227	91	234	94	3	70-130/30
	m,p-Xylene	14.6	500	566	110	583	114	3	70-130/30
95-47-6	o-Xylene	3.7	250	279	110	282	111	1	70-130/30
1330-20-7	Xylene (total)	18.4	750	845	110	865	113	2	70-130/30

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M99920-1MS	G106210.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1MSD	G106211.D	5	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106197.D	1	05/18/11	DFT	n/a	n/a	MSG4286
M99920-1	G106209.D	5	05/18/11	DFT	n/a	n/a	MSG4286

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-1, MC19-3, MC19-4

CAS No.	Surrogate Recoveries	MS	MSD	M99920-1	M99920-1	Limits
1868-53-7	Dibromofluoromethane	111%	110%	113%	108%	70-130%
2037-26-5	Toluene-D8	113%	112%	110%	110%	70-130%
460-00-4	4-Bromofluorobenzene	93%	94%	98%	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.
- (c) High RPD due to possible matrix interference and/or sample non-homogeneity.
- (d) Result is from Run #2.

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL.:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC19-7MS	G106249.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7MSD	G106250.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7	G106248.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	21.2	42* a	21.4	43* a	1	70-130/30
107-02-8	Acrolein	ND	250	2260	904* b	2350	940* b	4	70-130/30
107-13-1	Acrylonitrile	ND	50	44.4	89	46.3	93	4	70-130/30
71-43-2	Benzene	0.41	J 50	52.8	105	52.2	104	1	70-130/30
108-86-1	Bromobenzene	ND	50	48.6	97	47.9	96	1	70-130/30
74-97-5	Bromochloromethane	ND	50	61.7	123	61.8	124	0	70-130/30
75-27-4	Bromodichloromethane	ND	50	52.3	105	51.5	103	2	70-130/30
75-25-2	Bromoform	ND	50	40.5	81	41.6	83	3	70-130/30
74-83-9	Bromomethane	ND	50	47.9	96	47.4	95	1	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	36.5	73	37.9	76	4	70-130/30
104-51-8	n-Butylbenzene	ND	50	46.3	93	45.5	91	2	70-130/30
135-98-8	sec-Butylbenzene	ND	50	48.5	97	47.7	95	2	70-130/30
98-06-6	tert-Butylbenzene	ND	50	47.3	95	45.8	92	3	70-130/30
75-15-0	Carbon disulfide	ND	50	44.9	90	44.1	88	2	70-130/30
56-23-5	Carbon tetrachloride	ND	50	55.2	110	54.5	109	1	70-130/30
108-90-7	Chlorobenzene	ND	50	52.4	105	52.3	105	0	70-130/30
75-00-3	Chloroethane	ND	50	51.5	103	51.2	102	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	58.1	116	59.4	119	2	70-130/30
67-66-3	Chloroform	ND	50	58.0	116	57.1	114	2	70-130/30
74-87-3	Chloromethane	ND	50	31.4	63* a	30.1	60* a	4	70-130/30
95-49-8	o-Chlorotoluene	ND	50	44.9	90	44.4	89	1	70-130/30
106-43-4	p-Chlorotoluene	ND	50	46.6	93	45.7	91	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	40.4	81	41.9	84	4	70-130/30
124-48-1	Dibromochloromethane	ND	50	45.7	91	45.8	92	0	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	53.3	107	53.4	107	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	49.1	98	48.4	97	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	49.2	98	48.7	97	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	47.9	96	47.2	94	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	25.8	52* a	25.9	52* a	0	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	53.8	108	53.5	107	1	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	49.6	99	49.4	99	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	56.1	112	55.3	111	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	54.5	109	54.8	110	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	56.5	113	56.4	113	0	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	52.4	105	51.0	102	3	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	49.3	99	49.1	98	0	70-130/30

5.3.2
5



Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC19-7MS	G106249.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7MSD	G106250.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7	G106248.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	50	58.3	117	57.4	115	2	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	54.1	108	53.0	106	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	53.5	107	54.0	108	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	57.7	115	57.9	116	0	70-130/30
123-91-1	1,4-Dioxane	ND	250	238	95	225	90	6	70-130/30
97-63-2	Ethyl methacrylate	ND	50	45.3	91	46.5	93	3	72-139/30
100-41-4	Ethylbenzene	ND	50	50.2	100	50.0	100	0	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	51.9	104	51.5	103	1	70-130/30
591-78-6	2-Hexanone	ND	50	21.2	42* a	21.4	43* a	1	70-130/30
98-82-8	Isopropylbenzene	ND	50	54.6	109	53.4	107	2	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	48.7	97	47.9	96	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	52.4	105	53.2	106	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	40.2	80	40.9	82	2	70-130/30
74-95-3	Methylene bromide	ND	50	57.7	115	56.3	113	2	70-130/30
75-09-2	Methylene chloride	ND	50	55.2	110	55.4	111	0	70-130/30
91-20-3	Naphthalene	ND	50	36.8	74	38.1	76	3	70-130/30
103-65-1	n-Propylbenzene	ND	50	47.1	94	45.9	92	3	70-130/30
100-42-5	Styrene	ND	50	39.2	78	39.0	78	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	52.8	106	53.3	107	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	44.8	90	45.1	90	1	70-130/30
127-18-4	Tetrachloroethene	ND	50	56.4	113	55.6	111	1	70-130/30
108-88-3	Toluene	ND	50	55.3	111	55.0	110	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	39.4	79	40.1	80	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	41.5	83	42.3	85	2	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	60.3	121	59.3	119	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	57.7	115	57.9	116	0	70-130/30
79-01-6	Trichloroethene	ND	50	57.3	115	55.5	111	3	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	53.1	106	52.2	104	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	39.8	80	39.8	80	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	42.8	86	41.8	84	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	37.9	76	37.3	75	2	70-130/30
108-05-4	Vinyl Acetate	ND	50	40.9	82	41.4	83	1	70-130/30
75-01-4	Vinyl chloride	ND	50	41.5	83	40.6	81	2	70-130/30
	m,p-Xylene	ND	100	98.2	98	97.8	98	0	70-130/30
95-47-6	o-Xylene	ND	50	50.2	100	49.2	98	2	70-130/30
1330-20-7	Xylene (total)	ND	150	148	99	147	98	1	70-130/30

5.3.2

5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC19-7MS	G106249.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7MSD	G106250.D	1	05/19/11	DFT	n/a	n/a	MSG4288
MC19-7	G106248.D	1	05/19/11	DFT	n/a	n/a	MSG4288

The QC reported here applies to the following samples:

Method: SW846 8260B

MC19-2, MC19-5, MC19-6, MC19-7

CAS No.	Surrogate Recoveries	MS	MSD	MC19-7	Limits
1868-53-7	Dibromofluoromethane	119%	119%	116%	70-130%
2037-26-5	Toluene-D8	115%	114%	110%	70-130%
460-00-4	4-Bromofluorobenzene	90%	90%	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.

5.3.2
5

Volatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSG4286-CC4240	Injection Date:	05/18/11
Lab File ID:	G106194.D	Injection Time:	10:07
Instrument ID:	GCMSCG	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	79668	9.13	120252	10.00	63129	13.28	65569	15.85	29100	6.68
Upper Limit ^a	159336	9.63	240504	10.50	126258	13.78	131138	16.35	58200	7.18
Lower Limit ^b	39834	8.63	60126	9.50	31565	12.78	32785	15.35	14550	6.18

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSG4286-BS	79724	9.13	120356	10.00	63414	13.28	65527	15.85	28326	6.68
MSG4286-MB	78604	9.13	117504	10.01	59643	13.28	49729	15.86	29263	6.68
M99920-1	77344	9.13	116669	10.01	59004	13.28	57247	15.85	27358	6.68
ZZZZZZ	78675	9.13	118220	10.00	60737	13.28	61353	15.85	28384	6.68
ZZZZZZ	77991	9.13	118712	10.00	61368	13.28	61833	15.85	28143	6.68
ZZZZZZ	77393	9.13	117609	10.00	61767	13.28	62528	15.85	42081	6.69
MC19-1	83746	9.21	79363	10.07	55391	13.28	61757	15.85	30431	6.69
MC19-3	75898	9.15	86622	10.02	56386	13.28	59113	15.85	29077	6.68
MC19-4	72301	9.13	100772	10.01	55420	13.28	50822	15.85	26745	6.68
M99920-1	72198	9.13	107293	10.00	55455	13.28	49776	15.85	25010	6.68
M99920-1MS	73127	9.13	110232	10.00	58093	13.28	60650	15.85	25263	6.68
M99920-1MSD	74073	9.13	110889	10.00	58667	13.28	60994	15.85	25519	6.67
ZZZZZZ	73421	9.13	109596	10.01	55499	13.28	47038	15.86	23188	6.68
ZZZZZZ	73016	9.13	110785	10.01	56768	13.28	47563	15.86	24964	6.68
MC19-3	74402	9.13	111538	10.01	56761	13.28	48656	15.86	26757	6.68
MC19-4	74167	9.13	112806	10.01	57402	13.28	48597	15.86	26623	6.68
ZZZZZZ	75436	9.13	112284	10.01	57891	13.28	51969	15.85	27181	6.68
MC19-1	74989	9.13	114113	10.01	57884	13.28	48323	15.86	27619	6.68

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.

5.4.1
5

Volatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSG4288-CC4240	Injection Date:	05/19/11
Lab File ID:	G106243.D	Injection Time:	10:07
Instrument ID:	GCMMSG	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	89992	9.13	136222	10.00	72315	13.28	79423	15.85	33346	6.68
Upper Limit ^a	179984	9.63	272444	10.50	144630	13.78	158846	16.35	66692	7.18
Lower Limit ^b	44996	8.63	68111	9.50	36158	12.78	39712	15.35	16673	6.18

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSG4288-BS	92242	9.13	139033	10.01	74650	13.28	80995	15.85	33468	6.68
MSG4288-MB	90068	9.13	136344	10.01	71080	13.28	62651	15.86	33708	6.68
ZZZZZZ	89015	9.13	135185	10.01	70592	13.28	63838	15.86	37497	6.68
MC19-5	88306	9.13	134294	10.01	70031	13.28	60487	15.86	32387	6.68
MC19-7	89127	9.13	134087	10.01	70246	13.28	60851	15.86	32782	6.68
MC19-7MS	90176	9.13	137233	10.01	74588	13.28	80359	15.85	34278	6.68
MC19-7MSD	89899	9.13	137800	10.01	74479	13.28	81208	15.85	35706	6.68
MC19-2	89595	9.13	138719	10.01	73172	13.28	64989	15.86	35861	6.68
MC19-6	88806	9.13	136085	10.01	72626	13.29	63511	15.86	35791	6.68
ZZZZZZ	87950	9.13	134558	10.01	71916	13.28	62706	15.86	37355	6.68
MC26-2	87734	9.13	133356	10.01	71504	13.28	62587	15.86	36073	6.68
ZZZZZZ	88594	9.13	135577	10.01	71529	13.28	63313	15.86	37439	6.68
ZZZZZZ	87426	9.13	135321	10.01	72028	13.28	63571	15.86	37577	6.68
ZZZZZZ	86676	9.13	132584	10.01	71399	13.28	62955	15.86	37385	6.68
ZZZZZZ	85651	9.13	131012	10.01	71707	13.28	62395	15.86	37851	6.68
ZZZZZZ	86733	9.13	134455	10.01	71867	13.28	62805	15.86	37314	6.68
MC26-2MS	106107	9.13	147781	10.01	70763	13.28	74995	15.85	34979	6.68
MC26-2MSD	106709	9.13	147767	10.01	70636	13.28	74145	15.85	35121	6.68
ZZZZZZ	106891	9.13	148506	10.01	70069	13.28	71894	15.85	34543	6.68
ZZZZZZ	106378	9.13	147387	10.01	69364	13.28	66210	15.85	33261	6.68
ZZZZZZ	105698	9.13	145565	10.01	67034	13.28	60989	15.86	32045	6.68
ZZZZZZ	104605	9.13	143510	10.01	66933	13.28	57902	15.85	31486	6.68
ZZZZZZ	104097	9.13	143597	10.01	66598	13.28	55894	15.86	30455	6.68

- 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.

5.4.2
5

Volatile Surrogate Recovery Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC19-1	G106217.D	112.0	111.0	109.0
MC19-1	G106201.D	106.0	140.0* a	90.0
MC19-2	G106251.D	119.0	114.0	102.0
MC19-3	G106214.D	108.0	110.0	107.0
MC19-3	G106203.D	104.0	130.0	93.0
MC19-4	G106215.D	112.0	111.0	107.0
MC19-4	G106204.D	110.0	121.0	106.0
MC19-5	G106247.D	118.0	115.0	107.0
MC19-6	G106252.D	120.0	114.0	102.0
MC19-7	G106248.D	116.0	110.0	104.0
M99920-1MS	G106210.D	111.0	113.0	93.0
M99920-1MSD	G106211.D	110.0	112.0	94.0
MC19-7MS	G106249.D	119.0	115.0	90.0
MC19-7MSD	G106250.D	119.0	114.0	90.0
MSG4286-BS	G106195.D	112.0	113.0	95.0
MSG4286-MB	G106196.D	110.0	110.0	109.0
MSG4288-BS	G106244.D	116.0	114.0	89.0
MSG4288-MB	G106245.D	113.0	114.0	103.0

Surrogate Compounds **Recovery Limits**

S1 = Dibromofluoromethane 70-130%
 S2 = Toluene-D8 70-130%
 S3 = 4-Bromofluorobenzene 70-130%

(a) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

5.5.1
5

GC/MS Semi-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

Page 1 of 2

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-MB	S23926.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.0	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	0.85	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.3	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	

6.1.1

6

Method Blank Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-MB	S23926.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	64%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	82%	15-110%
4165-60-0	Nitrobenzene-d5	100%	30-130%
321-60-8	2-Fluorobiphenyl	85%	30-130%
1718-51-0	Terphenyl-d14	101%	30-130%

6.1.1
6

Method Blank Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24870-MB	F52878.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

6.1.2
6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	0.025	0.050	0.011	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	99%	30-130%
321-60-8	2-Fluorobiphenyl	85%	30-130%
1718-51-0	Terphenyl-d14	120%	30-130%

Blank Spike Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-BS	S23927.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	38.6	39	30-130
95-57-8	2-Chlorophenol	100	76.6	77	30-130
59-50-7	4-Chloro-3-methyl phenol	100	81.2	81	30-130
120-83-2	2,4-Dichlorophenol	100	81.1	81	30-130
105-67-9	2,4-Dimethylphenol	100	73.5	74	30-130
51-28-5	2,4-Dinitrophenol	100	78.0	78	30-130
534-52-1	4,6-Dinitro-o-cresol	100	82.0	82	30-130
95-48-7	2-Methylphenol	100	70.4	70	30-130
	3&4-Methylphenol	200	141	71	30-130
88-75-5	2-Nitrophenol	100	81.0	81	30-130
100-02-7	4-Nitrophenol	100	47.5	48	30-130
87-86-5	Pentachlorophenol	100	86.6	87	30-130
108-95-2	Phenol	100	35.7	36	30-130
95-95-4	2,4,5-Trichlorophenol	100	79.3	79	30-130
88-06-2	2,4,6-Trichlorophenol	100	80.5	81	30-130
62-53-3	Aniline	50	22.3	45	40-140
101-55-3	4-Bromophenyl phenyl ether	50	36.5	73	40-140
85-68-7	Butyl benzyl phthalate	50	44.2	88	40-140
100-51-6	Benzyl Alcohol	50	34.9	70	40-140
91-58-7	2-Chloronaphthalene	50	38.0	76	40-140
106-47-8	4-Chloroaniline	50	33.2	66	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	39.8	80	40-140
111-44-4	bis(2-Chloroethyl)ether	50	41.7	83	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	46.5	93	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	36.8	74	40-140
122-66-7	1,2-Diphenylhydrazine	50	43.9	88	40-140
121-14-2	2,4-Dinitrotoluene	50	39.6	79	40-140
606-20-2	2,6-Dinitrotoluene	50	38.0	76	40-140
91-94-1	3,3'-Dichlorobenzidine	50	33.6	67	40-140
132-64-9	Dibenzofuran	50	37.1	74	40-140
84-74-2	Di-n-butyl phthalate	50	44.6	89	40-140
117-84-0	Di-n-octyl phthalate	50	48.6	97	40-140
84-66-2	Diethyl phthalate	50	42.5	85	40-140
131-11-3	Dimethyl phthalate	50	40.5	81	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	47.7	95	40-140
118-74-1	Hexachlorobenzene	50	34.8	70	40-140

6.2.1
6

Blank Spike Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-BS	S23927.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	21.5	43	40-140
67-72-1	Hexachloroethane	50	40.6	81	40-140
78-59-1	Isophorone	50	40.1	80	40-140
90-12-0	1-Methylnaphthalene	50	36.3	73	40-140
88-74-4	2-Nitroaniline	50	40.3	81	40-140
99-09-2	3-Nitroaniline	50	34.3	69	40-140
100-01-6	4-Nitroaniline	50	36.0	72	40-140
98-95-3	Nitrobenzene	50	40.8	82	40-140
62-75-9	n-Nitrosodimethylamine	50	26.0	52	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	47.5	95	40-140
86-30-6	N-Nitrosodiphenylamine	50	38.5	77	40-140
110-86-1	Pyridine	50	26.0	52	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	56%	15-110%
4165-62-2	Phenol-d5	36%	15-110%
118-79-6	2,4,6-Tribromophenol	77%	15-110%
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	80%	30-130%

6.2.1

6

Blank Spike Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24870-BS	F52879.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	42.5	85	40-140
208-96-8	Acenaphthylene	50	35.0	70	40-140
120-12-7	Anthracene	50	41.9	84	40-140
56-55-3	Benzo(a)anthracene	50	53.2	106	40-140
50-32-8	Benzo(a)pyrene	50	33.2	66	40-140
205-99-2	Benzo(b)fluoranthene	50	43.3	87	40-140
191-24-2	Benzo(g,h,i)perylene	50	48.1	96	40-140
207-08-9	Benzo(k)fluoranthene	50	34.4	69	40-140
218-01-9	Chrysene	50	44.0	88	40-140
53-70-3	Dibenzo(a,h)anthracene	50	48.9	98	40-140
206-44-0	Fluoranthene	50	49.6	99	40-140
86-73-7	Fluorene	50	53.2	106	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	43.6	87	40-140
91-57-6	2-Methylnaphthalene	50	51.8	104	40-140
91-20-3	Naphthalene	50	47.8	96	40-140
85-01-8	Phenanthrene	50	43.0	86	40-140
129-00-0	Pyrene	50	47.3	95	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	107%	30-130%
321-60-8	2-Fluorobiphenyl	84%	30-130%
1718-51-0	Terphenyl-d14	108%	30-130%

6.2.2

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-MS	S23928.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016
OP24869-MSD	S23929.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016
MC19-7	S23930.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
65-85-0	Benzoic Acid	ND		95.2	33.4	35	ND	0* a	200* b	30-130/20
95-57-8	2-Chlorophenol	ND		95.2	74.3	78	78.7	79	6	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND		95.2	79.3	83	84.6	85	6	30-130/20
120-83-2	2,4-Dichlorophenol	ND		95.2	75.1	79	83.4	83	10	30-130/20
105-67-9	2,4-Dimethylphenol	ND		95.2	68.9	72	47.7	48	36* b	30-130/20
51-28-5	2,4-Dinitrophenol	ND		95.2	73.6	77	16.0	16* a	129* b	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND		95.2	78.8	83	74.8	75	5	30-130/20
95-48-7	2-Methylphenol	ND		95.2	74.9	79	70.2	70	6	30-130/20
	3&4-Methylphenol	ND		190	153	80	140	70	9	30-130/20
88-75-5	2-Nitrophenol	ND		95.2	78.1	82	85.2	85	9	30-130/20
100-02-7	4-Nitrophenol	ND		95.2	45.6	48	45.2	45	1	30-130/20
87-86-5	Pentachlorophenol	ND		95.2	84.5	89	85.7	86	1	30-130/20
108-95-2	Phenol	ND		95.2	42.6	45	34.0	34	22* b	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND		95.2	74.2	78	83.1	83	11	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND		95.2	73.7	77	82.4	82	11	30-130/20
62-53-3	Aniline	ND		47.6	20.5	43	20.0	40	2	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND		47.6	35.1	74	38.9	78	10	40-140/20
85-68-7	Butyl benzyl phthalate	ND		47.6	43.0	90	47.7	95	10	40-140/20
100-51-6	Benzyl Alcohol	ND		47.6	32.3	68	36.0	72	11	40-140/20
91-58-7	2-Chloronaphthalene	ND		47.6	37.0	78	41.5	83	11	40-140/20
106-47-8	4-Chloroaniline	ND		47.6	25.9	54	21.2	42	20	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND		47.6	37.9	80	41.9	84	10	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND		47.6	39.4	83	43.7	87	10	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND		47.6	46.2	97	50.7	101	9	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND		47.6	34.8	73	39.7	79	13	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND		47.6	42.5	89	47.3	95	11	40-140/20
121-14-2	2,4-Dinitrotoluene	ND		47.6	37.3	78	42.3	85	13	40-140/20
606-20-2	2,6-Dinitrotoluene	ND		47.6	36.5	77	41.2	82	12	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND		47.6	30.1	63	34.9	70	15	40-140/20
132-64-9	Dibenzofuran	ND		47.6	35.2	74	40.4	81	14	40-140/20
84-74-2	Di-n-butyl phthalate	1.0	J	47.6	42.3	87	48.1	94	13	40-140/20
117-84-0	Di-n-octyl phthalate	ND		47.6	45.8	96	55.1	110	18	40-140/20
84-66-2	Diethyl phthalate	0.90	J	47.6	40.8	84	46.2	91	12	40-140/20
131-11-3	Dimethyl phthalate	ND		47.6	37.8	79	43.4	87	14	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	2.8	B	47.6	45.1	89	51.7	98	14	40-140/20
118-74-1	Hexachlorobenzene	ND		47.6	34.2	72	38.5	77	12	40-140/20

6.3.1
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24869-MS	S23928.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016
OP24869-MSD	S23929.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016
MC19-7	S23930.D	1	05/15/11	KR	05/10/11	OP24869	MSS1016

The QC reported here applies to the following samples:

Method: SW846 8270C

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND	47.6	20.9	44	21.2	42	1	40-140/20
67-72-1	Hexachloroethane	ND	47.6	39.7	83	43.0	86	8	40-140/20
78-59-1	Isophorone	ND	47.6	38.5	81	43.3	87	12	40-140/20
90-12-0	1-Methylnaphthalene	ND	47.6	35.3	74	43.8	88	21* b	40-140/20
88-74-4	2-Nitroaniline	ND	47.6	39.0	82	45.6	91	16	40-140/20
99-09-2	3-Nitroaniline	ND	47.6	25.5	54	30.6	61	18	40-140/20
100-01-6	4-Nitroaniline	ND	47.6	33.4	70	38.0	76	13	40-140/20
98-95-3	Nitrobenzene	ND	47.6	39.4	83	44.2	88	11	40-140/20
62-75-9	n-Nitrosodimethylamine	ND	47.6	24.2	51	26.5	53	9	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	47.6	45.8	96	50.4	101	10	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	47.6	37.9	80	41.3	83	9	40-140/20
110-86-1	Pyridine	ND	47.6	23.5	49	34.3	69	37* b	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC19-7	Limits
367-12-4	2-Fluorophenol	54%	55%	56%	15-110%
4165-62-2	Phenol-d5	46%	35%	33%	15-110%
118-79-6	2,4,6-Tribromophenol	76%	80%	85%	15-110%
4165-60-0	Nitrobenzene-d5	86%	88%	96%	30-130%
321-60-8	2-Fluorobiphenyl	72%	78%	84%	30-130%
1718-51-0	Terphenyl-d14	76%	79%	98%	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.

6.3.1

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24870-MS	F52880.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
OP24870-MSD	F52881.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554
MC19-7	F52882.D	1	05/17/11	PR	05/10/11	OP24870	MSF2554

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC19-1, MC19-2, MC19-3, MC19-4, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		47.6	36.5	77	40.6	85	11	40-140/20
208-96-8	Acenaphthylene	ND		47.6	31.2	66	33.9	71	8	40-140/20
120-12-7	Anthracene	ND		47.6	35.6	75	39.2	82	10	40-140/20
56-55-3	Benzo(a)anthracene	0.042	JB	47.6	45.7	96	50.9	107	11	40-140/20
50-32-8	Benzo(a)pyrene	ND		47.6	27.6	58	30.0	63	8	40-140/20
205-99-2	Benzo(b)fluoranthene	0.025	J	47.6	34.9	73	37.1	78	6	40-140/20
191-24-2	Benzo(g,h,i)perylene	0.022	J	47.6	42.7	90	49.6	104	15	40-140/20
207-08-9	Benzo(k)fluoranthene	0.014	J	47.6	27.0	57	30.2	63	11	40-140/20
218-01-9	Chrysene	0.037	J	47.6	37.8	79	41.0	86	8	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND		47.6	42.1	88	50.3	106	18	40-140/20
206-44-0	Fluoranthene	0.026	J	47.6	42.0	88	47.1	99	11	40-140/20
86-73-7	Fluorene	ND		47.6	47.0	99	50.9	107	8	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	0.015	J	47.6	38.5	81	52.9	111	32* a	40-140/20
91-57-6	2-Methylnaphthalene	ND		47.6	44.2	93	49.6	104	12	40-140/20
91-20-3	Naphthalene	ND		47.6	41.3	87	45.8	96	10	40-140/20
85-01-8	Phenanthrene	0.025	J	47.6	36.9	77	41.0	86	11	40-140/20
129-00-0	Pyrene	0.026	J	47.6	40.8	86	44.4	93	8	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC19-7	Limits
4165-60-0	Nitrobenzene-d5	94%	102%	98%	30-130%
321-60-8	2-Fluorobiphenyl	78%	84%	81%	30-130%
1718-51-0	Terphenyl-d14	94%	102%	108%	30-130%

(a) High RPD due to possible matrix interference and/or sample non-homogeneity.

6.32
6

Semivolatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2554-CC2545	Injection Date:	05/17/11
Lab File ID:	F52872.D	Injection Time:	11:09
Instrument ID:	GCMSF	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	21693	5.10	76714	6.34	46757	8.70	88467	11.15	96213	16.07	59083	18.58
Upper Limit ^a	43386	5.60	153428	6.84	93514	9.20	176934	11.65	192426	16.57	118166	19.08
Lower Limit ^b	10847	4.60	38357	5.84	23379	8.20	44234	10.65	48107	15.57	29542	18.08

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP24931-MB	16709	5.10	57712	6.33	31509	8.70	57837	11.15	60484	16.07	35325	18.58
OP24931-BS	22979	5.10	79070	6.35	46983	8.68	88640	11.15	91376	16.07	64461	18.58
ZZZZZZ	17291	5.11	62503	6.33	33846	8.68	62158	11.15	65622	16.07	41975	18.58
ZZZZZZ	20833	5.10	70863	6.33	39312	8.68	73860	11.15	74879	16.07	46211	18.58
ZZZZZZ	19084	5.10	68039	6.33	37117	8.68	69403	11.15	70021	16.07	42238	18.58
OP24870-MB	37710 ^c	5.10	130446 ^c	6.33	73633 ^c	8.68	137472 ^c	11.15	142778 ^c	16.07	99865 ^c	18.58
OP24870-BS	41860 ^c	5.10	141183 ^c	6.34	86618 ^c	8.70	159951 ^c	11.15	166882 ^c	16.07	122729 ^c	18.58
OP24870-MS	45167 ^c	5.10	153802 ^c	6.34	91346 ^c	8.70	168168 ^c	11.15	171911 ^c	16.08	147888 ^c	18.58
OP24870-MSD	42731 ^c	5.10	148405 ^c	6.33	89268 ^c	8.70	161752 ^c	11.15	167770 ^c	16.07	150147 ^c	18.58
MC19-7	33588 ^c	5.10	117810 ^c	6.33	68549 ^c	8.68	127492 ^c	11.14	136491 ^c	16.07	113214 ^c	18.58
MC19-1	22483	5.10	78233	6.34	47610	8.68	87890	11.15	92757	16.07	76876	18.58
MC19-2	15857	5.10	59319	6.33	32772	8.68	62330	11.15	70961	16.07	55191	18.58
MC19-3	22997	5.10	83735	6.33	48240	8.68	89308	11.15	98196	16.07	77846	18.58
MC19-4	17968	5.10	63081	6.33	35842	8.68	68076	11.14	77176	16.07	64724	18.58
MC19-6	19756	5.10	68372	6.33	39817	8.68	72616	11.14	77200	16.07	58705	18.57
ZZZZZZ	10658 ^d	5.10	40449	6.33	22611 ^d	8.68	40903 ^d	11.14	42925 ^d	16.07	28892 ^d	18.58
ZZZZZZ	12004	5.10	44035	6.33	24067	8.68	44202 ^e	11.14	45958 ^e	16.07	28983 ^e	18.58
ZZZZZZ	18293	5.10	63671	6.33	38140	8.68	72439	11.14	79435	16.07	59263	18.57

- 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 2x concentration.
- (d) Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- (e) Outside control limits due to possible matrix interference.

6.4.1
6

Semivolatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSI2607-CC2552	Injection Date:	05/18/11
Lab File ID:	I72631.D	Injection Time:	09:26
Instrument ID:	GCMSI	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	161677	5.31	579288	6.60	304175	9.03	482991	11.54	360095	16.50	400009	19.03
Upper Limit ^a	323354	5.81	1158576	7.10	608350	9.53	965982	12.04	720190	17.00	800018	19.53
Lower Limit ^b	80839	4.81	289644	6.10	152088	8.53	241496	11.04	180048	16.00	200005	18.53

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP24948-MB	183493	5.31	682212	6.59	354678	9.02	553040	11.54	417863	16.49	327999	19.02
OP24948-BS	159117	5.31	580499	6.60	299756	9.03	473405	11.54	367648	16.50	326692	19.03
OP24948-MS	142693	5.31	528261	6.59	271810	9.03	429402	11.54	293266	16.50	358286	19.03
OP24948-MSD	163498	5.31	583932	6.60	289637	9.03	441156	11.54	334501	16.50	394681	19.03
M99934-13R	137564	5.31	505291	6.59	251918	9.02	400085	11.54	298655	16.49	334540	19.03
ZZZZZZ	163252	5.31	602768	6.59	307785	9.02	485247	11.54	370666	16.49	299392	19.02
ZZZZZZ	178696	5.31	662454	6.59	344908	9.02	545571	11.54	391571	16.49	308623	19.02
ZZZZZZ	187365	5.31	692295	6.59	360764	9.02	560502	11.54	413661	16.49	322873	19.02
ZZZZZZ	165950	5.31	604752	6.59	312894	9.02	490244	11.54	363812	16.49	308431	19.02
ZZZZZZ	119678	5.31	437862	6.59	218088	9.02	323013	11.54	387575	16.51	217352	19.05
ZZZZZZ	165387	5.31	604268	6.59	310756	9.02	493999	11.54	350699	16.49	322295	19.02
ZZZZZZ	178343	5.31	649278	6.59	330082	9.02	511007	11.54	372864	16.49	358137	19.03
ZZZZZZ	169959	5.31	621540	6.59	320114	9.02	500402	11.54	338135	16.49	326074	19.02
ZZZZZZ	161179	5.31	585538	6.59	299915	9.02	466310	11.54	335015	16.49	337303	19.02
ZZZZZZ	175437	5.31	646156	6.59	321551	9.02	497055	11.54	336554	16.49	359519	19.03
ZZZZZZ	183565	5.31	661214	6.59	331572	9.02	521551	11.54	376460	16.49	374516	19.03
ZZZZZZ	177158	5.31	650380	6.60	332324	9.02	516522	11.54	366331	16.49	345654	19.02
ZZZZZZ	166990	5.31	611754	6.59	310836	9.02	477826	11.54	354494	16.49	355370	19.02
ZZZZZZ	171955	5.31	626986	6.59	315865	9.02	495961	11.54	336321	16.50	441617	19.03
ZZZZZZ	152704	5.31	564619	6.59	281647	9.02	433590	11.54	306082	16.49	388116	19.03
MC19-6	145443	5.30	536330	6.59	273983	9.02	436623	11.54	369439	16.49	441106	19.03

- 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.

6.4.2
6

Semivolatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1016-CC1009	Injection Date:	05/15/11
Lab File ID:	S23925.D	Injection Time:	10:33
Instrument ID:	GCMSS	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	156575	6.59	562050	7.99	336420	10.27	663879	12.51	817224	16.88	698781	19.12
Upper Limit ^a	313150	7.09	1124100	8.49	672840	10.77	1327758	13.01	1634448	17.38	1397562	19.62
Lower Limit ^b	78288	6.09	281025	7.49	168210	9.77	331940	12.01	408612	16.38	349391	18.62

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP24869-MB	155178	6.59	589202	7.99	353821	10.27	702459	12.50	737832	16.87	615130	19.12
OP24869-BS	206472	6.59	753615	7.99	437377	10.27	863202	12.51	961518	16.88	775522	19.12
OP24869-MS	173846	6.59	644792	7.99	374390	10.27	726029	12.51	795079	16.88	661438	19.12
OP24869-MSD	191896	6.59	721508	7.99	410266	10.27	806893	12.51	898308	16.88	716937	19.12
MC19-7	154879	6.59	595778	7.99	347646	10.27	693716	12.50	715721	16.87	647133	19.12
ZZZZZ	181096	6.59	684729	7.99	408214	10.27	826659	12.50	880356	16.88	757541	19.12
ZZZZZ	181941	6.59	681073	7.99	407082	10.27	829671	12.50	890600	16.88	752804	19.12
ZZZZZ	158836	6.59	588559	7.99	349068	10.27	679560	12.50	669063	16.88	587036	19.12
OP24899-MB	173600	6.59	672495	7.99	401042	10.27	797176	12.50	849621	16.88	734011	19.12
OP24899-BS	180510	6.60	686268	8.00	393223	10.27	761817	12.51	815842	16.88	702158	19.12
OP24899-BSD	178588	6.59	670284	8.00	391252	10.27	748355	12.51	827861	16.88	724499	19.12
OP24899-MS	168984	6.59	611673	8.00	364943	10.27	695086	12.51	752897	16.88	639813	19.12
OP24899-MSD	162151	6.59	600805	8.00	348083	10.27	670140	12.51	723991	16.88	617553	19.12
MC118-2	151481	6.60	574345	8.00	344682	10.27	681677	12.50	730928	16.88	642636	19.12
ZZZZZ	144724	6.59	535679	8.00	324301	10.27	646983	12.50	695709	16.88	591323	19.12
OP24914-MB	160430	6.59	603569	8.00	364658	10.27	741007	12.50	764793	16.88	700707	19.12
OP24914-BS	178191	6.59	652866	8.00	381433	10.27	726584	12.51	792888	16.88	697512	19.12
OP24914-MS	180176	6.59	665847	7.99	391632	10.27	750804	12.51	837218	16.88	713792	19.12
OP24914-MSD	180775	6.59	666520	7.99	386192	10.27	747674	12.51	823017	16.88	722399	19.12
MC192-1	161009	6.59	612912	7.99	361330	10.27	721511	12.50	793237	16.87	695523	19.12
ZZZZZ	167494	6.59	622951	7.99	370340	10.27	738396	12.50	805650	16.87	728707	19.12
ZZZZZ	157486	6.59	584292	7.99	346612	10.26	684517	12.50	772322	16.87	725923	19.12
ZZZZZ	154655	6.59	575958	7.99	339153	10.26	675685	12.50	789031	16.87	781376	19.12

- 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.

6.4.3
6

Semivolatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1021-CC1009	Injection Date:	05/18/11
Lab File ID:	S24048.D	Injection Time:	11:07
Instrument ID:	GCMSS	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	182077	6.55	658708	7.95	387269	10.22	735007	12.45	858469	16.83	847742	19.07
Upper Limit ^a	364154	7.05	1317416	8.45	774538	10.72	1470014	12.95	1716938	17.33	1695484	19.57
Lower Limit ^b	91039	6.05	329354	7.45	193635	9.72	367504	11.95	429235	16.33	423871	18.57

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	195486	6.55	762550	7.95	417107	10.22	673058	12.45	702517	16.82	636670	19.07
ZZZZZZ	194550	6.55	740358	7.95	409184	10.22	701078	12.45	700019	16.83	637283	19.07
OP24942-MB	158942	6.55	593457	7.95	353982	10.22	691140	12.45	684906	16.83	617053	19.07
OP24942-BS	198569	6.55	742336	7.95	423858	10.22	786554	12.46	840577	16.83	764314	19.07
OP24942-MS	209715	6.55	764977	7.95	439434	10.22	825126	12.46	895708	16.83	800328	19.07
OP24942-MSD	187093	6.55	698549	7.95	411112	10.22	756775	12.45	817841	16.83	735061	19.07
MC230-2	177880	6.55	655074	7.95	397135	10.22	783516	12.45	787975	16.83	760969	19.07
ZZZZZZ	159446	6.55	594943	7.95	363118	10.22	710170	12.45	731958	16.83	721172	19.07
ZZZZZZ	159393	6.55	598943	7.95	360898	10.22	717158	12.45	738919	16.83	708226	19.07
ZZZZZZ	175095	6.55	663187	7.95	397071	10.22	773850	12.45	773586	16.83	756054	19.07
MC19-1	228353	6.55	921822	7.95	546627	10.22	1043882	12.45	1054324	16.83	951078	19.07
MC19-2	202033	6.55	768829	7.95	470452	10.22	913785	12.45	933742	16.83	878722	19.07
MC19-3	222616	6.55	835865	7.95	514472	10.22	1004284	12.45	1026610	16.83	968651	19.07
MC19-4	208087	6.55	797206	7.95	499977	10.22	982980	12.45	1018561	16.83	974688	19.07
ZZZZZZ	188878	6.55	701300	7.95	434556	10.22	861998	12.45	911513	16.83	852765	19.07
ZZZZZZ	185984	6.55	690920	7.95	410740	10.22	790974	12.45	836632	16.83	849069	19.08
ZZZZZZ	187942	6.55	698824	7.95	412098	10.22	796133	12.45	837937	16.83	854598	19.07
ZZZZZZ	212814	6.56	772157	7.95	469532	10.22	901374	12.45	932996	16.83	841249	19.08
ZZZZZZ	211993	6.55	791059	7.95	473832	10.22	864314	12.45	848581	16.83	921614	19.07
ZZZZZZ	200730	6.55	739111	7.95	430774	10.22	826231	12.45	863128	16.83	911455	19.07
ZZZZZZ	187412	6.55	692998	7.95	411404	10.22	782552	12.45	1014007	16.83	1213433	19.08
ZZZZZZ	208303	6.55	758192	7.95	446786	10.22	833366	12.45	1015017	16.83	1216046	19.08
ZZZZZZ	200261	6.55	729545	7.95	429755	10.22	802313	12.45	926873	16.83	1096026	19.08
ZZZZZZ	181744	6.55	690113	7.95	418547	10.22	817247	12.46	1204459	16.85	1617944	19.10

- 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.

6.4.4
6

Semivolatile Internal Standard Area Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1022-CC1009	Injection Date:	05/19/11
Lab File ID:	S24075.D	Injection Time:	13:24
Instrument ID:	GCMSS	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	176687	6.54	669766	7.94	399515	10.21	794849	12.44	984402	16.82	930030	19.05
Upper Limit ^a	353374	7.04	1339532	8.44	799030	10.71	1589698	12.94	1968804	17.32	1860060	19.55
Lower Limit ^b	88344	6.04	334883	7.44	199758	9.71	397425	11.94	492201	16.32	465015	18.55

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MC19-1	167314	6.54	657146	7.94	399304	10.21	778449	12.44	871484	16.81	857335	19.05
ZZZZZZ	165807	6.54	652327	7.94	426969	10.21	825880	12.44	876324	16.81	825206	19.05
ZZZZZZ	183663	6.54	727612	7.94	465234	10.21	888280	12.44	917883	16.81	832804	19.05
ZZZZZZ	156317	6.54	623631	7.94	416101	10.21	832997	12.44	911897	16.81	850473	19.05
ZZZZZZ	163653	6.54	656640	7.94	428762	10.21	825947	12.44	909539	16.81	864289	19.05
ZZZZZZ	166884	6.54	661741	7.94	435482	10.21	871903	12.44	915390	16.81	853130	19.05
ZZZZZZ	164625	6.54	654404	7.94	440470	10.21	881889	12.44	949644	16.81	909498	19.05
ZZZZZZ	163175	6.54	619459	7.94	380701	10.21	767959	12.44	871126	16.81	841616	19.05
ZZZZZZ	196670	6.54	773902	7.94	470021	10.21	912274	12.44	1037610	16.81	1026881	19.05
ZZZZZZ	177994	6.54	669679	7.94	411559	10.21	837398	12.44	1059906	16.81	1078052	19.05
ZZZZZZ	204167	6.55	824563	7.94	480934	10.21	913401	12.44	1039853	16.81	1044465	19.05
ZZZZZZ	204096	6.55	753183	7.94	453644	10.21	892804	12.44	991030	16.81	971081	19.05
ZZZZZZ	207760	6.55	821036	7.94	473273	10.21	855766	12.44	980853	16.81	995809	19.05
ZZZZZZ	183789	6.54	717084	7.94	439499	10.21	862310	12.44	997346	16.81	997716	19.05
ZZZZZZ	193454	6.54	735242	7.94	478946	10.21	1001508	12.44	1313082	16.82	1324277	19.07
ZZZZZZ	192035	6.55	737023	7.94	425759	10.21	826000	12.44	998510	16.81	1044125	19.06
ZZZZZZ	160625	6.55	643504	7.94	391385	10.21	812725	12.44	1090756	16.82	1108230	19.06
ZZZZZZ	198526	6.55	722745	7.94	433895	10.21	841165	12.44	973680	16.82	1075135	19.06
ZZZZZZ	185382	6.55	690551	7.94	416978	10.21	813099	12.44	992114	16.82	1019836	19.06
ZZZZZZ	157642	6.55	596557	7.94	377234	10.21	755991	12.44	977630	16.82	1021323	19.06
ZZZZZZ	185469	6.55	714753	7.94	413090	10.21	790977	12.44	960343	16.82	997050	19.06

- 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.

6.4.5
6

Semivolatile Surrogate Recovery Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC19-1	S24076.D	57.0	47.0	63.0	92.0	77.0	76.0
MC19-1	S24059.D	50.0	47.0	70.0	77.0	71.0	75.0
MC19-2	S24060.D	44.0	26.0	60.0	73.0	63.0	74.0
MC19-3	S24061.D	48.0	30.0	64.0	82.0	67.0	71.0
MC19-4	S24062.D	49.0	30.0	64.0	80.0	68.0	73.0
MC19-6	I72651A.D	44.0	29.0	77.0	72.0	76.0	80.0
MC19-7	S23930.D	56.0	33.0	85.0	96.0	84.0	98.0
OP24869-BS	S23927.D	56.0	36.0	77.0	86.0	72.0	80.0
OP24869-MB	S23926.D	64.0	38.0	82.0	100.0	85.0	101.0
OP24869-MS	S23928.D	54.0	46.0	76.0	86.0	72.0	76.0
OP24869-MSD	S23929.D	55.0	35.0	80.0	88.0	78.0	79.0

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%

6.5.1

6

Semivolatile Surrogate Recovery Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC19-1	F52883.D	92.0	66.0	87.0
MC19-2	F52884.D	76.0	66.0	85.0
MC19-3	F52885.D	84.0	67.0	85.0
MC19-4	F52886.D	85.0	69.0	87.0
MC19-6	F52887.D	86.0	71.0	98.0
MC19-7	F52882.D	98.0	81.0	108.0
OP24870-BS	F52879.D	107.0	84.0	108.0
OP24870-MB	F52878.D	99.0	85.0	120.0
OP24870-MS	F52880.D	94.0	78.0	94.0
OP24870-MSD	F52881.D	102.0	84.0	102.0

Surrogate Compounds **Recovery Limits**

S1 = Nitrobenzene-d5 30-130%
S2 = 2-Fluorobiphenyl 30-130%
S3 = Terphenyl-d14 30-130%

6.5.2
6

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: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-MB	BK2979.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC19-1, MC19-2, MC19-3, MC19-4, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	108%	36-173%
460-00-4	Bromofluorobenzene (S)	105%	36-173%

7.1.1

7

Blank Spike Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-BS	BK2980.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC19-1, MC19-2, MC19-3, MC19-4, MC19-5, MC19-6, MC19-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.069	97	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	97%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	36-173%

7.2.1
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24963-MS	BK2981.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
OP24963-MSD	BK2982.D	1	05/19/11	AP	05/18/11	OP24963	GBK120
MC19-7	BK2990.D	1	05/19/11	AP	05/18/11	OP24963	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC19-1, MC19-2, MC19-3, MC19-4, MC19-5, MC19-6, MC19-7

CAS No.	Compound	MC19-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND	0.0774	0.080	103	0.081	94	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC19-7	Limits
460-00-4	Bromofluorobenzene (S)	134%	94%	118%	36-173%
460-00-4	Bromofluorobenzene (S)	136%	91%	111%	36-173%

7.3.1
7

Volatile Surrogate Recovery Summary

Job Number: MC19

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Method: SW846 8011	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b
MC19-1	BK2983.D	138.0	136.0
MC19-2	BK2984.D	114.0	112.0
MC19-3	BK2985.D	146.0	142.0
MC19-4	BK2986.D	167.0	170.0
MC19-5	BK2987.D	132.0	132.0
MC19-6	BK2989.D	113.0	123.0
MC19-7	BK2990.D	118.0	111.0
OP24963-BS	BK2980.D	97.0	95.0
OP24963-MB	BK2979.D	108.0	105.0
OP24963-MS	BK2981.D	134.0	136.0
OP24963-MSD	BK2982.D	94.0	91.0

Surrogate Compounds **Recovery Limits**

S1 = Bromofluorobenzene (S) 36-173%

- (a) Recovery from GC signal #1
- (b) Recovery from GC signal #2

7.4.1
7

GC Surrogate Retention Time Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-ICC120	Injection Date:	05/19/11
Lab File ID:	BK2971.D	Injection Time:	09:46
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.90	5.48

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
ZZZZZ	BK2978.D	05/19/11	12:52	4.91	5.48
OP24963-MB	BK2979.D	05/19/11	13:18	4.90	5.48
OP24963-BS	BK2980.D	05/19/11	13:45	4.91	5.49
OP24963-MS	BK2981.D	05/19/11	14:12	4.90	5.48
OP24963-MSD	BK2982.D	05/19/11	14:38	4.91	5.48
MC19-1	BK2983.D	05/19/11	15:05	4.90	5.48
MC19-2	BK2984.D	05/19/11	15:31	4.90	5.49
MC19-3	BK2985.D	05/19/11	15:58	4.91	5.48
MC19-4	BK2986.D	05/19/11	16:25	4.91	5.49
MC19-5	BK2987.D	05/19/11	16:51	4.91	5.49

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.1
7

GC Surrogate Retention Time Summary

Job Number: MC19
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-CC120	Injection Date:	05/19/11
Lab File ID:	BK2988.D	Injection Time:	17:18
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.91	5.49

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
MC19-6	BK2989.D	05/19/11	17:44	4.91	5.49
MC19-7	BK2990.D	05/19/11	18:11	4.91	5.49
ZZZZZZ	BK2991.D	05/19/11	18:37	4.91	5.49
ZZZZZZ	BK2992.D	05/19/11	19:04	4.91	5.49
ZZZZZZ	BK2993.D	05/19/11	19:31	4.91	5.49
ZZZZZZ	BK2994.D	05/19/11	19:57	4.91	5.48
ZZZZZZ	BK2995.D	05/19/11	20:24	4.91	5.49
OP24964-MB	BK2996.D	05/19/11	20:50	4.91	5.48
OP24964-BS	BK2997.D	05/19/11	21:16	4.91	5.48
OP24964-MS	BK2998.D	05/19/11	21:43	4.91	5.48

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.2
7

Roxana Groundwater Quarterly – 2nd Quarter 2011

Laboratory SDG: MC230

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 06/20/2011

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

Sample Identification	Sample Identification
MW12-ROX-051211EB	MW12-ROX-051211
TB-ROX-051211	MW13-ROX-051311EB
MW13-ROX-051311	MW08-ROX-051311
MW08-ROX-051311D	MW07-ROX-051311
MW07-ROX-051311D	MW05-ROX-051211

1.0 Data Package Completeness

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

Yes, however the data package was re-issued to report PAHs by 8270C SIM; PAHs previously reported by both standard 8270C and 8270C SIM. No qualification of data was required.

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 the VOC LCS/LCSD recoveries were outside of evaluation criteria for several analytes. VOC MS/MSD recoveries were outside of evaluation criteria. The VOC surrogate 4-bromofluorobenzene was outside evaluation criteria for sample MW13-ROX-051311. Several samples were diluted due to high levels of target analytes. SVOC LCS/LCSD recoveries were outside evaluation criteria. SVOC MS/MSD and RPD recoveries were outside of evaluation criteria. Several SVOC target analytes were found in the associated method blank. The SVOC surrogate 2,4,6-tribromophenol was outside evaluation criteria in several samples. PAH MS/MSD and RPD recoveries were outside evaluation criteria for several analytes. PAH internal standard recoveries for several samples were outside evaluation criteria. The surrogates terphenyl-d14 and nitrobenzene-d5 were outside evaluation criteria for several samples. Although not indicated in the laboratory case narrative, analytes were detected in the equipment blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated three coolers with samples were received by the laboratory at 0.4°C, 0.7°C and 1.0°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. Seven bottles were received by the laboratory were not listed on the COC.

The samples were labeled MW05-ROX-051211 with a date of 05/12/11 and a time of 15:15. The laboratory verified these samples with URS personnel and logged them in appropriately.

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
OP24942-MB	SVOCs	Di-n-butyl phthalate	1.2 µg/L
OP24955-MB	SVOCs	Di-n-butyl phthalate	0.72 µg/L
OP24955-MB	SVOCs	Diethyl phthalate	1.8 µg/L
MW13-ROX-051311EB	SVOCs	Butyl benzyl phthalate	6.4 µg/L
MW13-ROX-051311EB	SVOCs	bis(2-Ethylhexyl)phthalate	2.8 µg/L
MW13-ROX-051311EB	PAHs	Naphthalene	0.080 µg/L

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

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW12-ROX-051211	SVOCs	Di-n-butyl phthalate	--	U
MW13-ROX-051311	SVOCs	Di-n-butyl phthalate	--	U
MW13-ROX-051311	SVOCs	Diethyl phthalate	--	U
MW13-ROX-051311	SVOCs	bis(2-Ethylhexyl)phthalate	2.7 µg/L	U
MW13-ROX-051311	PAHs	Naphthalene	--	U
MW08-ROX-051311	SVOCs	Di-n-butyl phthalate	--	U
MW08-ROX-051311	SVOCs	Diethyl phthalate	--	U
MW08-ROX-051311	SVOCs	bis(2-Ethylhexyl)phthalate	3.1 µg/L	U
MW08-ROX-051311D	SVOCs	Di-n-butyl phthalate	--	U
MW08-ROX-051311D	SVOCs	Diethyl phthalate	--	U
MW08-ROX-051311D	SVOCs	bis(2-Ethylhexyl)phthalate	3.4 µg/L	U
MW07-ROX-051311	SVOCs	Butyl benzyl phthalate	7.1 µg/L	U
MW07-ROX-051311	SVOCs	Di-n-butyl phthalate	--	U
MW07-ROX-051311	SVOCs	Diethyl phthalate	--	U
MW07-ROX-051311	SVOCs	bis(2-Ethylhexyl)phthalate	3.2 µg/L	U

MW07-ROX-051311D	SVOCs	Butyl benzyl phthalate	7.0 µg/L	U
MW07-ROX-051311D	SVOCs	Di-n-butyl phthalate	--	U

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW07-ROX-051311D	SVOCs	bis(2-Ethylhexyl)phthalate	3.5 µg/L	U
MW05-ROX-051211	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
MSM1276-BS	VOCs	Acrolein	35	NA	70-130
MSM1276-BS	VOCs	Acrylonitrile	502	NA	70-130
MSM1276-BS	VOCs	2-Chloroethyl vinyl ether	440	NA	70-130
MSN19980-BS/BSD	VOCs	Acrolein	326/289	12	70-130/25
MSN19980-BS/BSD	VOCs	Acrylonitrile	512/462	10	70-130/25
MSN19980-BS/BSD	VOCs	2-Chloroethyl vinyl ether	69/64	7	70-130/25
MSN2000-BS/BSD	VOCs	Acetone	78/68	13	70-130/25
MSN2000-BS/BSD	VOCs	Acrolein	269/263	2	70-130/25
MSN2000-BS/BSD	VOCs	Acrylonitrile	432/422	2	70-130/25
MSN2000-BS/BSD	VOCs	2-Chloroethyl vinyl ether	62/55	11	70-130/25
MSN2000-BS/BSD	VOCs	Vinyl Acetate	69/69	0	70-130/25
MSN1998-BS1/BSD1	VOCs	Acetone	78/68	13	70-130/25
MSN1998-BS1/BSD1	VOCs	Acrolein	269/263	2	70-130/25
MSN1998-BS1/BSD1	VOCs	Acrylonitrile	432/422	2	70-130/25
MSN1998-BS1/BSD1	VOCs	2-Chloroethyl vinyl ether	62/55	11	70-130/25
MSN1998-BS1/BSD1	VOCs	Vinyl Acetate	69/69	0	70-130/25
OP24942-BS	SVOCs	Phenol	27	NA	30-130

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.

Field ID	Parameter	Analyte	Qualification
MW12-ROX-051211	VOCs	Acetone	UJ
MW12-ROX-051211	VOCs	2-Chloroethyl vinyl ether	UJ
MW12-ROX-051211	VOCs	Vinyl Acetate	UJ
MW12-ROX-051211	SVOCs	Phenol	UJ
MW13-ROX-051311	VOCs	Acetone	UJ
MW13-ROX-051311	VOCs	2-Chloroethyl vinyl ether	UJ
MW13-ROX-051311	VOCs	Vinyl Acetate	UJ
MW13-ROX-051311	SVOCs	Phenol	UJ
MW08-ROX-051311	VOCs	Acrolein	UJ
MW08-ROX-051311D	VOCs	Acrolein	UJ
MW07-ROX-051311	VOCs	Acrolein	UJ
MW07-ROX-051311D	VOCs	Acrolein	UJ
MW05-ROX-051211	VOCs	Acetone	UJ
MW05-ROX-051211	VOCs	2-Chloroethyl vinyl ether	UJ
MW05-ROX-051211	VOCs	Vinyl Acetate	UJ
MW05-ROX-051211	SVOCs	Phenol	UJ

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery (%)	Criteria (%)
MW13-ROX-051311EB	PAHs	Nitrobenzene-d5	135	30-130
MW13-ROX-051311EB	PAHs	Terphenyl-d14	142	30-130
MW13-ROX-051311	VOCs	4-Bromofluorobenzene	136	70-130
MW08-ROX-051311 (Run#1)	SVOCs	2,4,6-Tribromophenol	133	15-110
MW08-ROX-051311 (Run#2)	SVOCs	2,4,6-Tribromophenol	149	15-110
MW08-ROX-051311D (Run#2)	VOCs	Dibromofluoromethane	66	70-130
MW08-ROX-051311D (Run#1)	SVOCs	2,4,6-Tribromophenol	117	15-110
MW08-ROX-051311D (Run#2)	SVOCs	2,4,6-Tribromophenol	130	15-110
MW07-ROX-051311 (Run#1)	VOCs	Dibromofluoromethane	63	70-130
MW07-ROX-051311 (Run#2)	VOCs	Dibromofluoromethane	67	70-130
MW07-ROX-051311D (Run#2)	VOCs	Dibromofluoromethane	67	70-130
MW07-ROX-051311D (Run#1)	SVOCs	2,4,6-Tribromophenol	113	15-110
MW07-ROX-051311D (Run#2)	SVOCs	2,4,6-Tribromophenol	123	15-110

Analytical data that required qualification based on surrogate data are included in the table below. MW13-ROX-051311EB is a quality control sample and does not require

qualification. Analytical data reported as non-detect and associated with surrogate recoveries above evaluation criteria, indicating a high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW13-ROX-051311	VOCs	Benzene	J
MW13-ROX-051311	VOCs	Methyl Tert Butyl Ether	J
MW08-ROX-051311D	VOCs	Benzene	J
Sample ID	Parameter	Analyte	Qualification
MW07-ROX-051311	VOCs	VOC detects/non-detects	J/UJ
MW07-ROX-051311D	VOCs	Benzene	J

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

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

Yes. Sample MW12-ROX-051211 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
MW12-ROX-051211	VOCs	Acetone	-408/-451	31	70-130/30
MW12-ROX-051211	VOCs	Acrolein	266/269	1	70-130/30
MW12-ROX-051211	VOCs	Acrylonitrile	464/464	0	70-130/30
MW12-ROX-051211	VOCs	2-Chloroethyl vinyl ether	49/50	2	70-130/30
MW12-ROX-051211	VOCs	4-Methyl-2-pentanone	61/56	4	70-130/30
MW12-ROX-051211	VOCs	Toluene	47/32	12	70-130/30
MW12-ROX-051211	SVOCs	Benzoic Acid	31/29	5	30-130/20
MW12-ROX-051211	SVOCs	Phenol	24/21	10	30-130/20
MW12-ROX-051211	SVOCs	Aniline	35/32	8	40-140/20
MW12-ROX-051211	SVOCs	Hexachlorocyclopentadiene	39/32	21	40-140/20
MW12-ROX-051211	SVOCs	Hexachloroethane	83/68	21	40-140/20
MW12-ROX-051211	SVOCs	Pyridine	32/27	16	40-140/20
MW12-ROX-051211	PAHs	Benzo(g,h,i)perylene	76/61	22	40-140/20
MW12-ROX-051211	PAHs	Benzo(k)fluoranthene	44/39	13	40-140/20
MW12-ROX-051211	PAHs	Indeno(1,2,3-cd)pyrene	68/55	21	40-140/20
MW12-ROX-051211	PAHs	2-Methylnaphthalene	97/77	24	40-140/20

analytical results reported as nondetect 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 exceptions of acetone, and 2-chloroethyl vinyl ether and were previously qualified due to LCS/LCSD recoveries outside of evaluation criteria. 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 recoveries were outside evaluation criteria. Analytical data that required qualification based on IS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
MW12-ROX-051211	PAHs	PAH detects/non-detects	J/UJ
MW13-ROX-051311	PAHs	PAH detects/non-detects	J/UJ
MW08-ROX-051311	PAHs	PAH detects/non-detects	J/UJ
MW08-ROX-051311D	PAHs	PAH detects/non-detects	J/UJ
MW07-ROX-051311	PAHs	PAH detects/non-detects	J/UJ
MW07-ROX-051311D	PAHs	PAH detects/non-detects	J/UJ
MW05-ROX-051211	PAHs	PAH detects/non-detects	J/UJ

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected 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
MW08-ROX-051311	MW08-ROX-051311D
MW07-ROX-051311	MW07-ROX-051311D

Were field duplicate RPDs within evaluation criteria?

No

Field ID	Field Duplicate ID	Analyte	RPD	Qualification
MW08-ROX-051311	MW08-ROX-051311D	Nitrobenzene	>2X RL	J/UJ

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



Reissue #1
06/15/11

Technical Report for

Shell Oil

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
INC#97216640 SAP#340061

Accutest Job Number: MC230

Sampling Dates: 05/12/11 - 05/13/11

Report to:

URS Corporation

Elizabeth_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

Total number of pages in report: 164



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.

*Reviewed
6/20/2011
WKB*

Reza Fard
Reza Fard
Lab Director

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) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.



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

June 14, 2011

Accutest Job MC230 (Revision 1)

Ms. Elizabeth Kunkel,

The report of Accutest job number MC230 has been revised to reflect the modified SVOC 8270C compound list. The request is per Elizabeth Kunkel's call on 06/13/2011.

Sincerely,

A handwritten signature in black ink, appearing to read 'Wendy Zhang'.

Wendy Zhang
Accutest Laboratories of New England, Inc.

Table of Contents

Sections:

1
2
3
4
5
6
7

-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Sample Results	8
3.1: MC230-1: MW12-ROX-051211EB	9
3.2: MC230-2: MW12-ROX-051211	16
3.3: MC230-3: TB-ROX-051211	23
3.4: MC230-4: MW13-ROX-051311EB	27
3.5: MC230-5: MW13-ROX-051311	34
3.6: MC230-6: MW08-ROX-051311	41
3.7: MC230-7: MW08-ROX-051311D	48
3.8: MC230-8: MW07-ROX-051311	55
3.9: MC230-9: MW07-ROX-051311D	62
3.10: MC230-10: MW05-ROX-051211	69
Section 4: Misc. Forms	76
4.1: Chain of Custody	77
4.2: Sample Tracking Chronicle	81
4.3: Internal Chain of Custody	84
Section 5: GC/MS Volatiles - QC Data Summaries	88
5.1: Method Blank Summary	89
5.2: Blank Spike Summary	101
5.3: Blank Spike/Blank Spike Duplicate Summary	104
5.4: Matrix Spike/Matrix Spike Duplicate Summary	113
5.5: Internal Standard Area Summaries	122
5.6: Surrogate Recovery Summaries	125
Section 6: GC/MS Semi-volatiles - QC Data Summaries	126
6.1: Method Blank Summary	127
6.2: Blank Spike Summary	133
6.3: Matrix Spike/Matrix Spike Duplicate Summary	139
6.4: Internal Standard Area Summaries	145
6.5: Surrogate Recovery Summaries	155
Section 7: GC Volatiles - QC Data Summaries	157
7.1: Method Blank Summary	158
7.2: Blank Spike Summary	159
7.3: Matrix Spike/Matrix Spike Duplicate Summary	160
7.4: Surrogate Recovery Summaries	161
7.5: GC Surrogate Retention Time Summaries	162



Sample Summary

Shell Oil

Job No: MC230

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
MC230-1	05/12/11	08:30	NSMJ	05/14/11	AQ Water	MW12-ROX-051211EB
MC230-2	05/12/11	11:30	NSMJ	05/14/11	AQ Water	MW12-ROX-051211
MC230-2D	05/12/11	11:30	NSMJ	05/14/11	AQ Water Dup/MSD	MW12-ROX-051211
MC230-2S	05/12/11	11:30	NSMJ	05/14/11	AQ Water Matrix Spike	MW12-ROX-051211
MC230-3	05/12/11	00:00	NSMJ	05/14/11	AQ Trip Blank Water	TB-ROX-051211
MC230-4	05/13/11	09:00	NSMJ	05/14/11	AQ Water	MW13-ROX-051311EB
MC230-5	05/13/11	10:30	NSMJ	05/14/11	AQ Water	MW13-ROX-051311
MC230-6	05/13/11	13:20	NSMJ	05/14/11	AQ Water	MW08-ROX-051311
MC230-7	05/13/11	13:20	NSMJ	05/14/11	AQ Water	MW08-ROX-051311D
MC230-8	05/13/11	15:50	NSMJ	05/14/11	AQ Water	MW07-ROX-051311
MC230-9	05/13/11	15:50	NSMJ	05/14/11	AQ Water	MW07-ROX-051311D
MC230-10	05/12/11	15:55	NSMJ	05/14/11	AQ Water	MW05-ROX-051211

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil **Job No** MC230
Site: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central **Report Date** 6/4/2011 4:05:30 PM

9 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 05/12/2011 and 05/13/2011 and were received at Accutest on 05/14/2011 properly preserved, at 1 Deg. C and intact. These Samples received an Accutest job number of MC230. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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: MSM1276
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC230-7MS, MC230-7MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for Acrolein are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 1,4-Dioxane, Acetone, Acrolein, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl Acetate, Vinyl chloride are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Acrolein, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl Acetate, Vinyl chloride, 1,4-Dioxane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for 1,4-Dioxane are outside control limits for sample MC230-7MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MSM1276-BS/MS/MSD for 2-Chloroethyl vinyl ether, Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC230-7, 8, 9, MC230-7MS/7MSD for Dibromofluoromethane: Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Matrix AQ	Batch ID: MSN1998
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC230-2MS, MC230-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- BS/BSD Recovery(s) for 2-Chloroethyl vinyl ether, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Chloroethyl vinyl ether, 4-Methyl-2-pentanone (MIBK), Acetone, Toluene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Acetone are outside control limits for sample MC230-2MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- MSN1998-BS1 for Vinyl Acetate, 2-Chloroethyl vinyl ether: Outside control limits. Blank Spike meets program technical requirements.
- MSN1998-BSD1 for Acetone, Vinyl Acetate, 2-Chloroethyl vinyl ether: Outside control limits. Blank Spike meets program technical requirements.
- MSN1998-BS/BSD/MS/MSD/BS1/BSD1 for Acrolein, Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.

Matrix AQ	Batch ID: MSN2000
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: MSN2000
------------------	--------------------------

- Sample(s) MC198-2MS, MC198-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 2-Chloroethyl vinyl ether, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for 2-Chloroethyl vinyl ether, Acetone are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Blank Spike Duplicate Recovery(s) for Acetone, 2-Chloroethyl vinyl ether, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- MSN2000-BS/BSD/MS/MSD for Acrolein, Acrylonitrile: Outside control limits. Associated samples are non-detect for this compound.
- MC230-5 for 4-Bromofluorobenzene: Outside control limits. Associated target analytes are non-detect.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP24942
------------------	--------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- MC230-1, 2, 10 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Sample(s) MC230-2MS, MC230-2MSD were used as the QC samples indicated.
- OP24942-BS/MS/MSD Recovery(s) for Phenol are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for Aniline, Hexachlorocyclopentadiene, Pyridine are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Aniline, Benzoic Acid, n-Nitrosodimethylamine, Pyridine, Hexachlorocyclopentadiene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Hexachlorocyclopentadiene, Hexachloroethane are outside control limits for sample OP24942-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.

Matrix AQ	Batch ID: OP24955
------------------	--------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- MC230-4-9 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Sample(s) MC308-1MS, MC308-1MSD were used as the QC samples indicated.
- MC230-6, 7, 9: Confirmation run for surrogate recoveries.
- MC230-6, 7, 9 for 2,4,6-Tribromophenol: Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix AQ	Batch ID: OP24943
------------------	--------------------------

- 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) MC230-2MS, MC230-2MSD 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 interference. Refer to Blank Spike.
- RPD(s) for MSD for 2-Methylnaphthalene, Benzo(g,h,i)perylene, Indeno(1,2,3-cd)pyrene are outside control limits for sample OP24943-MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Sample(s) MC230-1, 2, 10, OP24943-MB/BS/MS/MSD has internal standards outside control limits. Internal standard spiked at 10x concentration.

Matrix AQ	Batch ID: OP24956
------------------	--------------------------

- 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) MC308-2MS, MC308-2MSD were used as the QC samples indicated.
- Sample(s) MC230-4 has internal standards outside control limits due to possible matrix interference.
- MC230-4: Confirmation run.
- OP24956-MB/BS/MS/MSD has internal standards outside control limits. Internal standard spiked at 10x concentration.
- MC230-4 for Terphenyl-d 14, Nitrobenzene-d5: Outside control limits. Associated target analytes are non-detect.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP24964
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC230-2MS, MC230-2MSD 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(MC230).



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW12-ROX-051211EB	Date Sampled: 05/12/11
Lab Sample ID: MC230-1	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N53025.D	1	05/25/11	MC	n/a	n/a	MSN2000
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051211EB	Date Sampled:	05/12/11
Lab Sample ID:	MC230-1	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

3.1
3

Client Sample ID: MW12-ROX-051211EB	Date Sampled: 05/12/11
Lab Sample ID: MC230-1	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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-051211EB	Date Sampled:	05/12/11
Lab Sample ID:	MC230-1	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72840.D	1	05/26/11	KR	05/17/11	OP24942	MSI2618
Run #2							

Run #	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	0.79	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.59	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.65	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.68	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.42	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.79	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.63	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	0.30	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	0.68	5.2	0.35	ug/l	JR U
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	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-051211EB	Date Sampled:	05/12/11
Lab Sample ID:	MC230-1	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.63	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.50	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.2	0.44	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.2	0.57	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	2.6	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.63	ug/l	
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		15-110%
4165-62-2	Phenol-d5	21%		15-110%
118-79-6	2,4,6-Tribromophenol	73%		15-110%
4165-60-0	Nitrobenzene-d5	72%		30-130%
321-60-8	2-Fluorobiphenyl	73%		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

3.1
3

Client Sample ID:	MW12-ROX-051211EB	Date Sampled:	05/12/11
Lab Sample ID:	MC230-1	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52928.D	1	05/20/11	PR	05/17/11	OP24943	MSF2556
Run #2							

Run #	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	0.012	ug/l	WJ ↓
208-96-8	Acenaphthylene	ND	0.10	0.029	ug/l	
120-12-7	Anthracene	ND	0.10	0.027	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.052	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.052	0.0099	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.012	ug/l	
218-01-9	Chrysene	ND	0.10	0.013	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.017	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	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.21	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.052	0.013	ug/l	
129-00-0	Pyrene	ND	0.10	0.021	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	71%		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

3.1
3

Client Sample ID: MW12-ROX-051211EB	Date Sampled: 05/12/11
Lab Sample ID: MC230-1	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3001.D	1	05/19/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	33.1 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	160%		36-173%		
460-00-4	Bromofluorobenzene (S)	155%		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-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-2	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998
Run #2							

Run #	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	4.1	ug/l	WJ
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	1.6	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	WJ
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-2	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	WJ
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

32
3

Client Sample ID: MW12-ROX-051211		Date Sampled: 05/12/11
Lab Sample ID: MC230-2		Date Received: 05/14/11
Matrix: AQ - Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	107%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

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-051211	Date Sampled: 05/12/11
Lab Sample ID: MC230-2	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24055.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	UJ
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.1	5.0	0.34	ug/l	JBU
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
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J = Indicates 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-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-2	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		15-110%
4165-62-2	Phenol-d5	17%		15-110%
118-79-6	2,4,6-Tribromophenol	50%		15-110%
4165-60-0	Nitrobenzene-d5	68%		30-130%
321-60-8	2-Fluorobiphenyl	59%		30-130%
1718-51-0	Terphenyl-d14	55%		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-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-2	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52913.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555
Run #2							

Run #	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	0.012	ug/l	W
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	0.019	0.10	0.012	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	W
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		30-130%
321-60-8	2-Fluorobiphenyl	64%		30-130%
1718-51-0	Terphenyl-d14	65%		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

3.2
3

Client Sample ID:	MW12-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-2	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8011 SW846 8011	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3002.D	1	05/19/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.6 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0080	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	124%		36-173%		
460-00-4	Bromofluorobenzene (S)	124%		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-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-3	Date Received:	05/14/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N52972.D	1	05/24/11	JP	n/a	n/a	MSN1998
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-3	Date Received:	05/14/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

33
3

Client Sample ID: TB-ROX-051211		Date Sampled: 05/12/11
Lab Sample ID: MC230-3		Date Received: 05/14/11
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	104%		70-130%

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

J = Indicates 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-ROX-051211		Date Sampled: 05/12/11
Lab Sample ID: MC230-3		Date Received: 05/14/11
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8011 SW846 8011		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3003.D	1	05/19/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	33.2 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0073	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	167%		36-173%		
460-00-4	Bromofluorobenzene (S)	169%		36-173%		

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

Report of Analysis

Client Sample ID:	MW13-ROX-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N53041.D	1	05/26/11	MC	n/a	n/a	MSN2000
Run #2							

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropane	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

3.4
3

Client Sample ID: MW13-ROX-051311EB	Date Sampled: 05/13/11
Lab Sample ID: MC230-4	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24296.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.9	0.76	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.9	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.9	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.9	2.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.9	5.0	ug/l	
95-48-7	2-Methylphenol	ND	9.9	0.47	ug/l	
	3&4-Methylphenol	ND	9.9	0.62	ug/l	
88-75-5	2-Nitrophenol	ND	9.9	0.65	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	9.9	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.9	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.9	0.37	ug/l	
62-53-3	Aniline	ND	9.9	0.45	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	6.4	5.0	0.40	ug/l	
100-51-6	Benzyl Alcohol	ND	9.9	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.30	ug/l	
106-47-8	4-Chloroaniline	ND	9.9	0.57	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.9	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.9	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.31	ug/l	
84-74-2	Di-n-butyl phthalate	1.8	5.0	0.33	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.33	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-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.73	5.0	0.61	ug/l	J B U
131-11-3	Dimethyl phthalate	ND	5.0	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.8	2.0	0.48	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.9	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.42	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.55	ug/l	
88-74-4	2-Nitroaniline	ND	9.9	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	9.9	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	9.9	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.30	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.40	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	9.9	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		15-110%
4165-62-2	Phenol-d5	35%		15-110%
118-79-6	2,4,6-Tribromophenol	105%		15-110%
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	87%		30-130%
1718-51-0	Terphenyl-d14	94%		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-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53010.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
Run #2 ^a	F53060.D	1	06/03/11	PR	05/18/11	OP24956	MSF2561

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2	1010 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.099	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.099	0.028	ug/l	
120-12-7	Anthracene	ND	0.099	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.099	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.099	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.099	0.011	ug/l	
218-01-9	Chrysene	ND	0.099	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.099	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.099	0.016	ug/l	
86-73-7	Fluorene	ND	0.099	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.099	0.012	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	0.080	0.099	0.011	ug/l	J
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.099	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	135% ^b	123%	30-130%
321-60-8	2-Fluorobiphenyl	113%	87%	30-130%
1718-51-0	Terphenyl-d14	142% ^b	103%	30-130%

(a) Confirmation run.

(b) Outside control limits. Associated target analytes are non-detect.

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

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

Report of Analysis

3.4
3

Client Sample ID:	MW13-ROX-051311EB	Date Sampled:	05/13/11
Lab Sample ID:	MC230-4	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8011 SW846 8011	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3004.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.2 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0081	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	107%		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:	MW13-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-5	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N53042.D	1	05/26/11	MC	n/a	n/a	MSN2000
Run #2							

Run #	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	4.1	ug/l	W
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	0.50	0.50	0.46	ug/l	J
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	W
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-5	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	6.1	1.0	0.61	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	WJ
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

3.5
3

Client Sample ID: MW13-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-5	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	108%		70-130%
460-00-4	4-Bromofluorobenzene	136% ^a		70-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

J = Indicates 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-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-5	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24297.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.9	0.76	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.9	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.9	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.9	2.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.9	5.0	ug/l	
95-48-7	2-Methylphenol	ND	9.9	0.47	ug/l	
	3&4-Methylphenol	ND	9.9	0.62	ug/l	
88-75-5	2-Nitrophenol	ND	9.9	0.65	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	9.9	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.0	ug/l	W
95-95-4	2,4,5-Trichlorophenol	ND	9.9	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.9	0.37	ug/l	
62-53-3	Aniline	ND	9.9	0.45	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.40	ug/l	
100-51-6	Benzyl Alcohol	ND	9.9	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.30	ug/l	
106-47-8	4-Chloroaniline	ND	9.9	0.57	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.9	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.9	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.31	ug/l	
84-74-2	Di-n-butyl phthalate	1.3	5.0	0.33	ug/l	W
117-84-0	Di-n-octyl phthalate	ND	5.0	0.33	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-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-5	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.86	5.0	0.61	ug/l	J B U
131-11-3	Dimethyl phthalate	ND	5.0	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.7	2.0	0.48	ug/l	U
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.9	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.42	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.55	ug/l	
88-74-4	2-Nitroaniline	ND	9.9	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	9.9	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	9.9	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.30	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.40	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	9.9	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	106%		15-110%
4165-60-0	Nitrobenzene-d5	88%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	84%		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-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-5	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53011.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.099	0.011	ug/l	WJ
208-96-8	Acenaphthylene	0.067	0.099	0.028	ug/l	J
120-12-7	Anthracene	0.059	0.099	0.026	ug/l	J
56-55-3	Benzo(a)anthracene	0.042	0.050	0.011	ug/l	J
50-32-8	Benzo(a)pyrene	0.016	0.099	0.013	ug/l	J
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0095	ug/l	WJ
191-24-2	Benzo(g,h,i)perylene	ND	0.099	0.015	ug/l	WJ
207-08-9	Benzo(k)fluoranthene	ND	0.099	0.011	ug/l	WJ
218-01-9	Chrysene	0.059	0.099	0.012	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.099	0.016	ug/l	WJ
206-44-0	Fluoranthene	0.032	0.099	0.016	ug/l	J
86-73-7	Fluorene	0.23	0.099	0.044	ug/l	WJ
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.099	0.012	ug/l	WJ
91-57-6	2-Methylnaphthalene	0.15	0.20	0.012	ug/l	J
91-20-3	Naphthalene	0.095	0.099	0.011	ug/l	J
85-01-8	Phenanthrene	0.095	0.050	0.012	ug/l	J
129-00-0	Pyrene	0.089	0.099	0.020	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	97%		30-130%
321-60-8	2-Fluorobiphenyl	79%		30-130%
1718-51-0	Terphenyl-d14	92%		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

3.5
3

Client Sample ID: MW13-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-5	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3005.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0079	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	125%		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:	MW08-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-6	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M40691.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
Run #2							

Run #1	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	50000	41000	ug/l	
107-02-8	Acrolein	ND	250000	130000	ug/l	UK
107-13-1	Acrylonitrile	ND	50000	43000	ug/l	
71-43-2	Benzene	1310000	5000	4600	ug/l	
108-86-1	Bromobenzene	ND	50000	9900	ug/l	
74-97-5	Bromochloromethane	ND	50000	9200	ug/l	
75-27-4	Bromodichloromethane	ND	10000	4900	ug/l	
75-25-2	Bromoform	ND	10000	7100	ug/l	
74-83-9	Bromomethane	ND	20000	13000	ug/l	
78-93-3	2-Butanone (MEK)	ND	50000	27000	ug/l	
104-51-8	n-Butylbenzene	ND	50000	11000	ug/l	
135-98-8	sec-Butylbenzene	ND	50000	10000	ug/l	
98-06-6	tert-Butylbenzene	ND	50000	8200	ug/l	
75-15-0	Carbon disulfide	ND	50000	6200	ug/l	
56-23-5	Carbon tetrachloride	ND	10000	5800	ug/l	
108-90-7	Chlorobenzene	ND	10000	4400	ug/l	
75-00-3	Chloroethane	ND	20000	3200	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	50000	50000	ug/l	
67-66-3	Chloroform	ND	10000	5800	ug/l	
74-87-3	Chloromethane	ND	20000	7100	ug/l	
95-49-8	o-Chlorotoluene	ND	50000	11000	ug/l	
106-43-4	p-Chlorotoluene	ND	50000	9800	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50000	16000	ug/l	
124-48-1	Dibromochloromethane	ND	10000	8900	ug/l	
106-93-4	1,2-Dibromoethane	ND	20000	4800	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10000	4100	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10000	4400	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10000	4200	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20000	11000	ug/l	
75-34-3	1,1-Dichloroethane	ND	10000	3300	ug/l	
107-06-2	1,2-Dichloroethane	ND	10000	4400	ug/l	
75-35-4	1,1-Dichloroethene	ND	10000	8000	ug/l	

ND = Not detected MDL - Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW08-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-6	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	10000	6900	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10000	6400	ug/l	
78-87-5	1,2-Dichloropropane	ND	20000	7100	ug/l	
142-28-9	1,3-Dichloropropane	ND	50000	7500	ug/l	
594-20-7	2,2-Dichloropropane	ND	50000	9700	ug/l	
563-58-6	1,1-Dichloropropene	ND	50000	7800	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5000	4100	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5000	4900	ug/l	
123-91-1	1,4-Dioxane	ND	250000	250000	ug/l	
97-63-2	Ethyl methacrylate	ND	50000	7000	ug/l	
100-41-4	Ethylbenzene	ND	10000	8000	ug/l	
87-68-3	Hexachlorobutadiene	ND	50000	12000	ug/l	
591-78-6	2-Hexanone	ND	50000	13000	ug/l	
98-82-8	Isopropylbenzene	ND	50000	9400	ug/l	
99-87-6	p-Isopropyltoluene	ND	50000	8800	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10000	6100	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50000	7600	ug/l	
74-95-3	Methylene bromide	ND	50000	5200	ug/l	
75-09-2	Methylene chloride	ND	20000	9900	ug/l	
91-20-3	Naphthalene	ND	50000	50000	ug/l	
103-65-1	n-Propylbenzene	ND	50000	8900	ug/l	
100-42-5	Styrene	ND	50000	9700	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50000	8300	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10000	7900	ug/l	
127-18-4	Tetrachloroethene	ND	10000	3600	ug/l	
108-88-3	Toluene	ND	10000	5900	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50000	11000	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50000	10000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10000	5500	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10000	7400	ug/l	
79-01-6	Trichloroethene	ND	10000	7500	ug/l	
75-69-4	Trichlorofluoromethane	ND	10000	4000	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50000	7000	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	50000	9800	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	50000	9000	ug/l	
108-05-4	Vinyl Acetate	ND	50000	11000	ug/l	
75-01-4	Vinyl chloride	ND	10000	8200	ug/l	
	m,p-Xylene	ND	10000	9000	ug/l	
95-47-6	o-Xylene	ND	10000	3200	ug/l	
1330-20-7	Xylene (total)	ND	10000	3200	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

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N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID: MW08-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-6	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	81%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

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: MW08-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-6	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24298.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2 ^a	S24367.D	1	06/01/11	PR	05/18/11	OP24955	MSS1032

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2	910 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.85	ug/l	
95-57-8	2-Chlorophenol	ND	5.5	0.75	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.76	ug/l	
105-67-9	2,4-Dimethylphenol	22.5	11	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.5	ug/l	
95-48-7	2-Methylphenol	10.8	11	0.53	ug/l	J
	3&4-Methylphenol	24.3	11	0.69	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.72	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.5	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.6	ug/l	
108-95-2	Phenol	209	5.5	2.3	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.41	ug/l	
62-53-3	Aniline	ND	11	0.50	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.5	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.5	0.45	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.84	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.5	0.34	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.5	0.39	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.5	0.26	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.5	0.23	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.5	0.67	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.5	0.32	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.37	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.5	2.7	ug/l	
132-64-9	Dibenzofuran	ND	5.5	0.35	ug/l	
84-74-2	Di-n-butyl phthalate	1.4	5.5	0.37	ug/l	JBU
117-84-0	Di-n-octyl phthalate	ND	5.5	0.37	ug/l	

ND = Not detected MDL - Method Detection Limit

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW08-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-6	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.8	5.5	0.67	ug/l	NE U
131-11-3	Dimethyl phthalate	ND	5.5	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.1'	2.2	0.54	ug/l	U
118-74-1	Hexachlorobenzene	ND	5.5	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.5	0.47	ug/l	
78-59-1	Isophorone	ND	5.5	0.52	ug/l	
90-12-0	1-Methylnaphthalene	5.3	5.5	0.61	ug/l	J
88-74-4	2-Nitroaniline	ND	11	0.37	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.35	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.37	ug/l	
98-95-3	Nitrobenzene	4.1	5.5	0.34	ug/l	J
62-75-9	n-Nitrosodimethylamine	ND	5.5	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.5	0.45	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.5	0.67	ug/l	
110-86-1	Pyridine	ND	11	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	63%	60%	15-110%
4165-62-2	Phenol-d5	44%	42%	15-110%
118-79-6	2,4,6-Tribromophenol	133% ^b	149% ^b	15-110%
4165-60-0	Nitrobenzene-d5	82%	75%	30-130%
321-60-8	2-Fluorobiphenyl	86%	84%	30-130%
1718-51-0	Terphenyl-d14	101%	101%	30-130%

(a) Confirmation run for surrogate recoveries.

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

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

Report of Analysis

Client Sample ID:	MW08-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-6	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53012.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.35	0.11	0.013	ug/l	J
208-96-8	Acenaphthylene	ND	0.11	0.031	ug/l	B
120-12-7	Anthracene	0.063	0.11	0.029	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.055	0.012	ug/l	B
50-32-8	Benzo(a)pyrene	ND	0.11	0.014	ug/l	J
205-99-2	Benzo(b)fluoranthene	ND	0.055	0.011	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.013	ug/l	J
218-01-9	Chrysene	ND	0.11	0.014	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	J
206-44-0	Fluoranthene	0.030	0.11	0.018	ug/l	J
86-73-7	Fluorene	0.23	0.11	0.049	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.014	ug/l	J
91-57-6	2-Methylnaphthalene	7.5	0.22	0.013	ug/l	J
91-20-3	Naphthalene	24.1	0.11	0.012	ug/l	J
85-01-8	Phenanthrene	0.086	0.055	0.013	ug/l	J
129-00-0	Pyrene	0.028	0.11	0.022	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	90%		30-130%
321-60-8	2-Fluorobiphenyl	89%		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: MW08-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-6	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3006.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	31.6 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0077	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	130%		36-173%		
460-00-4	Bromofluorobenzene (S)	123%		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:	MW08-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-7	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M40692.D	1000	05/27/11	DFT	n/a	n/a	MSM1276
Run #2	M40704.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

Run #	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	5000	4100	ug/l	
107-02-8	Acrolein	ND	25000	13000	ug/l	W
107-13-1	Acrylonitrile	ND	5000	4300	ug/l	
71-43-2	Benzene	952000 ^a	5000	4600	ug/l	J
108-86-1	Bromobenzene	ND	5000	990	ug/l	
74-97-5	Bromochloromethane	ND	5000	920	ug/l	
75-27-4	Bromodichloromethane	ND	1000	490	ug/l	
75-25-2	Bromoform	ND	1000	710	ug/l	
74-83-9	Bromomethane	ND	2000	1300	ug/l	
78-93-3	2-Butanone (MEK)	ND	5000	2700	ug/l	
104-51-8	n-Butylbenzene	ND	5000	1100	ug/l	
135-98-8	sec-Butylbenzene	ND	5000	1000	ug/l	
98-06-6	tert-Butylbenzene	ND	5000	820	ug/l	
75-15-0	Carbon disulfide	ND	5000	620	ug/l	
56-23-5	Carbon tetrachloride	ND	1000	580	ug/l	
108-90-7	Chlorobenzene	ND	1000	440	ug/l	
75-00-3	Chloroethane	ND	2000	320	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5000	5000	ug/l	
67-66-3	Chloroform	ND	1000	580	ug/l	
74-87-3	Chloromethane	ND	2000	710	ug/l	
95-49-8	o-Chlorotoluene	ND	5000	1100	ug/l	
106-43-4	p-Chlorotoluene	ND	5000	980	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5000	1600	ug/l	
124-48-1	Dibromochloromethane	ND	1000	890	ug/l	
106-93-4	1,2-Dibromoethane	ND	2000	480	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1000	410	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1000	440	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1000	420	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2000	1100	ug/l	
75-34-3	1,1-Dichloroethane	ND	1000	330	ug/l	
107-06-2	1,2-Dichloroethane	ND	1000	440	ug/l	
75-35-4	1,1-Dichloroethene	ND	1000	800	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:	MW08-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-7	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1000	690	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1000	640	ug/l	
78-87-5	1,2-Dichloropropane	ND	2000	710	ug/l	
142-28-9	1,3-Dichloropropane	ND	5000	750	ug/l	
594-20-7	2,2-Dichloropropane	ND	5000	970	ug/l	
563-58-6	1,1-Dichloropropane	ND	5000	780	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	500	410	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	500	490	ug/l	
123-91-1	1,4-Dioxane	ND	25000	25000	ug/l	
97-63-2	Ethyl methacrylate	ND	5000	700	ug/l	
100-41-4	Ethylbenzene	ND	1000	800	ug/l	
87-68-3	Hexachlorobutadiene	ND	5000	1200	ug/l	
591-78-6	2-Hexanone	ND	5000	1300	ug/l	
98-82-8	Isopropylbenzene	ND	5000	940	ug/l	
99-87-6	p-Isopropyltoluene	ND	5000	880	ug/l	
1634-04-4	Methyl Tert Butyl Ether	657	1000	610	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5000	760	ug/l	
74-95-3	Methylene bromide	ND	5000	520	ug/l	
75-09-2	Methylene chloride	ND	2000	990	ug/l	
91-20-3	Naphthalene	ND	5000	5000	ug/l	
103-65-1	n-Propylbenzene	ND	5000	890	ug/l	
100-42-5	Styrene	ND	5000	970	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5000	830	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1000	790	ug/l	
127-18-4	Tetrachloroethene	ND	1000	360	ug/l	
108-88-3	Toluene	ND	1000	590	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5000	1100	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5000	1000	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1000	550	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1000	740	ug/l	
79-01-6	Trichloroethene	ND	1000	750	ug/l	
75-69-4	Trichlorofluoromethane	ND	1000	400	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5000	700	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5000	980	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5000	900	ug/l	
108-05-4	Vinyl Acetate	ND	5000	1100	ug/l	
75-01-4	Vinyl chloride	ND	1000	820	ug/l	
	m,p-Xylene	ND	1000	900	ug/l	
95-47-6	o-Xylene	ND	1000	320	ug/l	
1330-20-7	Xylene (total)	ND	1000	320	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: MW08-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-7	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	82%	66% ^b	70-130%
2037-26-5	Toluene-D8	80%	79%	70-130%
460-00-4	4-Bromofluorobenzene	83%	75%	70-130%

(a) Result is from Run# 2

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

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

Report of Analysis

Client Sample ID:	MW08-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-7	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24299.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2 ^a	S24368.D	1	06/01/11	PR	05/18/11	OP24955	MSS1032

Run #	Initial Volume	Final Volume
Run #1	890 ml	1.0 ml
Run #2	890 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.87	ug/l	
95-57-8	2-Chlorophenol	ND	5.6	0.77	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.64	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.78	ug/l	
105-67-9	2,4-Dimethylphenol	23.2	11	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.6	ug/l	
95-48-7	2-Methylphenol	10.5	11	0.54	ug/l	J
	3&4-Methylphenol	24.9	11	0.71	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.74	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.6	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.7	ug/l	
108-95-2	Phenol	208	5.6	2.3	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.45	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.42	ug/l	
62-53-3	Aniline	ND	11	0.51	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.6	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.6	0.46	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.86	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.6	0.34	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.65	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.6	0.39	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.6	0.26	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.6	0.23	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.6	0.69	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.6	0.33	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.38	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.6	2.8	ug/l	
132-64-9	Dibenzofuran	ND	5.6	0.35	ug/l	
84-74-2	Di-n-butyl phthalate	2.1	5.6	0.38	ug/l	JBU
117-84-0	Di-n-octyl phthalate	ND	5.6	0.38	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW08-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-7	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	1.1	5.6	0.69	ug/l	u u
131-11-3	Dimethyl phthalate	ND	5.6	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.4	2.2	0.55	ug/l	u
118-74-1	Hexachlorobenzene	ND	5.6	0.18	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.8	ug/l	
67-72-1	Hexachloroethane	ND	5.6	0.48	ug/l	
78-59-1	Isophorone	ND	5.6	0.53	ug/l	
90-12-0	1-Methylnaphthalene	5.5	5.6	0.63	ug/l	J
88-74-4	2-Nitroaniline	ND	11	0.38	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.36	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.38	ug/l	
98-95-3	Nitrobenzene	ND	5.6	0.34	ug/l	uJ
62-75-9	n-Nitrosodimethylamine	ND	5.6	2.8	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.6	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.6	0.69	ug/l	
110-86-1	Pyridine	ND	11	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%	58%	15-110%
4165-62-2	Phenol-d5	42%	39%	15-110%
118-79-6	2,4,6-Tribromophenol	117% ^b	130% ^b	15-110%
4165-60-0	Nitrobenzene-d5	81%	73%	30-130%
321-60-8	2-Fluorobiphenyl	82%	81%	30-130%
1718-51-0	Terphenyl-d14	97%	94%	30-130%

(a) Confirmation run for surrogate recoveries.

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

Report of Analysis

Client Sample ID: MW08-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-7	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53035.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	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	0.29	0.11	0.013	ug/l	J
208-96-8	Acenaphthylene	ND	0.11	0.031	ug/l	WF
120-12-7	Anthracene	0.054	0.11	0.030	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.056	0.012	ug/l	WF
50-32-8	Benzo(a)pyrene	ND	0.11	0.015	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.056	0.011	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.017	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.013	ug/l	
218-01-9	Chrysene	ND	0.11	0.014	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.018	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.018	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	0.014	ug/l	
91-57-6	2-Methylnaphthalene	8.9	0.22	0.013	ug/l	
91-20-3	Naphthalene	28.8	0.11	0.012	ug/l	
85-01-8	Phenanthrene	0.12	0.056	0.014	ug/l	
129-00-0	Pyrene	ND	0.11	0.023	ug/l	WF

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	101%		30-130%
321-60-8	2-Fluorobiphenyl	82%		30-130%
1718-51-0	Terphenyl-d14	107%		30-130%

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

Report of Analysis

3.7
3

Client Sample ID: MW08-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-7	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3007.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	32.8 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	141%		36-173%		
460-00-4	Bromofluorobenzene (S)	139%		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:	MW07-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-8	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M40694.D	1	05/27/11	DFT	n/a	n/a	MSM1276
Run #2	M40707.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

Run #	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	4.1	ug/l	W	
107-02-8	Acrolein	ND	25	13	ug/l	W	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	W	
71-43-2	Benzene	1030000 ^a	5000	4600	ug/l	J	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	W	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	↓	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l		
75-25-2	Bromoform	ND	1.0	0.71	ug/l		
74-83-9	Bromomethane	ND	2.0	1.3	ug/l		
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l		
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l		
135-98-8	sec-Butylbenzene	1.1	5.0	1.0	ug/l		J
98-06-6	tert-Butylbenzene	1.6	5.0	0.82	ug/l		J
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l		W
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l		↓
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l		
75-00-3	Chloroethane	ND	2.0	0.32	ug/l		
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l		
67-66-3	Chloroform	ND	1.0	0.58	ug/l		
74-87-3	Chloromethane	ND	2.0	0.71	ug/l		
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l		
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l		
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l		
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l		
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l		
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l		
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l		
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l		
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l		
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l		
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l		
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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: MW07-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-8	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	J
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	J
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	J
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	J
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	J
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	J
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	J
123-91-1	1,4-Dioxane	ND	25	25	ug/l	J
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	J
100-41-4	Ethylbenzene	49.4	1.0	0.80	ug/l	J
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	J
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	J
98-82-8	Isopropylbenzene	6.1	5.0	0.94	ug/l	J
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	10.9	1.0	0.61	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	J
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	J
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	J
91-20-3	Naphthalene	10.3	5.0	5.0	ug/l	J
103-65-1	n-Propylbenzene	7.8	5.0	0.89	ug/l	J
100-42-5	Styrene	ND	5.0	0.97	ug/l	J
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	J
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	J
108-88-3	Toluene	128	1.0	0.59	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/l	J
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.0	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	J
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	J
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	J
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	J
95-63-6	1,2,4-Trimethylbenzene	82.2	5.0	0.98	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	19.3	5.0	0.90	ug/l	J
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	J
	m,p-Xylene	101	1.0	0.90	ug/l	J
95-47-6	o-Xylene	41.8	1.0	0.32	ug/l	J
1330-20-7	Xylene (total)	143	1.0	0.32	ug/l	J

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

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

Report of Analysis

Client Sample ID: MW07-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-8	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	63% ^b	67% ^b	70-130%
2037-26-5	Toluene-D8	89%	81%	70-130%
460-00-4	4-Bromofluorobenzene	85%	78%	70-130%

(a) Result is from Run# 2

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

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

Report of Analysis

Client Sample ID: MW07-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-8	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24300.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	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	0.84	ug/l	
95-57-8	2-Chlorophenol	ND	5.4	0.74	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.75	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.4	ug/l	
95-48-7	2-Methylphenol	ND	11	0.52	ug/l	
	3&4-Methylphenol	0.82	11	0.68	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.72	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.4	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.6	ug/l	
108-95-2	Phenol	77.4	5.4	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.41	ug/l	
62-53-3	Aniline	ND	11	0.49	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.4	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	7.1	5.4	0.44	ug/l	u
100-51-6	Benzyl Alcohol	ND	11	0.83	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.4	0.33	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.4	0.38	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.4	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.4	0.23	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.4	0.67	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.4	0.32	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.37	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.4	2.7	ug/l	
132-64-9	Dibenzofuran	ND	5.4	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	1.7	5.4	0.37	ug/l	JB u
117-84-0	Di-n-octyl phthalate	ND	5.4	0.37	ug/l	

ND = Not detected MDL - Method Detection Limit
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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW07-ROX-051311	Date Sampled:	05/13/11
Lab Sample ID:	MC230-8	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.97	5.4	0.67	ug/l	B ^u
131-11-3	Dimethyl phthalate	ND	5.4	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.2	2.2	0.53	ug/l	u
118-74-1	Hexachlorobenzene	ND	5.4	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.4	0.47	ug/l	
78-59-1	Isophorone	ND	5.4	0.51	ug/l	
90-12-0	1-Methylnaphthalene	2.6	5.4	0.61	ug/l	J
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.35	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
98-95-3	Nitrobenzene	ND	5.4	0.33	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.4	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.4	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.4	0.67	ug/l	
110-86-1	Pyridine	ND	11	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	58%		15-110%
4165-62-2	Phenol-d5	37%		15-110%
118-79-6	2,4,6-Tribromophenol	103%		15-110%
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	107%		30-130%
1718-51-0	Terphenyl-d14	94%		30-130%

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

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW07-ROX-051311	Date Sampled: 05/13/11
Lab Sample ID: MC230-8	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53036.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	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	0.11	0.11	0.013	ug/l	N
208-96-8	Acenaphthylene	ND	0.11	0.030	ug/l	B
120-12-7	Anthracene	0.031	0.11	0.029	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.054	0.012	ug/l	B
50-32-8	Benzo(a)pyrene	ND	0.11	0.014	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.054	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.012	ug/l	
218-01-9	Chrysene	ND	0.11	0.013	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.018	ug/l	
86-73-7	Fluorene	0.10	0.11	0.048	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.014	ug/l	
91-57-6	2-Methylnaphthalene	4.9	0.22	0.013	ug/l	B
91-20-3	Naphthalene	11.4	0.11	0.012	ug/l	
85-01-8	Phenanthrene	0.17	0.054	0.013	ug/l	
129-00-0	Pyrene	0.044	0.11	0.022	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	102%		30-130%
321-60-8	2-Fluorobiphenyl	80%		30-130%
1718-51-0	Terphenyl-d14	107%		30-130%

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.8
3

Client Sample ID: MW07-ROX-051311		Date Sampled: 05/13/11
Lab Sample ID: MC230-8		Date Received: 05/14/11
Matrix: AQ - Water		Percent Solids: n/a
Method: SW846 8011 SW846 8011		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3008.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	31.5 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0077	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	122%		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

3.9
3

Client Sample ID: MW07-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-9	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M40693.D	1	05/27/11	DFT	n/a	n/a	MSM1276
Run #2	M40708.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

	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	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	uJ
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	922000 ^a	5000	4600	ug/l	J
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	1.3	5.0	1.0	ug/l	J
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	

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

Report of Analysis

Client Sample ID:	MW07-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-9	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	48.7	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	6.0	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	12.0	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	10.0	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	7.8	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	126	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	82.5	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	19.3	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	98.4	1.0	0.90	ug/l	
95-47-6	o-Xylene	40.5	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	139	1.0	0.32	ug/l	

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

Report of Analysis

Client Sample ID: MW07-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-9	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	75%	67% ^b	70-130%
2037-26-5	Toluene-D8	85%	79%	70-130%
460-00-4	4-Bromofluorobenzene	84%	75%	70-130%

(a) Result is from Run# 2

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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

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

Report of Analysis

Client Sample ID:	MW07-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-9	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24301.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2 ^a	S24369.D	1	06/01/11	PR	05/18/11	OP24955	MSS1032

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2	910 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.85	ug/l	
95-57-8	2-Chlorophenol	ND	5.5	0.75	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.76	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.5	ug/l	
95-48-7	2-Methylphenol	ND	11	0.53	ug/l	
	3&4-Methylphenol	0.78	11	0.69	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.72	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.5	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.6	ug/l	
108-95-2	Phenol	79.3	5.5	2.3	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.41	ug/l	
62-53-3	Aniline	ND	11	0.50	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.5	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	7.0	5.5	0.45	ug/l	u
100-51-6	Benzyl Alcohol	ND	11	0.84	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.5	0.34	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.5	0.39	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.5	0.26	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.5	0.23	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.5	0.67	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.5	0.32	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.37	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.5	2.7	ug/l	
132-64-9	Dibenzofuran	ND	5.5	0.35	ug/l	
84-74-2	Di-n-butyl phthalate	1.8	5.5	0.37	ug/l	XB u
117-84-0	Di-n-octyl phthalate	ND	5.5	0.37	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:	MW07-ROX-051311D	Date Sampled:	05/13/11
Lab Sample ID:	MC230-9	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	5.5	0.67	ug/l	.
131-11-3	Dimethyl phthalate	ND	5.5	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	3.5	2.2	0.54	ug/l	U
118-74-1	Hexachlorobenzene	ND	5.5	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.5	0.47	ug/l	
78-59-1	Isophorone	ND	5.5	0.52	ug/l	
90-12-0	1-Methylnaphthalene	2.6	5.5	0.61	ug/l	J
88-74-4	2-Nitroaniline	ND	11	0.37	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.35	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.37	ug/l	
98-95-3	Nitrobenzene	ND	5.5	0.34	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.5	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.5	0.45	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.5	0.67	ug/l	
110-86-1	Pyridine	ND	11	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%	58%	15-110%
4165-62-2	Phenol-d5	38%	38%	15-110%
118-79-6	2,4,6-Tribromophenol	113% ^b	123% ^b	15-110%
4165-60-0	Nitrobenzene-d5	83%	76%	30-130%
321-60-8	2-Fluorobiphenyl	81%	82%	30-130%
1718-51-0	Terphenyl-d14	99%	96%	30-130%

(a) Confirmation run for surrogate recoveries.

(b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

39
3

Client Sample ID: MW07-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-9	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53037.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.11	0.11	0.013	ug/l	J
208-96-8	Acenaphthylene	ND	0.11	0.031	ug/l	J
120-12-7	Anthracene	0.034	0.11	0.029	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.055	0.012	ug/l	J
50-32-8	Benzo(a)pyrene	0.018	0.11	0.014	ug/l	J
205-99-2	Benzo(b)fluoranthene	ND	0.055	0.011	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.013	ug/l	J
218-01-9	Chrysene	ND	0.11	0.014	ug/l	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	J
206-44-0	Fluoranthene	ND	0.11	0.018	ug/l	J
86-73-7	Fluorene	0.097	0.11	0.049	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.014	ug/l	J
91-57-6	2-Methylnaphthalene	4.7	0.22	0.013	ug/l	J
91-20-3	Naphthalene	11.0	0.11	0.012	ug/l	J
85-01-8	Phenanthrene	0.17	0.055	0.013	ug/l	J
129-00-0	Pyrene	0.051	0.11	0.022	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	106%		30-130%
321-60-8	2-Fluorobiphenyl	80%		30-130%
1718-51-0	Terphenyl-d14	115%		30-130%

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 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW07-ROX-051311D	Date Sampled: 05/13/11
Lab Sample ID: MC230-9	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3009.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	33.1 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0074	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	148%		36-173%		
460-00-4	Bromofluorobenzene (S)	144%		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:	MW05-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-10	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N53027.D	1	05/25/11	MC	n/a	n/a	MSN2000
Run #2							

Run #	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	4.1	ug/l	US
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	5.5	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	US
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW05-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-10	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	8.5	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	UJ
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	3.5	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	3.5	1.0	0.32	ug/l	

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N = Indicates presumptive evidence of a compound

Report of Analysis

3.10
3

Client Sample ID: MW05-ROX-051211	Date Sampled: 05/12/11
Lab Sample ID: MC230-10	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	109%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
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Report of Analysis

Client Sample ID:	MW05-ROX-051211	Date Sampled:	05/12/11
Lab Sample ID:	MC230-10	Date Received:	05/14/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project:	
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I72841.D	1	05/26/11	KR	05/17/11	OP24942	MSI2618
Run #2							

Run #	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	0.82	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.73	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.74	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.51	ug/l	
	3&4-Methylphenol	ND	11	0.67	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.70	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	WJ
95-95-4	2,4,5-Trichlorophenol	ND	11	0.43	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
62-53-3	Aniline	ND	11	0.48	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	0.43	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.81	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.65	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	0.31	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.36	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.7	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	0.90	5.3	0.36	ug/l	JB W
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	

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RL = Reporting Limit

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Report of Analysis

Client Sample ID: MW05-ROX-051211	Date Sampled: 05/12/11
Lab Sample ID: MC230-10	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.65	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.52	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.46	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.3	0.59	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.65	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		15-110%
4165-62-2	Phenol-d5	21%		15-110%
118-79-6	2,4,6-Tribromophenol	72%		15-110%
4165-60-0	Nitrobenzene-d5	70%		30-130%
321-60-8	2-Fluorobiphenyl	69%		30-130%
1718-51-0	Terphenyl-d14	63%		30-130%

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

Report of Analysis

3.10
3

Client Sample ID: MW05-ROX-051211	Date Sampled: 05/12/11
Lab Sample ID: MC230-10	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F52929.D	1	05/20/11	PR	05/17/11	OP24943	MSF2556
Run #2							

Run #	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	0.012	ug/l	UJ
208-96-8	Acenaphthylene	ND	0.11	0.030	ug/l	
120-12-7	Anthracene	ND	0.11	0.028	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.053	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.014	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.053	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.012	ug/l	
218-01-9	Chrysene	ND	0.11	0.013	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.017	ug/l	
86-73-7	Fluorene	ND	0.11	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.013	ug/l	
91-57-6	2-Methylnaphthalene	0.040	0.21	0.013	ug/l	J
91-20-3	Naphthalene	ND	0.11	0.011	ug/l	UJ
85-01-8	Phenanthrene	ND	0.053	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.022	ug/l	

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	70%		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

3.10
3

Client Sample ID: MW05-ROX-051211	Date Sampled: 05/12/11
Lab Sample ID: MC230-10	Date Received: 05/14/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3011.D	1	05/20/11	AP	05/18/11	OP24964	GBK120
Run #2							

Run #	Initial Volume	Final Volume
Run #1	32.2 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0076	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	157%		36-173%		
460-00-4	Bromofluorobenzene (S)	149%		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

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



Shell Oil Products Chain Of Custody Record

LAB (LOCATION) _____

NO
 SCIENCE
 OPER
 VENDOR # _____
 Lab Vendor # _____

Please Check Appropriate Box:

SERVICES
 RETAIL
 RETAIL
 SEARCH
 CONSULTANT
 OTHER
 PIPELINE
 OTHER

Print Bill To Contact Name: WENY PENNINGTON

INCIDENT # (ENV SERVICES) 97214040

DATE 5/13/11

PO # _____

SAP # _____

PAGE 1 of 2

REPORT TO:

URS CORPORATION
1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

WENY PENNINGTON
314-743-4168 or 341-452-8822 314-428-0482

WITH ADDRESS (If Street and City) 900 South Central Ave. ROXANA, ILL. 62451

LAB USE ONLY
N. SATAM, M. JOHNSON
MC230

15 MINUTES TRAP (FAT) TRAP
 15 MINUTES TRAP (FAT) TRAP
 15 MINUTES TRAP (FAT) TRAP
 15 MINUTES TRAP (FAT) TRAP

INVOIC REPORT FORMAT
 INVOIC REPORT FORMAT
 INVOIC REPORT FORMAT
 INVOIC REPORT FORMAT

DELIVERABLE
 DELIVERABLE
 DELIVERABLE
 DELIVERABLE

TEMPERATURE ON RECEIPT °C

SPECIAL INSTRUCTIONS OR NOTES:
Please include 3 vials in respect
Please print sample receipt upon
10/11

ALL CONTRACT RATE APPLIES
 ALL CONTRACT RATE APPLIES
 ALL CONTRACT RATE APPLIES
 ALL CONTRACT RATE APPLIES

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					VOL. OF CONT.	VOC B200B	VOC B011	SVOC B270C	PAH B270LL	PID (ppm)	FIELD NOTES: TEMPERATURE ON RECEIPT °C Container PID Readings at Laboratory Note
		DATE	TIME		HEX	HEXD	HEXON	OTHER								
-1	MW12-Rox-051211 EB ✓	5/12	0830	Water	3		2	2	7	X	X	X	X			
-2	MW12-Rox-051211 ✓	5/12	1130		3		2	2	7	X	X	X	X			
-2A	MW12-Rox-051211 MS	5/12	1130		5		2	2	7	X	X	X	X			
-2B	MW12-Rox-051211 MSD	5/12	1130		3		2	2	7	X	X	X	X			
-3	TB-Rox-051211 ✓	5/12			1		1	2	X	X						
-4	MW13-Rox-051311 EB ✓	5/13	0900		3		2	2	7	X	X	X	X			
-5	MW13-Rox-051311 ✓	5/13	1030		8		2	2	7	X	X	X	X			
-6	MW08-Rox-051311 ✓	5/13	1340		5		2	2	7	X	X	X	X			
-7	MW08-Rox-051311 ✓	5/13	1320		3		2	2	7	X	X	X	X			19D, 3B6, 3C2
-8	MW01-Rox-051311 ✓	5/13	1550	Water	3		2	2	7	X	X	X	X			

Prepared by (Signature): *[Signature]* Date: 5/13/11 Time: 1800
 Received by (Signature): FED EX Date: 5/14/11 Time: 10:30
 Prepared by (Signature): *[Signature]* Date: _____ Time: _____
 Received by (Signature): *[Signature]* Date: _____ Time: _____

1-0.4%
2-0.7%
3-1.0%

4.1
4

MC230: Chain of Custody
Page 1 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC230 Client: URS Immediate Client Services Action Required: No
 Date / Time Received: 5/14/2011 Delivery Method: FedEx
 Project: 900 S.CENTRAL AVE,ROX,IL No. Coolers: 3 Airbill #'s: N/A

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: Infrared gun
 3. Cooler media: Ice (bag)

Quality Control Preservation Y N NA
 1. Trip Blank present / cooler:
 2. Trip Blank listed on COC:
 3. Samples preserved properly:
 4. VOCs headspace free:

Comments

Received samples not on COC "MW05-ROX-051211, 5/12/11, time"15:15" total of 7 bottles same as other samples.

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 rec'd within HT:
 2. All containers accounted for:
 3. Condition of sample: Intact

Sample Integrity - Instructions Y N NA
 1. Analysis requested is clear:
 2. Bottles received for unspecified tests:
 3. Sufficient volume rec'd for analysis:
 4. Compositing instructions clear:
 5. Filtering instructions clear:

4.1
4



Sample Receipt Summary - Problem Resolution

Accutest Job Number: MC230

CSR: Jeremy Vienneau

Response Date 5/16/2011

Response: Client advised Accutest that MW05-ROX-051211 should have been on the COC. See email in file.

4.1

4

Accutest Laboratories
V 508 481 6200

455 Technology Center West, Bldg One
F. 508.481.7753

Marlborough, MA
www.accutest.com

MC230: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC230

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Project No: INC#97216640 SAP#340061

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC230-1 Collected: 12-MAY-11 08:30 By: NSMJ Received: 14-MAY-11 By:						
MW12-ROX-051211EB						
MC230-1	SW846 8011	19-MAY-11 23:01	AP	18-MAY-11 FC		V8011EDB
MC230-1	SW846 8270C BY SIM	20-MAY-11 14:17	PR	17-MAY-11 MS		B8270SIMPAAH
MC230-1	SW846 8260B	25-MAY-11 19:09	MC			V8260SL
MC230-1	SW846 8270C	26-MAY-11 10:16	KR	17-MAY-11 MS		AB8270SL
MC230-2 Collected: 12-MAY-11 11:30 By: NSMJ Received: 14-MAY-11 By:						
MW12-ROX-051211						
MC230-2	SW846 8270C	18-MAY-11 14:37	PR	17-MAY-11 MS		AB8270SL
MC230-2	SW846 8270C BY SIM	19-MAY-11 23:23	PR	17-MAY-11 MS		B8270SIMPAAH
MC230-2	SW846 8011	19-MAY-11 23:28	AP	18-MAY-11 FC		V8011EDB
MC230-2	SW846 8260B	25-MAY-11 19:37	JP			V8260SL
MC230-3 Collected: 12-MAY-11 00:00 By: NSMJ Received: 14-MAY-11 By:						
TB-ROX-051211						
MC230-3	SW846 8011	19-MAY-11 23:54	AP	18-MAY-11 FC		V8011EDB
MC230-3	SW846 8260B	24-MAY-11 18:04	JP			V8260SL
MC230-4 Collected: 13-MAY-11 09:00 By: NSMJ Received: 14-MAY-11 By:						
MW13-ROX-051311EB						
MC230-4	SW846 8011	20-MAY-11 00:20	AP	18-MAY-11 FC		V8011EDB
MC230-4	SW846 8270C BY SIM	24-MAY-11 19:10	KR	18-MAY-11 AJ		B8270SIMPAAH
MC230-4	SW846 8260B	26-MAY-11 02:39	MC			V8260SL
MC230-4	SW846 8270C	27-MAY-11 14:41	PR	18-MAY-11 AJ		AB8270SL
MC230-4	SW846 8270C BY SIM	03-JUN-11 18:25	PR	18-MAY-11 AJ		B8270SIMPAAH
MC230-5 Collected: 13-MAY-11 10:30 By: NSMJ Received: 14-MAY-11 By:						
MW13-ROX-051311						
MC230-5	SW846 8011	20-MAY-11 00:46	AP	18-MAY-11 FC		V8011EDB
MC230-5	SW846 8270C BY SIM	24-MAY-11 19:45	KR	18-MAY-11 AJ		B8270SIMPAAH
MC230-5	SW846 8260B	26-MAY-11 03:07	MC			V8260SL
MC230-5	SW846 8270C	27-MAY-11 15:11	PR	18-MAY-11 AJ		AB8270SL

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC230

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

4.2
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
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MC230-6 Collected: 13-MAY-11 13:20 By: NSMJ Received: 14-MAY-11 By:
 MW08-ROX-051311

MC230-6	SW846 8011	20-MAY-11 01:13	AP	18-MAY-11 FC	V8011EDB
MC230-6	SW846 8270C BY SIM	24-MAY-11 20:13	KR	18-MAY-11 AJ	B8270SIMPAAH
MC230-6	SW846 8260B	27-MAY-11 12:02	DFT		V8260SL
MC230-6	SW846 8270C	27-MAY-11 15:41	PR	18-MAY-11 AJ	AB8270SL
MC230-6	SW846 8270C	01-JUN-11 14:02	PR	18-MAY-11 AJ	AB8270SL

MC230-7 Collected: 13-MAY-11 13:20 By: NSMJ Received: 14-MAY-11 By:
 MW08-ROX-051311D

MC230-7	SW846 8011	20-MAY-11 01:39	AP	18-MAY-11 FC	V8011EDB
MC230-7	SW846 8270C BY SIM	27-MAY-11 10:51	PR	18-MAY-11 AJ	B8270SIMPAAH
MC230-7	SW846 8260B	27-MAY-11 12:30	DFT		V8260SL
MC230-7	SW846 8270C	27-MAY-11 16:11	PR	18-MAY-11 AJ	AB8270SL
MC230-7	SW846 8260B	27-MAY-11 18:20	DFT		V8260SL
MC230-7	SW846 8270C	01-JUN-11 14:32	PR	18-MAY-11 AJ	AB8270SL

MC230-8 Collected: 13-MAY-11 15:50 By: NSMJ Received: 14-MAY-11 By:
 MW07-ROX-051311

MC230-8	SW846 8011	20-MAY-11 02:05	AP	18-MAY-11 FC	V8011EDB
MC230-8	SW846 8270C BY SIM	27-MAY-11 11:17	PR	18-MAY-11 AJ	B8270SIMPAAH
MC230-8	SW846 8260B	27-MAY-11 13:27	DFT		V8260SL
MC230-8	SW846 8270C	27-MAY-11 16:42	PR	18-MAY-11 AJ	AB8270SL
MC230-8	SW846 8260B	27-MAY-11 19:45	DFT		V8260SL

MC230-9 Collected: 13-MAY-11 15:50 By: NSMJ Received: 14-MAY-11 By:
 MW07-ROX-051311D

MC230-9	SW846 8011	20-MAY-11 02:31	AP	18-MAY-11 FC	V8011EDB
MC230-9	SW846 8270C BY SIM	27-MAY-11 11:49	PR	18-MAY-11 AJ	B8270SIMPAAH
MC230-9	SW846 8260B	27-MAY-11 12:59	DFT		V8260SL
MC230-9	SW846 8270C	27-MAY-11 17:12	PR	18-MAY-11 AJ	AB8270SL
MC230-9	SW846 8260B	27-MAY-11 20:13	DFT		V8260SL
MC230-9	SW846 8270C	01-JUN-11 15:02	PR	18-MAY-11 AJ	AB8270SL

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC230

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Project No: INC#97216640 SAP#340061

4.2
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
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MC230-10 Collected: 12-MAY-11 15:55 By: NSMJ Received: 14-MAY-11 By:
MW05-ROX-051211

MC230-10	SW846 8011	20-MAY-11 03:24	AP	18-MAY-11	FC	V8011EDB
MC230-10	SW846 8270C BY SIM	20-MAY-11 14:48	PR	17-MAY-11	MS	B8270SIMPAH
MC230-10	SW846 8260B	25-MAY-11 20:05	MC			V8260SL
MC230-10	SW846 8270C	26-MAY-11 10:47	KR	17-MAY-11	MS	AB8270SL

Accutest Internal Chain of Custody

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/14/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC230-1.1	Walk In Ref #22	Mahmoud Afzali	05/17/11 07:12	Retrieve from Storage
MC230-1.1	Mahmoud Afzali		05/17/11 09:37	Depleted
MC230-1.3	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-1.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-1.5	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-1.5	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-1.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-1.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-1.6	VOC Ref #3	Jugal Patel	05/25/11 16:19	Retrieve from Storage
MC230-1.6	Jugal Patel	GCMSN	05/25/11 16:19	Load on Instrument
MC230-1.6	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-1.6	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-2.2	Walk In Ref #22	Mahmoud Afzali	05/17/11 07:12	Retrieve from Storage
MC230-2.2	Mahmoud Afzali		05/17/11 09:37	Depleted
MC230-2.5	Walk In Ref #22	Mahmoud Afzali	05/17/11 07:12	Retrieve from Storage
MC230-2.5	Mahmoud Afzali		05/17/11 09:37	Depleted
MC230-2.6	Walk In Ref #22	Mahmoud Afzali	05/17/11 07:12	Retrieve from Storage
MC230-2.6	Mahmoud Afzali		05/17/11 09:37	Depleted
MC230-2.7	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-2.7	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-2.8	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-2.8	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-2.9	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-2.9	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-2.13	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-2.13	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-2.13	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-2.13	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-2.14	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-2.14	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-2.14	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-2.14	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage

Accutest Internal Chain of Custody

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/14/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC230-2.15	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-2.15	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-2.15	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-2.15	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-2.16	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-2.16	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-2.16	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-2.16	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-2.17	VOC Ref #3	Jugal Patel	05/25/11 16:19	Retrieve from Storage
MC230-2.17	Jugal Patel	GCMSN	05/25/11 16:19	Load on Instrument
MC230-2.17	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-2.17	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-3.1	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-3.1	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-3.2	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-3.2	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-3.2	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-3.2	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-4.2	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-4.2	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-4.4	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-4.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-4.5	VOC Ref #3	Jugal Patel	05/25/11 16:54	Retrieve from Storage
MC230-4.5	Jugal Patel	GCMSN	05/25/11 16:54	Load on Instrument
MC230-4.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-4.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-5.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-5.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-5.4	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-5.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-5.5	VOC Ref #3	Jugal Patel	05/25/11 16:54	Retrieve from Storage
MC230-5.5	Jugal Patel	GCMSN	05/25/11 16:54	Load on Instrument
MC230-5.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-5.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage

Accutest Internal Chain of Custody

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/14/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC230-6.2	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-6.2	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-6.3	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-6.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-6.5	VOC Ref #3	Jugal Patel	05/25/11 16:54	Retrieve from Storage
MC230-6.5	Jugal Patel	GCMSN	05/25/11 16:54	Load on Instrument
MC230-6.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-6.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-6.6	VOC Ref #3	Jugal Patel	05/27/11 11:05	Retrieve from Storage
MC230-6.6	Jugal Patel	GCMSN	05/27/11 11:05	Load on Instrument
MC230-6.6	GCMSN	Dana Tyron	05/30/11 11:59	Unload from Instrument
MC230-6.6	Dana Tyron	VOC Ref #3	05/30/11 11:59	Return to Storage
MC230-7.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-7.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-7.3	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-7.3	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-7.5	VOC Ref #3	Jugal Patel	05/25/11 16:54	Retrieve from Storage
MC230-7.5	Jugal Patel	GCMSN	05/25/11 16:54	Load on Instrument
MC230-7.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-7.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-7.6	VOC Ref #3	Jugal Patel	05/27/11 11:05	Retrieve from Storage
MC230-7.6	Jugal Patel	GCMSN	05/27/11 11:05	Load on Instrument
MC230-7.6	GCMSN	Dana Tyron	05/30/11 11:59	Unload from Instrument
MC230-7.6	Dana Tyron	VOC Ref #3	05/30/11 11:59	Return to Storage
MC230-8.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-8.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-8.4	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-8.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-8.5	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC230-8.5	Dana Tyron	GCMSM	05/27/11 10:57	Load on Instrument
MC230-8.5	GCMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC230-8.5	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage

Accutest Internal Chain of Custody

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Received: 05/14/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC230-9.2	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC230-9.2	Mahmoud Afzali		05/19/11 08:17	Depleted
MC230-9.4	VOC Ref #3	Francisco Castellanos	05/18/11 15:13	Retrieve from Storage
MC230-9.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-9.5	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC230-9.5	Dana Tyron	GCMSM	05/27/11 10:57	Load on Instrument
MC230-9.5	GCMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC230-9.5	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC230-10.1	Walk In Ref #22	Mahmoud Afzali	05/17/11 07:12	Retrieve from Storage
MC230-10.1	Mahmoud Afzali		05/17/11 09:37	Depleted
MC230-10.4	VOC Ref #3	Francisco Castellanos	05/18/11 14:44	Retrieve from Storage
MC230-10.4	Francisco Castellanos		05/19/11 13:05	Depleted
MC230-10.5	VOC Ref #3	Jugal Patel	05/24/11 15:01	Retrieve from Storage
MC230-10.5	Jugal Patel	GCMSN	05/24/11 15:01	Load on Instrument
MC230-10.5	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-10.5	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage
MC230-10.6	VOC Ref #3	Jugal Patel	05/25/11 16:19	Retrieve from Storage
MC230-10.6	Jugal Patel	GCMSN	05/25/11 16:19	Load on Instrument
MC230-10.6	GCMSN	Jugal Patel	05/26/11 10:12	Unload from Instrument
MC230-10.6	Jugal Patel	VOC Ref #3	05/26/11 10:12	Return to Storage

GC/MS Volatiles

5

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: MC230
Account: SHELLWIC Shell Oil
Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	

5.1.1
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Method Blank Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

5.1.1
5

Method Blank Summary

Page 3 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB	N52966.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
2037-26-5	Toluene-D8	107%	70-130%
460-00-4	4-Bromofluorobenzene	103%	70-130%

5.1.1
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Method Blank Summary

Page 1 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-MB	N53023.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	

5.1.2
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Method Blank Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-MB	N53023.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

5.1.2
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Method Blank Summary

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-MB	N53023.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

5.1.2
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Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB1	N53023.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	

5.1.3
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Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB1	N53023.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

5.1.3
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Method Blank Summary

Page 3 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-MB1	N53023.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

5.1.3

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Method Blank Summary

Page 1 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-MB	M40690.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-02-8	Acrolein	ND	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	

5.1.4
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Method Blank Summary

Page 2 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-MB	M40690.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

5.1.4

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Method Blank Summary

Page 3 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-MB	M40690.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	82%	70-130%
2037-26-5	Toluene-D8	84%	70-130%
460-00-4	4-Bromofluorobenzene	81%	70-130%

5.1.4
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Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-BS	M40689.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	44.5	89	70-130
107-02-8	Acrolein	250	88.7	35* a	70-130
107-13-1	Acrylonitrile	50	251	502* b	70-130
71-43-2	Benzene	50	53.7	107	70-130
108-86-1	Bromobenzene	50	52.5	105	70-130
74-97-5	Bromochloromethane	50	52.8	106	70-130
75-27-4	Bromodichloromethane	50	53.7	107	70-130
75-25-2	Bromoform	50	47.1	94	70-130
74-83-9	Bromomethane	50	52.7	105	70-130
78-93-3	2-Butanone (MEK)	50	53.6	107	70-130
104-51-8	n-Butylbenzene	50	56.8	114	70-130
135-98-8	sec-Butylbenzene	50	55.0	110	70-130
98-06-6	tert-Butylbenzene	50	53.5	107	70-130
75-15-0	Carbon disulfide	50	51.5	103	70-130
56-23-5	Carbon tetrachloride	50	51.0	102	70-130
108-90-7	Chlorobenzene	50	47.9	96	70-130
75-00-3	Chloroethane	50	50.1	100	70-130
110-75-8	2-Chloroethyl vinyl ether	50	220	440* b	70-130
67-66-3	Chloroform	50	50.5	101	70-130
74-87-3	Chloromethane	50	45.0	90	70-130
95-49-8	o-Chlorotoluene	50	54.2	108	70-130
106-43-4	p-Chlorotoluene	50	56.6	113	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	54.0	108	70-130
124-48-1	Dibromochloromethane	50	51.5	103	70-130
106-93-4	1,2-Dibromoethane	50	51.1	102	70-130
95-50-1	1,2-Dichlorobenzene	50	52.6	105	70-130
541-73-1	1,3-Dichlorobenzene	50	52.0	104	70-130
106-46-7	1,4-Dichlorobenzene	50	50.5	101	70-130
75-71-8	Dichlorodifluoromethane	50	45.9	92	70-130
75-34-3	1,1-Dichloroethane	50	50.6	101	70-130
107-06-2	1,2-Dichloroethane	50	52.2	104	70-130
75-35-4	1,1-Dichloroethene	50	53.6	107	70-130
156-59-2	cis-1,2-Dichloroethene	50	50.0	100	70-130
156-60-5	trans-1,2-Dichloroethene	50	50.3	101	70-130
78-87-5	1,2-Dichloropropane	50	53.1	106	70-130
142-28-9	1,3-Dichloropropane	50	50.8	102	70-130

5.2.1
5

Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-BS	M40689.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
594-20-7	2,2-Dichloropropane	50	53.8	108	70-130
563-58-6	1,1-Dichloropropene	50	53.6	107	70-130
10061-01-5	cis-1,3-Dichloropropene	50	51.2	102	70-130
10061-02-6	trans-1,3-Dichloropropene	50	53.9	108	70-130
123-91-1	1,4-Dioxane	250	225	90	70-130
97-63-2	Ethyl methacrylate	50	52.1	104	77-137
100-41-4	Ethylbenzene	50	52.3	105	70-130
87-68-3	Hexachlorobutadiene	50	51.5	103	70-130
591-78-6	2-Hexanone	50	53.4	107	70-130
98-82-8	Isopropylbenzene	50	64.9	130	70-130
99-87-6	p-Isopropyltoluene	50	55.3	111	70-130
1634-04-4	Methyl Tert Butyl Ether	50	53.7	107	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.4	105	70-130
74-95-3	Methylene bromide	50	54.2	108	70-130
75-09-2	Methylene chloride	50	50.0	100	70-130
91-20-3	Naphthalene	50	52.6	105	70-130
103-65-1	n-Propylbenzene	50	55.0	110	70-130
100-42-5	Styrene	50	48.0	96	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	50.3	101	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	51.8	104	70-130
127-18-4	Tetrachloroethene	50	49.2	98	70-130
108-88-3	Toluene	50	55.9	112	70-130
87-61-6	1,2,3-Trichlorobenzene	50	52.6	105	70-130
120-82-1	1,2,4-Trichlorobenzene	50	54.3	109	70-130
71-55-6	1,1,1-Trichloroethane	50	49.1	98	70-130
79-00-5	1,1,2-Trichloroethane	50	54.4	109	70-130
79-01-6	Trichloroethene	50	51.7	103	70-130
75-69-4	Trichlorofluoromethane	50	46.6	93	70-130
96-18-4	1,2,3-Trichloropropane	50	53.5	107	70-130
95-63-6	1,2,4-Trimethylbenzene	50	52.2	104	70-130
108-67-8	1,3,5-Trimethylbenzene	50	52.7	105	70-130
108-05-4	Vinyl Acetate	50	47.9	96	70-130
75-01-4	Vinyl chloride	50	48.9	98	70-130
	m,p-Xylene	100	95.5	96	70-130
95-47-6	o-Xylene	50	47.9	96	70-130
1330-20-7	Xylene (total)	150	143	95	70-130

5.2.1
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Blank Spike Summary

Page 3 of 3

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM1276-BS	M40689.D	1	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	78%	70-130%
2037-26-5	Toluene-D8	83%	70-130%
460-00-4	4-Bromofluorobenzene	82%	70-130%

- (a) Outside control limits. Blank Spike meets program technical requirements.
- (b) Outside control limits. Associated samples are non-detect for this compound.

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	37.2	74	34.8	70	7	70-130/25
107-02-8	Acrolein	250	815	326* a	722	289* a	12	70-130/25
107-13-1	Acrylonitrile	50	256	512* a	231	462* a	10	70-130/25
71-43-2	Benzene	50	54.6	109	53.5	107	2	70-130/25
108-86-1	Bromobenzene	50	56.9	114	56.7	113	0	70-130/25
74-97-5	Bromochloromethane	50	54.4	109	53.5	107	2	70-130/25
75-27-4	Bromodichloromethane	50	61.2	122	60.4	121	1	70-130/25
75-25-2	Bromoform	50	53.8	108	51.0	102	5	70-130/25
74-83-9	Bromomethane	50	57.8	116	58.1	116	1	70-130/25
78-93-3	2-Butanone (MEK)	50	41.2	82	38.0	76	8	70-130/25
104-51-8	n-Butylbenzene	50	56.2	112	54.8	110	3	70-130/25
135-98-8	sec-Butylbenzene	50	53.6	107	52.0	104	3	70-130/25
98-06-6	tert-Butylbenzene	50	53.1	106	51.6	103	3	70-130/25
75-15-0	Carbon disulfide	50	54.5	109	52.5	105	4	70-130/25
56-23-5	Carbon tetrachloride	50	51.6	103	50.2	100	3	70-130/25
108-90-7	Chlorobenzene	50	53.8	108	53.0	106	1	70-130/25
75-00-3	Chloroethane	50	54.9	110	52.2	104	5	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	34.3	69* b	31.9	64* b	7	70-130/25
67-66-3	Chloroform	50	55.0	110	52.8	106	4	70-130/25
74-87-3	Chloromethane	50	55.3	111	51.7	103	7	70-130/25
95-49-8	o-Chlorotoluene	50	52.9	106	51.6	103	2	70-130/25
106-43-4	p-Chlorotoluene	50	55.1	110	54.1	108	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	51.4	103	47.1	94	9	70-130/25
124-48-1	Dibromochloromethane	50	55.7	111	54.1	108	3	70-130/25
106-93-4	1,2-Dibromoethane	50	58.4	117	55.9	112	4	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.5	109	54.3	109	0	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.3	111	54.4	109	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	53.2	106	52.8	106	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	51.4	103	49.4	99	4	70-130/25
75-34-3	1,1-Dichloroethane	50	52.7	105	50.8	102	4	70-130/25
107-06-2	1,2-Dichloroethane	50	56.2	112	54.6	109	3	70-130/25
75-35-4	1,1-Dichloroethene	50	53.7	107	52.1	104	3	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.1	104	51.2	102	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	54.2	108	52.2	104	4	70-130/25
78-87-5	1,2-Dichloropropane	50	52.7	105	51.9	104	2	70-130/25
142-28-9	1,3-Dichloropropane	50	54.6	109	52.0	104	5	70-130/25

5.3.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	47.4	95	45.5	91	4	70-130/25
563-58-6	1,1-Dichloropropene	50	56.2	112	54.7	109	3	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	51.2	102	49.8	100	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	54.2	108	52.5	105	3	70-130/25
123-91-1	1,4-Dioxane	250	272	109	231	92	16	70-130/25
97-63-2	Ethyl methacrylate	50	52.6	105	49.6	99	6	77-137/25
100-41-4	Ethylbenzene	50	55.8	112	53.9	108	3	70-130/25
87-68-3	Hexachlorobutadiene	50	55.0	110	54.1	108	2	70-130/25
591-78-6	2-Hexanone	50	44.7	89	40.4	81	10	70-130/25
98-82-8	Isopropylbenzene	50	63.7	127	62.2	124	2	70-130/25
99-87-6	p-Isopropyltoluene	50	56.1	112	54.2	108	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	54.1	108	51.2	102	6	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	50.4	101	46.1	92	9	70-130/25
74-95-3	Methylene bromide	50	55.7	111	54.8	110	2	70-130/25
75-09-2	Methylene chloride	50	54.0	108	53.3	107	1	70-130/25
91-20-3	Naphthalene	50	59.4	119	55.5	111	7	70-130/25
103-65-1	n-Propylbenzene	50	54.8	110	53.6	107	2	70-130/25
100-42-5	Styrene	50	58.1	116	57.4	115	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	61.9	124	60.3	121	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	58.3	117	54.5	109	7	70-130/25
127-18-4	Tetrachloroethene	50	57.5	115	55.1	110	4	70-130/25
108-88-3	Toluene	50	56.5	113	54.3	109	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	57.6	115	55.5	111	4	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	58.5	117	57.4	115	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	57.9	116	56.0	112	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	56.9	114	55.3	111	3	70-130/25
79-01-6	Trichloroethene	50	55.9	112	53.9	108	4	70-130/25
75-69-4	Trichlorofluoromethane	50	51.7	103	49.7	99	4	70-130/25
96-18-4	1,2,3-Trichloropropane	50	58.2	116	52.9	106	10	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.8	106	51.9	104	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	53.8	108	52.4	105	3	70-130/25
108-05-4	Vinyl Acetate	50	38.9	78	37.2	74	4	70-130/25
75-01-4	Vinyl chloride	50	54.3	109	49.3	99	10	70-130/25
	m,p-Xylene	100	113	113	110	110	3	70-130/25
95-47-6	o-Xylene	50	56.5	113	54.8	110	3	70-130/25
1330-20-7	Xylene (total)	150	169	113	165	110	2	70-130/25

5.3.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS	N52963.D	1	05/24/11	JP	n/a	n/a	MSN1998
MSN1998-BSD	N52964.D	1	05/24/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	104%	70-130%
2037-26-5	Toluene-D8	107%	107%	70-130%
460-00-4	4-Bromofluorobenzene	102%	102%	70-130%

- (a) Outside control limits. Associated samples are non-detect for this compound.
- (b) Outside control limits. Blank Spike meets program technical requirements.

5.3.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-BS	N53020.D	1	05/25/11	MC	n/a	n/a	MSN2000
MSN2000-BSD	N53021.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	38.8	78	34.2	68* ^a	13	70-130/25
107-02-8	Acrolein	250	672	269* ^b	658	263* ^b	2	70-130/25
107-13-1	Acrylonitrile	50	216	432* ^b	211	422* ^b	2	70-130/25
71-43-2	Benzene	50	53.0	106	51.1	102	4	70-130/25
108-86-1	Bromobenzene	50	56.1	112	55.3	111	1	70-130/25
74-97-5	Bromochloromethane	50	51.3	103	49.5	99	4	70-130/25
75-27-4	Bromodichloromethane	50	58.5	117	56.7	113	3	70-130/25
75-25-2	Bromoform	50	51.8	104	52.0	104	0	70-130/25
74-83-9	Bromomethane	50	52.4	105	51.8	104	1	70-130/25
78-93-3	2-Butanone (MEK)	50	39.1	78	36.2	72	8	70-130/25
104-51-8	n-Butylbenzene	50	54.1	108	53.1	106	2	70-130/25
135-98-8	sec-Butylbenzene	50	51.8	104	50.8	102	2	70-130/25
98-06-6	tert-Butylbenzene	50	51.6	103	50.7	101	2	70-130/25
75-15-0	Carbon disulfide	50	50.6	101	48.2	96	5	70-130/25
56-23-5	Carbon tetrachloride	50	49.7	99	47.9	96	4	70-130/25
108-90-7	Chlorobenzene	50	54.2	108	53.0	106	2	70-130/25
75-00-3	Chloroethane	50	50.5	101	46.9	94	7	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	31.0	62* ^a	27.7	55* ^a	11	70-130/25
67-66-3	Chloroform	50	51.1	102	49.7	99	3	70-130/25
74-87-3	Chloromethane	50	48.0	96	46.2	92	4	70-130/25
95-49-8	o-Chlorotoluene	50	51.0	102	49.8	100	2	70-130/25
106-43-4	p-Chlorotoluene	50	52.7	105	52.4	105	1	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	45.6	91	45.9	92	1	70-130/25
124-48-1	Dibromochloromethane	50	54.6	109	54.5	109	0	70-130/25
106-93-4	1,2-Dibromoethane	50	55.5	111	54.8	110	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	53.6	107	53.1	106	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.4	111	54.4	109	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	52.4	105	51.7	103	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	43.9	88	42.5	85	3	70-130/25
75-34-3	1,1-Dichloroethane	50	48.8	98	47.0	94	4	70-130/25
107-06-2	1,2-Dichloroethane	50	53.0	106	52.3	105	1	70-130/25
75-35-4	1,1-Dichloroethene	50	50.4	101	48.5	97	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	49.3	99	48.5	97	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	50.6	101	49.0	98	3	70-130/25
78-87-5	1,2-Dichloropropane	50	51.0	102	49.5	99	3	70-130/25
142-28-9	1,3-Dichloropropane	50	51.2	102	51.2	102	0	70-130/25

5.3.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-BS	N53020.D	1	05/25/11	MC	n/a	n/a	MSN2000
MSN2000-BSD	N53021.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	45.8	92	43.3	87	6	70-130/25
563-58-6	1,1-Dichloropropene	50	55.9	112	53.0	106	5	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	49.4	99	48.5	97	2	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.8	104	50.7	101	2	70-130/25
123-91-1	1,4-Dioxane	250	239	96	247	99	3	70-130/25
97-63-2	Ethyl methacrylate	50	49.3	99	48.5	97	2	77-137/25
100-41-4	Ethylbenzene	50	55.7	111	54.0	108	3	70-130/25
87-68-3	Hexachlorobutadiene	50	56.4	113	55.1	110	2	70-130/25
591-78-6	2-Hexanone	50	45.3	91	41.3	83	9	70-130/25
98-82-8	Isopropylbenzene	50	61.4	123	60.0	120	2	70-130/25
99-87-6	p-Isopropyltoluene	50	55.2	110	53.7	107	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	48.6	97	48.1	96	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	45.4	91	43.9	88	3	70-130/25
74-95-3	Methylene bromide	50	53.0	106	53.3	107	1	70-130/25
75-09-2	Methylene chloride	50	47.6	95	46.5	93	2	70-130/25
91-20-3	Naphthalene	50	57.7	115	56.2	112	3	70-130/25
103-65-1	n-Propylbenzene	50	53.4	107	51.8	104	3	70-130/25
100-42-5	Styrene	50	58.6	117	57.5	115	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	61.8	124	60.4	121	2	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	50.0	100	50.3	101	1	70-130/25
127-18-4	Tetrachloroethene	50	59.8	120	57.5	115	4	70-130/25
108-88-3	Toluene	50	55.1	110	52.9	106	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	56.4	113	56.2	112	0	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	58.5	117	58.0	116	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	54.5	109	52.7	105	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	54.0	108	53.2	106	1	70-130/25
79-01-6	Trichloroethene	50	54.8	110	52.6	105	4	70-130/25
75-69-4	Trichlorofluoromethane	50	48.3	97	46.2	92	4	70-130/25
96-18-4	1,2,3-Trichloropropane	50	50.6	101	50.6	101	0	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.4	105	51.3	103	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	52.1	104	50.9	102	2	70-130/25
108-05-4	Vinyl Acetate	50	34.5	69* a	34.4	69* a	0	70-130/25
75-01-4	Vinyl chloride	50	48.4	97	46.4	93	4	70-130/25
	m,p-Xylene	100	115	115	110	110	4	70-130/25
95-47-6	o-Xylene	50	57.1	114	54.3	109	5	70-130/25
1330-20-7	Xylene (total)	150	172	115	164	109	5	70-130/25

5.3.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2000-BS	N53020.D	1	05/25/11	MC	n/a	n/a	MSN2000
MSN2000-BSD	N53021.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	99%	99%	70-130%
2037-26-5	Toluene-D8	107%	106%	70-130%
460-00-4	4-Bromofluorobenzene	98%	99%	70-130%

- (a) Outside control limits. Blank Spike meets program technical requirements.
- (b) Outside control limits. Associated samples are non-detect for this compound.

5.3.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS1	N53020.D	1	05/25/11	JP	n/a	n/a	MSN1998
MSN1998-BSD1	N53021.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	38.8	78	34.2	68* ^a	13	70-130/25
107-02-8	Acrolein	250	672	269* ^b	658	263* ^b	2	70-130/25
107-13-1	Acrylonitrile	50	216	432* ^b	211	422* ^b	2	70-130/25
71-43-2	Benzene	50	53.0	106	51.1	102	4	70-130/25
108-86-1	Bromobenzene	50	56.1	112	55.3	111	1	70-130/25
74-97-5	Bromochloromethane	50	51.3	103	49.5	99	4	70-130/25
75-27-4	Bromodichloromethane	50	58.5	117	56.7	113	3	70-130/25
75-25-2	Bromoform	50	51.8	104	52.0	104	0	70-130/25
74-83-9	Bromomethane	50	52.4	105	51.8	104	1	70-130/25
78-93-3	2-Butanone (MEK)	50	39.1	78	36.2	72	8	70-130/25
104-51-8	n-Butylbenzene	50	54.1	108	53.1	106	2	70-130/25
135-98-8	sec-Butylbenzene	50	51.8	104	50.8	102	2	70-130/25
98-06-6	tert-Butylbenzene	50	51.6	103	50.7	101	2	70-130/25
75-15-0	Carbon disulfide	50	50.6	101	48.2	96	5	70-130/25
56-23-5	Carbon tetrachloride	50	49.7	99	47.9	96	4	70-130/25
108-90-7	Chlorobenzene	50	54.2	108	53.0	106	2	70-130/25
75-00-3	Chloroethane	50	50.5	101	46.9	94	7	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	31.0	62* ^a	27.7	55* ^a	11	70-130/25
67-66-3	Chloroform	50	51.1	102	49.7	99	3	70-130/25
74-87-3	Chloromethane	50	48.0	96	46.2	92	4	70-130/25
95-49-8	o-Chlorotoluene	50	51.0	102	49.8	100	2	70-130/25
106-43-4	p-Chlorotoluene	50	52.7	105	52.4	105	1	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	45.6	91	45.9	92	1	70-130/25
124-48-1	Dibromochloromethane	50	54.6	109	54.5	109	0	70-130/25
106-93-4	1,2-Dibromoethane	50	55.5	111	54.8	110	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	53.6	107	53.1	106	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.4	111	54.4	109	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	52.4	105	51.7	103	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	43.9	88	42.5	85	3	70-130/25
75-34-3	1,1-Dichloroethane	50	48.8	98	47.0	94	4	70-130/25
107-06-2	1,2-Dichloroethane	50	53.0	106	52.3	105	1	70-130/25
75-35-4	1,1-Dichloroethene	50	50.4	101	48.5	97	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	49.3	99	48.5	97	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	50.6	101	49.0	98	3	70-130/25
78-87-5	1,2-Dichloropropane	50	51.0	102	49.5	99	3	70-130/25
142-28-9	1,3-Dichloropropane	50	51.2	102	51.2	102	0	70-130/25

5.3.3
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS1	N53020.D	1	05/25/11	JP	n/a	n/a	MSN1998
MSN1998-BSD1	N53021.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	50	45.8	92	43.3	87	6	70-130/25
563-58-6	1,1-Dichloropropene	50	55.9	112	53.0	106	5	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	49.4	99	48.5	97	2	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.8	104	50.7	101	2	70-130/25
123-91-1	1,4-Dioxane	250	239	96	247	99	3	70-130/25
97-63-2	Ethyl methacrylate	50	49.3	99	48.5	97	2	77-137/25
100-41-4	Ethylbenzene	50	55.7	111	54.0	108	3	70-130/25
87-68-3	Hexachlorobutadiene	50	56.4	113	55.1	110	2	70-130/25
591-78-6	2-Hexanone	50	45.3	91	41.3	83	9	70-130/25
98-82-8	Isopropylbenzene	50	61.4	123	60.0	120	2	70-130/25
99-87-6	p-Isopropyltoluene	50	55.2	110	53.7	107	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	48.6	97	48.1	96	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	45.4	91	43.9	88	3	70-130/25
74-95-3	Methylene bromide	50	53.0	106	53.3	107	1	70-130/25
75-09-2	Methylene chloride	50	47.6	95	46.5	93	2	70-130/25
91-20-3	Naphthalene	50	57.7	115	56.2	112	3	70-130/25
103-65-1	n-Propylbenzene	50	53.4	107	51.8	104	3	70-130/25
100-42-5	Styrene	50	58.6	117	57.5	115	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	61.8	124	60.4	121	2	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	50.0	100	50.3	101	1	70-130/25
127-18-4	Tetrachloroethene	50	59.8	120	57.5	115	4	70-130/25
108-88-3	Toluene	50	55.1	110	52.9	106	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	56.4	113	56.2	112	0	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	58.5	117	58.0	116	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	54.5	109	52.7	105	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	54.0	108	53.2	106	1	70-130/25
79-01-6	Trichloroethene	50	54.8	110	52.6	105	4	70-130/25
75-69-4	Trichlorofluoromethane	50	48.3	97	46.2	92	4	70-130/25
96-18-4	1,2,3-Trichloropropane	50	50.6	101	50.6	101	0	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	52.4	105	51.3	103	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	52.1	104	50.9	102	2	70-130/25
108-05-4	Vinyl Acetate	50	34.5	69* a	34.4	69* a	0	70-130/25
75-01-4	Vinyl chloride	50	48.4	97	46.4	93	4	70-130/25
	m,p-Xylene	100	115	115	110	110	4	70-130/25
95-47-6	o-Xylene	50	57.1	114	54.3	109	5	70-130/25
1330-20-7	Xylene (total)	150	172	115	164	109	5	70-130/25

5.3.3

5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1998-BS1	N53020.D	1	05/25/11	JP	n/a	n/a	MSN1998
MSN1998-BSD1	N53021.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	99%	99%	70-130%
2037-26-5	Toluene-D8	107%	106%	70-130%
460-00-4	4-Bromofluorobenzene	98%	99%	70-130%

- (a) Outside control limits. Blank Spike meets program technical requirements.
- (b) Outside control limits. Associated samples are non-detect for this compound.

5.3.3
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2, MC230-3

CAS No.	Compound	MC230-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	79.9	-408* ^a	58.6	-451* ^a	31* ^b	70-130/30
107-02-8	Acrolein	ND	250	664	266* ^c	672	269* ^c	1	70-130/30
107-13-1	Acrylonitrile	ND	50	232	464* ^c	232	464* ^c	0	70-130/30
71-43-2	Benzene	1.6	50	57.2	110	54.6	105	5	70-130/30
108-86-1	Bromobenzene	ND	50	57.1	114	57.6	115	1	70-130/30
74-97-5	Bromochloromethane	ND	50	53.9	108	52.7	105	2	70-130/30
75-27-4	Bromodichloromethane	ND	50	60.4	121	58.1	116	4	70-130/30
75-25-2	Bromoform	ND	50	53.0	106	53.6	107	1	70-130/30
74-83-9	Bromomethane	ND	50	48.1	96	53.6	107	11	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	37.4	75	35.0	70	7	70-130/30
104-51-8	n-Butylbenzene	ND	50	50.6	101	52.4	105	3	70-130/30
135-98-8	sec-Butylbenzene	ND	50	52.9	106	52.0	104	2	70-130/30
98-06-6	tert-Butylbenzene	ND	50	53.0	106	52.5	105	1	70-130/30
75-15-0	Carbon disulfide	ND	50	52.5	105	50.3	101	4	70-130/30
56-23-5	Carbon tetrachloride	ND	50	53.7	107	51.1	102	5	70-130/30
108-90-7	Chlorobenzene	ND	50	55.0	110	53.5	107	3	70-130/30
75-00-3	Chloroethane	ND	50	53.9	108	51.0	102	6	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	50	24.3	49* ^a	24.8	50* ^a	2	70-130/30
67-66-3	Chloroform	ND	50	53.1	106	51.5	103	3	70-130/30
74-87-3	Chloromethane	ND	50	53.8	108	50.3	101	7	70-130/30
95-49-8	o-Chlorotoluene	ND	50	52.5	105	52.1	104	1	70-130/30
106-43-4	p-Chlorotoluene	ND	50	54.5	109	54.1	108	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	47.3	95	49.1	98	4	70-130/30
124-48-1	Dibromochloromethane	ND	50	56.0	112	54.7	109	2	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	57.3	115	57.1	114	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	54.5	109	54.3	109	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	54.9	110	55.2	110	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	52.1	104	52.3	105	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	44.3	89	42.8	86	3	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	51.4	103	49.5	99	4	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	54.4	109	53.2	106	2	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	52.2	104	50.9	102	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	55.9	88	52.3	81	7	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	53.4	107	51.3	103	4	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	53.0	106	51.3	103	3	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	53.8	108	52.8	106	2	70-130/30

5.4.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2, MC230-3

CAS No.	Compound	MC230-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	50	46.1	92	42.7	85	8	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	55.6	111	53.5	107	4	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	51.6	103	49.6	99	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	53.1	106	51.4	103	3	70-130/30
123-91-1	1,4-Dioxane	ND	250	269	108	252	101	7	70-130/30
97-63-2	Ethyl methacrylate	ND	50	52.5	105	52.8	106	1	72-139/30
100-41-4	Ethylbenzene	ND	50	57.7	107	55.5	103	4	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	52.7	105	55.8	112	6	70-130/30
591-78-6	2-Hexanone	ND	50	39.5	79	40.0	80	1	70-130/30
98-82-8	Isopropylbenzene	ND	50	63.5	127	62.7	125	1	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	54.2	108	54.6	109	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	53.6	107	52.2	104	3	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	53.0	61* a	50.8	56* a	4	70-130/30
74-95-3	Methylene bromide	ND	50	55.3	111	53.5	107	3	70-130/30
75-09-2	Methylene chloride	ND	50	51.1	102	49.4	99	3	70-130/30
91-20-3	Naphthalene	ND	50	52.7	105	57.9	116	9	70-130/30
103-65-1	n-Propylbenzene	ND	50	54.8	110	54.2	108	1	70-130/30
100-42-5	Styrene	ND	50	59.0	118	58.1	116	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	61.9	124	61.7	123	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	53.5	107	55.6	111	4	70-130/30
127-18-4	Tetrachloroethene	ND	50	59.2	115	57.1	111	4	70-130/30
108-88-3	Toluene	ND	50	68.3	47* a	60.6	32* a	12	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	51.5	103	55.6	111	8	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	53.2	106	57.3	115	7	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	58.3	117	55.2	110	5	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	56.0	112	54.4	109	3	70-130/30
79-01-6	Trichloroethene	ND	50	56.8	114	53.7	107	6	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	50.2	100	47.7	95	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	53.7	107	55.0	110	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	52.6	105	52.5	105	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	53.5	107	52.5	105	2	70-130/30
108-05-4	Vinyl Acetate	ND	50	40.2	80	39.1	78	3	70-130/30
75-01-4	Vinyl chloride	ND	50	51.6	103	47.1	94	9	70-130/30
	m,p-Xylene	ND	100	119	103	114	98	4	70-130/30
95-47-6	o-Xylene	ND	50	58.3	106	56.3	102	3	70-130/30
1330-20-7	Xylene (total)	ND	150	177	104	170	99	4	70-130/30

5.4.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-2MS	N52984.D	1	05/24/11	JP	n/a	n/a	MSN1998
MC230-2MSD	N52985.D	1	05/25/11	JP	n/a	n/a	MSN1998
MC230-2	N53026.D	1	05/25/11	JP	n/a	n/a	MSN1998

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-2, MC230-3

CAS No.	Surrogate Recoveries	MS	MSD	MC230-2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	104%	70-130%
2037-26-5	Toluene-D8	108%	106%	107%	70-130%
460-00-4	4-Bromofluorobenzene	100%	101%	105%	70-130%

- (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.
- (c) Outside control limits. Associated samples are non-detect for this compound.

5.4.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC198-2MS	N53032.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2MSD	N53033.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2	N53031.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	MC198-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	5.5	250	141	54* a	142	55* a	1	70-130/30
107-02-8	Acrolein	ND	1250	3610	289* b	3650	292* b	1	70-130/30
107-13-1	Acrylonitrile	ND	250	1300	520* b	1290	516* b	1	70-130/30
71-43-2	Benzene	ND	250	272	109	277	111	2	70-130/30
108-86-1	Bromobenzene	ND	250	273	109	285	114	4	70-130/30
74-97-5	Bromochloromethane	ND	250	270	108	272	109	1	70-130/30
75-27-4	Bromodichloromethane	ND	250	298	119	303	121	2	70-130/30
75-25-2	Bromoform	ND	250	255	102	269	108	5	70-130/30
74-83-9	Bromomethane	ND	250	255	102	274	110	7	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	176	70	176	70	0	70-130/30
104-51-8	n-Butylbenzene	ND	250	255	102	272	109	6	70-130/30
135-98-8	sec-Butylbenzene	ND	250	256	102	272	109	6	70-130/30
98-06-6	tert-Butylbenzene	ND	250	255	102	271	108	6	70-130/30
75-15-0	Carbon disulfide	ND	250	266	106	273	109	3	70-130/30
56-23-5	Carbon tetrachloride	ND	250	247	99	264	106	7	70-130/30
108-90-7	Chlorobenzene	ND	250	260	104	274	110	5	70-130/30
75-00-3	Chloroethane	ND	250	265	106	266	106	0	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	250	140	56* a	145	58* a	4	70-130/30
67-66-3	Chloroform	ND	250	269	108	272	109	1	70-130/30
74-87-3	Chloromethane	ND	250	227	91	255	102	12	70-130/30
95-49-8	o-Chlorotoluene	ND	250	255	102	267	107	5	70-130/30
106-43-4	p-Chlorotoluene	ND	250	267	107	278	111	4	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	240	96	253	101	5	70-130/30
124-48-1	Dibromochloromethane	ND	250	265	106	278	111	5	70-130/30
106-93-4	1,2-Dibromoethane	ND	250	283	113	289	116	2	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	266	106	275	110	3	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	268	107	279	112	4	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	252	101	266	106	5	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	205	82	206	82	0	70-130/30
75-34-3	1,1-Dichloroethane	ND	250	260	104	264	106	2	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	275	110	276	110	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	264	106	266	106	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	262	105	263	105	0	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	267	107	268	107	0	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	266	106	270	108	1	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	269	108	276	110	3	70-130/30

5.4.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC198-2MS	N53032.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2MSD	N53033.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2	N53031.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Compound	MC198-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	250	228	91	237	95	4	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	278	111	286	114	3	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	252	101	260	104	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	264	106	271	108	3	70-130/30
123-91-1	1,4-Dioxane	ND	1250	1320	106	1400	112	6	70-130/30
97-63-2	Ethyl methacrylate	ND	250	260	104	267	107	3	72-139/30
100-41-4	Ethylbenzene	ND	250	270	108	285	114	5	70-130/30
87-68-3	Hexachlorobutadiene	ND	250	251	100	279	112	11	70-130/30
591-78-6	2-Hexanone	ND	250	205	82	211	84	3	70-130/30
98-82-8	Isopropylbenzene	ND	250	306	122	319	128	4	70-130/30
99-87-6	p-Isopropyltoluene	ND	250	263	105	278	111	6	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	250	269	108	271	108	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	252	101	258	103	2	70-130/30
74-95-3	Methylene bromide	ND	250	279	112	283	113	1	70-130/30
75-09-2	Methylene chloride	ND	250	259	104	260	104	0	70-130/30
91-20-3	Naphthalene	ND	250	270	108	299	120	10	70-130/30
103-65-1	n-Propylbenzene	ND	250	266	106	280	112	5	70-130/30
100-42-5	Styrene	ND	250	283	113	297	119	5	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	295	118	311	124	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	276	110	284	114	3	70-130/30
127-18-4	Tetrachloroethene	ND	250	275	110	289	116	5	70-130/30
108-88-3	Toluene	1.0	250	279	111	286	114	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	250	255	102	284	114	11	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	250	262	105	287	115	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	250	289	116	296	118	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	250	285	114	289	116	1	70-130/30
79-01-6	Trichloroethene	ND	250	276	110	280	112	1	70-130/30
75-69-4	Trichlorofluoromethane	ND	250	249	100	253	101	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	250	273	109	282	113	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	250	255	102	263	105	3	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	250	254	102	268	107	5	70-130/30
108-05-4	Vinyl Acetate	ND	250	199	80	207	83	4	70-130/30
75-01-4	Vinyl chloride	ND	250	250	100	249	100	0	70-130/30
	m,p-Xylene	ND	500	555	111	585	117	5	70-130/30
95-47-6	o-Xylene	ND	250	277	111	288	115	4	70-130/30
1330-20-7	Xylene (total)	ND	750	832	111	873	116	5	70-130/30

5.4.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC198-2MS	N53032.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2MSD	N53033.D	5	05/25/11	MC	n/a	n/a	MSN2000
MC198-2	N53031.D	1	05/25/11	MC	n/a	n/a	MSN2000

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-1, MC230-4, MC230-5, MC230-10

CAS No.	Surrogate Recoveries	MS	MSD	MC198-2	Limits
1868-53-7	Dibromofluoromethane	105%	103%	103%	70-130%
2037-26-5	Toluene-D8	109%	108%	107%	70-130%
460-00-4	4-Bromofluorobenzene	101%	100%	105%	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.

5.4.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-7MS	M40705.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7MSD	M40706.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40692.D	1000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40704.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	MC230-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	500000	333000	67* a	356000	71	7	70-130/30
107-02-8	Acrolein	ND	2500000	859000	34* a	839000	34* a	2	70-130/30
107-13-1	Acrylonitrile	ND	500000	1590000	318* b	1660000	332* b	4	70-130/30
71-43-2	Benzene	952000 d	500000	1520000	58* c	1490000	52* c	2	70-130/30
108-86-1	Bromobenzene	ND	500000	489000	98	491000	98	0	70-130/30
74-97-5	Bromochloromethane	ND	500000	439000	88	448000	90	2	70-130/30
75-27-4	Bromodichloromethane	ND	500000	460000	92	456000	91	1	70-130/30
75-25-2	Bromoform	ND	500000	460000	92	478000	96	4	70-130/30
74-83-9	Bromomethane	ND	500000	357000	71	364000	73	2	70-130/30
78-93-3	2-Butanone (MEK)	ND	500000	394000	79	379000	76	4	70-130/30
104-51-8	n-Butylbenzene	ND	500000	456000	91	453000	91	1	70-130/30
135-98-8	sec-Butylbenzene	ND	500000	465000	93	461000	92	1	70-130/30
98-06-6	tert-Butylbenzene	ND	500000	447000	89	445000	89	0	70-130/30
75-15-0	Carbon disulfide	ND	500000	391000	78	380000	76	3	70-130/30
56-23-5	Carbon tetrachloride	ND	500000	457000	91	448000	90	2	70-130/30
108-90-7	Chlorobenzene	ND	500000	485000	97	489000	98	1	70-130/30
75-00-3	Chloroethane	ND	500000	361000	72	346000	69* a	4	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	500000	1940000	388* b	1930000	386* b	1	70-130/30
67-66-3	Chloroform	ND	500000	381000	76	376000	75	1	70-130/30
74-87-3	Chloromethane	ND	500000	236000	47* a	234000	47* a	1	70-130/30
95-49-8	o-Chlorotoluene	ND	500000	446000	89	444000	89	0	70-130/30
106-43-4	p-Chlorotoluene	ND	500000	471000	94	464000	93	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	500000	375000	75	388000	78	3	70-130/30
124-48-1	Dibromochloromethane	ND	500000	502000	100	522000	104	4	70-130/30
106-93-4	1,2-Dibromoethane	ND	500000	499000	100	503000	101	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	500000	460000	92	468000	94	2	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	500000	458000	92	462000	92	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	500000	427000	85	427000	85	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	500000	188000	38* a	188000	38* a	0	70-130/30
75-34-3	1,1-Dichloroethane	ND	500000	378000	76	372000	74	2	70-130/30
107-06-2	1,2-Dichloroethane	ND	500000	432000	86	433000	87	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	500000	431000	86	423000	85	2	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	500000	418000	84	399000	80	5	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	500000	422000	84	416000	83	1	70-130/30
78-87-5	1,2-Dichloropropane	ND	500000	440000	88	436000	87	1	70-130/30
142-28-9	1,3-Dichloropropane	ND	500000	453000	91	467000	93	3	70-130/30

5.4.3
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-7MS	M40705.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7MSD	M40706.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40692.D	1000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40704.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	MC230-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
594-20-7	2,2-Dichloropropane	ND	500000	435000	87	424000	85	3	70-130/30
563-58-6	1,1-Dichloropropene	ND	500000	480000	96	469000	94	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	500000	467000	93	464000	93	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	500000	492000	98	493000	99	0	70-130/30
123-91-1	1,4-Dioxane	ND	2500000	568000	23* a	889000	36* a	44* e	70-130/30
97-63-2	Ethyl methacrylate	ND	500000	445000	89	457000	91	3	72-139/30
100-41-4	Ethylbenzene	ND	500000	514000	103	517000	103	1	70-130/30
87-68-3	Hexachlorobutadiene	ND	500000	484000	97	488000	98	1	70-130/30
591-78-6	2-Hexanone	ND	500000	415000	83	428000	86	3	70-130/30
98-82-8	Isopropylbenzene	ND	500000	551000	110	550000	110	0	70-130/30
99-87-6	p-Isopropyltoluene	ND	500000	466000	93	464000	93	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	657	J 500000	433000	86	440000	88	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	500000	385000	77	388000	78	1	70-130/30
74-95-3	Methylene bromide	ND	500000	477000	95	472000	94	1	70-130/30
75-09-2	Methylene chloride	ND	500000	379000	76	389000	78	3	70-130/30
91-20-3	Naphthalene	ND	500000	426000	85	448000	90	5	70-130/30
103-65-1	n-Propylbenzene	ND	500000	454000	91	449000	90	1	70-130/30
100-42-5	Styrene	ND	500000	483000	97	486000	97	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	500000	485000	97	493000	99	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	500000	373000	75	380000	76	2	70-130/30
127-18-4	Tetrachloroethene	ND	500000	562000	112	557000	111	1	70-130/30
108-88-3	Toluene	ND	500000	512000	102	495000	99	3	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	500000	474000	95	485000	97	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	500000	510000	102	522000	104	2	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	500000	399000	80	394000	79	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	500000	472000	94	472000	94	0	70-130/30
79-01-6	Trichloroethene	ND	500000	476000	95	460000	92	3	70-130/30
75-69-4	Trichlorofluoromethane	ND	500000	345000	69* a	345000	69* a	0	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	500000	390000	78	414000	83	6	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	500000	446000	89	440000	88	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	500000	450000	90	449000	90	0	70-130/30
108-05-4	Vinyl Acetate	ND	500000	335000	67* a	345000	69* a	3	70-130/30
75-01-4	Vinyl chloride	ND	500000	294000	59* a	286000	57* a	3	70-130/30
	m,p-Xylene	ND	1000000	961000	96	970000	97	1	70-130/30
95-47-6	o-Xylene	ND	500000	475000	95	477000	95	0	70-130/30
1330-20-7	Xylene (total)	ND	1500000	1440000	96	1450000	97	1	70-130/30

5.4.3
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC230-7MS	M40705.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7MSD	M40706.D	10000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40692.D	1000	05/27/11	DFT	n/a	n/a	MSM1276
MC230-7	M40704.D	10000	05/27/11	DFT	n/a	n/a	MSM1276

The QC reported here applies to the following samples:

Method: SW846 8260B

MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Surrogate Recoveries	MS	MSD	MC230-7	MC230-7	Limits
1868-53-7	Dibromofluoromethane	65%* f	67%* f	82%	66%* f	70-130%
2037-26-5	Toluene-D8	81%	83%	80%	79%	70-130%
460-00-4	4-Bromofluorobenzene	71%	75%	83%	75%	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) Outside control limits due to high level in sample relative to spike amount.
- (d) Result is from Run #2.
- (e) High RPD due to possible matrix interference and/or sample non-homogeneity.
- (f) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

5.4.3
5

Volatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSM1276-CC1275	Injection Date:	05/27/11
Lab File ID:	M40688.D	Injection Time:	10:34
Instrument ID:	GCMSM	Method:	SW846 8260B

	IS 1	IS 2	IS 3	IS 4	IS 5
	AREA	RT	AREA	RT	AREA
Check Std	82437	9.24	138867	10.12	67916
Upper Limit ^a	164874	9.74	277734	10.62	135832
Lower Limit ^b	41219	8.74	69434	9.62	33958

Lab Sample ID	IS 1	IS 2	IS 3	IS 4	IS 5
	AREA	RT	AREA	RT	AREA
MSM1276-BS	82123	9.24	137183	10.12	68617
MSM1276-MB	76824	9.25	129884	10.12	61442
MC230-6	73809	9.25	128314	10.12	57308
MC230-7	73807	9.24	132724	10.12	58906
MC230-9	85073	9.26	216777	10.22	101201
MC230-8	162980	9.25	255217	10.22	120919
MC230-7	149260	9.24	228419	10.12	98271
MC230-7MS	153702	9.24	230695	10.12	109211
MC230-7MSD	147215	9.24	223093	10.12	103502
MC230-8	145508	9.24	221721	10.12	97606
MC230-9	143397	9.24	221687	10.12	98309

- 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.

5.5.1
5

Volatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSN1998-CC1974	Injection Date:	05/24/11
Lab File ID:	N52962.D	Injection Time:	13:22
Instrument ID:	GCMSN	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	157125	8.60	263476	9.46	147728	12.70	119469	15.26	63533	6.18
Upper Limit ^a	314250	9.10	526952	9.96	295456	13.20	238938	15.76	127066	6.68
Lower Limit ^b	78563	8.10	131738	8.96	73864	12.20	59735	14.76	31767	5.68

Lab	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
Sample ID	AREA		AREA		AREA		AREA		AREA	
MSN1998-BS	164593	8.60	273142	9.46	150452	12.70	119473	15.26	68429	6.18
MSN1998-BSD	167925	8.60	276892	9.46	152482	12.70	120361	15.26	58411	6.18
MSN1998-MB	160970	8.60	268782	9.46	141631	12.70	110169	15.26	65759	6.18
ZZZZZZ	164008	8.60	274470	9.46	145321	12.70	111269	15.27	69860	6.18
ZZZZZZ	161020	8.60	268754	9.46	142132	12.70	106197	15.27	55041	6.19
ZZZZZZ	159947	8.60	267978	9.46	142890	12.70	108646	15.27	55904	6.19
ZZZZZZ	164219	8.60	270634	9.46	142778	12.70	107482	15.26	54514	6.19
ZZZZZZ	159970	8.60	264502	9.46	142599	12.70	108938	15.26	57475	6.19
MC230-3	159495	8.60	267323	9.46	140270	12.70	104153	15.26	62634	6.19
ZZZZZZ	156196	8.60	263296	9.46	139044	12.70	102976	15.26	68859	6.18
ZZZZZZ	155239	8.60	259431	9.46	137633	12.70	104122	15.26	57643	6.19
ZZZZZZ	155021	8.60	261014	9.46	138798	12.70	101457	15.26	58018	6.19
ZZZZZZ	155158	8.60	261026	9.46	138238	12.71	104846	15.27	62699	6.19
ZZZZZZ	152692	8.60	254680	9.46	131640	12.71	89084	15.26	55760	6.19
ZZZZZZ	150324	8.60	256146	9.46	138029	12.70	101890	15.27	55969	6.19
ZZZZZZ	151569	8.60	252262	9.46	134682	12.70	101897	15.26	61502	6.19
ZZZZZZ	150443	8.60	252580	9.46	135824	12.70	101380	15.27	64935	6.19
ZZZZZZ	150229	8.60	256409	9.46	135114	12.71	98964	15.27	54744	6.19
MC230-2MS	176532	8.60	285271	9.46	155826	12.70	127197	15.26	63663	6.19
MC230-2MSD	181877	8.60	296206	9.46	159715	12.70	127937	15.26	66661	6.18

- 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.

5.5.2
5

Volatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSN2000-CC1974	Injection Date:	05/25/11
Lab File ID:	N53019.D	Injection Time:	16:20
Instrument ID:	GCMASN	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	180078	8.60	286006	9.46	154298	12.70	127847	15.26	60424	6.18
Upper Limit ^a	360156	9.10	572012	9.96	308596	13.20	255694	15.76	120848	6.68
Lower Limit ^b	90039	8.10	143003	8.96	77149	12.20	63924	14.76	30212	5.68

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSN2000-BS	177653	8.60	283470	9.46	154204	12.70	127883	15.26	62366	6.19
MSN1998-BS1	177653	8.60	283470	9.46	154204	12.70	127883	15.26	62366	6.19
MSN2000-BSD	177356	8.60	282905	9.46	152872	12.70	125761	15.26	59417	6.19
MSN1998-BSD1	177356	8.60	282905	9.46	152872	12.70	125761	15.26	59417	6.19
MSN2000-MB	176149	8.60	285195	9.46	146737	12.70	116911	15.26	58010	6.18
MSN1998-MB1	176149	8.60	285195	9.46	146737	12.70	116911	15.26	58010	6.18
ZZZZZZ	170132	8.60	278893	9.46	144531	12.70	114084	15.26	59736	6.19
MC230-1	170224	8.60	278971	9.46	146197	12.70	113531	15.27	64176	6.19
MC230-2	169206	8.60	280950	9.46	146170	12.71	110466	15.27	54888	6.19
MC230-10	166452	8.60	279206	9.46	146808	12.70	112598	15.26	60814	6.19
ZZZZZZ	167628	8.60	279867	9.46	148685	12.70	121374	15.26	68576	6.18
ZZZZZZ	166377	8.60	276136	9.46	146374	12.70	116424	15.26	64934	6.19
ZZZZZZ	167571	8.60	277834	9.46	145882	12.70	113809	15.26	66893	6.18
MC198-2	166064	8.60	274612	9.46	145425	12.70	110479	15.27	62420	6.19
MC198-2MS	168010	8.60	278194	9.46	155008	12.70	123886	15.26	67914	6.19
MC198-2MSD	168983	8.60	278085	9.46	153299	12.70	124646	15.26	71027	6.19
ZZZZZZ	165480	8.60	276349	9.46	144619	12.70	112585	15.26	71501	6.19
ZZZZZZ	164779	8.60	273724	9.46	143547	12.70	109392	15.27	67316	6.19
ZZZZZZ	163135	8.60	273783	9.46	143770	12.71	110636	15.27	65466	6.19
ZZZZZZ	162417	8.60	271815	9.46	141616	12.70	108704	15.27	63497	6.19
ZZZZZZ	162787	8.60	272101	9.46	143749	12.70	107364	15.27	59174	6.19
ZZZZZZ	161311	8.60	272685	9.46	143428	12.70	106813	15.26	57478	6.19
ZZZZZZ	159512	8.60	267525	9.46	141400	12.70	107321	15.26	56354	6.19
MC230-4	160028	8.60	267358	9.46	141211	12.71	106233	15.26	63901	6.19
MC230-5	157571	8.60	266542	9.46	142388	12.70	108882	15.26	66795	6.19

- 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.

5.5.3
5

Volatile Surrogate Recovery Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC230-1	N53025.D	102.0	106.0	103.0
MC230-2	N53026.D	104.0	107.0	105.0
MC230-3	N52972.D	106.0	107.0	104.0
MC230-4	N53041.D	106.0	109.0	103.0
MC230-5	N53042.D	106.0	108.0	136.0* a
MC230-6	M40691.D	83.0	81.0	84.0
MC230-7	M40704.D	66.0* b	79.0	75.0
MC230-7	M40692.D	82.0	80.0	83.0
MC230-8	M40707.D	67.0* b	81.0	78.0
MC230-8	M40694.D	63.0* b	89.0	85.0
MC230-9	M40708.D	67.0* b	79.0	75.0
MC230-9	M40693.D	75.0	85.0	84.0
MC230-10	N53027.D	104.0	109.0	106.0
MC198-2MS	N53032.D	105.0	109.0	101.0
MC198-2MSD	N53033.D	103.0	108.0	100.0
MC230-2MS	N52984.D	101.0	108.0	100.0
MC230-2MSD	N52985.D	102.0	106.0	101.0
MC230-7MS	M40705.D	65.0* b	81.0	71.0
MC230-7MSD	M40706.D	67.0* b	83.0	75.0
MSM1276-BS	M40689.D	78.0	83.0	82.0
MSM1276-MB	M40690.D	82.0	84.0	81.0
MSN1998-BS	N52963.D	106.0	107.0	102.0
MSN1998-BS1	N53020.D	99.0	107.0	98.0
MSN1998-BSD	N52964.D	104.0	107.0	102.0
MSN1998-BSD1	N53021.D	99.0	106.0	99.0
MSN1998-MB	N52966.D	105.0	107.0	103.0
MSN1998-MB1	N53023.D	99.0	106.0	100.0
MSN2000-BS	N53020.D	99.0	107.0	98.0
MSN2000-BSD	N53021.D	99.0	106.0	99.0
MSN2000-MB	N53023.D	99.0	106.0	100.0

Surrogate Compounds **Recovery Limits**

S1 = Dibromofluoromethane 70-130%
 S2 = Toluene-D8 70-130%
 S3 = 4-Bromofluorobenzene 70-130%

(a) Outside control limits. Associated target analytes are non-detect.
 (b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

5.6.1
5

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: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-MB	S24051.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.2	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	

6.1.1



Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-MB	S24051.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	37%	15-110%
4165-62-2	Phenol-d5	20%	15-110%
118-79-6	2,4,6-Tribromophenol	58%	15-110%
4165-60-0	Nitrobenzene-d5	74%	30-130%
321-60-8	2-Fluorobiphenyl	67%	30-130%
1718-51-0	Terphenyl-d14	83%	30-130%

6.1.1
6

Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MB	I72777.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	0.72	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1.8	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	

6.1.2
6

Method Blank Summary

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MB	I72777.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	58%	15-110%
4165-62-2	Phenol-d5	37%	15-110%
118-79-6	2,4,6-Tribromophenol	84%	15-110%
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	85%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

6.1.2
6

Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24943-MB	F52909.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	70%	30-130%
1718-51-0	Terphenyl-d14	97%	30-130%

6.1.3

6

Method Blank Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-MB	F53005.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	96%	30-130%
321-60-8	2-Fluorobiphenyl	83%	30-130%
1718-51-0	Terphenyl-d14	103%	30-130%

6.1.4

6

Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-BS	S24052.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	33.6	34	30-130
95-57-8	2-Chlorophenol	100	75.9	76	30-130
59-50-7	4-Chloro-3-methyl phenol	100	81.3	81	30-130
120-83-2	2,4-Dichlorophenol	100	83.8	84	30-130
105-67-9	2,4-Dimethylphenol	100	79.8	80	30-130
51-28-5	2,4-Dinitrophenol	100	66.6	67	30-130
534-52-1	4,6-Dinitro-o-cresol	100	79.1	79	30-130
95-48-7	2-Methylphenol	100	67.8	68	30-130
	3&4-Methylphenol	200	123	62	30-130
88-75-5	2-Nitrophenol	100	86.0	86	30-130
100-02-7	4-Nitrophenol	100	39.7	40	30-130
87-86-5	Pentachlorophenol	100	71.4	71	30-130
108-95-2	Phenol	100	27.1	27* a	30-130
95-95-4	2,4,5-Trichlorophenol	100	80.3	80	30-130
88-06-2	2,4,6-Trichlorophenol	100	81.4	81	30-130
62-53-3	Aniline	50	21.2	42	40-140
101-55-3	4-Bromophenyl phenyl ether	50	37.0	74	40-140
85-68-7	Butyl benzyl phthalate	50	47.4	95	40-140
100-51-6	Benzyl Alcohol	50	32.2	64	40-140
91-58-7	2-Chloronaphthalene	50	40.0	80	40-140
106-47-8	4-Chloroaniline	50	31.5	63	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	40.7	81	40-140
111-44-4	bis(2-Chloroethyl)ether	50	42.4	85	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	44.7	89	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	36.3	73	40-140
122-66-7	1,2-Diphenylhydrazine	50	49.1	98	40-140
121-14-2	2,4-Dinitrotoluene	50	40.5	81	40-140
606-20-2	2,6-Dinitrotoluene	50	38.7	77	40-140
91-94-1	3,3'-Dichlorobenzidine	50	36.0	72	40-140
132-64-9	Dibenzofuran	50	38.9	78	40-140
84-74-2	Di-n-butyl phthalate	50	47.3	95	40-140
117-84-0	Di-n-octyl phthalate	50	48.2	96	40-140
84-66-2	Diethyl phthalate	50	42.7	85	40-140
131-11-3	Dimethyl phthalate	50	40.8	82	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	50.7	101	40-140
118-74-1	Hexachlorobenzene	50	36.2	72	40-140

6.2.1
6

Blank Spike Summary

Page 2 of 2

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-BS	S24052.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	20.3	41	40-140
67-72-1	Hexachloroethane	50	43.5	87	40-140
78-59-1	Isophorone	50	41.1	82	40-140
90-12-0	1-Methylnaphthalene	50	36.4	73	40-140
88-74-4	2-Nitroaniline	50	42.4	85	40-140
99-09-2	3-Nitroaniline	50	30.1	60	40-140
100-01-6	4-Nitroaniline	50	36.1	72	40-140
98-95-3	Nitrobenzene	50	43.3	87	40-140
62-75-9	n-Nitrosodimethylamine	50	21.2	42	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	49.7	99	40-140
86-30-6	N-Nitrosodiphenylamine	50	42.2	84	40-140
110-86-1	Pyridine	50	19.8	40	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	46%	15-110%
4165-62-2	Phenol-d5	26%	15-110%
118-79-6	2,4,6-Tribromophenol	76%	15-110%
4165-60-0	Nitrobenzene-d5	88%	30-130%
321-60-8	2-Fluorobiphenyl	77%	30-130%
1718-51-0	Terphenyl-d14	84%	30-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1
6

Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-BS	I72778.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	51.6	52	30-130
95-57-8	2-Chlorophenol	100	90.4	90	30-130
59-50-7	4-Chloro-3-methyl phenol	100	96.8	97	30-130
120-83-2	2,4-Dichlorophenol	100	87.8	88	30-130
105-67-9	2,4-Dimethylphenol	100	84.3	84	30-130
51-28-5	2,4-Dinitrophenol	100	89.7	90	30-130
534-52-1	4,6-Dinitro-o-cresol	100	106	106	30-130
95-48-7	2-Methylphenol	100	88.4	88	30-130
	3&4-Methylphenol	200	209	105	30-130
88-75-5	2-Nitrophenol	100	93.8	94	30-130
100-02-7	4-Nitrophenol	100	60.8	61	30-130
87-86-5	Pentachlorophenol	100	107	107	30-130
108-95-2	Phenol	100	47.1	47	30-130
95-95-4	2,4,5-Trichlorophenol	100	91.1	91	30-130
88-06-2	2,4,6-Trichlorophenol	100	94.8	95	30-130
62-53-3	Aniline	50	40.8	82	40-140
101-55-3	4-Bromophenyl phenyl ether	50	45.9	92	40-140
85-68-7	Butyl benzyl phthalate	50	47.8	96	40-140
100-51-6	Benzyl Alcohol	50	40.8	82	40-140
91-58-7	2-Chloronaphthalene	50	43.6	87	40-140
106-47-8	4-Chloroaniline	50	23.2	46	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	42.3	85	40-140
111-44-4	bis(2-Chloroethyl)ether	50	45.3	91	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.4	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	45.1	90	40-140
122-66-7	1,2-Diphenylhydrazine	50	39.5	79	40-140
121-14-2	2,4-Dinitrotoluene	50	45.8	92	40-140
606-20-2	2,6-Dinitrotoluene	50	43.4	87	40-140
91-94-1	3,3'-Dichlorobenzidine	50	24.4	49	40-140
132-64-9	Dibenzofuran	50	41.4	83	40-140
84-74-2	Di-n-butyl phthalate	50	47.1	94	40-140
117-84-0	Di-n-octyl phthalate	50	47.3	95	40-140
84-66-2	Diethyl phthalate	50	48.9	98	40-140
131-11-3	Dimethyl phthalate	50	45.1	90	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.4	99	40-140
118-74-1	Hexachlorobenzene	50	43.3	87	40-140

6.2.2

6

Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-BS	I72778.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	28.0	56	40-140
67-72-1	Hexachloroethane	50	44.6	89	40-140
78-59-1	Isophorone	50	38.9	78	40-140
90-12-0	1-Methylnaphthalene	100	78.2	78	40-140
88-74-4	2-Nitroaniline	50	46.7	93	40-140
99-09-2	3-Nitroaniline	50	29.3	59	40-140
100-01-6	4-Nitroaniline	50	41.4	83	40-140
98-95-3	Nitrobenzene	50	40.3	81	40-140
62-75-9	n-Nitrosodimethylamine	50	27.5	55	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	45.8	92	40-140
86-30-6	N-Nitrosodiphenylamine	50	44.3	89	40-140
110-86-1	Pyridine	50	27.0	54	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	66%	15-110%
4165-62-2	Phenol-d5	45%	15-110%
118-79-6	2,4,6-Tribromophenol	88%	15-110%
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	91%	30-130%
1718-51-0	Terphenyl-d14	97%	30-130%

6.2.2

6

Blank Spike Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24943-BS	F52910.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-1, MC230-2, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	38.4	77	40-140
208-96-8	Acenaphthylene	50	31.7	63	40-140
120-12-7	Anthracene	50	38.5	77	40-140
56-55-3	Benzo(a)anthracene	50	48.9	98	40-140
50-32-8	Benzo(a)pyrene	50	27.2	54	40-140
205-99-2	Benzo(b)fluoranthene	50	32.9	66	40-140
191-24-2	Benzo(g,h,i)perylene	50	45.9	92	40-140
207-08-9	Benzo(k)fluoranthene	50	25.2	50	40-140
218-01-9	Chrysene	50	40.2	80	40-140
53-70-3	Dibenzo(a,h)anthracene	50	45.8	92	40-140
206-44-0	Fluoranthene	50	45.1	90	40-140
86-73-7	Fluorene	50	49.3	99	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.3	83	40-140
91-57-6	2-Methylnaphthalene	50	52.1	104	40-140
91-20-3	Naphthalene	50	46.3	93	40-140
85-01-8	Phenanthrene	50	39.6	79	40-140
129-00-0	Pyrene	50	41.5	83	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	101%	30-130%
321-60-8	2-Fluorobiphenyl	83%	30-130%
1718-51-0	Terphenyl-d14	99%	30-130%

6.2.3

6

Blank Spike Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-BS	F53006.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	43.7	87	40-140
208-96-8	Acenaphthylene	50	40.5	81	40-140
120-12-7	Anthracene	50	40.7	81	40-140
56-55-3	Benzo(a)anthracene	50	52.6	105	40-140
50-32-8	Benzo(a)pyrene	50	27.7	55	40-140
205-99-2	Benzo(b)fluoranthene	50	30.5	61	40-140
191-24-2	Benzo(g,h,i)perylene	50	37.5	75	40-140
207-08-9	Benzo(k)fluoranthene	50	24.0	48	40-140
218-01-9	Chrysene	50	41.3	83	40-140
53-70-3	Dibenzo(a,h)anthracene	50	43.8	88	40-140
206-44-0	Fluoranthene	50	46.3	93	40-140
86-73-7	Fluorene	50	51.2	102	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	40.2	80	40-140
91-57-6	2-Methylnaphthalene	50	51.3	103	40-140
91-20-3	Naphthalene	50	45.1	90	40-140
85-01-8	Phenanthrene	50	42.1	84	40-140
129-00-0	Pyrene	50	46.4	93	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	110%	30-130%
321-60-8	2-Fluorobiphenyl	84%	30-130%
1718-51-0	Terphenyl-d14	115%	30-130%

6.2.4
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-MS	S24053.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021
OP24942-MSD	S24054.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021
MC230-2	S24055.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	MC230-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	30.9	31	29.4	29* a	5	30-130/20
95-57-8	2-Chlorophenol	ND	100	66.0	66	58.3	58	12	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	100	74.4	74	66.3	66	12	30-130/20
120-83-2	2,4-Dichlorophenol	ND	100	76.9	77	66.0	66	15	30-130/20
105-67-9	2,4-Dimethylphenol	ND	100	72.2	72	63.3	63	13	30-130/20
51-28-5	2,4-Dinitrophenol	ND	100	70.7	71	58.4	58	19	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	100	78.4	78	69.1	69	13	30-130/20
95-48-7	2-Methylphenol	ND	100	58.1	58	50.2	50	15	30-130/20
	3&4-Methylphenol	ND	200	101	51	91.6	46	10	30-130/20
88-75-5	2-Nitrophenol	ND	100	78.9	79	67.1	67	16	30-130/20
100-02-7	4-Nitrophenol	ND	100	39.1	39	32.2	32	19	30-130/20
87-86-5	Pentachlorophenol	ND	100	69.6	70	59.8	60	15	30-130/20
108-95-2	Phenol	ND	100	23.5	24* b	21.2	21* b	10	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	100	75.4	75	64.9	65	15	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	100	77.1	77	63.9	64	19	30-130/20
62-53-3	Aniline	ND	50	17.5	35* a	16.2	32* a	8	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	50	35.5	71	30.4	61	15	40-140/20
85-68-7	Butyl benzyl phthalate	ND	50	45.1	90	39.2	78	14	40-140/20
100-51-6	Benzyl Alcohol	ND	50	28.4	57	25.0	50	13	40-140/20
91-58-7	2-Chloronaphthalene	ND	50	38.1	76	31.6	63	19	40-140/20
106-47-8	4-Chloroaniline	ND	50	23.0	46	26.0	52	12	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	50	38.1	76	32.8	66	15	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	50	39.0	78	33.1	66	16	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	41.3	83	34.7	69	17	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	35.2	70	30.2	60	15	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND	50	47.4	95	42.2	84	12	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	50	39.7	79	34.2	68	15	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	50	38.2	76	32.0	64	18	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	50	30.9	62	30.5	61	1	40-140/20
132-64-9	Dibenzofuran	ND	50	37.5	75	32.0	64	16	40-140/20
84-74-2	Di-n-butyl phthalate	1.1	JB 50	44.3	86	38.5	75	14	40-140/20
117-84-0	Di-n-octyl phthalate	ND	50	42.3	85	35.3	71	18	40-140/20
84-66-2	Diethyl phthalate	ND	50	42.0	84	35.6	71	16	40-140/20
131-11-3	Dimethyl phthalate	ND	50	39.0	78	34.1	68	13	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	44.0	88	38.6	77	13	40-140/20
118-74-1	Hexachlorobenzene	ND	50	33.0	66	29.2	58	12	40-140/20

6.3.1
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24942-MS	S24053.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021
OP24942-MSD	S24054.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021
MC230-2	S24055.D	1	05/18/11	PR	05/17/11	OP24942	MSS1021

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-1, MC230-2, MC230-10

CAS No.	Compound	MC230-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND	50	19.7	39* a	16.0	32* a	21* c	40-140/20
67-72-1	Hexachloroethane	ND	50	41.7	83	33.8	68	21* c	40-140/20
78-59-1	Isophorone	ND	50	39.4	79	34.1	68	14	40-140/20
90-12-0	1-Methylnaphthalene	ND	50	35.7	71	31.3	63	13	40-140/20
88-74-4	2-Nitroaniline	ND	50	42.3	85	35.5	71	17	40-140/20
99-09-2	3-Nitroaniline	ND	50	22.2	44	27.2	54	20	40-140/20
100-01-6	4-Nitroaniline	ND	50	35.2	70	31.0	62	13	40-140/20
98-95-3	Nitrobenzene	ND	50	40.4	81	34.2	68	17	40-140/20
62-75-9	n-Nitrosodimethylamine	ND	50	20.6	41	17.5	35* a	16	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	50	45.3	91	38.2	76	17	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	50	40.5	81	35.8	72	12	40-140/20
110-86-1	Pyridine	ND	50	16.0	32* a	13.6	27* a	16	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC230-2	Limits
367-12-4	2-Fluorophenol	39%	34%	30%	15-110%
4165-62-2	Phenol-d5	23%	20%	17%	15-110%
118-79-6	2,4,6-Tribromophenol	70%	62%	50%	15-110%
4165-60-0	Nitrobenzene-d5	84%	70%	68%	30-130%
321-60-8	2-Fluorobiphenyl	73%	62%	59%	30-130%
1718-51-0	Terphenyl-d14	58%	53%	55%	30-130%

- (a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
- (b) Outside control limits. Blank Spike meets program technical requirements.
- (c) High RPD due to possible matrix interference and/or sample non-homogeneity.

6.3.1
6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MS	I72779.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
OP24955-MSD	I72780.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
MC308-1	I72781.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	MC308-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	49.3	49	49.7	50	1	30-130/20
95-57-8	2-Chlorophenol	ND	100	87.1	87	87.4	87	0	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	100	92.2	92	91.4	91	1	30-130/20
120-83-2	2,4-Dichlorophenol	ND	100	84.7	85	84.6	85	0	30-130/20
105-67-9	2,4-Dimethylphenol	ND	100	79.9	80	80.0	80	0	30-130/20
51-28-5	2,4-Dinitrophenol	ND	100	90.9	91	91.0	91	0	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	84.5	85	83.6	84	1	30-130/20
	3&4-Methylphenol	ND	200	203	102	200	100	1	30-130/20
88-75-5	2-Nitrophenol	ND	100	91.5	92	89.8	90	2	30-130/20
100-02-7	4-Nitrophenol	ND	100	60.7	61	60.1	60	1	30-130/20
87-86-5	Pentachlorophenol	ND	100	104	104	107	107	3	30-130/20
108-95-2	Phenol	ND	100	43.7	44	43.1	43	1	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	100	86.7	87	87.4	87	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	100	90.2	90	89.7	90	1	30-130/20
62-53-3	Aniline	ND	50	38.8	78	39.3	79	1	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	50	44.1	88	45.3	91	3	40-140/20
85-68-7	Butyl benzyl phthalate	ND	50	46.6	93	47.2	94	1	40-140/20
100-51-6	Benzyl Alcohol	ND	50	40.0	80	40.0	80	0	40-140/20
91-58-7	2-Chloronaphthalene	ND	50	42.3	85	42.7	85	1	40-140/20
106-47-8	4-Chloroaniline	ND	50	24.2	48	21.1	42	14	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	50	41.2	82	41.4	83	0	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	50	43.0	86	42.3	85	2	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	44.7	89	44.3	89	1	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	43.4	87	44.5	89	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND	50	38.3	77	39.2	78	2	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	50	44.6	89	43.9	88	2	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	50	42.4	85	41.3	83	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	50	27.5	55	24.9	50	10	40-140/20
132-64-9	Dibenzofuran	ND	50	39.7	79	40.1	80	1	40-140/20
84-74-2	Di-n-butyl phthalate	0.98	50	46.1	90	47.0	92	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND	50	44.9	90	46.4	93	3	40-140/20
84-66-2	Diethyl phthalate	0.89	50	47.2	93	46.9	92	1	40-140/20
131-11-3	Dimethyl phthalate	ND	50	43.1	86	43.3	87	0	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	0.59	50	48.1	95	49.0	97	2	40-140/20
118-74-1	Hexachlorobenzene	ND	50	41.2	82	42.2	84	2	40-140/20

6.3.2

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MS	I72779.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
OP24955-MSD	I72780.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
MC308-1	I72781.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	MC308-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND	50	26.4	53	26.4	53	0	40-140/20
67-72-1	Hexachloroethane	ND	50	43.0	86	42.3	85	2	40-140/20
78-59-1	Isophorone	ND	50	37.8	76	37.6	75	1	40-140/20
90-12-0	1-Methylnaphthalene	ND	100	77.8	78	78.6	79	1	40-140/20
88-74-4	2-Nitroaniline	ND	50	45.8	92	45.6	91	0	40-140/20
99-09-2	3-Nitroaniline	ND	50	30.2	60	28.4	57	6	40-140/20
100-01-6	4-Nitroaniline	ND	50	41.2	82	40.8	82	1	40-140/20
98-95-3	Nitrobenzene	ND	50	39.5	79	38.9	78	2	40-140/20
62-75-9	n-Nitrosodimethylamine	ND	50	26.8	54	26.3	53	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	50	44.9	90	44.1	88	2	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	50	42.5	85	43.8	88	3	40-140/20
110-86-1	Pyridine	ND	50	27.4	55	26.4	53	4	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC308-1	Limits
367-12-4	2-Fluorophenol	65%	63%	58%	15-110%
4165-62-2	Phenol-d5	42%	42%	35%	15-110%
118-79-6	2,4,6-Tribromophenol	86%	88%	81%	15-110%
4165-60-0	Nitrobenzene-d5	82%	83%	81%	30-130%
321-60-8	2-Fluorobiphenyl	85%	86%	83%	30-130%
1718-51-0	Terphenyl-d14	93%	94%	98%	30-130%

6.3.2

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24943-MS	F52911.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555
OP24943-MSD	F52912.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555
MC230-2	F52913.D	1	05/19/11	PR	05/17/11	OP24943	MSF2555

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-1, MC230-2, MC230-10

CAS No.	Compound	MC230-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	50	37.5	75	33.1	66	12	40-140/20
208-96-8	Acenaphthylene	ND	50	30.3	61	26.5	53	13	40-140/20
120-12-7	Anthracene	ND	50	36.4	73	32.6	65	11	40-140/20
56-55-3	Benzo(a)anthracene	ND	50	44.1	88	39.3	78	12	40-140/20
50-32-8	Benzo(a)pyrene	ND	50	23.7	47	20.5	41	14	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	50	29.3	59	25.8	52	13	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	50	38.1	76	30.7	61	22* a	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	50	22.2	44	19.4	39* b	13	40-140/20
218-01-9	Chrysene	0.019	J 50	35.6	71	31.7	63	12	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND	50	37.3	75	31.0	62	18	40-140/20
206-44-0	Fluoranthene	ND	50	41.8	84	37.2	74	12	40-140/20
86-73-7	Fluorene	ND	50	47.5	95	41.3	83	14	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	33.9	68	27.4	55	21* a	40-140/20
91-57-6	2-Methylnaphthalene	ND	50	48.7	97	38.4	77	24* a	40-140/20
91-20-3	Naphthalene	ND	50	42.2	84	35.9	72	16	40-140/20
85-01-8	Phenanthrene	ND	50	37.2	74	32.4	65	14	40-140/20
129-00-0	Pyrene	ND	50	39.0	78	34.4	69	13	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC230-2	Limits
4165-60-0	Nitrobenzene-d5	90%	81%	70%	30-130%
321-60-8	2-Fluorobiphenyl	72%	63%	64%	30-130%
1718-51-0	Terphenyl-d14	72%	66%	65%	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.

6.3.3

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-MS	F53007.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
OP24956-MSD	F53008.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
MC308-2	F53009.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9

CAS No.	Compound	MC308-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	50	41.8	84	40.9	82	2	40-140/20
208-96-8	Acenaphthylene	ND	50	39.3	79	38.9	78	1	40-140/20
120-12-7	Anthracene	ND	50	40.4	81	40.0	80	1	40-140/20
56-55-3	Benzo(a)anthracene	ND	50	49.9	100	50.6	101	1	40-140/20
50-32-8	Benzo(a)pyrene	ND	50	26.9	54	27.1	54	1	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	50	30.2	60	29.8	60	1	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	50	38.3	77	38.4	77	0	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	50	23.4	47	23.1	46	1	40-140/20
218-01-9	Chrysene	ND	50	40.0	80	40.3	81	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND	50	43.9	88	42.8	86	3	40-140/20
206-44-0	Fluoranthene	ND	50	44.0	88	44.4	89	1	40-140/20
86-73-7	Fluorene	ND	50	49.4	99	49.3	99	0	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	39.4	79	39.3	79	0	40-140/20
91-57-6	2-Methylnaphthalene	ND	50	49.8	100	48.2	96	3	40-140/20
91-20-3	Naphthalene	ND	50	44.8	90	43.7	87	2	40-140/20
85-01-8	Phenanthrene	ND	50	40.7	81	40.7	81	0	40-140/20
129-00-0	Pyrene	ND	50	43.8	88	43.2	86	1	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC308-2	Limits
4165-60-0	Nitrobenzene-d5	108%	108%	100%	30-130%
321-60-8	2-Fluorobiphenyl	87%	83%	82%	30-130%
1718-51-0	Terphenyl-d14	107%	110%	101%	30-130%

6.3.4
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2555-CC2545	Injection Date:	05/19/11
Lab File ID:	F52892.D	Injection Time:	12:11
Instrument ID:	GCMSF	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	18444	5.09	71649	6.33	43382	8.68	82445	11.14	93766	16.07	58701	18.57
Upper Limit ^a	36888	5.59	143298	6.83	86764	9.18	164890	11.64	187532	16.57	117402	19.07
Lower Limit ^b	9222	4.59	35825	5.83	21691	8.18	41223	10.64	46883	15.57	29351	18.07

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	167915 ^c	5.10	618534 ^c	6.33	368886 ^c	8.68	697854 ^c	11.15	816040 ^c	16.07	725917 ^c	18.58
OP24918-MB	151184 ^c	5.09	584649 ^c	6.33	333842 ^c	8.68	641380 ^c	11.15	711447 ^c	16.07	638178 ^c	18.58
OP24918-BS	207300 ^c	5.10	727337 ^c	6.35	451757 ^c	8.68	849974 ^c	11.15	887355 ^c	16.07	790440 ^c	18.59
OP24918-MS	210538 ^c	5.10	717182 ^c	6.34	447394 ^c	8.70	782200 ^c	11.15	854758 ^c	16.07	856290 ^c	18.59
OP24918-MSD	178398 ^c	5.10	604450 ^c	6.34	375413 ^c	8.70	665017 ^c	11.15	791582 ^c	16.08	743774 ^c	18.58
MC571-1	157040 ^c	5.10	542237 ^c	6.33	341833 ^c	8.68	642293 ^c	11.15	740994 ^c	16.07	677089 ^c	18.58
OP24929-MB	105820 ^c	5.09	398115 ^c	6.33	231101 ^c	8.68	433447 ^c	11.14	492289 ^c	16.07	453551 ^c	18.58
OP24929-BS	170488 ^c	5.10	596127 ^c	6.35	364123 ^c	8.68	691966 ^c	11.15	763884 ^c	16.07	736030 ^c	18.59
OP24929-MS	158395 ^c	5.10	537380 ^c	6.34	325547 ^c	8.68	641549 ^c	11.15	697541 ^c	16.07	691030 ^c	18.58
OP24929-MSD	153010 ^c	5.10	530824 ^c	6.33	334055 ^c	8.68	617128 ^c	11.15	677665 ^c	16.07	654898 ^c	18.58
MC167-5	136469 ^c	5.10	486180 ^c	6.33	292179 ^c	8.68	552730 ^c	11.15	638081 ^c	16.07	576664 ^c	18.58
ZZZZZZ	120639 ^c	5.10	451014 ^c	6.33	264594 ^c	8.68	499816 ^c	11.14	583646 ^c	16.07	533814 ^c	18.58
ZZZZZZ	125006 ^c	5.10	469527 ^c	6.33	276292 ^c	8.68	509533 ^c	11.14	591806 ^c	16.07	537104 ^c	18.58
ZZZZZZ	102199 ^c	5.10	388227 ^c	6.33	230641 ^c	8.68	421870 ^c	11.14	493924 ^c	16.07	506054 ^c	18.58
ZZZZZZ	129461 ^c	5.10	476545 ^c	6.33	289033 ^c	8.68	518260 ^c	11.14	596461 ^c	16.07	545386 ^c	18.58
OP24943-MB	152011 ^c	5.10	543561 ^c	6.33	295247 ^c	8.68	548184 ^c	11.14	625222 ^c	16.07	579134 ^c	18.58
OP24943-BS	196381 ^c	5.10	670840 ^c	6.33	369546 ^c	8.68	700916 ^c	11.15	774084 ^c	16.07	765289 ^c	18.58
OP24943-MS	180499 ^c	5.10	655327 ^c	6.33	397904 ^c	8.68	756242 ^c	11.15	816500 ^c	16.08	787380 ^c	18.58
OP24943-MSD	182229 ^c	5.10	634815 ^c	6.33	353583 ^c	8.68	662710 ^c	11.15	723012 ^c	16.07	722122 ^c	18.58
MC230-2	169247 ^c	5.09	679259 ^c	6.33	358287 ^c	8.68	622642 ^c	11.14	734499 ^c	16.07	664362 ^c	18.58

- 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 10x concentration.

6.4.1
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2556-CC2545	Injection Date:	05/20/11
Lab File ID:	F52921.D	Injection Time:	10:42
Instrument ID:	GCMSF	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	22811	5.09	83797	6.33	49948	8.68	89195	11.14	101168	16.06	66566	18.57
Upper Limit ^a	45622	5.59	167594	6.83	99896	9.18	178390	11.64	202336	16.56	133132	19.07
Lower Limit ^b	11406	4.59	41899	5.83	24974	8.18	44598	10.64	50584	15.56	33283	18.07

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP24959-BS	14470	5.09	53549	6.33	30749	8.68	54339	11.14	61962	16.06	47340	18.57
OP24959-MS	14746	5.10	55554	6.33	32415	8.68	57479	11.14	63507	16.06	50010	18.57
OP24959-MSD	16265	5.10	60499	6.33	35525	8.68	60671	11.14	68599	16.06	56167	18.57
M99934-12R	13516	5.10	49563	6.33	27170	8.68	48985	11.14	51595	16.06	34304	18.57
OP24959-LB	15592	5.09	56249	6.33	31517	8.68	56182	11.14	56540	16.06	39750	18.57
MC230-1	133024 ^c	5.09	472249 ^c	6.33	274928 ^c	8.68	489454 ^c	11.14	563792 ^c	16.07	524504 ^c	18.57
MC230-10	94422 ^c	5.10	344640 ^c	6.33	204596 ^c	8.68	366179 ^c	11.14	436074 ^c	16.06	439576 ^c	18.57
ZZZZZZ	72818 ^c	5.09	256266 ^c	6.33	141383 ^c	8.68	253958 ^c	11.14	293055 ^c	16.06	286806 ^c	18.57
ZZZZZZ	136080 ^c	5.09	537533 ^c	6.33	279048 ^c	8.68	499230 ^c	11.14	572678 ^c	16.06	543700 ^c	18.58
ZZZZZZ	52850 ^c	5.10	190225 ^c	6.33	109647 ^c	8.68	195937 ^c	11.14	224301 ^c	16.06	212714 ^c	18.57
OP24981-MB	214292 ^c	5.10	784285 ^c	6.33	408747 ^c	8.68	704713 ^c	11.14	735051 ^c	16.07	644309 ^c	18.58
OP24981-BS	192385 ^c	5.11	673176 ^c	6.33	389885 ^c	8.68	689336 ^c	11.15	714071 ^c	16.07	702635 ^c	18.58
OP24981-BSD	199469 ^c	5.10	678545 ^c	6.33	398197 ^c	8.68	722093 ^c	11.15	733516 ^c	16.07	646413 ^c	18.58
ZZZZZZ	253083 ^c	5.10	843308 ^c	6.33	466549 ^c	8.68	761105 ^c	11.14	751567 ^c	16.07	721656 ^c	18.58
ZZZZZZ	195758 ^c	5.10	680313 ^c	6.33	404751 ^c	8.68	658231 ^c	11.14	674138 ^c	16.07	996852 ^c	18.59
ZZZZZZ	210374 ^c	5.10	730853 ^c	6.33	418027 ^c	8.68	667515 ^c	11.14	642523 ^c	16.07	750605 ^c	18.58

- 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 10x concentration.

6.4.2
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2559-CC2545	Injection Date:	05/24/11
Lab File ID:	F52993.D	Injection Time:	09:34
Instrument ID:	GCMSF	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	22635	5.09	80324	6.33	47540	8.68	86596	11.14	98611	16.05	86862	18.56
Upper Limit ^a	45270	5.59	160648	6.83	95080	9.18	173192	11.64	197222	16.55	173724	19.06
Lower Limit ^b	11318	4.59	40162	5.83	23770	8.18	43298	10.64	49306	15.55	43431	18.06

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP25008-MB	13074	5.09	45820	6.33	24810	8.67	46559	11.12	51716	16.05	49350	18.56
OP25008-BS	14415	5.09	50670	6.33	30263	8.68	54216	11.14	62539	16.05	65404	18.56
OP25008-MS	14534	5.09	51971	6.33	30252	8.68	54232	11.14	63920	16.06	65485	18.56
OP25008-MSD	15964	5.09	57026	6.33	33672	8.68	60964	11.14	66006	16.06	73730	18.56
MC417-1	12989	5.09	44170	6.33	24201	8.67	45029	11.12	50703	16.05	45913	18.56
ZZZZZZ	10137 ^c	5.09	33254 ^c	6.33	18773 ^c	8.68	35126 ^c	11.12	39705 ^c	16.05	40090 ^c	18.56
ZZZZZZ	9831 ^c	5.09	33836 ^c	6.33	18893 ^c	8.68	34843 ^c	11.12	40265 ^c	16.05	42564 ^c	18.56
ZZZZZZ	150249 ^d	5.09	529885 ^d	6.33	322532 ^d	8.68	577014 ^d	11.14	656535 ^d	16.06	675799 ^d	18.57
ZZZZZZ	10570 ^c	5.09	34534 ^c	6.32	18920 ^c	8.67	36787 ^c	11.12	41575 ^c	16.05	43121 ^c	18.56
ZZZZZZ	7845 ^c	5.09	26686 ^c	6.33	14788 ^c	8.68	28321 ^c	11.12	32905 ^c	16.05	36714 ^c	18.56
ZZZZZZ	161741 ^d	5.09	564029 ^d	6.33	340780 ^d	8.68	622203 ^d	11.14	716330 ^d	16.06	892734 ^d	18.57
ZZZZZZ	136227 ^d	5.09	464192 ^d	6.33	277511 ^d	8.68	500616 ^d	11.14	606253 ^d	16.06	699244 ^d	18.57
ZZZZZZ	158188 ^d	5.09	557678 ^d	6.33	330880 ^d	8.68	606169 ^d	11.14	692149 ^d	16.06	824435 ^d	18.57
OP24956-MB	124783 ^d	5.09	469265 ^d	6.33	247793 ^d	8.68	458959 ^d	11.12	543072 ^d	16.05	669424 ^d	18.57
OP24956-BS	141762 ^d	5.09	547180 ^d	6.33	328778 ^d	8.68	571845 ^d	11.14	583599 ^d	16.06	758829 ^d	18.57
OP24956-MS	150250 ^d	5.09	561419 ^d	6.33	330758 ^d	8.68	570787 ^d	11.14	598617 ^d	16.06	776347 ^d	18.57
OP24956-MSD	154525 ^d	5.09	582683 ^d	6.33	346613 ^d	8.68	589277 ^d	11.14	612843 ^d	16.06	790728 ^d	18.58
MC308-2	106659 ^d	5.09	370175 ^d	6.33	215082 ^d	8.68	392533 ^d	11.12	456764 ^d	16.05	571158 ^d	18.57
MC230-4	9145 ^e	5.09	31546 ^e	6.33	17806 ^e	8.67	32266 ^e	11.12	35797 ^e	16.05	39326 ^e	18.56
MC230-5	12390	5.09	42129	6.33	25645	8.68	47392	11.12	57022	16.05	81667	18.56
MC230-6	15998	5.10	71430	6.33	33449	8.68	57925	11.14	58103	16.05	86665	18.56

- 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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.
 (d) Internal standard spiked at 10x concentration.
 (e) Outside control limits due to possible matrix interference.

6.4.3
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2560-CC2545	Injection Date:	05/27/11
Lab File ID:	F53034.D	Injection Time:	10:20
Instrument ID:	GCMSF	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	18435	5.09	68511	6.32	40903	8.67	73121	11.12	86066	16.05	77392	18.56
Upper Limit ^a	36870	5.59	137022	6.82	81806	9.17	146242	11.62	172132	16.55	154784	19.06
Lower Limit ^b	9218	4.59	34256	5.82	20452	8.17	36561	10.62	43033	15.55	38696	18.06

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MC230-7	133721 ^c	5.09	491116 ^c	6.33	258931 ^c	8.67	489618 ^c	11.12	557058 ^c	16.05	842493 ^c	18.57
MC230-8	121995 ^c	5.10	446814 ^c	6.33	265485 ^c	8.67	477390 ^c	11.12	543463 ^c	16.05	684682 ^c	18.56
MC230-9	128095 ^c	5.09	452523 ^c	6.33	270509 ^c	8.67	481427 ^c	11.12	523128 ^c	16.05	689380 ^c	18.56
ZZZZZZ	82409 ^c	5.09	268772 ^c	6.33	161912 ^c	8.67	297522 ^c	11.12	390378 ^c	16.05	562855 ^c	18.56
ZZZZZZ	113775 ^c	5.09	386184 ^c	6.32	227841 ^c	8.67	413639 ^c	11.12	522842 ^c	16.05	677184 ^c	18.56
ZZZZZZ	129833 ^c	5.09	435354 ^c	6.32	257878 ^c	8.67	468081 ^c	11.12	566333 ^c	16.05	721930 ^c	18.56
ZZZZZZ	92862 ^c	5.09	315562 ^c	6.32	182236 ^c	8.67	347289 ^c	11.12	431737 ^c	16.05	538315 ^c	18.56
ZZZZZZ	114940 ^c	5.09	390983 ^c	6.33	232715 ^c	8.67	431323 ^c	11.12	528026 ^c	16.05	678809 ^c	18.56
OP25011-MB	9335	5.09	34366	6.33	20486	8.67	36751	11.12	43340	16.05	46296	18.56
OP25012-MB	9335	5.09	34366	6.33	20486	8.67	36751	11.12	43340	16.05	46296	18.56
OP25011-BS	12503	5.09	43381	6.32	25646	8.67	46575	11.12	54271	16.05	60177	18.56
OP25012-BS	12503	5.09	43381	6.32	25646	8.67	46575	11.12	54271	16.05	60177	18.56
OP25011-BSD	11951	5.09	40895	6.33	24500	8.67	44026	11.12	51352	16.05	54353	18.56
OP25012-BSD	11951	5.09	40895	6.33	24500	8.67	44026	11.12	51352	16.05	54353	18.56
OP25011-MS	13605	5.09	45639	6.32	27114	8.67	49557	11.12	55895	16.05	69411	18.56
OP25011-MSD	10569	5.09	35401	6.32	21121	8.67	37977	11.12	45780	16.05	54197	18.56
MC333-1	10897	5.09	36437	6.33	20929	8.67	41374	11.12	50957	16.04	61190	18.55
ZZZZZZ	11941	5.09	41731	6.33	24518	8.67	40939	11.12	52266	16.04	74418	18.56
ZZZZZZ	13006	5.09	43805	6.32	25643	8.67	47029	11.12	55161	16.04	67583	18.56
ZZZZZZ	9437	5.09	36562	6.32	20912	8.67	37970	11.12	44803	16.05	52700	18.56
ZZZZZZ	9391	5.09	35289	6.32	20836	8.67	36776	11.12	43353	16.04	46412	18.55

- 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 10x concentration.

6.4.4
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2561-CC2545	Injection Date:	06/03/11
Lab File ID:	F53058.D	Injection Time:	17:04
Instrument ID:	GCMSF	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	17294	5.06	62782	6.29	39252	8.63	76572	11.08	102644	16.00	89695	18.51
Upper Limit ^a	34588	5.56	125564	6.79	78504	9.13	153144	11.58	205288	16.50	179390	19.01
Lower Limit ^b	8647	4.56	31391	5.79	19626	8.13	38286	10.58	51322	15.50	44848	18.01

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
ZZZZZZ	14573	5.07	54178	6.29	33962	8.63	63387	11.08	84701	16.00	85384	18.50
MC230-4 ^c	373510 ^d	5.06	1340375 ^d	6.29	840127 ^d	8.63	1633430 ^d	11.09	2250029 ^d	16.02	2606929 ^d	18.53

- 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) Confirmation run.
- (d) Internal standard spiked at 10x concentration.

6.4.5
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSI2615-CC2552	Injection Date:	05/24/11
Lab File ID:	I72776.D	Injection Time:	09:00
Instrument ID:	GCMSI	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	118178	5.26	445084	6.54	234055	8.96	376856	11.47	299986	16.42	312474	18.95
Upper Limit ^a	236356	5.76	890168	7.04	468110	9.46	753712	11.97	599972	16.92	624948	19.45
Lower Limit ^b	59089	4.76	222542	6.04	117028	8.46	188428	10.97	149993	15.92	156237	18.45

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP24955-MB	153378	5.26	568440	6.54	297503	8.96	479660	11.47	387181	16.42	341526	18.95
OP24955-BS	140870	5.26	535446	6.54	277035	8.96	446414	11.47	342886	16.42	366773	18.95
OP24955-MS	139930	5.26	525824	6.54	277549	8.96	445165	11.47	345773	16.42	371313	18.95
OP24955-MSD	147848	5.26	554120	6.54	290385	8.96	459811	11.47	353445	16.42	388876	18.95
MC308-1	132184	5.26	484501	6.54	258544	8.95	440566	11.46	330844	16.41	284888	18.95
ZZZZZZ	153409	5.26	561511	6.54	296589	8.96	461408	11.47	408982	16.42	308039	18.95
OP24969-MB	152227	5.26	567432	6.54	291252	8.96	457772	11.46	357745	16.41	315600	18.95
OP24969-BS	165943	5.26	624067	6.54	333577	8.96	534063	11.47	392491	16.42	403507	18.95
OP24969-MS	183821	5.26	676299	6.54	356576	8.96	567617	11.47	416820	16.42	410087	18.95
OP24969-MSD	164911	5.26	620269	6.54	323647	8.96	514915	11.47	370794	16.42	387243	18.95
ZZZZZZ	177220	5.26	656644	6.54	339804	8.96	528019	11.47	400964	16.41	329662	18.95
ZZZZZZ	165221	5.26	602196	6.54	306328	8.96	483999	11.46	394431	16.41	328242	18.95
ZZZZZZ	174864	5.26	636432	6.54	328200	8.96	509839	11.47	387393	16.41	312701	18.95
ZZZZZZ	176693	5.26	650078	6.54	344254	8.96	538581	11.47	410327	16.41	313380	18.95
MC125-5	182179	5.26	685552	6.54	353514	8.96	547600	11.46	393026	16.41	297337	18.95
ZZZZZZ	172782	5.26	641127	6.54	331545	8.96	513018	11.47	390379	16.41	338182	18.95
ZZZZZZ	179928	5.26	669912	6.54	345055	8.96	533580	11.46	417844	16.41	359657	18.95
ZZZZZZ	190870	5.26	704360	6.54	358758	8.96	543805	11.46	406130	16.41	357544	18.95
ZZZZZZ	211888	5.26	773442	6.54	385616	8.96	561015	11.47	392331	16.41	348772	18.95
ZZZZZZ	201852	5.26	758532	6.54	382110	8.96	590274	11.47	479147	16.42	553286	18.96
ZZZZZZ	186732	5.26	688716	6.54	352312	8.96	550141	11.47	441782	16.42	425478	18.95
ZZZZZZ	183885	5.26	689219	6.54	363006	8.96	570242	11.46	455618	16.41	427797	18.95

- 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.

6.4.6
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSI2618-CC2552	Injection Date:	05/26/11
Lab File ID:	I72838.D	Injection Time:	09:14
Instrument ID:	GCMSI	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	182902	5.23	684982	6.51	355784	8.92	578053	11.43	467992	16.38	449742	18.91
Upper Limit ^a	365804	5.73	1369964	7.01	711568	9.42	1156106	11.93	935984	16.88	899484	19.41
Lower Limit ^b	91451	4.73	342491	6.01	177892	8.42	289027	10.93	233996	15.88	224871	18.41

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	158970	5.23	594261	6.51	305501	8.92	483994	11.42	395151	16.37	345484	18.90
MC230-1	205626	5.23	765953	6.51	390050	8.92	616687	11.42	504419	16.37	431357	18.90
MC230-10	208173	5.23	772715	6.51	399349	8.92	625691	11.42	500003	16.37	424047	18.90
ZZZZZZ	184672	5.23	683731	6.51	347565	8.92	572207	11.42	478532	16.37	408161	18.90
ZZZZZZ	171965	5.23	634003	6.51	319719	8.92	511122	11.42	406846	16.37	354541	18.90
ZZZZZZ	227974	5.23	829269	6.51	424648	8.92	672938	11.42	551890	16.37	471962	18.90
ZZZZZZ	220580	5.23	817860	6.51	412533	8.92	656151	11.42	527638	16.37	449520	18.90
ZZZZZZ	207395	5.23	764217	6.51	392327	8.92	628934	11.42	524098	16.37	456822	18.90
ZZZZZZ	174941	5.23	642550	6.51	340719	8.92	578346	11.42	429730	16.37	370617	18.90
ZZZZZZ	173061	5.23	636924	6.51	325261	8.92	519263	11.42	429749	16.37	382083	18.90
ZZZZZZ	220622	5.23	838531	6.51	428609	8.92	682023	11.42	550414	16.37	491919	18.90

- 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.

6.4.7
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1021-CC1009	Injection Date:	05/18/11
Lab File ID:	S24048.D	Injection Time:	11:07
Instrument ID:	GCMSS	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	182077	6.55	658708	7.95	387269	10.22	735007	12.45	858469	16.83	847742	19.07
Upper Limit ^a	364154	7.05	1317416	8.45	774538	10.72	1470014	12.95	1716938	17.33	1695484	19.57
Lower Limit ^b	91039	6.05	329354	7.45	193635	9.72	367504	11.95	429235	16.33	423871	18.57

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	195486	6.55	762550	7.95	417107	10.22	673058	12.45	702517	16.82	636670	19.07
ZZZZZZ	194550	6.55	740358	7.95	409184	10.22	701078	12.45	700019	16.83	637283	19.07
OP24942-MB	158942	6.55	593457	7.95	353982	10.22	691140	12.45	684906	16.83	617053	19.07
OP24942-BS	198569	6.55	742336	7.95	423858	10.22	786554	12.46	840577	16.83	764314	19.07
OP24942-MS	209715	6.55	764977	7.95	439434	10.22	825126	12.46	895708	16.83	800328	19.07
OP24942-MSD	187093	6.55	698549	7.95	411112	10.22	756775	12.45	817841	16.83	735061	19.07
MC230-2	177880	6.55	655074	7.95	397135	10.22	783516	12.45	787975	16.83	760969	19.07
ZZZZZZ	159446	6.55	594943	7.95	363118	10.22	710170	12.45	731958	16.83	721172	19.07
ZZZZZZ	159393	6.55	598943	7.95	360898	10.22	717158	12.45	738919	16.83	708226	19.07
ZZZZZZ	175095	6.55	663187	7.95	397071	10.22	773850	12.45	773586	16.83	756054	19.07
ZZZZZZ	228353	6.55	921822	7.95	546627	10.22	1043882	12.45	1054324	16.83	951078	19.07
ZZZZZZ	202033	6.55	768829	7.95	470452	10.22	913785	12.45	933742	16.83	878722	19.07
ZZZZZZ	222616	6.55	835865	7.95	514472	10.22	1004284	12.45	1026610	16.83	968651	19.07
ZZZZZZ	208087	6.55	797206	7.95	499977	10.22	982980	12.45	1018561	16.83	974688	19.07
ZZZZZZ	188878	6.55	701300	7.95	434556	10.22	861998	12.45	911513	16.83	852765	19.07
ZZZZZZ	185984	6.55	690920	7.95	410740	10.22	790974	12.45	836632	16.83	849069	19.08
ZZZZZZ	187942	6.55	698824	7.95	412098	10.22	796133	12.45	837937	16.83	854598	19.07
ZZZZZZ	212814	6.56	772157	7.95	469532	10.22	901374	12.45	932996	16.83	841249	19.08
ZZZZZZ	211993	6.55	791059	7.95	473832	10.22	864314	12.45	848581	16.83	921614	19.07
ZZZZZZ	200730	6.55	739111	7.95	430774	10.22	826231	12.45	863128	16.83	911455	19.07
ZZZZZZ	187412	6.55	692998	7.95	411404	10.22	782552	12.45	1014007	16.83	1213433	19.08
ZZZZZZ	208303	6.55	758192	7.95	446786	10.22	833366	12.45	1015017	16.83	1216046	19.08
ZZZZZZ	200261	6.55	729545	7.95	429755	10.22	802313	12.45	926873	16.83	1096026	19.08
ZZZZZZ	181744	6.55	690113	7.95	418547	10.22	817247	12.46	1204459	16.85	1617944	19.10

- 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.

6.4.8

6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1029-CC1009	Injection Date:	05/27/11
Lab File ID:	S24287A.D	Injection Time:	10:11
Instrument ID:	GCMSS	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	227651	6.48	792703	7.87	486546	10.12	959176	12.35	1173598	16.72	1113115	18.95
Upper Limit ^a	455302	6.98	1585406	8.37	973092	10.62	1918352	12.85	2347196	17.22	2226230	19.45
Lower Limit ^b	113826	5.98	396352	7.37	243273	9.62	479588	11.85	586799	16.22	556558	18.45

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	226757	6.48	953975	7.88	746027	10.16	1030804	12.40	973024	16.74	956475	18.95
ZZZZZZ	274847	6.48	988453	7.87	577997	10.12	1088126	12.35	1180263	16.72	1224773	18.96
ZZZZZZ	232150	6.48	843897	7.87	511846	10.14	898202	12.37	1001343	16.72	1080461	18.95
ZZZZZZ	226717	6.48	831007	7.87	492438	10.13	848921	12.37	991416	16.72	1124356	18.96
ZZZZZZ	369705	6.48	1343672	7.87	756299	10.14	1194341	12.37	1088264	16.72	1135752	18.96
ZZZZZZ	358184	6.48	1251228	7.87	723499	10.12	1345616	12.35	1326704	16.72	1289620	18.95
ZZZZZZ	283146	6.48	1026307	7.87	700715	10.12	1062759	12.35	997940	16.72	995900	18.96
ZZZZZZ	179052	6.48	784863	7.87	494606	10.12	958909	12.35	1093477	16.72	1228205	18.95
MC230-4	284868	6.48	1022660	7.87	604931	10.12	1196380	12.35	1305681	16.72	1458508	18.95
MC230-5	246897	6.48	708983	7.87	427345	10.12	814736	12.35	936062	16.72	1018303	18.96
MC230-6	284904	6.48	1091067	7.87	632971	10.12	1206846	12.35	1246695	16.72	1408005	18.96
MC230-7	224372	6.48	879884	7.87	521520	10.12	998393	12.35	1016142	16.72	954732	18.96
MC230-8	257582	6.48	923459	7.87	412130	10.12	814122	12.35	878811	16.72	983055	18.95
MC230-9	261148	6.48	938103	7.87	564104	10.12	1096896	12.35	1182797	16.72	1297940	18.95
ZZZZZZ	208940	6.48	748217	7.87	453655	10.13	840179	12.35	1032444	16.72	1181438	18.95
ZZZZZZ	250172	6.48	891673	7.87	528165	10.12	1019775	12.35	1186789	16.72	1343284	18.96
ZZZZZZ	246548	6.48	888883	7.87	540769	10.12	1053363	12.35	1213178	16.72	1354772	18.95
ZZZZZZ	261637	6.48	933206	7.87	554058	10.12	1095576	12.35	1287173	16.72	1434205	18.95
ZZZZZZ	248134	6.48	889441	7.87	534353	10.12	1045662	12.35	1243046	16.72	1370691	18.95
ZZZZZZ	256252	6.48	920279	7.87	552633	10.12	1088597	12.35	1277100	16.72	1417237	18.95
ZZZZZZ	258017	6.48	936421	7.87	575721	10.12	1140487	12.35	1354102	16.71	1514813	18.95
ZZZZZZ	257165	6.48	940603	7.87	581025	10.12	1125516	12.34	1295049	16.71	1494452	18.95
ZZZZZZ	301306	6.48	1091213	7.87	631942	10.12	1223737	12.34	1443516	16.72	1579573	18.96
ZZZZZZ	360069	6.48	1281336	7.87	749663	10.12	1421136	12.35	1557743	16.72	1700504	18.96
ZZZZZZ	270101	6.48	976337	7.87	564485	10.12	1077580	12.35	1333651	16.72	1593099	18.95

- 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.

6.4.9
6

Semivolatile Internal Standard Area Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1032-CC1009	Injection Date:	06/01/11
Lab File ID:	S24361.D	Injection Time:	10:29
Instrument ID:	GCMSS	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	250839	6.46	887128	7.86	547385	10.10	1080765	12.33	1386803	16.70	1326733	18.93
Upper Limit ^a	501678	6.96	1774256	8.36	1094770	10.60	2161530	12.83	2773606	17.20	2653466	19.43
Lower Limit ^b	125420	5.96	443564	7.36	273693	9.60	540383	11.83	693402	16.20	663367	18.43

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP25072-LB	298574	6.46	1111230	7.86	708895	10.10	1443408	12.33	1642804	16.70	1622761	18.93
ZZZZZZ	367599	6.46	1359796	7.86	859198	10.10	1751070	12.33	2000778	16.70	1985462	18.93
ZZZZZZ	269902	6.46	1005714	7.86	623968	10.10	1284842	12.33	1520846	16.70	1558273	18.93
ZZZZZZ	362324	6.47	1370035	7.86	876809	10.10	1772628	12.33	2011821	16.70	2000495	18.93
ZZZZZZ	565334 ^c	6.47	2084010 ^c	7.86	1311582 ^c	10.11	2664537 ^c	12.33	2942288 ^c	16.70	2802847 ^c	18.93
MC230-6 ^d	371269	6.47	1452319	7.86	889498	10.11	1749457	12.33	1954369	16.70	1813859	18.93
MC230-7 ^d	290332	6.47	1137389	7.86	688995	10.11	1368663	12.33	1598531	16.70	1592303	18.93
MC230-9 ^d	284711	6.47	1071531	7.86	663104	10.11	1363380	12.33	1570713	16.70	1542493	18.93

- 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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- (d) Confirmation run for surrogate recoveries.

6.4.10
6

Semivolatile Surrogate Recovery Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Method: SW846 8270C	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC230-1	I72840.D	36.0	21.0	73.0	72.0	73.0	77.0
MC230-2	S24055.D	30.0	17.0	50.0	68.0	59.0	55.0
MC230-4	S24296.D	56.0	35.0	105.0	86.0	87.0	94.0
MC230-5	S24297.D	57.0	33.0	106.0	88.0	81.0	84.0
MC230-6	S24367.D	60.0	42.0	149.0* a	75.0	84.0	101.0
MC230-6	S24298.D	63.0	44.0	133.0* a	82.0	86.0	101.0
MC230-7	S24368.D	58.0	39.0	130.0* a	73.0	81.0	94.0
MC230-7	S24299.D	61.0	42.0	117.0* a	81.0	82.0	97.0
MC230-8	S24300.D	58.0	37.0	103.0	83.0	107.0	94.0
MC230-9	S24369.D	58.0	38.0	123.0* a	76.0	82.0	96.0
MC230-9	S24301.D	59.0	38.0	113.0* a	83.0	81.0	99.0
MC230-10	I72841.D	35.0	21.0	72.0	70.0	69.0	63.0
OP24942-BS	S24052.D	46.0	26.0	76.0	88.0	77.0	84.0
OP24942-MB	S24051.D	37.0	20.0	58.0	74.0	67.0	83.0
OP24942-MS	S24053.D	39.0	23.0	70.0	84.0	73.0	58.0
OP24942-MSD	S24054.D	34.0	20.0	62.0	70.0	62.0	53.0
OP24955-BS	I72778.D	66.0	45.0	88.0	85.0	91.0	97.0
OP24955-MB	I72777.D	58.0	37.0	84.0	82.0	85.0	92.0
OP24955-MS	I72779.D	65.0	42.0	86.0	82.0	85.0	93.0
OP24955-MSD	I72780.D	63.0	42.0	88.0	83.0	86.0	94.0

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%

(a) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

6.5.1
6

Semivolatile Surrogate Recovery Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC230-1	F52928.D	84.0	71.0	87.0
MC230-2	F52913.D	70.0	64.0	65.0
MC230-4	F53060.D	123.0	87.0	103.0
MC230-4	F53010.D	135.0* a	113.0	142.0* a
MC230-5	F53011.D	97.0	79.0	92.0
MC230-6	F53012.D	90.0	89.0	115.0
MC230-7	F53035.D	101.0	82.0	107.0
MC230-8	F53036.D	102.0	80.0	107.0
MC230-9	F53037.D	106.0	80.0	115.0
MC230-10	F52929.D	84.0	67.0	70.0
OP24943-BS	F52910.D	101.0	83.0	99.0
OP24943-MB	F52909.D	86.0	70.0	97.0
OP24943-MS	F52911.D	90.0	72.0	72.0
OP24943-MSD	F52912.D	81.0	63.0	66.0
OP24956-BS	F53006.D	110.0	84.0	115.0
OP24956-MB	F53005.D	96.0	83.0	103.0
OP24956-MS	F53007.D	108.0	87.0	107.0
OP24956-MSD	F53008.D	108.0	83.0	110.0

Surrogate Compounds **Recovery Limits**

S1 = Nitrobenzene-d5 30-130%
 S2 = 2-Fluorobiphenyl 30-130%
 S3 = Terphenyl-d14 30-130%

(a) Outside control limits. Associated target analytes are non-detect.

6.5.2
6

GC Volatiles

QC Data Summaries

7

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: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24964-MB	BK2996.D	1	05/19/11	AP	05/18/11	OP24964	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC230-1, MC230-2, MC230-3, MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9, MC230-10

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	95%	36-173%
460-00-4	Bromofluorobenzene (S)	97%	36-173%

7.1.1

7

Blank Spike Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24964-BS	BK2997.D	1	05/19/11	AP	05/18/11	OP24964	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC230-1, MC230-2, MC230-3, MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9, MC230-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.071	100	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	106%	36-173%
460-00-4	Bromofluorobenzene (S)	98%	36-173%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24964-MS	BK2998.D	1	05/19/11	AP	05/18/11	OP24964	GBK120
OP24964-MSD	BK3000.D	1	05/19/11	AP	05/18/11	OP24964	GBK120
MC230-2	BK3002.D	1	05/19/11	AP	05/18/11	OP24964	GBK120

The QC reported here applies to the following samples:

Method: SW846 8011

MC230-1, MC230-2, MC230-3, MC230-4, MC230-5, MC230-6, MC230-7, MC230-8, MC230-9, MC230-10

CAS No.	Compound	MC230-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND	0.0753	0.10	133	0.11	147	10	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC230-2	Limits
460-00-4	Bromofluorobenzene (S)	169%	173%	124%	36-173%
460-00-4	Bromofluorobenzene (S)	173%	170%	124%	36-173%

7.3.1
7

Volatile Surrogate Recovery Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC230-1	BK3001.D	160.0	155.0
MC230-2	BK3002.D	124.0	124.0
MC230-3	BK3003.D	167.0	169.0
MC230-4	BK3004.D	107.0	110.0
MC230-5	BK3005.D	125.0	109.0
MC230-6	BK3006.D	130.0	123.0
MC230-7	BK3007.D	141.0	139.0
MC230-8	BK3008.D	122.0	135.0
MC230-9	BK3009.D	148.0	144.0
MC230-10	BK3011.D	157.0	149.0
OP24964-BS	BK2997.D	106.0	98.0
OP24964-MB	BK2996.D	95.0	97.0
OP24964-MS	BK2998.D	169.0	173.0
OP24964-MSD	BK3000.D	173.0	170.0

Surrogate Compounds Recovery Limits

S1 = Bromofluorobenzene (S) 36-173%

(a) Recovery from GC signal #1

(b) Recovery from GC signal #2

7.4.1

7

GC Surrogate Retention Time Summary

Job Number: MC230
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-CC120	Injection Date:	05/19/11
Lab File ID:	BK2988.D	Injection Time:	17:18
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.91	5.49

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
ZZZZZZ	BK2989.D	05/19/11	17:44	4.91	5.49
MC19-7	BK2990.D	05/19/11	18:11	4.91	5.49
ZZZZZZ	BK2991.D	05/19/11	18:37	4.91	5.49
ZZZZZZ	BK2992.D	05/19/11	19:04	4.91	5.49
ZZZZZZ	BK2993.D	05/19/11	19:31	4.91	5.49
ZZZZZZ	BK2994.D	05/19/11	19:57	4.91	5.48
ZZZZZZ	BK2995.D	05/19/11	20:24	4.91	5.49
OP24964-MB	BK2996.D	05/19/11	20:50	4.91	5.48
OP24964-BS	BK2997.D	05/19/11	21:16	4.91	5.48
OP24964-MS	BK2998.D	05/19/11	21:43	4.91	5.48

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.1
7

GC Surrogate Retention Time Summary

Job Number: MC230
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std: GBK120-CC120	Injection Date: 05/19/11
Lab File ID: BK2999.D	Injection Time: 22:09
Instrument ID: GCBK	Method: SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.91	5.48

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP24964-MSD	BK3000.D	05/19/11	22:35	4.91	5.49
MC230-1	BK3001.D	05/19/11	23:01	4.91	5.49
MC230-2	BK3002.D	05/19/11	23:28	4.91	5.49
MC230-3	BK3003.D	05/19/11	23:54	4.91	5.49
MC230-4	BK3004.D	05/20/11	00:20	4.91	5.49
MC230-5	BK3005.D	05/20/11	00:46	4.90	5.49
MC230-6	BK3006.D	05/20/11	01:13	4.91	5.48
MC230-7	BK3007.D	05/20/11	01:39	4.90	5.48
MC230-8	BK3008.D	05/20/11	02:05	4.90	5.48
MC230-9	BK3009.D	05/20/11	02:31	4.91	5.49

**Surrogate
Compounds**

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.2
7

GC Surrogate Retention Time Summary

Job Number: MC230

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK120-CC120	Injection Date:	05/20/11
Lab File ID:	BK3010.D	Injection Time:	02:58
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a	S1 ^b
	RT	RT
Check Std	4.91	5.48

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
MC230-10	BK3011.D	05/20/11	03:24	4.91	5.48
GBK120-ECC120	BK3012.D	05/20/11	03:50	4.91	5.48

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.3
7

Roxana Groundwater Quarterly – 2nd Quarter 2011

Laboratory SDG: MC269

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 06/21/2011

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

Sample Identification	Sample Identification
MW6A-ROX-051611	MW6B-ROX-051611
MW6C-ROX-051611	MW6D-ROX-051611
MW6B-ROX-051611-DUP	TB-ROX-051611

1.0 Data Package Completeness

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

Yes, however the data package was re-issued to report PAHs by 8270C SIM; PAHs previously reported by both standard 8270C and 8270C SIM. No qualification of data was required.

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 VOC LCS/LCSD recoveries were outside of evaluation criteria for several analytes. VOC MS/MSD recoveries were outside of evaluation criteria. The surrogate bromofluorobenzene was outside of evaluation criteria in trip blank, TB-ROX-051611. The SVOC surrogate 2,4,6-tribromophenol was outside of evaluation criteria in several samples. Although not indicated in the case narrative SVOC analytes di-n-butyl phthalate and diethyl phthalate were found in the method blank. PAH internal standard recoveries were outside evaluation criteria. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated two coolers with samples were received by the laboratory at 1.8°C and 1.4°C which were outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. MW6B-ROX-051611 was listed twice on the COC. The laboratory noted on the cooler receipt form that extra volume was received for this sample, the laboratory contacted URS and were advised that the additional MW6B-ROX-051611 was a duplicate and it was logged in accordingly.

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
OP24955-MB	SVOCs	Di-n-butyl phthalate	0.72 µg/L
OP24955-MB	SVOCs	Diethyl phthalate	1.8 µg/L

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

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW6A-ROX-051611	SVOCs	Di-n-butyl phthalate	--	U
MW6A-ROX-051611	SVOCs	Diethyl phthalate	--	U
MW6B-ROX-051611	SVOCs	Di-n-butyl phthalate	--	U
MW6B-ROX-051611	SVOCs	Diethyl phthalate	--	U
MW6C-ROX-051611	SVOCs	Di-n-butyl phthalate	--	U
MW6C-ROX-051611	SVOCs	Diethyl phthalate	--	U
MW6D-ROX-051611	SVOCs	Di-n-butyl phthalate	--	U
MW6D-ROX-051611	SVOCs	Diethyl phthalate	--	U
MW6D-ROX-051611-DUP	SVOCs	Di-n-butyl phthalate	--	U
MW6D-ROX-051611-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
MSG4305-BS/BSD	VOCs	Acetone	57/49	14	70-130/25
MSG4305-BS/BSD	VOCs	Chloromethane	75/68	11	70-130/25
MSG4305-BS/BSD	VOCs	Hexachloro-butadiene	132/129	2	70-130/25
MSG4305-BS/BSD	VOCs	2-Hexanone	56/52	8	70-130/25
MSN2006-BS/BSD	VOCs	Acrolein	274/274	0	70-130/25
MSN2006-BS/BSD	VOCs	2-Chloroethyl vinyl ether	59/44	29	70-130/25

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.

Field ID	Parameter	Analyte	Qualification
MW6A-ROX-051611	VOCs	Acetone	UJ
MW6A-ROX-051611	VOCs	Chloromethane	UJ
MW6A-ROX-051611	VOCs	2-Hexanone	UJ
MW6B-ROX-051611	VOCs	Acetone	UJ
MW6B-ROX-051611	VOCs	Chloromethane	UJ
MW6B-ROX-051611	VOCs	2-Hexanone	UJ
MW6B-ROX-051611	VOCs	2-Chloroethyl vinyl ether	UJ
MW6C-ROX-051611	VOCs	Acetone	UJ
MW6C-ROX-051611	VOCs	Chloromethane	UJ
MW6C-ROX-051611	VOCs	2-Hexanone	UJ
MW6C-ROX-051611	VOCs	2-Chloroethyl vinyl ether	UJ
MW6D-ROX-051611	VOCs	Acetone	UJ
MW6D-ROX-051611	VOCs	Chloromethane	UJ
MW6D-ROX-051611	VOCs	2-Hexanone	UJ
MW6D-ROX-051611	VOCs	2-Chloroethyl vinyl ether	UJ
MW6B-ROX-051611-DUP	VOCs	Acetone	UJ
MW6B-ROX-051611-DUP	VOCs	Chloromethane	UJ
MW6B-ROX-051611-DUP	VOCs	2-Hexanone	UJ
MW6B-ROX-051611-DUP	VOCs	2-Chloroethyl vinyl ether	UJ

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery (%)	Criteria (%)
MW6A-ROX-051611	SVOCs	2,4,6-Tribromophenol	117	15-110
MW6B-ROX-051611	SVOCs	2,4,6-Tribromophenol	116	15-110
MW6C-ROX-051611	SVOCs	2,4,6-Tribromophenol	116	15-110
MW6D-ROX-051611	SVOCs	2,4,6-Tribromophenol	117	15-110
MW6B-ROX-051611-DUP	SVOCs	2,4,6-Tribromophenol	118	15-110
TB-ROX-051611	VOCs	Bromofluorobenzene	187	36-173

Analytical data reported as non-detect and associated with surrogate recoveries above evaluation criteria, indicating a 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?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No, PAH internal standard recoveries were outside evaluation criteria. Analytical data that required qualification based on IS data are included in the following table.

Sample ID	Parameter	Analyte	Qualification
MW6A-ROX-051611	PAHs	PAH detects/non-detects	J/UJ
MW6B-ROX-051611	PAHs	PAH detects/non-detects	J/UJ
MW6C-ROX-051611	PAHs	PAH detects/non-detects	J/UJ
MW6D-ROX-051611	PAHs	PAH detects/non-detects	J/UJ
MW6B-ROX-051611-DUP	PAHs	PAH detects/non-detects	J/UJ

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected 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
MW6B-ROX-051611	MW6B-ROX-051611-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 a dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

No



Reissue #1
06/15/11

Technical Report for

Shell Oil

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
INC#97216640 SAP#340061

Accutest Job Number: MC269

Sampling Date: 05/16/11

Report to:

URS Corporation
Elizabeth_Kunkel@URSCorp.com
ATTN: Elizabeth Kunkel

*Reviewed
6/21/2011
WEB*

Total number of pages in report: 94



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.

Reza Fard
Reza Fard
Lab Director

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) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.



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

June 14, 2011

Accutest Job MC269 (Revision 1)

Ms. Elizabeth Kunkel,

The report of Accutest job number MC269 has been revised to reflect the modified SVOC 8270C compound list. The request is per Elizabeth Kunkel's call on 06/13/2011.

Sincerely,

A handwritten signature in black ink, appearing to read "Wendy Zhang".

Wendy Zhang
Accutest Laboratories of New England, Inc.

Table of Contents

Sections:



-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Sample Results	7
3.1: MC269-1: MW6A-ROX-051611	8
3.2: MC269-2: MW6B-ROX-051611	15
3.3: MC269-3: MW6C-ROX-051611	22
3.4: MC269-4: MW6D-ROX-051611	29
3.5: MC269-5: MW6B-ROX-051611-DUP	36
3.6: MC269-6: TB-ROX-051611	43
Section 4: Misc. Forms	47
4.1: Chain of Custody	48
4.2: Sample Tracking Chronicle	51
4.3: Internal Chain of Custody	53
Section 5: GC/MS Volatiles - QC Data Summaries	56
5.1: Method Blank Summary	57
5.2: Blank Spike/Blank Spike Duplicate Summary	61
5.3: Matrix Spike/Matrix Spike Duplicate Summary	65
5.4: Internal Standard Area Summaries	69
5.5: Surrogate Recovery Summaries	71
Section 6: GC/MS Semi-volatiles - QC Data Summaries	72
6.1: Method Blank Summary	73
6.2: Blank Spike Summary	76
6.3: Matrix Spike/Matrix Spike Duplicate Summary	79
6.4: Internal Standard Area Summaries	82
6.5: Surrogate Recovery Summaries	86
Section 7: GC Volatiles - QC Data Summaries	88
7.1: Method Blank Summary	89
7.2: Blank Spike Summary	90
7.3: Matrix Spike/Matrix Spike Duplicate Summary	91
7.4: Surrogate Recovery Summaries	92
7.5: GC Surrogate Retention Time Summaries	93



Sample Summary

Shell Oil

Job No: MC269

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
Project No: INC#97216640 SAP#340061

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
MC269-1	05/16/11	11:00	MSBE 05/17/11	AQ	Water	MW6A-ROX-051611
MC269-2	05/16/11	14:15	MSBE 05/17/11	AQ	Water	MW6B-ROX-051611
MC269-3	05/16/11	11:45	MSBE 05/17/11	AQ	Water	MW6C-ROX-051611
MC269-4	05/16/11	16:55	MSBE 05/17/11	AQ	Water	MW6D-ROX-051611
MC269-5	05/16/11	14:15	MSBE 05/17/11	AQ	Water	MW6B-ROX-051611-DUP
MC269-6	05/16/11	00:00	MSBE 05/17/11	AQ	Trip Blank Water	TB-ROX-051611

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil **Job No** MC269
Site: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central **Report Date** 6/3/2011 11:56:16 AM

5 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 05/16/2011 and were received at Accutest on 05/17/2011 properly preserved, at 1.8 Deg. C and intact. These Samples received an Accutest job number of MC269. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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: MSG4305
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC280-1MS, MC280-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 2-Hexanone, Acetone, Hexachlorobutadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 2-Butanone (MEK), 2-Hexanone, Acetone are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 2-Hexanone, Acetone, Dichlorodifluoromethane are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Blank Spike Duplicate Recovery(s) for 2-Hexanone, Acetone, Chloromethane are outside control limits. Blank Spike meets program technical requirements.

Matrix AQ	Batch ID: MSN2006
------------------	--------------------------

- All method blanks for this batch meet method specific criteria.
- Sample(s) MC551-10MS, MC551-10MSD were used as the QC samples indicated.
- BS/BSD Recovery(s) for 2-Chloroethyl vinyl ether 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 interference. Refer to Blank Spike.
- RPD for MSN2006-BSD for 2-Chloroethyl vinyl ether: Outside control limits. Individual spike recoveries within acceptance limits.
- MSN2006-BS/BSD/MS/MSD for Acrolein: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP24955
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC308-1MS, MC308-1MSD were used as the QC samples indicated.
- MC269-1, 2, 3, 4, 5 for 2,4,6-Tribromophenol: Outside control limits. Associated target analytes are non-detect.

Extractables by GCMS By Method SW846 8270C BY SIM

2

Matrix AQ	Batch ID: OP24956
------------------	--------------------------

- 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) MC308-2MS, MC308-2MSD were used as the QC samples indicated.
- OP24956-MB/BS/MS/MSD, MC269-1~5 has internal standards outside control limits. Internal standard spiked at 10x concentration.

Volatiles by GC By Method SW846 8011

Matrix AQ	Batch ID: OP25065
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) MC616-2MS, MC616-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MC269-6 for Bromofluorobenzene (S): Outside control limits due to possible matrix interference.

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(MC269).



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW6A-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106675.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53289.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	WJ
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	3.1	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	WJ
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-1	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	W
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	27.7	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	103%	70-130%
2037-26-5	Toluene-D8	105%	108%	70-130%
460-00-4	4-Bromofluorobenzene	115%	100%	70-130%

(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 compound

Report of Analysis

Client Sample ID: MW6A-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24303.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.6	5.0	0.34	ug/l	XU
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.83	5.0	0.61	ug/l	Y U
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.6	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	117% ^a		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	85%		30-130%
1718-51-0	Terphenyl-d14	88%		30-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

J = Indicates 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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53038.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	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	0.012	ug/l	W
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	J
86-73-7	Fluorene	0.25	0.10	0.044	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	W
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	101%		30-130%
321-60-8	2-Fluorobiphenyl	83%		30-130%
1718-51-0	Terphenyl-d14	101%		30-130%

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

Report of Analysis

Client Sample ID: MW6A-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-1	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3182.D	1	05/27/11	AP	05/27/11	OP25065	GBK128
Run #2							

	Initial Volume	Final Volume
Run #1	31.8 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.017	0.0077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	147%		36-173%
460-00-4	Bromofluorobenzene (S)	75%		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-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-2	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106676.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53290.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	WJ
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	3.3	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	WJ
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-2	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	WJ
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.9	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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

32
3

Client Sample ID: MW6B-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-2	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	104%	70-130%
2037-26-5	Toluene-D8	105%	107%	70-130%
460-00-4	4-Bromofluorobenzene	115%	100%	70-130%

(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 compound

Report of Analysis

Client Sample ID: MW6B-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-2	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24304.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.5	0.73	ug/l	
95-57-8	2-Chlorophenol	ND	4.8	0.65	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.5	0.54	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.5	0.66	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.5	2.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	19	2.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	4.8	ug/l	
95-48-7	2-Methylphenol	ND	9.5	0.46	ug/l	
	3&4-Methylphenol	ND	9.5	0.60	ug/l	
88-75-5	2-Nitrophenol	ND	9.5	0.63	ug/l	
100-02-7	4-Nitrophenol	ND	19	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	9.5	3.2	ug/l	
108-95-2	Phenol	ND	4.8	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.5	0.38	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.5	0.36	ug/l	
62-53-3	Aniline	ND	9.5	0.43	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.8	0.30	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.8	0.39	ug/l	
100-51-6	Benzyl Alcohol	ND	9.5	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.29	ug/l	
106-47-8	4-Chloroaniline	ND	9.5	0.55	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.33	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.22	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.20	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.8	0.58	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	4.8	0.28	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.5	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.5	0.32	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	2.4	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	1.2	4.8	0.32	ug/l	✓
117-84-0	Di-n-octyl phthalate	ND	4.8	0.32	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-051611		Date Sampled: 05/16/11
Lab Sample ID: MC269-2		Date Received: 05/17/11
Matrix: AQ - Water		Percent Solids: n/a
Method: SW846 8270C SW846 3510C		
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.78	4.8	0.58	ug/l	X U
131-11-3	Dimethyl phthalate	ND	4.8	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.3	1.9	0.47	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.4	ug/l	
67-72-1	Hexachloroethane	ND	4.8	0.41	ug/l	
78-59-1	Isophorone	ND	4.8	0.45	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.53	ug/l	
88-74-4	2-Nitroaniline	ND	9.5	0.32	ug/l	
99-09-2	3-Nitroaniline	ND	9.5	0.31	ug/l	
100-01-6	4-Nitroaniline	ND	9.5	0.32	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.29	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	4.8	2.4	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	4.8	0.39	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.58	ug/l	
110-86-1	Pyridine	ND	9.5	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	116% ^a		15-110%
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	85%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

J = Indicates 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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-2	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53039.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.095	0.011	ug/l	W
208-96-8	Acenaphthylene	0.098	0.095	0.027	ug/l	J
120-12-7	Anthracene	ND	0.095	0.025	ug/l	W
56-55-3	Benzo(a)anthracene	ND	0.048	0.010	ug/l	↓
50-32-8	Benzo(a)pyrene	ND	0.095	0.012	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.048	0.0091	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.095	0.014	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.095	0.011	ug/l	
218-01-9	Chrysene	ND	0.095	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	0.015	ug/l	
206-44-0	Fluoranthene	ND	0.095	0.015	ug/l	
86-73-7	Fluorene	ND	0.095	0.042	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.095	0.012	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.19	0.011	ug/l	
91-20-3	Naphthalene	ND	0.095	0.010	ug/l	
85-01-8	Phenanthrene	ND	0.048	0.012	ug/l	
129-00-0	Pyrene	ND	0.095	0.019	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	106%		30-130%
321-60-8	2-Fluorobiphenyl	83%		30-130%
1718-51-0	Terphenyl-d14	106%		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: MW6B-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-2	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3183.D	1	05/27/11	AP	05/27/11	OP25065	GBK128
Run #2							

	Initial Volume	Final Volume
Run #1	28.2 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.019	0.0086	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	105%		36-173%
460-00-4	Bromofluorobenzene (S)	57%		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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-3	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106677.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53291.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	UJ
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	7.1	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	UJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	UJ
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-3	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	us
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.4	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-3	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	107%	70-130%
2037-26-5	Toluene-D8	104%	107%	70-130%
460-00-4	4-Bromofluorobenzene	113%	98%	70-130%

(a) Result is from Run# 2

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

Report of Analysis

Client Sample ID: MW6C-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-3	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24305.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	6.4	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.3	5.0	0.34	ug/l	X U
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-3	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.63	5.0	0.61	ug/l	XU
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.5	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	116% ^a		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	86%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

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

Report of Analysis

33
3

Client Sample ID: MW6C-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-3	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53040.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	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	0.012	ug/l	B
208-96-8	Acenaphthylene	0.046	0.10	0.028	ug/l	J
120-12-7	Anthracene	ND	0.10	0.026	ug/l	N
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	↓
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	107%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	106%		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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-3	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3184.D	1	05/27/11	AP	05/27/11	OP25065	GBK128
Run #2							

	Initial Volume	Final Volume
Run #1	29.2 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.018	0.0083	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	108%		36-173%
460-00-4	Bromofluorobenzene (S)	50%		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: MW6D-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106678.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53292.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	W
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	2.0	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	WJ
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-4	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	UK
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	105%	70-130%
2037-26-5	Toluene-D8	103%	108%	70-130%
460-00-4	4-Bromofluorobenzene	115%	99%	70-130%

(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 compound

Report of Analysis

Client Sample ID: MW6D-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24306.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.85	ug/l	
95-57-8	2-Chlorophenol	ND	5.5	0.75	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.76	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	22	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.5	ug/l	
95-48-7	2-Methylphenol	ND	11	0.53	ug/l	
	3&4-Methylphenol	ND	11	0.69	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.72	ug/l	
100-02-7	4-Nitrophenol	ND	22	5.5	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.6	ug/l	
108-95-2	Phenol	ND	5.5	2.3	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.44	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.41	ug/l	
62-53-3	Aniline	ND	11	0.50	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.5	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	6.9	5.5	0.45	ug/l	
100-51-6	Benzyl Alcohol	ND	11	0.84	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.5	0.34	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.63	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.5	0.39	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.5	0.26	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.5	0.23	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.5	0.67	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.5	0.32	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.37	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.5	2.7	ug/l	
132-64-9	Dibenzofuran	ND	5.5	0.35	ug/l	
84-74-2	Di-n-butyl phthalate	1.5	5.5	0.37	ug/l	u u
117-84-0	Di-n-octyl phthalate	ND	5.5	0.37	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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	0.85	5.5	0.67	ug/l	J U
131-11-3	Dimethyl phthalate	ND	5.5	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.7	2.2	0.54	ug/l	
118-74-1	Hexachlorobenzene	ND	5.5	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.5	0.47	ug/l	
78-59-1	Isophorone	ND	5.5	0.52	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.5	0.61	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.37	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.35	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.37	ug/l	
98-95-3	Nitrobenzene	ND	5.5	0.34	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.5	2.7	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.5	0.45	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.5	0.67	ug/l	
110-86-1	Pyridine	ND	11	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	60%		15-110%
4165-62-2	Phenol-d5	37%		15-110%
118-79-6	2,4,6-Tribromophenol	117% ^a		15-110%
4165-60-0	Nitrobenzene-d5	84%		30-130%
321-60-8	2-Fluorobiphenyl	87%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

Report of Analysis

3.4
3

Client Sample ID: MW6D-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53041.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.013	ug/l	WJ ↓
208-96-8	Acenaphthylene	ND	0.11	0.031	ug/l	
120-12-7	Anthracene	ND	0.11	0.029	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.055	0.012	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.11	0.014	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.055	0.011	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.013	ug/l	
218-01-9	Chrysene	ND	0.11	0.014	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.017	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.018	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	0.014	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.22	0.013	ug/l	
91-20-3	Naphthalene	ND	0.11	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.055	0.013	ug/l	
129-00-0	Pyrene	ND	0.11	0.022	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	106%		30-130%
321-60-8	2-Fluorobiphenyl	87%		30-130%
1718-51-0	Terphenyl-d14	105%		30-130%

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J = Indicates 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-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-4	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3185.D	1	05/28/11	AP	05/27/11	OP25065	GBK128
Run #2							

	Initial Volume	Final Volume
Run #1	29.5 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.018	0.0083	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	141%		36-173%
460-00-4	Bromofluorobenzene (S)	73%		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-051611-DUP	Date Sampled:	05/16/11
Lab Sample ID:	MC269-5	Date Received:	05/17/11
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106679.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53293.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	WJ
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	3.3	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	WJ
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	WJ
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	

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

J = Indicates 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-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	us
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.1	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	105%	70-130%
2037-26-5	Toluene-D8	105%	107%	70-130%
460-00-4	4-Bromofluorobenzene	114%	101%	70-130%

(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 compound

Report of Analysis

Client Sample ID: MW6B-ROX-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S24307.D	1	05/27/11	PR	05/18/11	OP24955	MSS1029
Run #2							

Run #	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	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	1.4	5.0	0.34	ug/l	✓✓
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	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-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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	0.61	ug/l	J U
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.4	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	60%		15-110%
4165-62-2	Phenol-d5	36%		15-110%
118-79-6	2,4,6-Tribromophenol	118% ^a		15-110%
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	86%		30-130%
1718-51-0	Terphenyl-d14	92%		30-130%

(a) Outside control limits. Associated target analytes are non-detect.

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

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

Report of Analysis

3

Client Sample ID: MW6B-ROX-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8270C BY SIM SW846 3510C	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F53042.D	1	05/27/11	PR	05/18/11	OP24956	MSF2560
Run #2							

Run #	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	0.012	ug/l	WJ
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	J WJ WJ
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	0.044	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	109%		30-130%
321-60-8	2-Fluorobiphenyl	85%		30-130%
1718-51-0	Terphenyl-d14	107%		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: MW6B-ROX-051611-DUP	Date Sampled: 05/16/11
Lab Sample ID: MC269-5	Date Received: 05/17/11
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3186.D	1	05/28/11	AP	05/27/11	OP25065	GBK128
Run #2							

Run #	Initial Volume	Final Volume
Run #1	28.4 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.018	0.0086	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	110%		36-173%		
460-00-4	Bromofluorobenzene (S)	56%		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-ROX-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-6	Date Received:	05/17/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G106673.D	1	05/29/11	AT	n/a	n/a	MSG4305
Run #2	N53294.D	1	05/31/11	JP	n/a	n/a	MSN2006

Run #	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	4.1	ug/l	
107-02-8	Acrolein	ND ^a	25	13	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND ^a	5.0	5.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	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-ROX-051611	Date Sampled:	05/16/11
Lab Sample ID:	MC269-6	Date Received:	05/17/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	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-ROX-051611	Date Sampled: 05/16/11
Lab Sample ID: MC269-6	Date Received: 05/17/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%	105%	70-130%
2037-26-5	Toluene-D8	104%	108%	70-130%
460-00-4	4-Bromofluorobenzene	116%	97%	70-130%

(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 compound

Report of Analysis

Client Sample ID:	TB-ROX-051611		Date Sampled:	05/16/11	
Lab Sample ID:	MC269-6		Date Received:	05/17/11	
Matrix:	AQ - Trip Blank Water		Percent Solids:	n/a	
Method:	SW846 8011 SW846 8011				
Project:	URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK3188.D	1	05/28/11	AP	05/27/11	OP25065	GBK128
Run #2							

	Initial Volume	Final Volume
Run #1	33.4 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.016	0.0073	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	187% ^a		36-173%
460-00-4	Bromofluorobenzene (S)	111%		36-173%

(a) Outside control limits due to possible matrix interference.

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

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

Shell Oil Products Chain Of Custody Record

URS

CO ()
 STORE ()
 VENDOR ()
 LAB VENDOR #

Please Check Appropriate Box:

<input type="checkbox"/> SERVICE	<input type="checkbox"/> RETAIL	<input type="checkbox"/> RETAIL
<input type="checkbox"/> STORAGE	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> RES
<input type="checkbox"/> PIPELINE	<input type="checkbox"/> OTHER	

Print Bill To Contact Name: WENDY PEIN NGPT-2N
 INCIDENT # (ENV SERVICES): 9 1 2 1 0 1 0 1 0
 DATE: 5/16/11
 PAGE: 1 of 1

PROJECT NAME: URS CORPORATION
 100 HIGHLANDS PLAZA DRIVE WEST SUITE 300 ST LOUIS, MO 63110
 PROJECT NO: 314-743-4168 or 314-429-0462

ANALYST: N. SATAM, B. EXCEAN
 LAB USE ONLY: MC269

REQUESTED ANALYSIS: [Blank]
 FIELD NOTES: [Blank]

SPECIAL INSTRUCTIONS OR NOTES:
 [Blank]

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE						NO. OF CONT.	VOC B200B	VOC B011	SVOC B270C	PAH B270LL	PID (ppm)	FIELD NOTES
		DATE	TIME		HCL	INHIB	HTCC	NOISE	OTHER								
	MW6A-Rox-051611	5/16/11	1100	Water	3				2	2	2	X	X	X	X		-1
	MW6B-Rox-051611	5/16/11	1415		3				2	2	2	X	X	X	X		-2
	MW6C-Rox-051611	5/16/11	1442		3				2	2	2	X	X	X	X		-3
	MW6D-Rox-051611	5/16/11	1635		3				2	2	2	X	X	X	X		-4
	MW6E-Rox-051611	5/16/11	1415		3				2	2	2	X	X	X	X		-5
	TB-Rox-051611	5/16			1				1	2		X	X	X	X		-6

RECEIVED BY: [Signature]
 RECEIVED BY: [Signature]
 RECEIVED BY: [Signature]
 DATE: 5/16/11 TIME: 1630
 DATE: 5/17/11 TIME: 9:30
 16A, 3DG
 L800/1.400

4.1
4



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC269 Client: URS Immediate Client Services Action Required: Yes
 Date / Time Received: 5/17/2011 Delivery Method: FedEx
 Project: 900 SOUTH CENTRAL AVE ROXANA IL No. Coolers: 1 Airbill #'s: N/A

Cooler Security Y or N

1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler Temperature Y or N

1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	<u>Infrared gun</u>	
3. Cooler media:	<u>Ice (bag)</u>	

Quality Control Preservation Y N N/A

1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

-2 MW6B-ROX-051611 5/16 14:15 Extra volume received, no ms msd noted

Sample Integrity - Documentation Y or N

1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Condition Y or N

1. Sample rec'd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>	

Sample Integrity - Instructions Y N N/A

1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.1
4



Sample Receipt Summary - Problem Resolution

Accutest Job Number: MC269

CSR: Jeremy Vienneau

Response Date 5/17/2011

Response: Client advised Accutest that MW6B-ROX-051611 is not an MS/MSD, but it is a Duplicate. Email is in file.

4.1
4

Accutest Laboratories
V 508 461 6200

495 Technology Center West, Bldg One
F 508 481 7753

Marlborough, MA
www.accutest.com

MC269: Chain of Custody
Page 3 of 3

5

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC269

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC269-1 Collected: 16-MAY-11 11:00 By: MSBE Received: 17-MAY-11 By: JB						
MW6A-ROX-051611						
MC269-1	SW846 8270C BY SIM	27-MAY-11 12:54	PR	18-MAY-11 AJ		B8270SIMPAH
MC269-1	SW846 8270C	27-MAY-11 18:12	PR	18-MAY-11 AJ		AB8270SL
MC269-1	SW846 8011	27-MAY-11 23:05	AP	27-MAY-11 FC		V8011EDB
MC269-1	SW846 8260B	29-MAY-11 14:37	AT			V8260SL
MC269-1	SW846 8260B	31-MAY-11 16:37	JP			V8260SL
MC269-2 Collected: 16-MAY-11 14:15 By: MSBE Received: 17-MAY-11 By: JB						
MW6B-ROX-051611						
MC269-2	SW846 8270C BY SIM	27-MAY-11 13:24	PR	18-MAY-11 AJ		B8270SIMPAH
MC269-2	SW846 8270C	27-MAY-11 18:42	PR	18-MAY-11 AJ		AB8270SL
MC269-2	SW846 8011	27-MAY-11 23:31	AP	27-MAY-11 FC		V8011EDB
MC269-2	SW846 8260B	29-MAY-11 15:05	AT			V8260SL
MC269-2	SW846 8260B	31-MAY-11 17:05	JP			V8260SL
MC269-3 Collected: 16-MAY-11 11:45 By: MSBE Received: 17-MAY-11 By: JB						
MW6C-ROX-051611						
MC269-3	SW846 8270C BY SIM	27-MAY-11 13:56	PR	18-MAY-11 AJ		B8270SIMPAH
MC269-3	SW846 8270C	27-MAY-11 19:12	PR	18-MAY-11 AJ		AB8270SL
MC269-3	SW846 8011	27-MAY-11 23:57	AP	27-MAY-11 FC		V8011EDB
MC269-3	SW846 8260B	29-MAY-11 15:33	AT			V8260SL
MC269-3	SW846 8260B	31-MAY-11 17:33	JP			V8260SL
MC269-4 Collected: 16-MAY-11 16:55 By: MSBE Received: 17-MAY-11 By: JB						
MW6D-ROX-051611						
MC269-4	SW846 8270C BY SIM	27-MAY-11 14:27	PR	18-MAY-11 AJ		B8270SIMPAH
MC269-4	SW846 8270C	27-MAY-11 19:42	PR	18-MAY-11 AJ		AB8270SL
MC269-4	SW846 8011	28-MAY-11 00:22	AP	27-MAY-11 FC		V8011EDB
MC269-4	SW846 8260B	29-MAY-11 16:01	AT			V8260SL
MC269-4	SW846 8260B	31-MAY-11 18:01	JP			V8260SL
MC269-5 Collected: 16-MAY-11 14:15 By: MSBE Received: 17-MAY-11 By: JB						
MW6B-ROX-051611-DUP						
MC269-5	SW846 8270C BY SIM	27-MAY-11 14:52	PR	18-MAY-11 AJ		B8270SIMPAH

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC269

URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Project No: INC#97216640 SAP#340061

4.2
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC269-5	SW846 8270C	27-MAY-11 20:12	PR	18-MAY-11	AJ	AB8270SL
MC269-5	SW846 8011	28-MAY-11 00:48	AP	27-MAY-11	FC	V8011EDB
MC269-5	SW846 8260B	29-MAY-11 16:29	AT			V8260SL
MC269-5	SW846 8260B	31-MAY-11 18:29	JP			V8260SL

MC269-6 Collected: 16-MAY-11 00:00 By: MSBE Received: 17-MAY-11 By: JB
 TB-ROX-051611

MC269-6	SW846 8011	28-MAY-11 01:40	AP	27-MAY-11	FC	V8011EDB
MC269-6	SW846 8260B	29-MAY-11 13:42	AT			V8260SL
MC269-6	SW846 8260B	31-MAY-11 18:58	JP			V8260SL

Accutest Internal Chain of Custody

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Received: 05/17/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC269-1.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC269-1.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC269-1.3	VOC Ref #3	Ali Tand	05/29/11 13:06	Retrieve from Storage
MC269-1.3	Ali Tand	GCMMSG	05/29/11 13:06	Load on Instrument
MC269-1.4	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-1.4	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-1.4	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-1.4	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-1.5	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-1.5	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-1.5	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-1.5	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-1.6	VOC Ref #3	Ali Tand	05/29/11 12:12	Retrieve from Storage
MC269-1.6	Ali Tand	GCMMSG	05/29/11 12:12	Load on Instrument
MC269-1.7	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage
MC269-1.7	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-1.7	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-1.7	Francisco Castellanos		05/27/11 20:33	Depleted
MC269-2.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC269-2.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC269-2.3	VOC Ref #3	Ali Tand	05/29/11 13:06	Retrieve from Storage
MC269-2.3	Ali Tand	GCMMSG	05/29/11 13:06	Load on Instrument
MC269-2.4	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-2.4	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-2.4	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-2.4	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-2.5	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-2.5	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-2.5	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-2.5	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-2.6	VOC Ref #3	Ali Tand	05/29/11 12:12	Retrieve from Storage
MC269-2.6	Ali Tand	GCMMSG	05/29/11 12:12	Load on Instrument
MC269-2.7	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Received: 05/17/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC269-2.7	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-2.7	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-2.7	Francisco Castellanos		05/27/11 20:33	Depleted
MC269-3.2	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC269-3.2	Mahmoud Afzali		05/19/11 08:17	Depleted
MC269-3.3	VOC Ref #3	Ali Tand	05/29/11 12:12	Retrieve from Storage
MC269-3.3	Ali Tand	GCMMSG	05/29/11 12:12	Load on Instrument
MC269-3.4	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-3.4	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-3.4	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-3.4	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-3.5	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-3.5	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-3.5	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-3.5	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-3.6	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage
MC269-3.6	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-3.6	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-3.6	Francisco Castellanos		05/27/11 20:33	Depleted
MC269-4.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC269-4.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC269-4.4	VOC Ref #3	Ali Tand	05/29/11 12:12	Retrieve from Storage
MC269-4.4	Ali Tand	GCMMSG	05/29/11 12:12	Load on Instrument
MC269-4.5	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-4.5	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-4.5	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-4.5	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-4.5	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-4.5	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-4.5	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-4.5	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-4.6	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage
MC269-4.6	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-4.6	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-4.6	Francisco Castellanos		05/27/11 20:33	Depleted

Accutest Internal Chain of Custody

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL
 Received: 05/17/11

4.3
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC269-5.1	Walk In Ref #22	Mahmoud Afzali	05/18/11 08:50	Retrieve from Storage
MC269-5.1	Mahmoud Afzali		05/19/11 08:17	Depleted
MC269-5.3	VOC Ref #3	Ali Tand	05/29/11 13:06	Retrieve from Storage
MC269-5.3	Ali Tand	GCMMSG	05/29/11 13:06	Load on Instrument
MC269-5.4	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-5.4	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-5.4	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-5.4	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-5.5	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-5.5	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-5.5	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-5.5	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-5.6	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage
MC269-5.6	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-5.6	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-5.6	Francisco Castellanos		05/27/11 20:33	Depleted
MC269-5.7	VOC Ref #3	Ali Tand	05/29/11 12:12	Retrieve from Storage
MC269-5.7	Ali Tand	GCMMSG	05/29/11 12:12	Load on Instrument
MC269-6.1	VOC Ref #3	Dana Tyron	05/27/11 10:56	Retrieve from Storage
MC269-6.1	Dana Tyron	GCMMSM	05/27/11 10:57	Load on Instrument
MC269-6.1	GCMMSM	Dana Tyron	05/29/11 12:29	Unload from Instrument
MC269-6.1	Dana Tyron	VOC Ref #3	05/29/11 12:29	Return to Storage
MC269-6.1	VOC Ref #3	Dana Tyron	05/31/11 11:49	Retrieve from Storage
MC269-6.1	Dana Tyron	GCMMSM	05/31/11 11:49	Load on Instrument
MC269-6.1	GCMMSM	Dana Tyron	06/02/11 11:21	Unload from Instrument
MC269-6.1	Dana Tyron	VOC Ref #3	06/02/11 11:21	Return to Storage
MC269-6.2	VOC Ref #3	Francisco Castellanos	05/24/11 11:33	Retrieve from Storage
MC269-6.2	Francisco Castellanos	VOC Ref #3	05/24/11 12:43	Return to Storage
MC269-6.2	VOC Ref #3	Francisco Castellanos	05/27/11 11:24	Retrieve from Storage
MC269-6.2	Francisco Castellanos		05/27/11 20:33	Depleted

GC/MS Volatiles

5

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

Page 1 of 3

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-MB	G106671.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.1	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.3	ug/l	
71-43-2	Benzene	ND	0.50	0.46	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.99	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.92	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.49	ug/l	
75-25-2	Bromoform	ND	1.0	0.71	ug/l	
74-83-9	Bromomethane	ND	2.0	1.3	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.7	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	1.1	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.82	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.62	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.58	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.44	ug/l	
75-00-3	Chloroethane	ND	2.0	0.32	ug/l	
67-66-3	Chloroform	ND	1.0	0.58	ug/l	
74-87-3	Chloromethane	ND	2.0	0.71	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	1.1	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.98	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.6	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.89	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.41	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.44	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.42	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.33	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.44	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.80	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.71	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.75	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.97	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.78	ug/l	

5.1.1

5

Method Blank Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-MB	G106671.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.41	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.49	ug/l	
123-91-1	1,4-Dioxane	ND	25	25	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.70	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.80	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.2	ug/l	
591-78-6	2-Hexanone	ND	5.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.94	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.88	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.61	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	0.76	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.52	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.89	ug/l	
100-42-5	Styrene	ND	5.0	0.97	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.83	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.79	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.59	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	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.55	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.74	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.75	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.98	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.90	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.82	ug/l	
	m,p-Xylene	ND	1.0	0.90	ug/l	
95-47-6	o-Xylene	ND	1.0	0.32	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.32	ug/l	

5.1.1

5

Method Blank Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-MB	G106671.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	70-130%
2037-26-5	Toluene-D8	105%	70-130%
460-00-4	4-Bromofluorobenzene	116%	70-130%

5.1.1

5

Method Blank Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2006-MB	N53285.D	1	05/31/11	JP	n/a	n/a	MSN2006

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Result	RL	MDL	Units	Q
107-02-8	Acrolein	ND	25	13	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	5.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	101% 70-130%
2037-26-5	Toluene-D8	108% 70-130%
460-00-4	4-Bromofluorobenzene	98% 70-130%

5.1.2
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-BS	G106669.D	1	05/29/11	AT	n/a	n/a	MSG4305
MSG4305-BSD	G106670.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	28.3	57* a	24.7	49* a	14	70-130/25
107-13-1	Acrylonitrile	50	43.5	87	41.9	84	4	70-130/25
71-43-2	Benzene	50	52.1	104	52.0	104	0	70-130/25
108-86-1	Bromobenzene	50	56.5	113	55.7	111	1	70-130/25
74-97-5	Bromochloromethane	50	59.1	118	59.8	120	1	70-130/25
75-27-4	Bromodichloromethane	50	55.8	112	56.0	112	0	70-130/25
75-25-2	Bromoform	50	65.2	130	64.0	128	2	70-130/25
74-83-9	Bromomethane	50	51.2	102	51.9	104	1	70-130/25
78-93-3	2-Butanone (MEK)	50	42.2	84	39.5	79	7	70-130/25
104-51-8	n-Butylbenzene	50	55.2	110	54.3	109	2	70-130/25
135-98-8	sec-Butylbenzene	50	55.8	112	54.7	109	2	70-130/25
98-06-6	tert-Butylbenzene	50	53.9	108	52.7	105	2	70-130/25
75-15-0	Carbon disulfide	50	52.5	105	53.2	106	1	70-130/25
56-23-5	Carbon tetrachloride	50	58.6	117	59.2	118	1	70-130/25
108-90-7	Chlorobenzene	50	58.7	117	58.2	116	1	70-130/25
75-00-3	Chloroethane	50	50.6	101	50.1	100	1	70-130/25
67-66-3	Chloroform	50	53.8	108	53.8	108	0	70-130/25
74-87-3	Chloromethane	50	37.6	75	33.8	68* a	11	70-130/25
95-49-8	o-Chlorotoluene	50	52.9	106	52.0	104	2	70-130/25
106-43-4	p-Chlorotoluene	50	53.5	107	53.2	106	1	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	50.0	100	50.8	102	2	70-130/25
124-48-1	Dibromochloromethane	50	60.7	121	59.6	119	2	70-130/25
106-93-4	1,2-Dibromoethane	50	61.0	122	59.3	119	3	70-130/25
95-50-1	1,2-Dichlorobenzene	50	56.3	113	57.3	115	2	70-130/25
541-73-1	1,3-Dichlorobenzene	50	56.5	113	56.1	112	1	70-130/25
106-46-7	1,4-Dichlorobenzene	50	56.5	113	55.4	111	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	64.9	130	64.3	129	1	70-130/25
75-34-3	1,1-Dichloroethane	50	48.1	96	48.5	97	1	70-130/25
107-06-2	1,2-Dichloroethane	50	51.7	103	51.4	103	1	70-130/25
75-35-4	1,1-Dichloroethene	50	52.4	105	52.8	106	1	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	50.7	101	51.7	103	2	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	52.0	104	52.9	106	2	70-130/25
78-87-5	1,2-Dichloropropane	50	50.8	102	50.6	101	0	70-130/25
142-28-9	1,3-Dichloropropane	50	54.2	108	54.3	109	0	70-130/25
594-20-7	2,2-Dichloropropane	50	54.9	110	54.6	109	1	70-130/25
563-58-6	1,1-Dichloropropene	50	54.9	110	53.9	108	2	70-130/25

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-BS	G106669.D	1	05/29/11	AT	n/a	n/a	MSG4305
MSG4305-BSD	G106670.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

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	56.9	114	56.0	112	2	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	57.8	116	57.5	115	1	70-130/25
123-91-1	1,4-Dioxane	250	225	90	251	100	11	70-130/25
97-63-2	Ethyl methacrylate	50	50.9	102	51.5	103	1	77-137/25
100-41-4	Ethylbenzene	50	57.6	115	56.5	113	2	70-130/25
87-68-3	Hexachlorobutadiene	50	65.9	132* a	64.4	129	2	70-130/25
591-78-6	2-Hexanone	50	28.1	56* a	26.0	52* a	8	70-130/25
98-82-8	Isopropylbenzene	50	54.5	109	53.9	108	1	70-130/25
99-87-6	p-Isopropyltoluene	50	56.3	113	56.0	112	1	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	51.3	103	53.0	106	3	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	40.2	80	39.5	79	2	70-130/25
74-95-3	Methylene bromide	50	57.5	115	57.9	116	1	70-130/25
75-09-2	Methylene chloride	50	49.6	99	50.9	102	3	70-130/25
91-20-3	Naphthalene	50	46.9	94	46.5	93	1	70-130/25
103-65-1	n-Propylbenzene	50	54.1	108	53.1	106	2	70-130/25
100-42-5	Styrene	50	60.9	122	60.1	120	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	60.6	121	59.2	118	2	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	50.3	101	49.8	100	1	70-130/25
127-18-4	Tetrachloroethene	50	62.1	124	60.2	120	3	70-130/25
108-88-3	Toluene	50	57.4	115	56.9	114	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	52.5	105	53.0	106	1	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	53.1	106	52.7	105	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	57.3	115	57.0	114	1	70-130/25
79-00-5	1,1,2-Trichloroethane	50	58.0	116	58.6	117	1	70-130/25
79-01-6	Trichloroethene	50	57.8	116	56.4	113	2	70-130/25
75-69-4	Trichlorofluoromethane	50	60.9	122	60.0	120	1	70-130/25
96-18-4	1,2,3-Trichloropropane	50	48.9	98	48.6	97	1	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	55.9	112	55.8	112	0	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	55.9	112	55.3	111	1	70-130/25
108-05-4	Vinyl Acetate	50	40.6	81	42.5	85	5	70-130/25
75-01-4	Vinyl chloride	50	44.6	89	44.3	89	1	70-130/25
	m,p-Xylene	100	119	119	118	118	1	70-130/25
95-47-6	o-Xylene	50	59.5	119	58.3	117	2	70-130/25
1330-20-7	Xylene (total)	150	179	119	176	117	2	70-130/25

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4305-BS	G106669.D	1	05/29/11	AT	n/a	n/a	MSG4305
MSG4305-BSD	G106670.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	97%	97%	70-130%
2037-26-5	Toluene-D8	106%	106%	70-130%
460-00-4	4-Bromofluorobenzene	98%	102%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

5.2.1

5

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN2006-BS	N53282.D	1	05/31/11	JP	n/a	n/a	MSN2006
MSN2006-BSD	N53283.D	1	05/31/11	JP	n/a	n/a	MSN2006

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
107-02-8	Acrolein	250	684	274* a	686	274* a	0	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	29.6	59* b	22.1	44* b	29* c	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	103%	101%	70-130%
2037-26-5	Toluene-D8	106%	107%	70-130%
460-00-4	4-Bromofluorobenzene	98%	98%	70-130%

- (a) Outside control limits. Associated samples are non-detect for this compound.
- (b) Outside control limits. Blank Spike meets program technical requirements.
- (c) Outside control limits. Individual spike recoveries within acceptance limits.

5.2.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC280-1MS	G106684.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1MSD	G106685.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1	G106680.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	MC280-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	18.4	37* a	18.6	37* a	1	70-130/30
107-13-1	Acrylonitrile	ND	50	41.9	84	44.0	88	5	70-130/30
71-43-2	Benzene	ND	50	51.2	102	52.6	105	3	70-130/30
108-86-1	Bromobenzene	ND	50	53.5	107	55.1	110	3	70-130/30
74-97-5	Bromochloromethane	ND	50	58.5	117	60.4	121	3	70-130/30
75-27-4	Bromodichloromethane	ND	50	53.6	107	54.7	109	2	70-130/30
75-25-2	Bromoform	ND	50	57.4	115	57.7	115	1	70-130/30
74-83-9	Bromomethane	ND	50	52.0	104	54.8	110	5	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	34.4	69* a	35.0	70	2	70-130/30
104-51-8	n-Butylbenzene	ND	50	49.1	98	51.4	103	5	70-130/30
135-98-8	sec-Butylbenzene	ND	50	51.3	103	53.6	107	4	70-130/30
98-06-6	tert-Butylbenzene	ND	50	50.1	100	52.4	105	4	70-130/30
75-15-0	Carbon disulfide	ND	50	39.8	80	42.1	84	6	70-130/30
56-23-5	Carbon tetrachloride	ND	50	57.5	115	58.1	116	1	70-130/30
108-90-7	Chlorobenzene	ND	50	57.6	115	57.5	115	0	70-130/30
75-00-3	Chloroethane	ND	50	49.7	99	51.3	103	3	70-130/30
67-66-3	Chloroform	ND	50	53.8	108	56.2	112	4	70-130/30
74-87-3	Chloromethane	ND	50	37.7	75	39.5	79	5	70-130/30
95-49-8	o-Chlorotoluene	ND	50	50.1	100	51.7	103	3	70-130/30
106-43-4	p-Chlorotoluene	ND	50	50.5	101	51.4	103	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	46.3	93	49.6	99	7	70-130/30
124-48-1	Dibromochloromethane	ND	50	54.5	109	56.5	113	4	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	58.5	117	59.5	119	2	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	53.9	108	55.3	111	3	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	53.3	107	54.9	110	3	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	52.5	105	53.9	108	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	62.5	125	66.1	132* a	6	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	48.7	97	50.0	100	3	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	51.2	102	51.8	104	1	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	51.0	102	52.6	105	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	51.4	103	52.9	106	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	51.2	102	53.4	107	4	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	51.0	102	50.7	101	1	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	52.6	105	53.9	108	2	70-130/30
594-20-7	2,2-Dichloropropane	ND	50	50.5	101	52.3	105	4	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	53.1	106	54.9	110	3	70-130/30

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC280-1MS	G106684.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1MSD	G106685.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1	G106680.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	MC280-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND	50	52.4	105	54.1	108	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	50	53.8	108	55.4	111	3	70-130/30
123-91-1	1,4-Dioxane	ND	250	233	93	223	89	4	70-130/30
97-63-2	Ethyl methacrylate	ND	50	48.8	98	48.9	98	0	72-139/30
100-41-4	Ethylbenzene	ND	50	55.8	112	56.9	114	2	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	55.8	112	58.4	117	5	70-130/30
591-78-6	2-Hexanone	ND	50	23.3	47* a	23.7	47* a	2	70-130/30
98-82-8	Isopropylbenzene	ND	50	51.8	104	52.6	105	2	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	52.3	105	53.7	107	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	50.8	102	52.7	105	4	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	40.0	80	40.5	81	1	70-130/30
74-95-3	Methylene bromide	ND	50	58.0	116	57.6	115	1	70-130/30
75-09-2	Methylene chloride	ND	50	49.4	99	51.4	103	4	70-130/30
91-20-3	Naphthalene	ND	50	41.5	83	44.5	89	7	70-130/30
103-65-1	n-Propylbenzene	ND	50	50.7	101	52.1	104	3	70-130/30
100-42-5	Styrene	ND	50	54.9	110	56.5	113	3	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	58.8	118	60.6	121	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	48.0	96	49.1	98	2	70-130/30
127-18-4	Tetrachloroethene	ND	50	59.4	119	61.1	122	3	70-130/30
108-88-3	Toluene	ND	50	56.2	112	57.8	116	3	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	44.7	89	49.3	99	10	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	45.8	92	48.7	97	6	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	57.3	115	59.1	118	3	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	58.0	116	57.8	116	0	70-130/30
79-01-6	Trichloroethene	ND	50	56.5	113	57.5	115	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	59.1	118	61.3	123	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	44.3	89	45.2	90	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	51.4	103	52.8	106	3	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	51.6	103	53.0	106	3	70-130/30
108-05-4	Vinyl Acetate	ND	50	37.8	76	38.1	76	1	70-130/30
75-01-4	Vinyl chloride	ND	50	44.6	89	46.4	93	4	70-130/30
	m,p-Xylene	ND	100	115	115	117	117	2	70-130/30
95-47-6	o-Xylene	ND	50	57.6	115	59.2	118	3	70-130/30
1330-20-7	Xylene (total)	ND	150	173	115	177	118	2	70-130/30

5.3.1

5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC280-1MS	G106684.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1MSD	G106685.D	1	05/29/11	AT	n/a	n/a	MSG4305
MC280-1	G106680.D	1	05/29/11	AT	n/a	n/a	MSG4305

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Surrogate Recoveries	MS	MSD	MC280-1	Limits
1868-53-7	Dibromofluoromethane	96%	99%	98%	70-130%
2037-26-5	Toluene-D8	105%	105%	106%	70-130%
460-00-4	4-Bromofluorobenzene	98%	100%	117%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

5.3.1

5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC551-10MS	N53302.D	5	05/31/11	JP	n/a	n/a	MSN2006
MC551-10MSD	N53303.D	5	05/31/11	JP	n/a	n/a	MSN2006
MC551-10	N53301.D	1	05/31/11	JP	n/a	n/a	MSN2006

The QC reported here applies to the following samples:

Method: SW846 8260B

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	MC551-10 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
107-02-8	Acrolein	ND	1250	3300	264* ^a	3310	265* ^a	0	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND	250	138	55* ^b	144	58* ^b	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	MC551-10	Limits
1868-53-7	Dibromofluoromethane	106%	103%	106%	70-130%
2037-26-5	Toluene-D8	109%	107%	107%	70-130%
460-00-4	4-Bromofluorobenzene	97%	98%	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.

5.3.2

5

Volatile Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSG4305-CC4240	Injection Date:	05/29/11
Lab File ID:	G106668.D	Injection Time:	11:19
Instrument ID:	GCMSC	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	68142	9.12	96553	10.00	47956	13.28	51179	15.85	22228	6.67
Upper Limit ^a	136284	9.62	193106	10.50	95912	13.78	102358	16.35	44456	7.17
Lower Limit ^b	34071	8.62	48277	9.50	23978	12.78	25590	15.35	11114	6.17

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSG4305-BS	68684	9.12	96301	10.00	47414	13.28	51043	15.85	21528	6.68
MSG4305-BSD	67424	9.12	95515	10.00	47750	13.28	50936	15.85	21793	6.68
MSG4305-MB	67627	9.13	95254	10.00	45476	13.28	40700	15.85	21181	6.68
MC269-6	67420	9.13	94913	10.00	44936	13.28	40128	15.85	20748	6.68
ZZZZZZ	66403	9.13	92364	10.00	44741	13.28	40147	15.85	20676	6.68
MC269-1	64609	9.13	91627	10.00	44399	13.28	41021	15.85	21888	6.68
MC269-2	65918	9.13	92892	10.00	44632	13.28	39849	15.85	20004	6.68
MC269-3	64040	9.13	89810	10.00	43319	13.28	38307	15.85	19470	6.68
MC269-4	64700	9.13	91504	10.01	43935	13.28	39014	15.85	19695	6.68
MC269-5	64182	9.13	89909	10.00	43572	13.28	38943	15.85	19291	6.68
MC280-1	64868	9.13	90518	10.00	43520	13.28	38302	15.85	20134	6.68
ZZZZZZ	64127	9.13	90497	10.01	43820	13.28	38354	15.85	18980	6.68
ZZZZZZ	64831	9.13	90808	10.01	43540	13.28	38154	15.86	19937	6.68
ZZZZZZ	63497	9.13	89021	10.01	44022	13.28	38076	15.85	19633	6.68
MC280-1MS	65135	9.12	92417	10.00	45980	13.28	50529	15.85	21039	6.67
MC280-1MSD	64727	9.12	92802	10.00	46313	13.28	50333	15.85	21302	6.67
ZZZZZZ	66491	9.13	92996	10.00	46045	13.28	49538	15.85	24559	6.68
ZZZZZZ	68044	9.13	96207	10.00	46911	13.28	47490	15.85	20932	6.68
ZZZZZZ	69216	9.13	97558	10.00	46912	13.28	48318	15.85	22510	6.68
ZZZZZZ	68820	9.13	97183	10.00	47814	13.28	50898	15.85	22807	6.68
ZZZZZZ	70198	9.13	99490	10.00	49029	13.28	51863	15.85	21721	6.68
ZZZZZZ	70050	9.13	98022	10.00	48654	13.28	52169	15.85	22879	6.68
ZZZZZZ	70587	9.12	97522	10.00	48818	13.28	53013	15.85	23388	6.68
ZZZZZZ	70677	9.13	97976	10.00	47481	13.28	43983	15.85	21043	6.67

- 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.

5.4.1
5

Volatile Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSN2006-CC1974	Injection Date:	05/31/11
Lab File ID:	N53281.D	Injection Time:	12:51
Instrument ID:	GCMSN	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	153866	8.60	250939	9.46	134447	12.70	115921	15.26	57488	6.18
Upper Limit ^a	307732	9.10	501878	9.96	268894	13.20	231842	15.76	114976	6.68
Lower Limit ^b	76933	8.10	125470	8.96	67224	12.20	57961	14.76	28744	5.68

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSN2006-BS	162714	8.60	260042	9.46	144925	12.70	118382	15.26	56113	6.18
MSN2007-BS	162714	8.60	260042	9.46	144925	12.70	118382	15.26	56113	6.18
MSN2006-BSD	162985	8.60	258950	9.46	144488	12.70	117867	15.26	54923	6.18
MSN2007-BSD	162985	8.60	258950	9.46	144488	12.70	117867	15.26	54923	6.18
MSN2006-MB	157866	8.60	251823	9.46	132310	12.70	106144	15.26	55354	6.19
MSN2007-MB	157866	8.60	251823	9.46	132310	12.70	106144	15.26	55354	6.19
MC379-8	155757	8.60	248532	9.46	130650	12.70	104141	15.26	55536	6.18
MC379-8DUP	156334	8.60	254461	9.46	133450	12.70	107307	15.26	54379	6.19
MC269-1	152513	8.60	246936	9.46	129654	12.70	105354	15.26	51127	6.18
MC269-2	151250	8.60	246069	9.46	131119	12.70	102345	15.26	49593	6.18
MC269-3	149793	8.60	246747	9.46	130441	12.70	102630	15.26	49564	6.19
MC269-4	148121	8.60	240976	9.46	128004	12.70	100631	15.26	42195	6.19
MC269-5	147851	8.60	242689	9.46	128926	12.70	100349	15.26	50034	6.18
MC269-6	146095	8.60	237840	9.46	126357	12.70	100898	15.26	48557	6.19
ZZZZZZ	143779	8.60	233664	9.46	126070	12.70	96936	15.26	48106	6.19
ZZZZZZ	141181	8.60	233944	9.46	124416	12.70	97761	15.26	46089	6.18
ZZZZZZ	146165	8.60	238185	9.46	127286	12.70	104837	15.26	49609	6.18
ZZZZZZ	147755	8.60	241038	9.46	128898	12.70	103801	15.27	46048	6.18
ZZZZZZ	147041	8.60	242338	9.46	128512	12.70	106488	15.26	55191	6.18
ZZZZZZ	149036	8.60	243692	9.46	130327	12.70	104879	15.26	56985	6.18
MC551-10	149161	8.60	245552	9.46	130577	12.70	103207	15.27	53368	6.19
MC551-10MS	150941	8.60	246898	9.46	138925	12.70	115479	15.26	53020	6.18
MC551-10MSD	156343	8.60	250834	9.46	141810	12.70	114972	15.26	54859	6.18
ZZZZZZ	158701	8.60	253902	9.46	137143	12.70	112806	15.26	55634	6.19
ZZZZZZ	165471	8.60	259399	9.46	137614	12.70	118145	15.26	60642	6.18

- 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.

5.4.2
5

Volatile Surrogate Recovery Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC269-1	N53289.D	103.0	108.0	100.0
MC269-1	G106675.D	98.0	105.0	115.0
MC269-2	N53290.D	104.0	107.0	100.0
MC269-2	G106676.D	98.0	105.0	115.0
MC269-3	N53291.D	107.0	107.0	98.0
MC269-3	G106677.D	97.0	104.0	113.0
MC269-4	N53292.D	105.0	108.0	99.0
MC269-4	G106678.D	98.0	103.0	115.0
MC269-5	N53293.D	105.0	107.0	101.0
MC269-5	G106679.D	100.0	105.0	114.0
MC269-6	N53294.D	105.0	108.0	97.0
MC269-6	G106673.D	94.0	104.0	116.0
MC280-1MS	G106684.D	96.0	105.0	98.0
MC280-1MSD	G106685.D	99.0	105.0	100.0
MC551-10MS	N53302.D	106.0	109.0	97.0
MC551-10MSD	N53303.D	103.0	107.0	98.0
MSG4305-BS	G106669.D	97.0	106.0	98.0
MSG4305-BSD	G106670.D	97.0	106.0	102.0
MSG4305-MB	G106671.D	98.0	105.0	116.0
MSN2006-BS	N53282.D	103.0	106.0	98.0
MSN2006-BSD	N53283.D	101.0	107.0	98.0
MSN2006-MB	N53285.D	101.0	108.0	98.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.5.1
5

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: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MB	I72777.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
100-51-6	Benzyl Alcohol	ND	10	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	0.29	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	0.72	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1.8	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	

6.1.1

6

Method Blank Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MB	I72777.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.56	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	2.5	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	58%	15-110%
4165-62-2	Phenol-d5	37%	15-110%
118-79-6	2,4,6-Tribromophenol	84%	15-110%
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	85%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

6.1.1

6

Method Blank Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-MB	F53005.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

6.1.2
6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.012	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.028	ug/l	
120-12-7	Anthracene	ND	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.011	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.013	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	0.0096	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.015	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.011	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.016	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.016	ug/l	
86-73-7	Fluorene	ND	0.10	0.044	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.013	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	0.012	ug/l	
91-20-3	Naphthalene	ND	0.10	0.011	ug/l	
85-01-8	Phenanthrene	ND	0.050	0.012	ug/l	
129-00-0	Pyrene	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	96%	30-130%
321-60-8	2-Fluorobiphenyl	83%	30-130%
1718-51-0	Terphenyl-d14	103%	30-130%

Blank Spike Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-BS	I72778.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	51.6	52	30-130
95-57-8	2-Chlorophenol	100	90.4	90	30-130
59-50-7	4-Chloro-3-methyl phenol	100	96.8	97	30-130
120-83-2	2,4-Dichlorophenol	100	87.8	88	30-130
105-67-9	2,4-Dimethylphenol	100	84.3	84	30-130
51-28-5	2,4-Dinitrophenol	100	89.7	90	30-130
534-52-1	4,6-Dinitro-o-cresol	100	106	106	30-130
95-48-7	2-Methylphenol	100	88.4	88	30-130
	3&4-Methylphenol	200	209	105	30-130
88-75-5	2-Nitrophenol	100	93.8	94	30-130
100-02-7	4-Nitrophenol	100	60.8	61	30-130
87-86-5	Pentachlorophenol	100	107	107	30-130
108-95-2	Phenol	100	47.1	47	30-130
95-95-4	2,4,5-Trichlorophenol	100	91.1	91	30-130
88-06-2	2,4,6-Trichlorophenol	100	94.8	95	30-130
62-53-3	Aniline	50	40.8	82	40-140
101-55-3	4-Bromophenyl phenyl ether	50	45.9	92	40-140
85-68-7	Butyl benzyl phthalate	50	47.8	96	40-140
100-51-6	Benzyl Alcohol	50	40.8	82	40-140
91-58-7	2-Chloronaphthalene	50	43.6	87	40-140
106-47-8	4-Chloroaniline	50	23.2	46	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	42.3	85	40-140
111-44-4	bis(2-Chloroethyl)ether	50	45.3	91	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.4	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	45.1	90	40-140
122-66-7	1,2-Diphenylhydrazine	50	39.5	79	40-140
121-14-2	2,4-Dinitrotoluene	50	45.8	92	40-140
606-20-2	2,6-Dinitrotoluene	50	43.4	87	40-140
91-94-1	3,3'-Dichlorobenzidine	50	24.4	49	40-140
132-64-9	Dibenzofuran	50	41.4	83	40-140
84-74-2	Di-n-butyl phthalate	50	47.1	94	40-140
117-84-0	Di-n-octyl phthalate	50	47.3	95	40-140
84-66-2	Diethyl phthalate	50	48.9	98	40-140
131-11-3	Dimethyl phthalate	50	45.1	90	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	49.4	99	40-140
118-74-1	Hexachlorobenzene	50	43.3	87	40-140

Blank Spike Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-BS	I72778.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	50	28.0	56	40-140
67-72-1	Hexachloroethane	50	44.6	89	40-140
78-59-1	Isophorone	50	38.9	78	40-140
90-12-0	1-Methylnaphthalene	100	78.2	78	40-140
88-74-4	2-Nitroaniline	50	46.7	93	40-140
99-09-2	3-Nitroaniline	50	29.3	59	40-140
100-01-6	4-Nitroaniline	50	41.4	83	40-140
98-95-3	Nitrobenzene	50	40.3	81	40-140
62-75-9	n-Nitrosodimethylamine	50	27.5	55	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	45.8	92	40-140
86-30-6	N-Nitrosodiphenylamine	50	44.3	89	40-140
110-86-1	Pyridine	50	27.0	54	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	66%	15-110%
4165-62-2	Phenol-d5	45%	15-110%
118-79-6	2,4,6-Tribromophenol	88%	15-110%
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	91%	30-130%
1718-51-0	Terphenyl-d14	97%	30-130%

6.2.1

6

Blank Spike Summary

Job Number: MC269
Account: SHELLWIC Shell Oil
Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-BS	F53006.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	43.7	87	40-140
208-96-8	Acenaphthylene	50	40.5	81	40-140
120-12-7	Anthracene	50	40.7	81	40-140
56-55-3	Benzo(a)anthracene	50	52.6	105	40-140
50-32-8	Benzo(a)pyrene	50	27.7	55	40-140
205-99-2	Benzo(b)fluoranthene	50	30.5	61	40-140
191-24-2	Benzo(g,h,i)perylene	50	37.5	75	40-140
207-08-9	Benzo(k)fluoranthene	50	24.0	48	40-140
218-01-9	Chrysene	50	41.3	83	40-140
53-70-3	Dibenzo(a,h)anthracene	50	43.8	88	40-140
206-44-0	Fluoranthene	50	46.3	93	40-140
86-73-7	Fluorene	50	51.2	102	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	40.2	80	40-140
91-57-6	2-Methylnaphthalene	50	51.3	103	40-140
91-20-3	Naphthalene	50	45.1	90	40-140
85-01-8	Phenanthrene	50	42.1	84	40-140
129-00-0	Pyrene	50	46.4	93	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	110%	30-130%
321-60-8	2-Fluorobiphenyl	84%	30-130%
1718-51-0	Terphenyl-d14	115%	30-130%

6.2.2

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MS	I72779.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
OP24955-MSD	I72780.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
MC308-1	I72781.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	MC308-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	49.3	49	49.7	50	1	30-130/20
95-57-8	2-Chlorophenol	ND	100	87.1	87	87.4	87	0	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	100	92.2	92	91.4	91	1	30-130/20
120-83-2	2,4-Dichlorophenol	ND	100	84.7	85	84.6	85	0	30-130/20
105-67-9	2,4-Dimethylphenol	ND	100	79.9	80	80.0	80	0	30-130/20
51-28-5	2,4-Dinitrophenol	ND	100	90.9	91	91.0	91	0	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	84.5	85	83.6	84	1	30-130/20
	3&4-Methylphenol	ND	200	203	102	200	100	1	30-130/20
88-75-5	2-Nitrophenol	ND	100	91.5	92	89.8	90	2	30-130/20
100-02-7	4-Nitrophenol	ND	100	60.7	61	60.1	60	1	30-130/20
87-86-5	Pentachlorophenol	ND	100	104	104	107	107	3	30-130/20
108-95-2	Phenol	ND	100	43.7	44	43.1	43	1	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	100	86.7	87	87.4	87	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	100	90.2	90	89.7	90	1	30-130/20
62-53-3	Aniline	ND	50	38.8	78	39.3	79	1	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	50	44.1	88	45.3	91	3	40-140/20
85-68-7	Butyl benzyl phthalate	ND	50	46.6	93	47.2	94	1	40-140/20
100-51-6	Benzyl Alcohol	ND	50	40.0	80	40.0	80	0	40-140/20
91-58-7	2-Chloronaphthalene	ND	50	42.3	85	42.7	85	1	40-140/20
106-47-8	4-Chloroaniline	ND	50	24.2	48	21.1	42	14	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	50	41.2	82	41.4	83	0	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	50	43.0	86	42.3	85	2	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	44.7	89	44.3	89	1	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	43.4	87	44.5	89	3	40-140/20
122-66-7	1,2-Diphenylhydrazine	ND	50	38.3	77	39.2	78	2	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	50	44.6	89	43.9	88	2	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	50	42.4	85	41.3	83	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	50	27.5	55	24.9	50	10	40-140/20
132-64-9	Dibenzofuran	ND	50	39.7	79	40.1	80	1	40-140/20
84-74-2	Di-n-butyl phthalate	0.98	50	46.1	90	47.0	92	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND	50	44.9	90	46.4	93	3	40-140/20
84-66-2	Diethyl phthalate	0.89	50	47.2	93	46.9	92	1	40-140/20
131-11-3	Dimethyl phthalate	ND	50	43.1	86	43.3	87	0	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	0.59	50	48.1	95	49.0	97	2	40-140/20
118-74-1	Hexachlorobenzene	ND	50	41.2	82	42.2	84	2	40-140/20

6.3.1

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24955-MS	I72779.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
OP24955-MSD	I72780.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615
MC308-1	I72781.D	1	05/24/11	KR	05/18/11	OP24955	MSI2615

The QC reported here applies to the following samples:

Method: SW846 8270C

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	MC308-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND	50	26.4	53	26.4	53	0	40-140/20
67-72-1	Hexachloroethane	ND	50	43.0	86	42.3	85	2	40-140/20
78-59-1	Isophorone	ND	50	37.8	76	37.6	75	1	40-140/20
90-12-0	1-Methylnaphthalene	ND	100	77.8	78	78.6	79	1	40-140/20
88-74-4	2-Nitroaniline	ND	50	45.8	92	45.6	91	0	40-140/20
99-09-2	3-Nitroaniline	ND	50	30.2	60	28.4	57	6	40-140/20
100-01-6	4-Nitroaniline	ND	50	41.2	82	40.8	82	1	40-140/20
98-95-3	Nitrobenzene	ND	50	39.5	79	38.9	78	2	40-140/20
62-75-9	n-Nitrosodimethylamine	ND	50	26.8	54	26.3	53	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	50	44.9	90	44.1	88	2	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	50	42.5	85	43.8	88	3	40-140/20
110-86-1	Pyridine	ND	50	27.4	55	26.4	53	4	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC308-1	Limits
367-12-4	2-Fluorophenol	65%	63%	58%	15-110%
4165-62-2	Phenol-d5	42%	42%	35%	15-110%
118-79-6	2,4,6-Tribromophenol	86%	88%	81%	15-110%
4165-60-0	Nitrobenzene-d5	82%	83%	81%	30-130%
321-60-8	2-Fluorobiphenyl	85%	86%	83%	30-130%
1718-51-0	Terphenyl-d14	93%	94%	98%	30-130%

6.3.1

6

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP24956-MS	F53007.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
OP24956-MSD	F53008.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559
MC308-2	F53009.D	1	05/24/11	KR	05/18/11	OP24956	MSF2559

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5

CAS No.	Compound	MC308-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	50	41.8	84	40.9	82	2	40-140/20
208-96-8	Acenaphthylene	ND	50	39.3	79	38.9	78	1	40-140/20
120-12-7	Anthracene	ND	50	40.4	81	40.0	80	1	40-140/20
56-55-3	Benzo(a)anthracene	ND	50	49.9	100	50.6	101	1	40-140/20
50-32-8	Benzo(a)pyrene	ND	50	26.9	54	27.1	54	1	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	50	30.2	60	29.8	60	1	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	50	38.3	77	38.4	77	0	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	50	23.4	47	23.1	46	1	40-140/20
218-01-9	Chrysene	ND	50	40.0	80	40.3	81	1	40-140/20
53-70-3	Dibenzo(a,h)anthracene	ND	50	43.9	88	42.8	86	3	40-140/20
206-44-0	Fluoranthene	ND	50	44.0	88	44.4	89	1	40-140/20
86-73-7	Fluorene	ND	50	49.4	99	49.3	99	0	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	39.4	79	39.3	79	0	40-140/20
91-57-6	2-Methylnaphthalene	ND	50	49.8	100	48.2	96	3	40-140/20
91-20-3	Naphthalene	ND	50	44.8	90	43.7	87	2	40-140/20
85-01-8	Phenanthrene	ND	50	40.7	81	40.7	81	0	40-140/20
129-00-0	Pyrene	ND	50	43.8	88	43.2	86	1	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	MC308-2	Limits
4165-60-0	Nitrobenzene-d5	108%	108%	100%	30-130%
321-60-8	2-Fluorobiphenyl	87%	83%	82%	30-130%
1718-51-0	Terphenyl-d14	107%	110%	101%	30-130%

6.3.2
6

Semivolatile Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2559-CC2545	Injection Date:	05/24/11
Lab File ID:	F52993.D	Injection Time:	09:34
Instrument ID:	GCMSF	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	22635	5.09	80324	6.33	47540	8.68	86596	11.14	98611	16.05	86862	18.56
Upper Limit ^a	45270	5.59	160648	6.83	95080	9.18	173192	11.64	197222	16.55	173724	19.06
Lower Limit ^b	11318	4.59	40162	5.83	23770	8.18	43298	10.64	49306	15.55	43431	18.06

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP25008-MB	13074	5.09	45820	6.33	24810	8.67	46559	11.12	51716	16.05	49350	18.56
OP25008-BS	14415	5.09	50670	6.33	30263	8.68	54216	11.14	62539	16.05	65404	18.56
OP25008-MS	14534	5.09	51971	6.33	30252	8.68	54232	11.14	63920	16.06	65485	18.56
OP25008-MSD	15964	5.09	57026	6.33	33672	8.68	60964	11.14	66006	16.06	73730	18.56
MC417-1	12989	5.09	44170	6.33	24201	8.67	45029	11.12	50703	16.05	45913	18.56
ZZZZZZ	10137 ^c	5.09	33254 ^c	6.33	18773 ^c	8.68	35126 ^c	11.12	39705 ^c	16.05	40090 ^c	18.56
ZZZZZZ	9831 ^c	5.09	33836 ^c	6.33	18893 ^c	8.68	34843 ^c	11.12	40265 ^c	16.05	42564 ^c	18.56
ZZZZZZ	150249 ^d	5.09	529885 ^d	6.33	322532 ^d	8.68	577014 ^d	11.14	656535 ^d	16.06	675799 ^d	18.57
ZZZZZZ	10570 ^c	5.09	34534 ^c	6.32	18920 ^c	8.67	36787 ^c	11.12	41575 ^c	16.05	43121 ^c	18.56
ZZZZZZ	7845 ^c	5.09	26686 ^c	6.33	14788 ^c	8.68	28321 ^c	11.12	32905 ^c	16.05	36714 ^c	18.56
ZZZZZZ	161741 ^d	5.09	564029 ^d	6.33	340780 ^d	8.68	622203 ^d	11.14	716330 ^d	16.06	892734 ^d	18.57
ZZZZZZ	136227 ^d	5.09	464192 ^d	6.33	277511 ^d	8.68	500616 ^d	11.14	606253 ^d	16.06	699244 ^d	18.57
ZZZZZZ	158188 ^d	5.09	557678 ^d	6.33	330880 ^d	8.68	606169 ^d	11.14	692149 ^d	16.06	824435 ^d	18.57
OP24956-MB	124783 ^d	5.09	469265 ^d	6.33	247793 ^d	8.68	458959 ^d	11.12	543072 ^d	16.05	669424 ^d	18.57
OP24956-BS	141762 ^d	5.09	547180 ^d	6.33	328778 ^d	8.68	571845 ^d	11.14	583599 ^d	16.06	758829 ^d	18.57
OP24956-MS	150250 ^d	5.09	561419 ^d	6.33	330758 ^d	8.68	570787 ^d	11.14	598617 ^d	16.06	776347 ^d	18.57
OP24956-MSD	154525 ^d	5.09	582683 ^d	6.33	346613 ^d	8.68	589277 ^d	11.14	612843 ^d	16.06	790728 ^d	18.58
MC308-2	106659 ^d	5.09	370175 ^d	6.33	215082 ^d	8.68	392533 ^d	11.12	456764 ^d	16.05	571158 ^d	18.57
ZZZZZZ	9145 ^e	5.09	31546 ^e	6.33	17806 ^e	8.67	32266 ^e	11.12	35797 ^e	16.05	39326 ^e	18.56
ZZZZZZ	12390	5.09	42129	6.33	25645	8.68	47392	11.12	57022	16.05	81667	18.56
ZZZZZZ	15998	5.10	71430	6.33	33449	8.68	57925	11.14	58103	16.05	86665	18.56

- 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) Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- (d) Internal standard spiked at 10x concentration.
- (e) Outside control limits due to possible matrix interference.

6.4.1
6

Semivolatile Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSF2560-CC2545	Injection Date:	05/27/11
Lab File ID:	F53034.D	Injection Time:	10:20
Instrument ID:	GCMSF	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	18435	5.09	68511	6.32	40903	8.67	73121	11.12	86066	16.05	77392	18.56
Upper Limit ^a	36870	5.59	137022	6.82	81806	9.17	146242	11.62	172132	16.55	154784	19.06
Lower Limit ^b	9218	4.59	34256	5.82	20452	8.17	36561	10.62	43033	15.55	38696	18.06

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	133721 ^c	5.09	491116 ^c	6.33	258931 ^c	8.67	489618 ^c	11.12	557058 ^c	16.05	842493 ^c	18.57
ZZZZZZ	121995 ^c	5.10	446814 ^c	6.33	265485 ^c	8.67	477390 ^c	11.12	543463 ^c	16.05	684682 ^c	18.56
ZZZZZZ	128095 ^c	5.09	452523 ^c	6.33	270509 ^c	8.67	481427 ^c	11.12	523128 ^c	16.05	689380 ^c	18.56
MC269-1	82409 ^c	5.09	268772 ^c	6.33	161912 ^c	8.67	297522 ^c	11.12	390378 ^c	16.05	562855 ^c	18.56
MC269-2	113775 ^c	5.09	386184 ^c	6.32	227841 ^c	8.67	413639 ^c	11.12	522842 ^c	16.05	677184 ^c	18.56
MC269-3	129833 ^c	5.09	435354 ^c	6.32	257878 ^c	8.67	468081 ^c	11.12	566333 ^c	16.05	721930 ^c	18.56
MC269-4	92862 ^c	5.09	315562 ^c	6.32	182236 ^c	8.67	347289 ^c	11.12	431737 ^c	16.05	538315 ^c	18.56
MC269-5	114940 ^c	5.09	390983 ^c	6.33	232715 ^c	8.67	431323 ^c	11.12	528026 ^c	16.05	678809 ^c	18.56
OP25011-MB	9335	5.09	34366	6.33	20486	8.67	36751	11.12	43340	16.05	46296	18.56
OP25012-MB	9335	5.09	34366	6.33	20486	8.67	36751	11.12	43340	16.05	46296	18.56
OP25011-BS	12503	5.09	43381	6.32	25646	8.67	46575	11.12	54271	16.05	60177	18.56
OP25012-BS	12503	5.09	43381	6.32	25646	8.67	46575	11.12	54271	16.05	60177	18.56
OP25011-BSD	11951	5.09	40895	6.33	24500	8.67	44026	11.12	51352	16.05	54353	18.56
OP25012-BSD	11951	5.09	40895	6.33	24500	8.67	44026	11.12	51352	16.05	54353	18.56
OP25011-MS	13605	5.09	45639	6.32	27114	8.67	49557	11.12	55895	16.05	69411	18.56
OP25011-MSD	10569	5.09	35401	6.32	21121	8.67	37977	11.12	45780	16.05	54197	18.56
MC333-1	10897	5.09	36437	6.33	20929	8.67	41374	11.12	50957	16.04	61190	18.55
ZZZZZZ	11941	5.09	41731	6.33	24518	8.67	40939	11.12	52266	16.04	74418	18.56
ZZZZZZ	13006	5.09	43805	6.32	25643	8.67	47029	11.12	55161	16.04	67583	18.56
ZZZZZZ	9437	5.09	36562	6.32	20912	8.67	37970	11.12	44803	16.05	52700	18.56
ZZZZZZ	9391	5.09	35289	6.32	20836	8.67	36776	11.12	43353	16.04	46412	18.55

- 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 10x concentration.

6.4.2
6

Semivolatiles Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSI2615-CC2552	Injection Date:	05/24/11
Lab File ID:	I72776.D	Injection Time:	09:00
Instrument ID:	GCMSI	Method:	SW846 8270C

	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
	AREA	RT	AREA	RT	AREA	RT
Check Std	118178	5.26	445084	6.54	234055	8.96
Upper Limit ^a	236356	5.76	890168	7.04	468110	9.46
Lower Limit ^b	59089	4.76	222542	6.04	117028	8.46

Lab Sample ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
	AREA	RT	AREA	RT	AREA	RT
OP24955-MB	153378	5.26	568440	6.54	297503	8.96
OP24955-BS	140870	5.26	535446	6.54	277035	8.96
OP24955-MS	139930	5.26	525824	6.54	277549	8.96
OP24955-MSD	147848	5.26	554120	6.54	290385	8.96
MC308-1	132184	5.26	484501	6.54	258544	8.95
ZZZZZZ	153409	5.26	561511	6.54	296589	8.96
OP24969-MB	152227	5.26	567432	6.54	291252	8.96
OP24969-BS	165943	5.26	624067	6.54	333577	8.96
OP24969-MS	183821	5.26	676299	6.54	356576	8.96
OP24969-MSD	164911	5.26	620269	6.54	323647	8.96
ZZZZZZ	177220	5.26	656644	6.54	339804	8.96
ZZZZZZ	165221	5.26	602196	6.54	306328	8.96
ZZZZZZ	174864	5.26	636432	6.54	328200	8.96
ZZZZZZ	176693	5.26	650078	6.54	344254	8.96
MC125-5	182179	5.26	685552	6.54	353514	8.96
ZZZZZZ	172782	5.26	641127	6.54	331545	8.96
ZZZZZZ	179928	5.26	669912	6.54	345055	8.96
ZZZZZZ	190870	5.26	704360	6.54	358758	8.96
ZZZZZZ	211888	5.26	773442	6.54	385616	8.96
ZZZZZZ	201852	5.26	758532	6.54	382110	8.96
ZZZZZZ	186732	5.26	688716	6.54	352312	8.96
ZZZZZZ	183885	5.26	689219	6.54	363006	8.96

- 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.

6.4.3

6

Semivolatile Internal Standard Area Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	MSS1029-CC1009	Injection Date:	05/27/11
Lab File ID:	S24287A.D	Injection Time:	10:11
Instrument ID:	GCMSS	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	227651	6.48	792703	7.87	486546	10.12	959176	12.35	1173598	16.72	1113115	18.95
Upper Limit ^a	455302	6.98	1585406	8.37	973092	10.62	1918352	12.85	2347196	17.22	2226230	19.45
Lower Limit ^b	113826	5.98	396352	7.37	243273	9.62	479588	11.85	586799	16.22	556558	18.45

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	226757	6.48	953975	7.88	746027	10.16	1030804	12.40	973024	16.74	956475	18.95
ZZZZZZ	274847	6.48	988453	7.87	577997	10.12	1088126	12.35	1180263	16.72	1224773	18.96
ZZZZZZ	232150	6.48	843897	7.87	511846	10.14	898202	12.37	1001343	16.72	1080461	18.95
ZZZZZZ	226717	6.48	831007	7.87	492438	10.13	848921	12.37	991416	16.72	1124356	18.96
ZZZZZZ	369705	6.48	1343672	7.87	756299	10.14	1194341	12.37	1088264	16.72	1135752	18.96
ZZZZZZ	358184	6.48	1251228	7.87	723499	10.12	1345616	12.35	1326704	16.72	1289620	18.95
ZZZZZZ	283146	6.48	1026307	7.87	700715	10.12	1062759	12.35	997940	16.72	995900	18.96
ZZZZZZ	179052	6.48	784863	7.87	494606	10.12	958909	12.35	1093477	16.72	1228205	18.95
ZZZZZZ	284868	6.48	1022660	7.87	604931	10.12	1196380	12.35	1305681	16.72	1458508	18.95
ZZZZZZ	246897	6.48	708983	7.87	427345	10.12	814736	12.35	936062	16.72	1018303	18.96
ZZZZZZ	284904	6.48	1091067	7.87	632971	10.12	1206846	12.35	1246695	16.72	1408005	18.96
ZZZZZZ	224372	6.48	879884	7.87	521520	10.12	998393	12.35	1016142	16.72	954732	18.96
ZZZZZZ	257582	6.48	923459	7.87	412130	10.12	814122	12.35	878811	16.72	983055	18.95
ZZZZZZ	261148	6.48	938103	7.87	564104	10.12	1096896	12.35	1182797	16.72	1297940	18.95
ZZZZZZ	208940	6.48	748217	7.87	453655	10.13	840179	12.35	1032444	16.72	1181438	18.95
MC269-1	250172	6.48	891673	7.87	528165	10.12	1019775	12.35	1186789	16.72	1343284	18.96
MC269-2	246548	6.48	888883	7.87	540769	10.12	1053363	12.35	1213178	16.72	1354772	18.95
MC269-3	261637	6.48	933206	7.87	554058	10.12	1095576	12.35	1287173	16.72	1434205	18.95
MC269-4	248134	6.48	889441	7.87	534353	10.12	1045662	12.35	1243046	16.72	1370691	18.95
MC269-5	256252	6.48	920279	7.87	552633	10.12	1088597	12.35	1277100	16.72	1417237	18.95
ZZZZZZ	258017	6.48	936421	7.87	575721	10.12	1140487	12.35	1354102	16.71	1514813	18.95
ZZZZZZ	257165	6.48	940603	7.87	581025	10.12	1125516	12.34	1295049	16.71	1494452	18.95
ZZZZZZ	301306	6.48	1091213	7.87	631942	10.12	1223737	12.34	1443516	16.72	1579573	18.96
ZZZZZZ	360069	6.48	1281336	7.87	749663	10.12	1421136	12.35	1557743	16.72	1700504	18.96
ZZZZZZ	270101	6.48	976337	7.87	564485	10.12	1077580	12.35	1333651	16.72	1593099	18.95

- 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.

6.4.4
6

Semivolatile Surrogate Recovery Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC269-1	S24303.D	55.0	33.0	117.0* a	82.0	85.0	88.0
MC269-2	S24304.D	56.0	34.0	116.0* a	84.0	85.0	93.0
MC269-3	S24305.D	55.0	33.0	116.0* a	82.0	86.0	93.0
MC269-4	S24306.D	60.0	37.0	117.0* a	84.0	87.0	93.0
MC269-5	S24307.D	60.0	36.0	118.0* a	83.0	86.0	92.0
OP24955-BS	I72778.D	66.0	45.0	88.0	85.0	91.0	97.0
OP24955-MB	I72777.D	58.0	37.0	84.0	82.0	85.0	92.0
OP24955-MS	I72779.D	65.0	42.0	86.0	82.0	85.0	93.0
OP24955-MSD	I72780.D	63.0	42.0	88.0	83.0	86.0	94.0

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%

(a) Outside control limits. Associated target analytes are non-detect.

6.5.1
6

Semivolatile Surrogate Recovery Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC269-1	F53038.D	101.0	83.0	101.0
MC269-2	F53039.D	106.0	83.0	106.0
MC269-3	F53040.D	107.0	81.0	106.0
MC269-4	F53041.D	106.0	87.0	105.0
MC269-5	F53042.D	109.0	85.0	107.0
OP24956-BS	F53006.D	110.0	84.0	115.0
OP24956-MB	F53005.D	96.0	83.0	103.0
OP24956-MS	F53007.D	108.0	87.0	107.0
OP24956-MSD	F53008.D	108.0	83.0	110.0

Surrogate Compounds	Recovery Limits
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S1 = Nitrobenzene-d5	30-130%
S2 = 2-Fluorobiphenyl	30-130%
S3 = Terphenyl-d14	30-130%

6.5.2

6

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: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP25065-MB	BK3177.D	1	05/27/11	AP	05/27/11	OP25065	GBK128

The QC reported here applies to the following samples:

Method: SW846 8011

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	88%	36-173%
460-00-4	Bromofluorobenzene (S)	72%	36-173%

7.1.1

7

Blank Spike Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP25065-BS	BK3178.D	1	05/27/11	AP	05/27/11	OP25065	GBK128

The QC reported here applies to the following samples:

Method: SW846 8011

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.062	87	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	86%	36-173%
460-00-4	Bromofluorobenzene (S)	71%	36-173%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP25065-MS	BK3179.D	1	05/27/11	AP	05/27/11	OP25065	GBK128
OP25065-MSD	BK3180.D	1	05/27/11	AP	05/27/11	OP25065	GBK128
MC616-2	BK3181.D	1	05/27/11	AP	05/27/11	OP25065	GBK128

The QC reported here applies to the following samples:

Method: SW846 8011

MC269-1, MC269-2, MC269-3, MC269-4, MC269-5, MC269-6

CAS No.	Compound	MC616-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND	0.071	0.071	100	0.070	99	1	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC616-2	Limits
460-00-4	Bromofluorobenzene (S)	103%	99%	98%	36-173%
460-00-4	Bromofluorobenzene (S)	95%	98%	89%	36-173%

7.3.1

7

Volatile Surrogate Recovery Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 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
MC269-1	BK3182.D	147.0	75.0
MC269-2	BK3183.D	105.0	57.0
MC269-3	BK3184.D	108.0	50.0
MC269-4	BK3185.D	141.0	73.0
MC269-5	BK3186.D	110.0	56.0
MC269-6	BK3188.D	187.0* ^c	111.0
OP25065-BS	BK3178.D	86.0	71.0
OP25065-MB	BK3177.D	88.0	72.0
OP25065-MS	BK3179.D	103.0	95.0
OP25065-MSD	BK3180.D	99.0	98.0

Surrogate Compounds **Recovery Limits**

S1 = Bromofluorobenzene (S) 36-173%

- (a) Recovery from GC signal #1
- (b) Recovery from GC signal #2
- (c) Outside control limits due to possible matrix interference.

7.4.1
7

GC Surrogate Retention Time Summary

Job Number: MC269
 Account: SHELLWIC Shell Oil
 Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK128-ICC128	Injection Date:	05/27/11
Lab File ID:	BK3170.D	Injection Time:	17:50
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.81	5.40

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP25065-MB	BK3177.D	05/27/11	20:54	4.81	5.40
OP25066-MB	BK3177A.D	05/27/11	20:54	4.81	5.40
OP25065-BS	BK3178.D	05/27/11	21:20	4.81	5.39
OP25065-MS	BK3179.D	05/27/11	21:46	4.81	5.40
OP25065-MSD	BK3180.D	05/27/11	22:12	4.81	5.40
MC616-2	BK3181.D	05/27/11	22:39	4.81	5.40
MC269-1	BK3182.D	05/27/11	23:05	4.81	5.39
MC269-2	BK3183.D	05/27/11	23:31	4.81	5.39
MC269-3	BK3184.D	05/27/11	23:57	4.81	5.39
MC269-4	BK3185.D	05/28/11	00:22	4.82	5.39
MC269-5	BK3186.D	05/28/11	00:48	4.81	5.39

Surrogate Compounds

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.1
7

GC Surrogate Retention Time Summary

Job Number: MC269

Account: SHELLWIC Shell Oil

Project: URSMOSTL:Roxana 2Q11 GW/ 21562593.0004 900 South Central Avenue Roxana, IL

Check Std:	GBK128-CC128	Injection Date:	05/28/11
Lab File ID:	BK3187.D	Injection Time:	01:14
Instrument ID:	GCBK	Method:	SW846 8011

	S1 ^a RT	S1 ^b RT
Check Std	4.81	5.39

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
MC269-6	BK3188.D	05/28/11	01:40	4.81	5.39
ZZZZZZ	BK3189.D	05/28/11	02:06	4.81	5.41
ZZZZZZ	BK3190.D	05/28/11	02:32	4.81	5.40
GBK128-ECC128	BK3191.D	05/28/11	02:57	4.81	5.39

**Surrogate
Compounds**

S1 = Bromofluorobenzene (S)

- (a) Retention time from GC signal #1
- (b) Retention time from GC signal #2

7.5.2
7