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May 23, 2017

Ms. Joyce Munie, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Avenue East
Springfield, Illinois 62794

Submittal of Corrected Information
Soil Vapor Sampling and SVE Monitoring – 1st Quarter 2014
Roxana, Illinois
1191150002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43R

Dear Ms. Munie:

On behalf of Shell Oil Products US (SOPUS), AECOM Technical Services, Inc. (AECOM) hereby submits the enclosed addendum to the above-referenced report (the Report).

AECOM collects a variety of samples for SOPUS as part of the work performed in connection with the above-referenced site including the samples referenced and utilized in the Report. AECOM contracts with independent laboratories to analyze the samples collected. As noted in SOPUS' initial disclosure letter and our subsequent communications, Accutest Laboratories (Accutest) issued revised laboratory analyses in response to an internal evaluation performed of its process. Please note, the majority of the corrected analyses were issued only to include a revised footnote and the numeric value of the analytical results reported remained unchanged. If any numeric values of analytical results presented in the Report were updated by Accutest, the updated results are presented as part of the information included in the Report addendum. Moreover, based upon our evaluation of the Report and the revised information received from Accutest, the conclusion(s) of the Report as originally issued are unaffected.

The information provided within and the format of this addendum is as discussed during our meeting with IEPA on March 23, 2017. This addendum includes the following information:

- IEPA LPC form
- Data Revised Addendum Table (summarizing changed information)
- Revised analytical results table
- Revised laboratory reports (on CD)

If you have any questions during your review, please contact Kevin Dyer, SOPUS Senior Principal Program Manager, at kevin.dyer@shell.com (618/288-7237), or Bob Billman at bob.billman@aecom.com (314/743-4108).

Sincerely,

AECOM, on behalf of Shell Oil Products US

Robert Billman, PG
Senior Project Manager

Robert E. Mooshegian, CHMM
Senior Program Manager

Enclosures: 2 copies

cc: Kevin Dyer, SOPUS
Eric Petersen, Phillips 66
Shannon Haney, Greensfelder, Hemker & Gale P.C.
Repositories – Village Hall, Roxana Public Library, website
Project File

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

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

Site No. (USEPA): ILD 080 012 305

2.0 OWNER INFORMATION

Name: Not Applicable

Mailing Address:

3.0 OPERATOR INFORMATION

Equilon Enterprises LLC dba Shell Oil Products US (SOPUS)

17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Contact Name: Kevin Dyer

Contact Title: Senior Principal Program Manager

Phone No.: 618-288-7237

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

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Multiple Document Addenda (see attached report list)
Date of Submittal May 2017

IEPA Permit Log No. B-43R
Date of Last IEPA Letter on Project January 18, 2017
Log No. of Last IEPA Letter on Project B-43R-CA-59, -60, -69
Does this submittal include groundwater information: ☒ Yes ☐ No

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

Addenda to multiple documents. List of documents is provided on the Attachment 1. Addenda being issued due to revised laboratory reports.

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

Cover letter, RCRA Corrective Action Certification, Addenda to multiple documents identified on the attached list.

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

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

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

A person is a duly authorized representative only if:

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

Owner Signature: _____ _____ (Date)

Title: _____

Operator Signature: [signature] 5/17/18 (Date)

Title: Senior 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: [signature] 5/17/17 Date

Professional's Name: Robert B. Billman

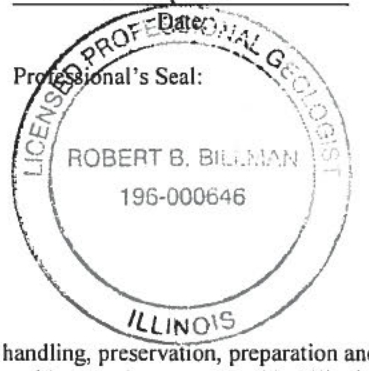
Professional's Address: AECOM Technical Services, Inc.

1001 Highlands Plaza Drive West, Suite 300

St. Louis, MO 63110

Professional's Phone No.: 314-429-0100

Professional's Seal:



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

Name of Laboratory: See Attachment 2

_____ Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory:

_____ Name and Title of Laboratory Responsible Officer

_____

_____

_____

Attachment 1
List of Documents

Submittal	Date of Submittal
Roxana 3Q12 Groundwater Monitoring Report	10/15/2012
Roxana 4Q12 Groundwater Monitoring Report	1/15/2013
Roxana 4Q13 Soil Vapor Report	1/31/2014
Roxana 1Q14 Soil Vapor Report	4/30/2014
Roxana 2Q14 Soil Vapor Report	7/30/2014
Roxana 3Q14 Soil Vapor Report	10/30/2014
Roxana 2Q15 Soil Vapor Report	7/29/2015
GWP-28 Installation Plan	11/27/2012
Public Work Yard Soil Sampling Report	3/13/2013
GW Monitoring Well and Vapor Monitoring Point Installation Report	4/3/2013
April 30, 2013-Groundwater Profile Delineation Report	4/30/2013
Addendum to Monitoring Well & Vapor Monitoring Point Installation Report - Supplemental Investigation Activities	5/22/2013
SVE Expansion-Construction Completion Rpt Addendum 2	1/9/2014
SVE System Construction Completion Rpt Addendum 3	3/4/2015

Note: Highlighted row represents subject Addendum

ATTACHMENT 2

LABORATORY CERTIFICATION

Revisions to previously reported laboratory data were required following a laboratory quality review. These revisions were performed in accordance with industry standards for testing laboratories accredited by the National Environmental Laboratory Accreditation Conference (NELAC). I certify the information contained in the revised and reissued laboratory reports are, to the best of my knowledge and belief, true, accurate and complete.

Name of Laboratory: SGS Accutest

5.17.17

Signature of Laboratory Responsible Officer — Date

HOSSAIN (BABU) MADAJAN

Name and Title of Laboratory Responsible Officer

LAB Director

Mailing Address of Laboratory:

50 D'Angelo Drive

495 Technology Center West, Building I

Marlboro, MA 01752

LEGAL REVIEWED
BY: MD
DATE: 5.17.17

Laboratory Report (Sample Delivery Group[SDG])			
mc12669	mc23880	mc17144	mc18856
mc12784	mc26889	mc17324	mc18890
mc12833	mc27073	mc17401	mc18895
mc12905	mc23933	mc16336	mc18752
mc12941	mc32497	mc16445	mc24546
mc12942	mc32521	mc16475	mc32549
mc13051	mc38153	mc16587	mc32591
mc15232	mc38192	mc16644	mc32628
mc15892	mc14777	mc16798	mc32660
mc16960	mc14814	mc16889	mc32763
mc23682	mc16999	mc17501	mc33045

May 16, 2017

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260C	VMP63-120413(6-8')	MC26889-1	12/03/2013	Acrolein	ND	ND		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP63-120413(22-24')	MC26889-2	12/03/2013	Acrolein	ND	ND		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP63-120413(36-38')	MC26889-3	12/03/2013	Acrolein	ND	ND		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	Acrolein	ND	ND		mg/kg	Ana: Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	Acrylonitrile	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	1,2-Dichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	n-Propylbenzene	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	1,1,2,2-Tetrachloroethane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	1,2,3-Trichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')	MC27073-1	12/11/2013	Vinyl chloride	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	Acrolein	ND	ND		mg/kg	Ana: Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	Acrylonitrile	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	1,2-Dichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	n-Propylbenzene	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	1,1,2,2-Tetrachloroethane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	1,2,3-Trichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(10-14')DUP	MC27073-2	12/11/2013	Vinyl chloride	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	Acrolein	ND	ND		mg/kg	Ana: Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	Acrylonitrile	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	1,2-Dichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	n-Propylbenzene	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	1,1,2,2-Tetrachloroethane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	1,2,3-Trichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(28-30')	MC27073-3	12/11/2013	Vinyl chloride	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	Acrolein	ND	ND		mg/kg	Ana: Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	Acrylonitrile	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	1,2-Dichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	n-Propylbenzene	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	1,1,2,2-Tetrachloroethane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	1,2,3-Trichloropropane	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ
SW846 8260C	VMP64-121113(44-46')	MC27073-4	12/11/2013	Vinyl chloride	ND	ND		mg/kg	Ana: Continuing Calibration outside of acceptance criteria. Sample result may be biased low.	UJ

LABORATORY QUALIFIERS:

ND = Not detected.

AECOM QUALIFIERS:

UJ = Estimated nondetect.

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOCs													
				Benzene			sec-Butylbenzene			Carbon disulfide			Ethylbenzene			Isopropylbenzene (Cumene)		
				0.03						32			13			91		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	0.0016			< 0.0062	U		0.0161			0.0049			< 0.0062	U	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	0.00098			< 0.0057	U		< 0.0057	U		0.0022	J		< 0.0057	U	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.00055	U		< 0.0055	U		< 0.0055	U		0.00055	J		< 0.0055	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	0.0012			< 0.0056	U		< 0.0056	U		0.0044			< 0.0056	U	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	0.00075			< 0.0058	U		< 0.0058	U		0.002	J		< 0.0058	U	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	< 0.0006	U		< 0.006	U		< 0.006	U		< 0.0024	U		< 0.006	U	
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	0.0018			0.00042	J		0.001	J		0.0026	J		0.00048	J	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.0014			< 0.0064	U		< 0.0064	U		0.0029			< 0.0064	U	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	0.00044	J		< 0.0054	U		< 0.0054	U		0.00081	J		< 0.0054	U	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	0.00043	J		< 0.0055	U		< 0.0055	U		0.0009	J		< 0.0055	U	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOCs													
				n-Propylbenzene			1,2,4-Trimethylbenzene			1,3,5-Trimethylbenzene			Toluene			m,p-Xylenes		
										10			12			150		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	< 0.0062	U		< 0.0062	U		< 0.0062	U		0.0055	J		0.0011	J	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	< 0.0057	U		< 0.0057	U		< 0.0057	U		0.0028	J		0.00087	J	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.0055	U		< 0.0055	U		< 0.0055	U		< 0.0055	U		< 0.0022	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	0.00036	J		0.00051	J		< 0.0056	U		0.0043	J		0.00096	J	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	< 0.0058	U		< 0.0058	U		< 0.0058	U		0.0021	J		0.00057	J	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	< 0.006	U		< 0.006	U		< 0.006	U		< 0.006	U		< 0.0024	U	
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	< 0.0073	U	UJ	0.0018	J		0.0011	J		0.0029	J		0.0014	J	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	< 0.0064	U	UJ	0.00095	J		0.00053	J		0.0033	J		0.0011	J	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	< 0.0054	U	UJ	< 0.0054	U		< 0.0054	U		0.00094	J		< 0.0022	U	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	< 0.0055	U	UJ	< 0.0055	U		< 0.0055	U		0.00095	J		< 0.0022	U	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOCs						VOC TICs								
				o-Xylenes			Xylenes (total)			Butane, 2,3-dimethyl-			Butane, 2,2,3,3-tetramethyl-			Cyclohexane, ethyl-		
				190			150											
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	< 0.0025	U		0.0011	J										
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	< 0.0023	U		0.00087	J										
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.0022	U		< 0.0022	U					0.081	JN				
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	< 0.0023	U		0.00096	J										
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	< 0.0023	U		0.00057	J										
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	< 0.0024	U		< 0.0024	U										
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	0.0012	J		0.0027	J		0.0058	JN					0.0077	JN	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.00085	J		0.0019	J										
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	< 0.0022	U		< 0.0022	U										
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	< 0.0022	U		< 0.0022	U										

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOC TICs														
				Cyclohexane, methyl-			1-Cyclohexanone, 3-butyl-3-methyl-			Cyclopentane, 1,1,3-trimethyl-			Heptadecane, 9-octyl-			Hexadecane		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	0.0068	JN													
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013															
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013							0.016	JN							
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013															
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013															
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013															
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	0.021	JN		0.011	JN										
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.0098	JN											0.39	JN	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013															
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013										0.27	JN				

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOC TICs														
				Hexane, 2,2,5-trimethyl-			Hexenal, 2-ethyl-			Isopentane			9-Octadecenamide, (Z)-			Octadecane		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013							0.02	JN							
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013															
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	0.0082	JN		0.0056	JN		0.0088	JN							
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013							0.017	JN							
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013							0.0078	JN							
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013															
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013							0.013	JN							
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013							0.012	JN		1.3	JN				
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013							0.0094	JN		0.31	JN				
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013							0.012	JN		0.3	JN		0.28	JN	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOC TICs														
				Pentadecane			Pentane			Pentane, 2,3-dimethyl-			Pentane, 2,4-dimethyl-			Pentane, 2-methyl-		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013															
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013															
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013							0.019	JN		0.014	JN				
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013				0.01	JN								0.0055	JN	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013				0.0048	JN										
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013															
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013				0.0062	JN										
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.58	JN													
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013				0.0086	JN										
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013				0.0095	JN										

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOC TICs														
				Pentane, 2,3,3-trimethyl-			Pentane, 2,3,4-trimethyl-			1-Propanol, 2-methyl-			2(1H)-Pyrimidinone, 4-amino-			Tridecane		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013							0.013	JN							
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013															
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	0.044	JN		0.033	JN					0.0057	JN				
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013															
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013															
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013															
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013															
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013													0.37	JN	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013															
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013															

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	VOC TICs			Hydrocarbons			SVOCs								
				Unknown Cyclohexane			TPH GRO (C6-C10)			Acenaphthene			Acenaphthylene			Anthracene		
										570						12000		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013				3.53	J		< 0.0012	JB	U	0.0012	J		0.00097	J	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013				3.34	J		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013				4.24	J		< 0.0059	U		< 0.0059	U		< 0.0059	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013				< 11	U		< 0.005	U		< 0.005	U		< 0.005	U	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013				< 2.63	JB	U	< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013				< 12	U		0.0012	J		0.0012	J		0.0015	J	
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	0.0084	JN		< 13	U	UJ	0.0042	J		< 0.029	U		< 0.029	U	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013				14.5	J	J	0.0044	J		< 0.0059	U		0.0029	J	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013				3.52	J	J	< 0.0063	U		< 0.0063	U		< 0.0063	U	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013				3.22	J	J	0.0011	J		< 0.0063	U		0.001	J	

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TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

				SVOCs													
Location	Sample ID	Depth	Sample Date	Benzo(a)anthracene			Benzo(a)pyrene			Benzo(b)fluoranthene			Benzo(g,h,i)perylene_2300_			Benzo(k)fluoranthene		
				2			8			5						49		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	0.0011	J		0.0012	J		0.0012	J		< 0.0052	U		0.001	J	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.0059	U		< 0.0059	U		< 0.0059	U		< 0.0059	U		< 0.0059	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	< 0.005	U		< 0.005	U		< 0.005	U		< 0.005	U		< 0.005	U	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	0.0032	J		0.0025	J		0.0017	J		0.0098			< 0.0056	U	
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	0.0096	J		0.0079	J		0.0083	J		0.0111	J		< 0.029	U	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.0066			0.0038	J		0.0049	J		0.0061			0.0019	J	
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	0.001	J		< 0.0063	U		< 0.0063	U		< 0.0063	U		< 0.0063	U	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	0.0013	J		< 0.0063	U		< 0.0063	U		0.0053	J		< 0.0063	U	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	SVOCs													
				bis(2-Ethylhexyl)phthalate			Chrysene (1,2-Benzphenanthracene)			Dibenzo(a,h)anthracene			Fluoranthene			Fluorene		
				46			160			2			560			560		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	< 0.26	U		0.0013	J		< 0.0052	U		0.0022	J		< 0.0052	U	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	< 0.25	U		< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.29	U		< 0.0059	U		< 0.0059	U		< 0.0059	U		< 0.0059	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	< 0.25	U		< 0.005	U		< 0.005	U		< 0.005	U		< 0.005	U	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	< 0.25	U		< 0.0051	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	< 0.28	U		0.0046	J		< 0.0056	U		0.0101			< 0.0056	U	
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	< 1.4	U		0.0219	J		< 0.029	U		0.01	J		0.0103	J	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.0153	J		0.0141			0.0018	J		0.0063			0.0108		
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	< 0.32	U		0.0018	J		< 0.0063	U		0.0019	J		< 0.0063	U	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	0.433			0.0028	J		< 0.0063	U		0.0038	J		< 0.0063	U	

SEE LAST PAGE OF TABLE FOR NOTES

TABLE 11
SUMMARY OF SOIL ANALYTICAL DETECTIONS AND SCREENING RESULTS: VMPs 62-64

Location	Sample ID	Depth	Sample Date	SVOCs													
				Indeno(1,2,3-cd)pyrene			1-Methylnaphthalene			2-Methylnaphthalene			Phenanthrene			Pyrene		
				14			130									4200		
				Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals	Result (mg/kg)	Lab Quals	AECOM Quals
VMP-62	VMP62-121713(10-12')	10 - 12 ft	12/17/2013	< 0.0052	U		< 0.01	U		0.0021	J		0.0028	J		0.0027	J	
VMP-62	VMP62-121713(36-38')	36 - 38 ft	12/17/2013	< 0.0051	U		< 0.01	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-62	VMP62-121713(46-48')	46 - 48 ft	12/17/2013	< 0.0059	U		< 0.012	U		< 0.0059	U		< 0.0059	U		< 0.0059	U	
VMP-63	VMP63-120413(22-24')	22 - 24 ft	12/3/2013	< 0.005	U		< 0.01	U		0.0012	J		< 0.005	U		< 0.005	U	
VMP-63	VMP63-120413(36-38')	36 - 38 ft	12/3/2013	< 0.0051	U		< 0.01	U		< 0.0051	U		< 0.0051	U		< 0.0051	U	
VMP-63	VMP63-120413(6-8')	6 - 8 ft	12/3/2013	< 0.0056	U		< 0.011	U		0.0032	J		0.0124			0.0065		
VMP-64	VMP64-121113(10-14')	10 - 14 ft	12/11/2013	< 0.029	U		0.0581			0.0605			0.0405			0.0276	J	
VMP-64	VMP64-121113(10-14')DUP	10 - 14 ft	12/11/2013	0.0026	J		0.0587			0.0606			0.0304			0.0175		
VMP-64	VMP64-121113(28-30')	28 - 30 ft	12/11/2013	< 0.0063	U		< 0.013	U		< 0.0063	U		0.0014	J		0.0031	J	
VMP-64	VMP64-121113(44-46')	44 - 46 ft	12/11/2013	0.0043	J		< 0.013	U		< 0.0063	U		0.0018	J		0.0074		

Notes:

Lab Qualifiers

J = Estimated value; results between the MDL and RL

U = Compound analyzed for but not detected above the RL

JN = Tentatively identified compound (TIC); estimated concentration

B = Indicates analyte found in associated method blank

URS Qualifiers

J = Estimated detect

UJ = Estimated non-detect

U= Non-detect (e.g. method blank contamination)

e-Hardcopy 2.0
Automated Report

Technical Report for

Shell Oil

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

21562850.15000

SGS Accutest Job Number: MC26889

Sampling Date: 12/03/13

Report to:

AECOM, INC.

Melissa.mansker@aecom.com

ATTN: Melissa Mansker

Total number of pages in report: 106

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

H. (Brad) Madadian
Lab Director

Client Service contact: Jeremy Vienneau 508-481-6200

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

SGS ACCUTEST

October 27, 2016

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

RE: SGS Accutest Job # MC26889

Dear Elizabeth Kunkel

As you are aware, SGS Accutest Inc. - Marlborough has been conducting an extensive review of data associated with some historical Gas Chromatography-Mass Spectroscopy volatiles analyses. As a result of this review it was determined that some revisions of the original test report for this job were needed. These corrections have been incorporated into the revised report.

Please be assured that corrective actions have been put in place to address this matter and prevent a recurrence.

We apologize for any inconvenience that this issue may have caused. Please don't hesitate to contact us if we can be of further assistance.

Sincerely,

H. (Brad) Madadian

Regional Laboratory Director
SGS Accutest Inc. - Marlborough

Sections: 1 2 3 4 5 6 7 8 9

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Sample Summary

Shell Oil

Job No: MC26889

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Project No: 21562850.15000

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC26889-1	12/03/13	13:15	MC	12/05/13	SO	Soil	VMP63-120413(6-8')
MC26889-1D	12/03/13	13:15	MC	12/05/13	SO	Soil Dup/MSD	VMP63-120413(6-8')
MC26889-1S	12/03/13	13:15	MC	12/05/13	SO	Soil Matrix Spike	VMP63-120413(6-8')
MC26889-2	12/03/13	14:50	MC	12/05/13	SO	Soil	VMP63-120413(22-24')
MC26889-3	12/03/13	16:50	MC	12/05/13	SO	Soil	VMP63-120413(36-38')
MC26889-4	12/03/13	00:00	MC	12/05/13	AQ	Trip Blank Water	TB-120413(HCL)
MC26889-5	12/03/13	00:00	MC	12/05/13	AQ	Trip Blank Water	TB-120413(NA THIO)

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: She O **Job No** MC26889

Site: URSMOSTL: Roxana VMP-47 Step Out, 900 South Centra Avenue **Report Date** 0/27/20 6 2: 7:58 P

3 Samp e(s), 2 Tr p B ank(s) and 0 F e d B ank(s) were co ected on 2/03/20 3 and were rece ved at SGS Accutest New Eng and on 2/05/20 3 proper y preserved, at 0 6 Deg C and ntact These Samp es rece ved a job number of MC26889 A st ng of the Laboratory Samp e ID, C ent Samp e ID and dates of co ect on are presented n the Resu ts Summary Sect on of th s repo t - Ch orohexane, Benzeneth o , D benz(a,h)acr d ne, Indene and Qu no ne were searched n the brary search and reported on y f detect ons were found

Except as noted be ow, a method spec f ed ca brat ons and qua ty contro performance cr ter a were met for th s job For more nformat on, p ease refer to QC summary pages

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** MSU802

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) JB55056-6MS, JB55056-6MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for ,4-D oxane, Acro e n are outs de contro m ts
- Matr x Sp ke Recovery(s) for 2-Butanone (MEK), 2-Ch oroethy v ny ether, Acetone are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for 2-Ch oroethy v ny ether, Acro e n, ,4-D oxane are outs de contro m ts H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty
- RPD(s) for MSD for ,4-D oxane, 2-Butanone (MEK), Acetone are outs de contro m ts for samp e JB55056-6MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty
- Carbon d su f de: Cont nu ng Ca brat on outs de of acceptance cr ter a Samp e resu t may be b ased ow

Matrix: SO **Batch ID:** MSM2 7

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC26889- MS, MC26889- MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for 2-Butanone (MEK) are outs de contro m ts
- Matr x Sp ke Recovery(s) for ,4-D oxane, 2-Ch oroethy v ny ether, Acro e n, D ch orod f uoromethane, Styrene, V ny ch or de are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for ,4-D oxane, 2-Ch oroethy v ny ether, Acro e n, D ch orod f uoromethane, Styrene, V ny ch or de are outs de contro m ts Probab e cause due to matr x nterference
- Acro e n: In t a Ca brat on Ver f cat on outs de of acceptance cr ter a Samp e resu t may be b ased ow
- MSM2 7 -BSD for V ny Acetate: Outs de contro m ts Ind v dua sp ke recover es w th n acceptance m ts

Extractables by GCMS By Method SW846 8270D

Matrix: SO **Batch ID:** OP36 24

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC26889- MS, MC26889- MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for Hexach orocyc opentad ene are outs de contro m ts
- Matr x Sp ke Recovery(s) for An ne are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for An ne, Hexach orocyc opentad ene are outs de contro m ts Probab e cause due to matr x nterference
- OP36 24-BS for Hexach orocyc opentad ene: Outs de contro m ts Assoc ated samp es are non-detect for th s compound
- In t a Ca brat on Ver f cat on standard for An ne, b s(2-ch oro sopropy) ether excedds 30% D fference These compounds w th n cr ter a n cont nu ng ca brat on check MSW738-CC729 exceeded cr ter a Target recovery sat sfactory

Extractables by GCMS By Method SW846 8270D BY SIM

Matrix: SO **Batch ID:** OP36 25

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC26889- MS, MC26889- MSD were used as the QC samp es nd cated

Volatiles by GC By Method SW846 8011

Matrix: AQ **Batch ID:** OP36056

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC26600- 5MS, MC26600- 5MSD were used as the QC samp es nd cated

Matrix: SO **Batch ID:** OP36082

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC26889- MS, MC26889- MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a

Volatiles by GC By Method SW846 8015

Matrix: SO **Batch ID:** GWX339

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC26889- MS, MC26889- MSD were used as the QC samp es nd cated
- Samp e(s) MC26889-3 have compound(s) repo ted w th a “B” qua f er, nd cat ng ana yte s found n the assoc ated method b ank

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO **Batch ID:** GN454 9

- Samp e(s) MC26889- DUP were used as the QC samp es for So ds, Percent

SGS Accutest New Eng and ce t f es that a ana ys s were performed w th n method spec f cat on It s further recommended that th s report to be used n ts ent rety The Laborato y D rector for SGS Accutest New Eng and or ass gnee as ver f ed by the s gnature on the cover page has author zed the re ease of th s report(MC26889)

Summary of Hits

Job Number: MC26889
Account: Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Collected: 12/03/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC26889-1	**VMP63-120413(6-8')**					
Acenaphthene		0.0012 J	0.0056	0.00065	mg/kg	SW846 8270D BY SIM
Acenaphthylene		0.0012 J	0.0056	0.0010	mg/kg	SW846 8270D BY SIM
Anthracene		0.0015 J	0.0056	0.00091	mg/kg	SW846 8270D BY SIM
Benzo(a)anthracene		0.0032 J	0.0056	0.00070	mg/kg	SW846 8270D BY SIM
Benzo(a)pyrene		0.0025 J	0.0056	0.00081	mg/kg	SW846 8270D BY SIM
Benzo(b)fluoranthene		0.0017 J	0.0056	0.00069	mg/kg	SW846 8270D BY SIM
Benzo(g,h,i)perylene		0.0098	0.0056	0.0022	mg/kg	SW846 8270D BY SIM
Chrysene		0.0046 J	0.0056	0.00086	mg/kg	SW846 8270D BY SIM
Fluoranthene		0.0101	0.0056	0.00089	mg/kg	SW846 8270D BY SIM
2-Methylnaphthalene		0.0032 J	0.0056	0.0012	mg/kg	SW846 8270D BY SIM
Phenanthrene		0.0124	0.0056	0.0011	mg/kg	SW846 8270D BY SIM
Pyrene		0.0065	0.0056	0.0020	mg/kg	SW846 8270D BY SIM
MC26889-2	**VMP63-120413(22-24')**					
Benzene		0.0012	0.00056	0.00028	mg/kg	SW846 8260C
Ethylbenzene		0.0044	0.0023	0.00020	mg/kg	SW846 8260C
n-Propylbenzene		0.00036 J	0.0056	0.00027	mg/kg	SW846 8260C
Toluene		0.0043 J	0.0056	0.00027	mg/kg	SW846 8260C
1,2,4-Trimethylbenzene		0.00051 J	0.0056	0.00023	mg/kg	SW846 8260C
m,p-Xylene		0.00096 J	0.0023	0.00032	mg/kg	SW846 8260C
Xylene (total)		0.00096 J	0.0023	0.00023	mg/kg	SW846 8260C
Total TIC, Volatile		0.0325 J			mg/kg	
2-Methylnaphthalene		0.0012 J	0.0050	0.0011	mg/kg	SW846 8270D BY SIM
MC26889-3	**VMP63-120413(36-38')**					
Benzene		0.00075	0.00058	0.00029	mg/kg	SW846 8260C
Ethylbenzene		0.0020 J	0.0023	0.00021	mg/kg	SW846 8260C
Toluene		0.0021 J	0.0058	0.00028	mg/kg	SW846 8260C
m,p-Xylene		0.00057 J	0.0023	0.00033	mg/kg	SW846 8260C
Xylene (total)		0.00057 J	0.0023	0.00024	mg/kg	SW846 8260C
Total TIC, Volatile		0.0126 J			mg/kg	
TPH-GRO (VOA)		2.63 JB	12	2.6	mg/kg	SW846 8015
MC26889-4	**TB-120413(HCL)**					
Acetone		12.1	10	2.8	ug/l	SW846 8260C
Total TIC, Volatile		9.7 J			ug/l	
MC26889-5	**TB-120413(NA THIO)**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62145.D	1	12/13/13	KD	n/a	n/a	MSM2171
Run #2							

	Initial Weight	Final Volume
Run #1	4.83 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.012	0.0047	mg/kg	
107-02-8	Acrolein [a]	ND	0.030	0.0045	mg/kg	
107-13-1	Acrylonitrile	ND	0.030	0.0016	mg/kg	
71-43-2	Benzene	ND	0.00060	0.00030	mg/kg	
108-86-1	Bromobenzene	ND	0.0060	0.00033	mg/kg	
74-97-5	Bromochloromethane	ND	0.0060	0.00069	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0024	0.00043	mg/kg	
75-25-2	Bromoform	ND	0.0024	0.00035	mg/kg	
74-83-9	Bromomethane	ND	0.0024	0.0012	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0060	0.0037	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0060	0.00021	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0060	0.00019	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0060	0.00042	mg/kg	
75-15-0	Carbon disulfide	ND	0.0060	0.00018	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0024	0.0014	mg/kg	
108-90-7	Chlorobenzene	ND	0.0024	0.00032	mg/kg	
75-00-3	Chloroethane	ND	0.0060	0.00072	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0060	0.0057	mg/kg	
67-66-3	Chloroform	ND	0.0024	0.00034	mg/kg	
74-87-3	Chloromethane	ND	0.0060	0.0015	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0060	0.00049	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0060	0.00053	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0024	0.00051	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0024	0.00025	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0024	0.00027	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0024	0.00024	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0024	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0024	0.00040	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0024	0.00065	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0024	0.00062	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0024	0.00061	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0024	0.00053	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0024	0.00050	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0060	0.00053	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0060	0.00079	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0060	0.00028	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0024	0.00035	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0024	0.00035	mg/kg	
123-91-1	1,4-Dioxane	ND	0.030	0.025	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0060	0.0040	mg/kg	
100-41-4	Ethylbenzene	ND	0.0024	0.00021	mg/kg	
87-68-3	Hexachlorobutadiene	ND	0.0060	0.00068	mg/kg	
591-78-6	2-Hexanone	ND	0.0060	0.0029	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0060	0.00033	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0060	0.00019	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0024	0.00047	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0060	0.0022	mg/kg	
74-95-3	Methylene bromide	ND	0.0060	0.00042	mg/kg	
75-09-2	Methylene chloride	ND	0.0024	0.0018	mg/kg	
91-20-3	Naphthalene	ND	0.0060	0.00094	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0060	0.00029	mg/kg	
100-42-5	Styrene	ND	0.0060	0.00025	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0060	0.00046	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0024	0.00035	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0024	0.00053	mg/kg	
108-88-3	Toluene	ND	0.0060	0.00029	mg/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	0.0060	0.00052	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0060	0.00043	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0024	0.00022	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0024	0.00041	mg/kg	
79-01-6	Trichloroethene	ND	0.0024	0.00057	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0024	0.0013	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0060	0.00046	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0060	0.00025	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0060	0.00015	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0060	0.0015	mg/kg	
75-01-4	Vinyl chloride	ND	0.0024	0.00068	mg/kg	
	m,p-Xylene	ND	0.0024	0.00034	mg/kg	
95-47-6	o-Xylene	ND	0.0024	0.00024	mg/kg	
1330-20-7	Xylene (total)	ND	0.0024	0.00024	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

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

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16539.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
Run #2							

	Initial Weight	Final Volume
Run #1	20.6 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.56	0.070	mg/kg	
95-57-8	2-Chlorophenol	ND	0.28	0.013	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.56	0.014	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.56	0.016	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.56	0.092	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.1	0.14	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.56	0.070	mg/kg	
95-48-7	2-Methylphenol	ND	0.56	0.022	mg/kg	
	3&4-Methylphenol	ND	0.56	0.027	mg/kg	
88-75-5	2-Nitrophenol	ND	0.56	0.015	mg/kg	
100-02-7	4-Nitrophenol	ND	1.1	0.11	mg/kg	
87-86-5	Pentachlorophenol	ND	0.56	0.040	mg/kg	
108-95-2	Phenol	ND	0.28	0.016	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.56	0.014	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.56	0.014	mg/kg	
62-53-3	Aniline	ND	0.56	0.028	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.28	0.014	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.28	0.011	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.56	0.028	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.28	0.015	mg/kg	
106-47-8	4-Chloroaniline	ND	0.56	0.014	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.28	0.013	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.28	0.017	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.28	0.020	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.28	0.017	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.28	0.013	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.56	0.038	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.56	0.014	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.28	0.028	mg/kg	
132-64-9	Dibenzofuran	ND	0.11	0.016	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.28	0.030	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.28	0.0088	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.28	0.014	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.28	0.016	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.28	0.010	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.28	0.018	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.56	0.14	mg/kg	
67-72-1	Hexachloroethane	ND	0.28	0.014	mg/kg	
78-59-1	Isophorone	ND	0.28	0.013	mg/kg	
88-74-4	2-Nitroaniline	ND	0.56	0.014	mg/kg	
99-09-2	3-Nitroaniline	ND	0.56	0.031	mg/kg	
100-01-6	4-Nitroaniline	ND	0.56	0.014	mg/kg	
98-95-3	Nitrobenzene	ND	0.28	0.015	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.28	0.013	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.28	0.016	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.28	0.017	mg/kg	
110-86-1	Pyridine	ND	0.56	0.028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	82%		30-130%
4165-62-2	Phenol-d5	82%		30-130%
118-79-6	2,4,6-Tribromophenol	86%		30-130%
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	87%		30-130%
1718-51-0	Terphenyl-d14	98%		30-130%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36009.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319
Run #2							

	Initial Weight	Final Volume
Run #1	20.6 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.0012	0.0056	0.00065	mg/kg	J
208-96-8	Acenaphthylene	0.0012	0.0056	0.0010	mg/kg	J
120-12-7	Anthracene	0.0015	0.0056	0.00091	mg/kg	J
56-55-3	Benzo(a)anthracene	0.0032	0.0056	0.00070	mg/kg	J
50-32-8	Benzo(a)pyrene	0.0025	0.0056	0.00081	mg/kg	J
205-99-2	Benzo(b)fluoranthene	0.0017	0.0056	0.00069	mg/kg	J
191-24-2	Benzo(g,h,i)perylene	0.0098	0.0056	0.0022	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0056	0.0011	mg/kg	
218-01-9	Chrysene	0.0046	0.0056	0.00086	mg/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.0056	0.0016	mg/kg	
206-44-0	Fluoranthene	0.0101	0.0056	0.00089	mg/kg	
86-73-7	Fluorene	ND	0.0056	0.00049	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0056	0.0014	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.011	0.011	mg/kg	
91-57-6	2-Methylnaphthalene	0.0032	0.0056	0.0012	mg/kg	J
85-01-8	Phenanthrene	0.0124	0.0056	0.0011	mg/kg	
129-00-0	Pyrene	0.0065	0.0056	0.0020	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%		15-110%
4165-62-2	Phenol-d5	42%		15-110%
118-79-6	2,4,6-Tribromophenol	37%		15-110%
4165-60-0	Nitrobenzene-d5	89%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	128%		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:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86542.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0029	0.00070	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0029	0.0011	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	150%		61-167%
460-00-4	Bromofluorobenzene (S)	99%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(6-8')		
Lab Sample ID:	MC26889-1	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8015	**Percent Solids:**	86.6
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WX70643.D	1	12/09/13	TB	n/a	n/a	GWX3391
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.14 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	12	2.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	106%		61-116%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62146.D	1	12/13/13	KD	n/a	n/a	MSM2171
Run #2							

	Initial Weight	Final Volume
Run #1	4.64 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.011	0.0044	mg/kg	
107-02-8	Acrolein [a]	ND	0.028	0.0042	mg/kg	
107-13-1	Acrylonitrile	ND	0.028	0.0015	mg/kg	
71-43-2	Benzene	0.0012	0.00056	0.00028	mg/kg	
108-86-1	Bromobenzene	ND	0.0056	0.00031	mg/kg	
74-97-5	Bromochloromethane	ND	0.0056	0.00065	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0023	0.00041	mg/kg	
75-25-2	Bromoform	ND	0.0023	0.00033	mg/kg	
74-83-9	Bromomethane	ND	0.0023	0.0011	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0056	0.0035	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0056	0.00019	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0056	0.00018	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0056	0.00040	mg/kg	
75-15-0	Carbon disulfide	ND	0.0056	0.00017	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0023	0.0013	mg/kg	
108-90-7	Chlorobenzene	ND	0.0023	0.00030	mg/kg	
75-00-3	Chloroethane	ND	0.0056	0.00067	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0056	0.0053	mg/kg	
67-66-3	Chloroform	ND	0.0023	0.00032	mg/kg	
74-87-3	Chloromethane	ND	0.0056	0.0014	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0056	0.00046	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0056	0.00050	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0023	0.00048	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0023	0.00023	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0023	0.00025	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0023	0.00023	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0023	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0023	0.00037	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0023	0.00061	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0023	0.00059	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0023	0.00057	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0023	0.00050	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0023	0.00047	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0056	0.00050	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0056	0.00074	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0056	0.00026	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0023	0.00032	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0023	0.00033	mg/kg	
123-91-1	1,4-Dioxane	ND	0.028	0.023	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0056	0.0037	mg/kg	
100-41-4	Ethylbenzene	0.0044	0.0023	0.00020	mg/kg	
87-68-3	Hexachlorobutadiene	ND	0.0056	0.00064	mg/kg	
591-78-6	2-Hexanone	ND	0.0056	0.0027	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0056	0.00031	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0056	0.00018	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0023	0.00045	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0056	0.0021	mg/kg	
74-95-3	Methylene bromide	ND	0.0056	0.00039	mg/kg	
75-09-2	Methylene chloride	ND	0.0023	0.0017	mg/kg	
91-20-3	Naphthalene	ND	0.0056	0.00088	mg/kg	
103-65-1	n-Propylbenzene	0.00036	0.0056	0.00027	mg/kg	J
100-42-5	Styrene	ND	0.0056	0.00023	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0056	0.00043	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0023	0.00033	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0023	0.00050	mg/kg	
108-88-3	Toluene	0.0043	0.0056	0.00027	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0056	0.00049	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0056	0.00041	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0023	0.00020	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0023	0.00039	mg/kg	
79-01-6	Trichloroethene	ND	0.0023	0.00053	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0023	0.0012	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0056	0.00043	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.00051	0.0056	0.00023	mg/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	0.0056	0.00015	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0056	0.0014	mg/kg	
75-01-4	Vinyl chloride	ND	0.0023	0.00064	mg/kg	
	m,p-Xylene	0.00096	0.0023	0.00032	mg/kg	J
95-47-6	o-Xylene	ND	0.0023	0.00023	mg/kg	
1330-20-7	Xylene (total)	0.00096	0.0023	0.00023	mg/kg	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:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.08	.017	mg/kg	JN
109-66-0	Pentane	6.49	.01	mg/kg	JN
107-83-5	Pentane, 2-methyl-	7.83	.0055	mg/kg	JN
	Total TIC, Volatile		.0325	mg/kg	J

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16540.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
Run #2							

	Initial Weight	Final Volume
Run #1	20.9 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.50	0.062	mg/kg	
95-57-8	2-Chlorophenol	ND	0.25	0.011	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.50	0.013	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.50	0.014	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.50	0.081	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.0	0.12	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.50	0.062	mg/kg	
95-48-7	2-Methylphenol	ND	0.50	0.020	mg/kg	
	3&4-Methylphenol	ND	0.50	0.024	mg/kg	
88-75-5	2-Nitrophenol	ND	0.50	0.013	mg/kg	
100-02-7	4-Nitrophenol	ND	1.0	0.094	mg/kg	
87-86-5	Pentachlorophenol	ND	0.50	0.035	mg/kg	
108-95-2	Phenol	ND	0.25	0.014	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.50	0.012	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.50	0.012	mg/kg	
62-53-3	Aniline	ND	0.50	0.025	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.25	0.013	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.25	0.010	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.50	0.025	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.25	0.014	mg/kg	
106-47-8	4-Chloroaniline	ND	0.50	0.012	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.25	0.012	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.25	0.015	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.25	0.018	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.25	0.015	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.25	0.011	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.50	0.033	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.50	0.012	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.25	0.025	mg/kg	
132-64-9	Dibenzofuran	ND	0.10	0.014	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.25	0.026	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.25	0.0078	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.25	0.012	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.25	0.014	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.25	0.0092	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.25	0.016	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.50	0.12	mg/kg	
67-72-1	Hexachloroethane	ND	0.25	0.012	mg/kg	
78-59-1	Isophorone	ND	0.25	0.012	mg/kg	
88-74-4	2-Nitroaniline	ND	0.50	0.012	mg/kg	
99-09-2	3-Nitroaniline	ND	0.50	0.027	mg/kg	
100-01-6	4-Nitroaniline	ND	0.50	0.012	mg/kg	
98-95-3	Nitrobenzene	ND	0.25	0.014	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.25	0.012	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.25	0.014	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.25	0.015	mg/kg	
110-86-1	Pyridine	ND	0.50	0.025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		30-130%
4165-62-2	Phenol-d5	54%		30-130%
118-79-6	2,4,6-Tribromophenol	54%		30-130%
4165-60-0	Nitrobenzene-d5	56%		30-130%
321-60-8	2-Fluorobiphenyl	56%		30-130%
1718-51-0	Terphenyl-d14	64%		30-130%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36010.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319
Run #2							

	Initial Weight	Final Volume
Run #1	20.9 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0050	0.00058	mg/kg	
208-96-8	Acenaphthylene	ND	0.0050	0.00093	mg/kg	
120-12-7	Anthracene	ND	0.0050	0.00081	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0050	0.00062	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0050	0.00072	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0050	0.00061	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0050	0.0019	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0050	0.00096	mg/kg	
218-01-9	Chrysene	ND	0.0050	0.00077	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0050	0.0014	mg/kg	
206-44-0	Fluoranthene	ND	0.0050	0.00079	mg/kg	
86-73-7	Fluorene	ND	0.0050	0.00044	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0050	0.0013	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.010	0.010	mg/kg	
91-57-6	2-Methylnaphthalene	0.0012	0.0050	0.0011	mg/kg	J
85-01-8	Phenanthrene	ND	0.0050	0.00098	mg/kg	
129-00-0	Pyrene	ND	0.0050	0.0017	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	24%		15-110%
4165-60-0	Nitrobenzene-d5	59%		30-130%
321-60-8	2-Fluorobiphenyl	54%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86553.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0026	0.00063	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0026	0.00095	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	140%		61-167%
460-00-4	Bromofluorobenzene (S)	73%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(22-24')		
Lab Sample ID:	MC26889-2	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8015	**Percent Solids:**	95.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WX70646.D	1	12/09/13	TB	n/a	n/a	GWX3391
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.77 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	11	2.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	106%		61-116%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62147.D	1	12/13/13	KD	n/a	n/a	MSM2171
Run #2							

	Initial Weight	Final Volume
Run #1	4.51 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.012	0.0045	mg/kg	
107-02-8	Acrolein [a]	ND	0.029	0.0044	mg/kg	
107-13-1	Acrylonitrile	ND	0.029	0.0016	mg/kg	
71-43-2	Benzene	0.00075	0.00058	0.00029	mg/kg	
108-86-1	Bromobenzene	ND	0.0058	0.00032	mg/kg	
74-97-5	Bromochloromethane	ND	0.0058	0.00067	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0023	0.00042	mg/kg	
75-25-2	Bromoform	ND	0.0023	0.00034	mg/kg	
74-83-9	Bromomethane	ND	0.0023	0.0011	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0058	0.0036	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0058	0.00020	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0058	0.00018	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0058	0.00041	mg/kg	
75-15-0	Carbon disulfide	ND	0.0058	0.00018	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0023	0.0013	mg/kg	
108-90-7	Chlorobenzene	ND	0.0023	0.00031	mg/kg	
75-00-3	Chloroethane	ND	0.0058	0.00069	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0058	0.0055	mg/kg	
67-66-3	Chloroform	ND	0.0023	0.00033	mg/kg	
74-87-3	Chloromethane	ND	0.0058	0.0014	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0058	0.00047	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0058	0.00051	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0023	0.00049	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0023	0.00024	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0023	0.00026	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0023	0.00023	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0023	0.0013	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0023	0.00038	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0023	0.00063	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0023	0.00060	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0023	0.00059	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0023	0.00052	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0023	0.00049	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0058	0.00052	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0058	0.00076	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0058	0.00027	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0023	0.00033	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0023	0.00034	mg/kg	
123-91-1	1,4-Dioxane	ND	0.029	0.024	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0058	0.0038	mg/kg	
100-41-4	Ethylbenzene	0.0020	0.0023	0.00021	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0058	0.00066	mg/kg	
591-78-6	2-Hexanone	ND	0.0058	0.0028	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0058	0.00032	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0058	0.00018	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0023	0.00046	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0058	0.0021	mg/kg	
74-95-3	Methylene bromide	ND	0.0058	0.00041	mg/kg	
75-09-2	Methylene chloride	ND	0.0023	0.0018	mg/kg	
91-20-3	Naphthalene	ND	0.0058	0.00091	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0058	0.00028	mg/kg	
100-42-5	Styrene	ND	0.0058	0.00024	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0058	0.00045	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0023	0.00034	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0023	0.00051	mg/kg	
108-88-3	Toluene	0.0021	0.0058	0.00028	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0058	0.00050	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0058	0.00042	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0023	0.00021	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0023	0.00040	mg/kg	
79-01-6	Trichloroethene	ND	0.0023	0.00055	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0023	0.0012	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0058	0.00045	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0058	0.00024	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0058	0.00015	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0058	0.0014	mg/kg	
75-01-4	Vinyl chloride	ND	0.0023	0.00066	mg/kg	
	m,p-Xylene	0.00057	0.0023	0.00033	mg/kg	J
95-47-6	o-Xylene	ND	0.0023	0.00024	mg/kg	
1330-20-7	Xylene (total)	0.00057	0.0023	0.00024	mg/kg	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:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.08	.0078	mg/kg	JN
109-66-0	Pentane	6.50	.0048	mg/kg	JN
	Total TIC, Volatile		.0126	mg/kg	J

(a) Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low.

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16541.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
Run #2							

	Initial Weight	Final Volume
Run #1	20.5 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.51	0.064	mg/kg	
95-57-8	2-Chlorophenol	ND	0.25	0.011	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.51	0.013	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.51	0.015	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.51	0.083	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.0	0.13	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.51	0.064	mg/kg	
95-48-7	2-Methylphenol	ND	0.51	0.020	mg/kg	
	3&4-Methylphenol	ND	0.51	0.025	mg/kg	
88-75-5	2-Nitrophenol	ND	0.51	0.014	mg/kg	
100-02-7	4-Nitrophenol	ND	1.0	0.095	mg/kg	
87-86-5	Pentachlorophenol	ND	0.51	0.036	mg/kg	
108-95-2	Phenol	ND	0.25	0.014	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.51	0.013	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.51	0.013	mg/kg	
62-53-3	Aniline	ND	0.51	0.025	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.25	0.013	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.25	0.010	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.51	0.026	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.25	0.014	mg/kg	
106-47-8	4-Chloroaniline	ND	0.51	0.013	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.25	0.012	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.25	0.016	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.25	0.018	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.25	0.016	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.25	0.011	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.51	0.034	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.51	0.013	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.25	0.025	mg/kg	
132-64-9	Dibenzofuran	ND	0.10	0.014	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.25	0.027	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.25	0.0080	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.25	0.013	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.25	0.015	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.25	0.0094	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.25	0.016	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.51	0.13	mg/kg	
67-72-1	Hexachloroethane	ND	0.25	0.012	mg/kg	
78-59-1	Isophorone	ND	0.25	0.012	mg/kg	
88-74-4	2-Nitroaniline	ND	0.51	0.013	mg/kg	
99-09-2	3-Nitroaniline	ND	0.51	0.028	mg/kg	
100-01-6	4-Nitroaniline	ND	0.51	0.013	mg/kg	
98-95-3	Nitrobenzene	ND	0.25	0.014	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.25	0.012	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.25	0.015	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.25	0.015	mg/kg	
110-86-1	Pyridine	ND	0.51	0.025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	69%		30-130%
4165-62-2	Phenol-d5	68%		30-130%
118-79-6	2,4,6-Tribromophenol	74%		30-130%
4165-60-0	Nitrobenzene-d5	71%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	93%		30-130%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36011.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319
Run #2							

	Initial Weight	Final Volume
Run #1	20.5 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0051	0.00059	mg/kg	
208-96-8	Acenaphthylene	ND	0.0051	0.00095	mg/kg	
120-12-7	Anthracene	ND	0.0051	0.00083	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0051	0.00063	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0051	0.00074	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0051	0.00062	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0051	0.0020	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0051	0.00098	mg/kg	
218-01-9	Chrysene	ND	0.0051	0.00078	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0051	0.0015	mg/kg	
206-44-0	Fluoranthene	ND	0.0051	0.00081	mg/kg	
86-73-7	Fluorene	ND	0.0051	0.00045	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0051	0.0013	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.010	0.010	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0051	0.0011	mg/kg	
85-01-8	Phenanthrene	ND	0.0051	0.0010	mg/kg	
129-00-0	Pyrene	ND	0.0051	0.0018	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		15-110%
4165-62-2	Phenol-d5	35%		15-110%
118-79-6	2,4,6-Tribromophenol	32%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	68%		30-130%
1718-51-0	Terphenyl-d14	121%		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:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86554.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0026	0.00063	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0026	0.00094	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	146%		61-167%
460-00-4	Bromofluorobenzene (S)	106%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP63-120413(36-38')		
Lab Sample ID:	MC26889-3	**Date Sampled:**	12/03/13
Matrix:	SO - Soil	**Date Received:**	12/05/13
Method:	SW846 8015	**Percent Solids:**	95.9
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WX70647.D	1	12/09/13	TB	n/a	n/a	GWX3391
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.47 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	2.63	12	2.6	mg/kg	JB

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	105%		61-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC26889-4	**Date Sampled:**	12/03/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U16830.D	1	12/16/13	GK	n/a	n/a	MSU802
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	12.1	10	2.8	ug/l	
107-02-8	Acrolein	ND	25	6.3	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.5	ug/l	
71-43-2	Benzene	ND	0.50	0.45	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.64	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.33	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.5	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.6	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.54	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.58	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.87	ug/l	
75-15-0	Carbon disulfide [a]	ND	5.0	0.59	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.62	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.48	ug/l	
75-00-3	Chloroethane	ND	2.0	0.84	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	1.4	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.55	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.33	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.35	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.30	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.37	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC26889-4	**Date Sampled:**	12/03/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.45	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.97	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.3	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.63	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.29	ug/l	
123-91-1	1,4-Dioxane	ND	25	16	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.38	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.3	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.64	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.55	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.43	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	0.43	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.41	ug/l	
91-20-3	Naphthalene	ND	5.0	0.79	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.59	ug/l	
100-42-5	Styrene	ND	5.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.42	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.61	ug/l	
108-88-3	Toluene	ND	1.0	0.46	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.76	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.45	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.94	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.49	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.45	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.61	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	0.47	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	1.1	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.61	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.41	ug/l	

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

J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC26889-4	**Date Sampled:**	12/03/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/05/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	112%		70-130%
460-00-4	4-Bromofluorobenzene	117%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74381-40-1	Propanoic acid, 2-methyl-, 1-(1,1-	16.58	9.7	ug/l	JN
	Total TIC, Volatile		9.7	ug/l	J

(a) Continuing Calibration outside of acceptance criteria. Sample result may be biased low.

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

J = Indicates 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-120413(NA THIO)		
Lab Sample ID:	MC26889-5	**Date Sampled:**	12/03/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/05/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB53144.D	1	12/09/13	CZ	12/06/13	OP36056	GBB3106
Run #2							

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

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0053	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	146%		36-173%
460-00-4	Bromofluorobenzene (S)	137%		36-173%

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

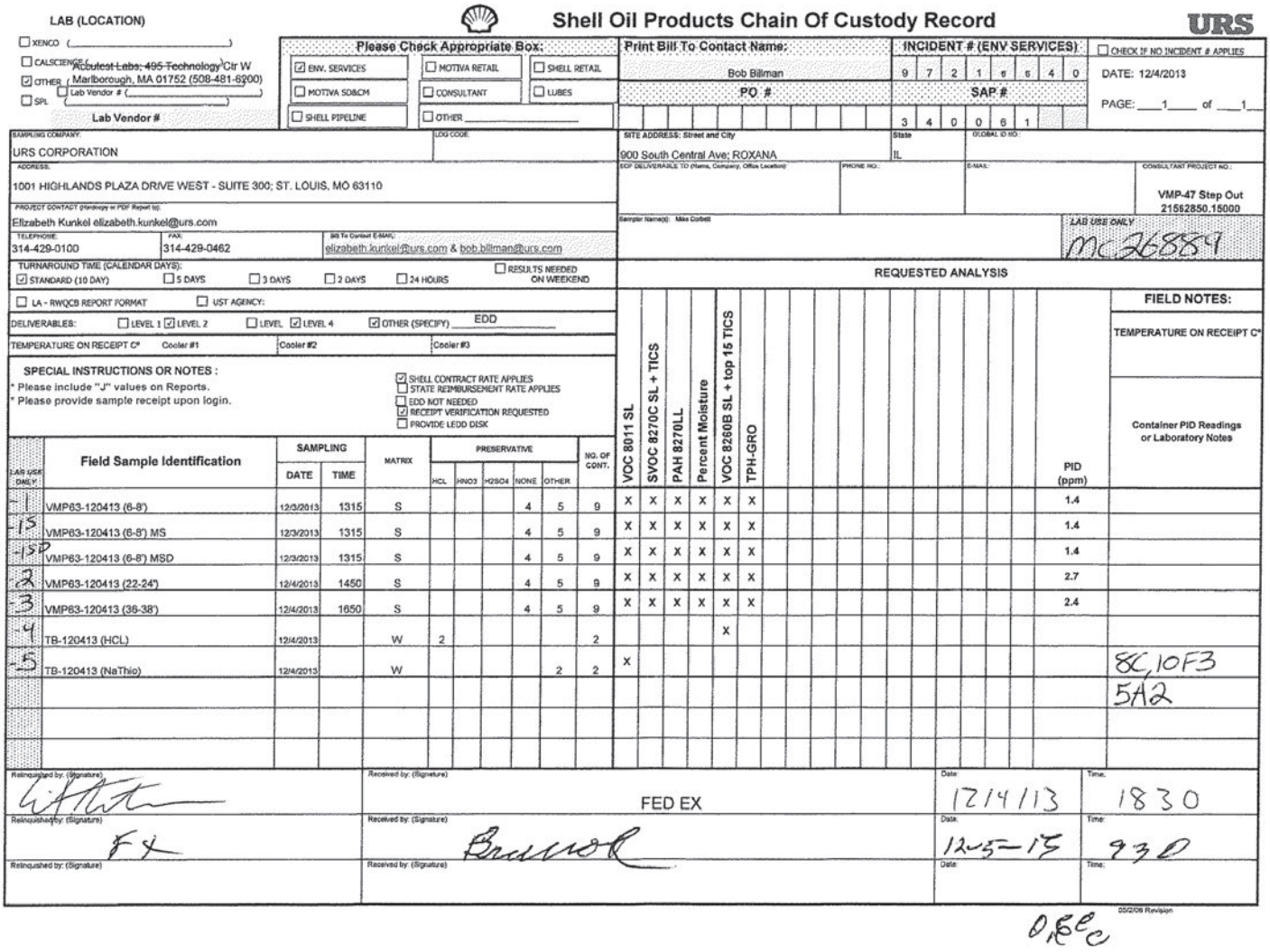
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- REPROC Form: Reprocessed/Corrected Data
- Sample Tracking Chronicle
- Internal Chain of Custody



Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs; 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200))
☐ SPL (_____)
Lab Vendor # (_____)

Please Check Appropriate Box:

☑ ENV. SERVICES | ☐ MOTIVA RETAIL | ☐ SHELL RETAIL
☐ MOTIVA SD&CM | ☐ CONSULTANT | ☐ LUBES
☐ SHELL PIPELINE | ☐ OTHER _____

Print Bill To Contact Name: Bob Billman

INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 12/4/2013

PAGE: 1 of 1

PO #

SAP #: 3 4 0 0 6 1

SAMPLING COMPANY: URS CORPORATION

LOG CODE:

SITE ADDRESS: Street and City: 900 South Central Ave; ROXANA

State: IL

GLOBAL ID NO.:

ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300; ST. LOUIS, MO 63110

EDF DELIVERABLE TO (Name, Company, Office Location):

PHONE NO.:

E-MAIL:

CONSULTANT PROJECT NO.: VMP-47 Step Out 21562850.15000

PROJECT CONTACT (Hardcopy or PDF Report to): Elizabeth Kunkel elizabeth.kunkel@urs.com

Sampler Name(s): Mike Corbett

LAB USE ONLY: MC26889

TELEPHONE: 314-429-0100

FAX: 314-429-0462

Bill To Contact E-MAIL: elizabeth.kunkel@urs.com & bob.billman@urs.com

TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

REQUESTED ANALYSIS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT C° | Cooler #1 | Cooler #2 | Cooler #3

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

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8011 SL	SVOC 8270C SL + TICS	PAH 8270LL	Percent Moisture	VOC 8260B SL + top 15 TICS	TPH-GRO	PID (ppm)	Container PID Readings or Laboratory Notes
-1	VMP63-120413 (6-8')	12/3/2013	1315	S				4	5	9	X	X	X	X	X	X	1.4	
-1S	VMP63-120413 (6-8') MS	12/3/2013	1315	S				4	5	9	X	X	X	X	X	X	1.4	
-1SD	VMP63-120413 (6-8') MSD	12/3/2013	1315	S				4	5	9	X	X	X	X	X	X	1.4	
-2	VMP63-120413 (22-24')	12/4/2013	1450	S				4	5	9	X	X	X	X	X	X	2.7	
-3	VMP63-120413 (36-38')	12/4/2013	1650	S				4	5	9	X	X	X	X	X	X	2.4	
-4	TB-120413 (HCL)	12/4/2013		W	2					2					X			
-5	TB-120413 (NaThio)	12/4/2013		W					2	2	X							8C, 10F3 5A2

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	FED EX	12/4/13	1830
		12-5-13	930

05/2006 Revision

ORIG

MC26889: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC26889 **Client:** URS **Immediate Client Services Action Required:** No

Date / Time Received: 12/5/2013 **Delivery Method:** **Client Service Action Required at Login:** No

Project: 900 SOUTH CENTRAL AVENUE **No. Coolers:** 1 **Airbill #'s:**

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

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

Quality Control 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:508.481.6200

495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www/accutest.com

5.1

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MC26889: Chain of Custody
Page 2 of 2

Job Number: MC26889 **Sample:** MSM2169-ICV2169
Account: SHELLWIC Shell Oil **Lab FileID:** M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Evaluate Continuing Calibration Report

Data File : O:\msm\1\data.back-up\m131212s\m62084.d Vial: 4
Acq On : 12 Dec 2013 10:00 am Operator: krystend
Sample : cc2169-50 Inst : GCMS M
Misc : MS30736,MSM2169,5,,,5,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : O:\msm\1\methods\m131211s.m (RTE Integrator)
Title : SW-846 Method 8260
Last Update : Thu Dec 12 09:23:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	88	0.00	6.84
2	P	tertiary butyl alcohol	1.708	2.110	-23.5#	116	0.00	6.92
3	P	Ethanol	0.128	0.142	-10.9	108	0.00	5.64
4	I	pentafluorobenzene	1.000	1.000	0.0	97	0.00	9.35
5	P	dichlorodifluoromethane	0.475	0.399	16.0	90	0.02	4.45
6	P	chloromethane	0.725	0.756	-4.3	111	0.01	4.71
7	P	vinyl chloride	0.700	0.594	15.1	87	0.02	4.98
8	P	bromomethane	0.461	0.437	5.2	105	0.01	5.50
9	P	chloroethane	0.340	0.353	-3.8	106	0.00	5.67
10	P	ethyl ether	0.393	0.486	-23.7#	132	0.00	6.58
11	P	acetonitrile	0.126	0.131	-4.0	117	0.00	6.57
12	P	trichlorofluoromethane	0.810	0.789	2.6	99	0.00	6.34
13	P	freon-113	0.391	0.533	-36.3#	130	0.00	7.15
14	P	acrolein	0.114	0.017#	85.1#	16#	0.03	6.36
15	P	1,1-dichloroethene	0.466	0.579	-24.2#	139	0.00	6.94
16	P	acetone	0.094	0.140	-48.9#	171	0.00	6.47
17	P	Methyl Acetate	0.588	0.608	-3.4	105	0.00	7.13
18	P	methylene chloride	0.511	0.624	-22.1#	133	0.00	7.10
19	P	methyl tert butyl ether	1.059	1.181	-11.5	121	0.00	7.91
20	P	acrylonitrile	0.231	0.456	-97.4#	209#	-0.01	7.00
21	P	allyl chloride	0.916	1.090	-19.0	127	0.00	7.19
22	P	trans-1,2-dichloroethene	0.519	0.616	-18.7	128	0.00	7.81
23	P	iodomethane	0.884	1.165	-31.8#	135	0.00	7.00
24	P	carbon disulfide	1.334	1.788	-34.0#	143	0.00	7.39
25	P	propionitrile	0.078	0.087	-11.5	122	0.00	8.16
26	P	vinyl acetate	1.093	1.115	-2.0	104	0.00	8.17
27	P	chloroprene	0.825	1.024	-24.1#	132	0.00	8.44
28	P	di-isopropyl ether	2.028	2.246	-10.7	120	0.00	8.48
29	P	methacrylonitrile	0.356	0.389	-9.3	125	0.00	8.60
30	P	2-butanone	0.078	0.118	-51.3#	167	0.00	8.49
31	P	1,1-dichloroethane	0.904	1.075	-18.9	126	0.00	8.07
32	P	tert-butyl ethyl ether	1.271	1.493	-17.5	124	0.00	8.88
33	P	isobutyl alcohol	0.056	0.053	5.4	110	0.00	8.88
34	P	2,2-dichloropropane	0.533	0.628	-17.8	123	0.00	8.94
35	P	cis-1,2-dichloroethene	0.601	0.679	-13.0	124	0.00	8.65
36	P	ethyl acetate	0.370	0.354	4.3	108	0.00	8.88
37	P	bromochloromethane	0.331	0.382	-15.4	127	0.00	8.82
38	P	chloroform	0.887	1.002	-13.0	121	0.00	8.86
		----------	Amount	Calc.	%Drift	----------		
39	S	dibromofluoromethane (s)	45.000	52.242	-16.1	93	0.00	8.99

Job Number: MC26889 Sample: MSM2169-ICV2169
Account: SHELLWIC Shell Oil Lab FileID: M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

			AvgRF	CCRF	%Dev			
40	P	Tetrahydrofuran	0.224	0.226	-0.9	123	0.00	9.19
41	P	1,1,1-trichloroethane	0.719	0.823	-14.5	121	0.00	9.62
42	I	1,4-difluorobenzene	1.000	1.000	0.0	95	0.00	10.23
43	P	Cyclohexane	0.578	0.666	-15.2	119	0.00	9.91
44	P	carbon tetrachloride	0.459	0.547	-19.2	123	0.00	10.00
45	P	1,1-dichloropropene	0.401	0.470	-17.2	125	0.00	9.80
46	P	benzene	1.324	1.465	-10.6	124	0.00	10.03
47	P	1,2-dichloroethane	0.417	0.473	-13.4	123	0.00	9.52
48	P	tert-amyl methyl ether	0.614	0.717	-16.8	121	0.00	10.14
49	P	heptane	0.648	0.699	-7.9	116	0.00	10.51
50	P	trichloroethene	0.382	0.416	-8.9	122	0.00	10.66
51	P	1,2-dichloropropane	0.366	0.413	-12.8	120	0.00	10.62
52	P	dibromomethane	0.216	0.248	-14.8	125	0.00	10.60
53	P	bromodichloromethane	0.435	0.505	-16.1	121	0.00	10.71
54	P	Methylcyclohexane	0.543	0.657	-21.0#	125	0.00	11.17
55	P	2-chloroethyl vinyl ether	0.096	0.114	-18.8	127	0.00	11.08
56	P	methyl methacrylate	0.211	0.236	-11.8	122	0.00	10.80
			Amount	Calc.	%Drift			
57	P	1,4-dioxane	250.000	273.767	-9.5	115	0.00	10.80
			AvgRF	CCRF	%Dev			
58	P	cis-1,3-dichloropropene	0.525	0.584	-11.2	117	0.00	11.33
			Amount	Calc.	%Drift			
59	S	toluene-d8 (s)	45.000	49.920	-10.9	102	0.00	12.04
			AvgRF	CCRF	%Dev			
60	P	4-methyl-2-pentanone	0.411	0.460	-11.9	125	0.00	11.42
61	P	toluene	0.832	0.973	-16.9	122	0.00	12.11
62	P	trans-1,3-dichloropropene	0.428	0.528	-23.4#	130	0.00	11.75
63	P	1,1,2-trichloroethane	0.243	0.280	-15.2	120	0.00	11.92
64	P	ethyl methacrylate	0.389	0.445	-14.4	121	0.00	12.12
65	I	chlorobenzene-d5	1.000	1.000	0.0	96	0.00	13.51
66	P	tetrachloroethene	0.923	1.051	-13.9	122	0.00	12.85
67	P	1,3-dichloropropane	1.033	1.222	-18.3	124	0.00	12.16
68	P	dibromochloromethane	0.942	1.130	-20.0	124	0.00	12.45
69	P	1,2-dibromoethane	0.738	0.868	-17.6	122	0.00	12.71
70	P	2-hexanone	0.802	1.082	-34.9#	167	0.00	12.28
71	P	chlorobenzene	2.471	2.805	-13.5	117	0.00	13.54
72	P	1,1,1,2-tetrachloroethane	0.893	1.085	-21.5#	125	0.00	13.46
73	P	ethylbenzene	3.647	4.238	-16.2	121	0.00	13.71
74	P	m,p-xylene	1.552	1.811	-16.7	120	0.00	13.90
75	P	o-xylene	1.566	1.807	-15.4	118	0.00	14.31
76	P	styrene	2.493	2.989	-19.9	122	0.00	14.23
77	P	bromoform	0.626	0.752	-20.1#	126	0.00	14.06
78	P	trans-1,4-dichloro-2-bute	0.301	0.354	-17.6	129	0.00	14.45
79	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	16.06
80	P	isopropylbenzene	3.606	3.897	-8.1	117	0.00	14.67
			Amount	Calc.	%Drift			
81	S	bromofluorobenzene (s)	45.000	51.683	-14.9	95	0.00	14.73
			AvgRF	CCRF	%Dev			
82	P	bromobenzene	0.960	1.081	-12.6	123	0.00	14.97

Job Number: MC26889 **Sample:** MSM2169-ICV2169
Account: SHELLWIC Shell Oil **Lab FileID:** M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

83	P	1,1,2,2-tetrachloroethane	0.844	0.979	-16.0	129	0.00	14.31
84	P	1,2,3-trichloropropane	0.904	1.025	-13.4	125	0.00	14.46
85	P	n-propylbenzene	3.960	4.128	-4.2	112	0.00	15.12
86	P	2-chlorotoluene	2.423	2.577	-6.4	117	0.00	15.24
87	P	4-chlorotoluene	2.391	2.669	-11.6	121	0.00	15.31
88	P	1,3,5-trimethylbenzene	3.022	3.298	-9.1	119	0.00	15.39
89	P	tert-butylbenzene	1.637	1.727	-5.5	115	0.00	15.70
90	P	1,2,4-trimethylbenzene	2.990	3.254	-8.8	119	0.00	15.80
91	P	sec-butylbenzene	4.117	4.440	-7.8	118	0.00	15.92
92	P	1,3-dichlorobenzene	1.941	2.184	-12.5	124	0.00	16.03
93	P	p-isopropyltoluene	3.578	3.977	-11.2	123	0.00	16.09
94	P	1,4-dichlorobenzene	1.987	2.282	-14.8	129	0.00	16.10
95	P	1,2-dichlorobenzene	1.933	2.168	-12.2	122	0.00	16.46
96	P	n-butylbenzene	3.011	3.363	-11.7	123	0.00	16.51
97	P	1,2-dibromo-3-chloropropa	0.184	0.189	-2.7	124	0.00	16.94
98	P	1,3,5-trichlorobenzene	1.412	1.608	-13.9	129	0.00	17.75
99	P	1,2,4-trichlorobenzene	1.349	1.573	-16.6	131	0.00	18.30
100	P	hexachlorobutadiene	0.630	0.710	-12.7	128	0.00	18.59
101	P	naphthalene	3.804	4.166	-9.5	125	0.00	18.57
102	P	1,2,3-trichlorobenzene	1.317	1.495	-13.5	128	0.00	18.78
103	P	2-methylnaphthalene	2.146	2.377	-10.8	121	0.00	19.97
			Amount	Calc.	%Drift			
104	P	1-methylnaphthalene	25.000	27.233	-8.9	121	0.00	20.22

(#) = Out of Range SPCC's out = 1 CCC's out = 0
m62074.D m131211s.m Fri Jan 29 11:39:28 2016

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC26889

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Project No: 21562850.15000

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC26889-1 Collected: 03-DEC-13 13:15 By: MC VMP63-120413(6-8')		Received: 05-DEC-13 By:				
MC26889-1	SW846 8011	07-DEC-13 01:17	CZ	06-DEC-13	TA	V8011SL
MC26889-1	SM21 2540 B MOD.	09-DEC-13	MC			%SOL
MC26889-1	SW846 8015	09-DEC-13 15:20	TB			V8015GRO
MC26889-1	SW846 8260C	13-DEC-13 16:23	KD			V8260SL+
MC26889-1	SW846 8270D	17-DEC-13 18:40	KR	13-DEC-13	AW	AB8270SL+
MC26889-1	SW846 8270D BY SIM	18-DEC-13 20:27	KR	13-DEC-13	AW	B8270SIMSL
MC26889-2 Collected: 03-DEC-13 14:50 By: MC VMP63-120413(22-24')		Received: 05-DEC-13 By:				
MC26889-2	SW846 8011	07-DEC-13 05:54	CZ	06-DEC-13	TA	V8011SL
MC26889-2	SM21 2540 B MOD.	09-DEC-13	MC			%SOL
MC26889-2	SW846 8015	09-DEC-13 17:10	TB			V8015GRO
MC26889-2	SW846 8260C	13-DEC-13 16:52	KD			V8260SL+
MC26889-2	SW846 8270D	17-DEC-13 19:03	KR	13-DEC-13	AW	AB8270SL+
MC26889-2	SW846 8270D BY SIM	18-DEC-13 20:48	KR	13-DEC-13	AW	B8270SIMSL
MC26889-3 Collected: 03-DEC-13 16:50 By: MC VMP63-120413(36-38')		Received: 05-DEC-13 By:				
MC26889-3	SW846 8011	07-DEC-13 06:19	CZ	06-DEC-13	TA	V8011SL
MC26889-3	SM21 2540 B MOD.	09-DEC-13	MC			%SOL
MC26889-3	SW846 8015	09-DEC-13 17:47	TB			V8015GRO
MC26889-3	SW846 8260C	13-DEC-13 17:22	KD			V8260SL+
MC26889-3	SW846 8270D	17-DEC-13 19:26	KR	13-DEC-13	AW	AB8270SL+
MC26889-3	SW846 8270D BY SIM	18-DEC-13 21:10	KR	13-DEC-13	AW	B8270SIMSL
MC26889-4 Collected: 03-DEC-13 00:00 By: MC TB-120413(HCL)		Received: 05-DEC-13 By:				
MC26889-4	SW846 8260C	16-DEC-13 13:09	GK			V8260SL+
MC26889-5 Collected: 03-DEC-13 00:00 By: MC TB-120413(NA THIO)		Received: 05-DEC-13 By:				
MC26889-5	SW846 8011	09-DEC-13 15:08	CZ	06-DEC-13	MT	V8011SL

SGS Accutest Internal Chain of Custody

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC26889-1.7	Walk In Ref #5	Miranda Cardullo	12/09/13 14:44	Retrieve from Storage
MC26889-1.7	Miranda Cardullo	Walk In Ref #5	12/09/13 16:05	Return to Storage
MC26889-1.7	Scott Parsick		03/03/14 15:47	Disposed
MC26889-1.8	Walk In Ref #5	Michael Rolo	12/06/13 09:36	Retrieve from Storage
MC26889-1.8	Michael Rolo		12/09/13 06:52	Depleted
MC26889-1.12	Walk In Ref #5	Michael Rolo	12/06/13 09:36	Retrieve from Storage
MC26889-1.12	Michael Rolo		12/09/13 06:52	Depleted
MC26889-1.14	VOC Ref #10	Krysten Dufort	12/13/13 14:13	Retrieve from Storage
MC26889-1.14	Krysten Dufort	GCMSM	12/13/13 14:13	Load on Instrument
MC26889-1.14	GCMSM	Krysten Dufort	12/16/13 10:04	Unload from Instrument
MC26889-1.14	Krysten Dufort	VOC Ref #10	12/16/13 10:04	Return to Storage
MC26889-1.14	Scott Parsick		03/03/14 15:47	Disposed
MC26889-1.16	VOC Ref #10	Krysten Dufort	12/13/13 14:13	Retrieve from Storage
MC26889-1.16	Krysten Dufort	GCMSM	12/13/13 14:13	Load on Instrument
MC26889-1.16	GCMSM	Krysten Dufort	12/16/13 10:04	Unload from Instrument
MC26889-1.16	Krysten Dufort	VOC Ref #10	12/16/13 10:04	Return to Storage
MC26889-1.16	Scott Parsick		03/03/14 15:47	Disposed
MC26889-1.18	VOC Ref #10	Krysten Dufort	12/13/13 14:13	Retrieve from Storage
MC26889-1.18	Krysten Dufort	GCMSM	12/13/13 14:13	Load on Instrument
MC26889-1.18	GCMSM	Krysten Dufort	12/16/13 10:04	Unload from Instrument
MC26889-1.18	Krysten Dufort	VOC Ref #10	12/16/13 10:04	Return to Storage
MC26889-1.18	Scott Parsick		03/03/14 15:47	Disposed
MC26889-1.19	VOC Ref #10	Todd Bahosh	12/09/13 12:11	Retrieve from Storage
MC26889-1.19	Todd Bahosh	GCWX	12/09/13 12:11	Load on Instrument
MC26889-1.19	GCWX	Todd Bahosh	12/10/13 12:54	Unload from Instrument
MC26889-1.19	Todd Bahosh	VOC Ref #10	12/10/13 12:54	Return to Storage
MC26889-1.19	Scott Parsick		03/03/14 15:47	Disposed
MC26889-1.27	VOC Ref #10	Jaime Maslowski	12/06/13 14:38	Retrieve from Storage
MC26889-1.27	Jaime Maslowski	VOC Ref #10	12/10/13 15:54	Return to Storage
MC26889-1.27	Scott Parsick		03/03/14 15:47	Disposed
MC26889-2.1	Walk In Ref #5	Miranda Cardullo	12/09/13 14:44	Retrieve from Storage
MC26889-2.1	Miranda Cardullo	Walk In Ref #5	12/09/13 16:05	Return to Storage
MC26889-2.1	Scott Parsick		03/03/14 15:47	Disposed
MC26889-2.4	Walk In Ref #5	Michael Rolo	12/06/13 09:36	Retrieve from Storage
MC26889-2.4	Michael Rolo		12/09/13 06:52	Depleted

SGS Accutest Internal Chain of Custody

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC26889-2.5	VOC Ref #10	Krysten Dufort	12/13/13 14:13	Retrieve from Storage
MC26889-2.5	Krysten Dufort	GCMSM	12/13/13 14:13	Load on Instrument
MC26889-2.5	GCMSM	Krysten Dufort	12/16/13 10:04	Unload from Instrument
MC26889-2.5	Krysten Dufort	VOC Ref #10	12/16/13 10:04	Return to Storage
MC26889-2.5	Scott Parsick		03/03/14 15:47	Disposed
MC26889-2.7	VOC Ref #10	Jaime Maslowski	12/06/13 14:38	Retrieve from Storage
MC26889-2.7	Jaime Maslowski	VOC Ref #10	12/10/13 15:54	Return to Storage
MC26889-2.7	Scott Parsick		03/03/14 15:47	Disposed
MC26889-2.9	VOC Ref #10	Todd Bahosh	12/09/13 12:11	Retrieve from Storage
MC26889-2.9	Todd Bahosh	GCWX	12/09/13 12:11	Load on Instrument
MC26889-2.9	GCWX	Todd Bahosh	12/10/13 12:54	Unload from Instrument
MC26889-2.9	Todd Bahosh	VOC Ref #10	12/10/13 12:54	Return to Storage
MC26889-2.9	Scott Parsick		03/03/14 15:47	Disposed
MC26889-3.1	Walk In Ref #5	Miranda Cardullo	12/09/13 14:44	Retrieve from Storage
MC26889-3.1	Miranda Cardullo	Walk In Ref #5	12/09/13 16:05	Return to Storage
MC26889-3.1	Scott Parsick		03/03/14 15:47	Disposed
MC26889-3.3	Walk In Ref #5	Michael Rolo	12/06/13 09:36	Retrieve from Storage
MC26889-3.3	Michael Rolo		12/09/13 06:52	Depleted
MC26889-3.5	VOC Ref #10	Krysten Dufort	12/13/13 14:13	Retrieve from Storage
MC26889-3.5	Krysten Dufort	GCMSM	12/13/13 14:13	Load on Instrument
MC26889-3.5	GCMSM	Krysten Dufort	12/16/13 10:04	Unload from Instrument
MC26889-3.5	Krysten Dufort	VOC Ref #10	12/16/13 10:04	Return to Storage
MC26889-3.5	Scott Parsick		03/03/14 15:47	Disposed
MC26889-3.7	VOC Ref #10	Todd Bahosh	12/09/13 12:11	Retrieve from Storage
MC26889-3.7	Todd Bahosh	GCWX	12/09/13 12:11	Load on Instrument
MC26889-3.7	GCWX	Todd Bahosh	12/10/13 12:54	Unload from Instrument
MC26889-3.7	Todd Bahosh	VOC Ref #10	12/10/13 12:54	Return to Storage
MC26889-3.7	Scott Parsick		03/03/14 15:47	Disposed
MC26889-3.8	VOC Ref #10	Jaime Maslowski	12/06/13 14:38	Retrieve from Storage
MC26889-3.8	Jaime Maslowski	VOC Ref #10	12/10/13 15:54	Return to Storage
MC26889-3.8	Scott Parsick		03/03/14 15:47	Disposed
MC26889-4.2	VOC Ref #5	Gary Krasinski	12/16/13 10:29	Retrieve from Storage
MC26889-4.2	Gary Krasinski	GCMSU	12/16/13 10:29	Load on Instrument
MC26889-4.2	GCMSU	Gary Krasinski	12/17/13 11:17	Unload from Instrument
MC26889-4.2	Gary Krasinski	VOC Ref #5	12/17/13 11:17	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/05/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC26889-4.2	Scott Parsick		03/03/14 15:47	Disposed

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: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-MB	M62140.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.9	ug/kg	
107-02-8	Acrolein	ND	25	3.8	ug/kg	
107-13-1	Acrylonitrile	ND	25	1.3	ug/kg	
71-43-2	Benzene	ND	0.50	0.25	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.27	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.58	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.36	ug/kg	
75-25-2	Bromoform	ND	2.0	0.29	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.97	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	3.1	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.17	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.16	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.36	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.15	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	1.2	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.27	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.60	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	4.7	ug/kg	
67-66-3	Chloroform	ND	2.0	0.29	ug/kg	
74-87-3	Chloromethane	ND	5.0	1.2	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	0.41	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.44	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.43	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.21	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.22	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.20	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.33	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.54	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.52	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.51	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.45	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.42	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.45	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.66	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.23	ug/kg	

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-MB	M62140.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
123-91-1	1,4-Dioxane	ND	25	21	ug/kg	
97-63-2	Ethyl methacrylate	ND	5.0	3.3	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.18	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.57	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.4	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.28	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.40	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.8	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.35	ug/kg	
75-09-2	Methylene chloride	ND	2.0	1.5	ug/kg	
91-20-3	Naphthalene	ND	5.0	0.79	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	0.24	ug/kg	
100-42-5	Styrene	ND	5.0	0.21	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.39	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.44	ug/kg	
108-88-3	Toluene	ND	5.0	0.24	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.43	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.36	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.18	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.35	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.47	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	1.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.39	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.13	ug/kg	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.57	ug/kg	
	m,p-Xylene	ND	2.0	0.29	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.20	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.20	ug/kg	

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-MB	M62140.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	103%	70-130%

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

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-MB	U16825.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	2.8	ug/l	
107-02-8	Acrolein	ND	25	6.3	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.5	ug/l	
71-43-2	Benzene	ND	0.50	0.45	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.64	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.33	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.5	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.6	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.54	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.58	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.87	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.59	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.62	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.48	ug/l	
75-00-3	Chloroethane	ND	2.0	0.84	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	1.4	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.55	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.33	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.35	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.30	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.37	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.45	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.97	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.3	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.63	ug/l	

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-MB	U16825.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.29	ug/l	
123-91-1	1,4-Dioxane	ND	25	16	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.38	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.3	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.64	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.55	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.43	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	0.43	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.41	ug/l	
91-20-3	Naphthalene	ND	5.0	0.79	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.59	ug/l	
100-42-5	Styrene	ND	5.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.42	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.61	ug/l	
108-88-3	Toluene	ND	1.0	0.46	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.76	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.45	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.94	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.49	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.45	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.61	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	0.47	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	1.1	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.61	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.41	ug/l	

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-MB	U16825.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	107%	70-130%
2037-26-5	Toluene-D8	112%	70-130%
460-00-4	4-Bromofluorobenzene	115%	70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
74381-40-1	Propanoic acid, 2-methyl-, 1-(1,1-	16.59	9.7	ug/l	JN
	Total TIC, Volatile		9.7	ug/l	J

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-BS	U16823.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	62.5	125	70-130
107-02-8	Acrolein	50	83.9	168* [a]	70-130
107-13-1	Acrylonitrile	100	101	101	70-130
71-43-2	Benzene	50	46.6	93	70-130
108-86-1	Bromobenzene	50	48.5	97	70-130
74-97-5	Bromochloromethane	50	50.1	100	70-130
75-27-4	Bromodichloromethane	50	44.0	88	70-130
75-25-2	Bromoform	50	51.5	103	70-130
74-83-9	Bromomethane	50	48.8	98	70-130
78-93-3	2-Butanone (MEK)	50	56.6	113	70-130
104-51-8	n-Butylbenzene	50	48.9	98	70-130
135-98-8	sec-Butylbenzene	50	48.2	96	70-130
98-06-6	tert-Butylbenzene	50	46.5	93	70-130
75-15-0	Carbon disulfide	50	59.3	119	70-130
56-23-5	Carbon tetrachloride	50	50.8	102	70-130
108-90-7	Chlorobenzene	50	44.8	90	70-130
75-00-3	Chloroethane	50	51.2	102	70-130
110-75-8	2-Chloroethyl vinyl ether	50	52.4	105	70-130
67-66-3	Chloroform	50	45.6	91	70-130
74-87-3	Chloromethane	50	53.5	107	70-130
95-49-8	o-Chlorotoluene	50	46.4	93	70-130
106-43-4	p-Chlorotoluene	50	47.5	95	70-130
124-48-1	Dibromochloromethane	50	51.3	103	70-130
95-50-1	1,2-Dichlorobenzene	50	47.5	95	70-130
541-73-1	1,3-Dichlorobenzene	50	46.2	92	70-130
106-46-7	1,4-Dichlorobenzene	50	47.5	95	70-130
75-71-8	Dichlorodifluoromethane	50	42.3	85	70-130
75-34-3	1,1-Dichloroethane	50	48.7	97	70-130
107-06-2	1,2-Dichloroethane	50	46.6	93	70-130
75-35-4	1,1-Dichloroethene	50	56.2	112	70-130
156-59-2	cis-1,2-Dichloroethene	50	51.7	103	70-130
156-60-5	trans-1,2-Dichloroethene	50	54.9	110	70-130
78-87-5	1,2-Dichloropropane	50	46.2	92	70-130
142-28-9	1,3-Dichloropropane	50	49.3	99	70-130
594-20-7	2,2-Dichloropropane	50	50.1	100	70-130
563-58-6	1,1-Dichloropropene	50	50.2	100	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-BS	U16823.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	48.7	97	70-130
10061-02-6	trans-1,3-Dichloropropene	50	50.2	100	70-130
123-91-1	1,4-Dioxane	250	337	135* [a]	70-130
97-63-2	Ethyl methacrylate	50	46.7	93	77-137
100-41-4	Ethylbenzene	50	47.7	95	70-130
87-68-3	Hexachlorobutadiene	50	52.2	104	70-130
591-78-6	2-Hexanone	50	55.6	111	70-130
98-82-8	Isopropylbenzene	50	47.3	95	70-130
99-87-6	p-Isopropyltoluene	50	49.0	98	70-130
1634-04-4	Methyl Tert Butyl Ether	50	49.9	100	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	48.3	97	70-130
74-95-3	Methylene bromide	50	49.5	99	70-130
75-09-2	Methylene chloride	50	51.3	103	70-130
91-20-3	Naphthalene	50	53.3	107	70-130
103-65-1	n-Propylbenzene	50	45.4	91	70-130
100-42-5	Styrene	50	49.2	98	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	44.6	89	70-130
127-18-4	Tetrachloroethene	50	47.4	95	70-130
108-88-3	Toluene	50	47.5	95	70-130
87-61-6	1,2,3-Trichlorobenzene	50	52.5	105	70-130
120-82-1	1,2,4-Trichlorobenzene	50	52.7	105	70-130
71-55-6	1,1,1-Trichloroethane	50	46.8	94	70-130
79-00-5	1,1,2-Trichloroethane	50	44.3	89	70-130
79-01-6	Trichloroethene	50	47.9	96	70-130
75-69-4	Trichlorofluoromethane	50	45.9	92	70-130
96-18-4	1,2,3-Trichloropropane	50	52.0	104	70-130
95-63-6	1,2,4-Trimethylbenzene	50	48.0	96	70-130
108-67-8	1,3,5-Trimethylbenzene	50	48.1	96	70-130
108-05-4	Vinyl Acetate	50	43.6	87	70-130
75-01-4	Vinyl chloride	50	41.2	82	70-130
	m,p-Xylene	100	94.3	94	70-130
95-47-6	o-Xylene	50	47.6	95	70-130
1330-20-7	Xylene (total)	150	142	95	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSU802-BS	U16823.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

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

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

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-BS	M62137.D	1	12/13/13	KD	n/a	n/a	MSM2171
MSM2171-BSD	M62138.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	55.0	110	42.7	85	25	70-130/25
107-02-8	Acrolein	50	40.1	80	40.3	81	0	70-130/25
107-13-1	Acrylonitrile	100	96.5	97	93.8	94	3	70-130/25
71-43-2	Benzene	50	52.8	106	43.4	87	20	70-130/25
108-86-1	Bromobenzene	50	54.8	110	47.6	95	14	70-130/25
74-97-5	Bromochloromethane	50	56.7	113	47.7	95	17	70-130/25
75-27-4	Bromodichloromethane	50	56.8	114	47.6	95	18	70-130/25
75-25-2	Bromoform	50	60.5	121	52.2	104	15	70-130/25
74-83-9	Bromomethane	50	46.2	92	53.7	107	15	70-130/25
78-93-3	2-Butanone (MEK)	50	68.0	136* [a]	47.0	94	37* [a]	70-130/25
104-51-8	n-Butylbenzene	50	53.6	107	46.7	93	14	70-130/25
135-98-8	sec-Butylbenzene	50	53.0	106	45.1	90	16	70-130/25
98-06-6	tert-Butylbenzene	50	51.6	103	44.2	88	15	70-130/25
75-15-0	Carbon disulfide	50	62.4	125	49.9	100	22	70-130/25
56-23-5	Carbon tetrachloride	50	60.8	122	51.0	102	18	70-130/25
108-90-7	Chlorobenzene	50	55.5	111	46.2	92	18	70-130/25
75-00-3	Chloroethane	50	50.1	100	58.0	116	15	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	55.9	112	46.8	94	18	10-160/25
67-66-3	Chloroform	50	55.8	112	45.4	91	21	70-130/25
74-87-3	Chloromethane	50	46.9	94	55.5	111	17	70-130/25
95-49-8	o-Chlorotoluene	50	51.6	103	43.8	88	16	70-130/25
106-43-4	p-Chlorotoluene	50	53.2	106	45.6	91	15	70-130/25
124-48-1	Dibromochloromethane	50	60.0	120	51.3	103	16	70-130/25
95-50-1	1,2-Dichlorobenzene	50	54.6	109	49.9	100	9	70-130/25
541-73-1	1,3-Dichlorobenzene	50	55.0	110	48.1	96	13	70-130/25
106-46-7	1,4-Dichlorobenzene	50	55.8	112	49.4	99	12	70-130/25
75-71-8	Dichlorodifluoromethane	50	37.2	74	45.8	92	21	70-130/25
75-34-3	1,1-Dichloroethane	50	57.5	115	46.6	93	21	70-130/25
107-06-2	1,2-Dichloroethane	50	57.3	115	47.7	95	18	70-130/25
75-35-4	1,1-Dichloroethene	50	58.2	116	48.9	98	17	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	54.0	108	44.9	90	18	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	58.8	118	46.2	92	24	70-130/25
78-87-5	1,2-Dichloropropane	50	53.0	106	44.4	89	18	70-130/25
142-28-9	1,3-Dichloropropane	50	54.9	110	46.6	93	16	70-130/25
594-20-7	2,2-Dichloropropane	50	57.8	116	48.1	96	18	70-130/25
563-58-6	1,1-Dichloropropene	50	57.1	114	46.7	93	20	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-BS	M62137.D	1	12/13/13	KD	n/a	n/a	MSM2171
MSM2171-BSD	M62138.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	53.3	107	44.8	90	17	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	59.4	119	50.5	101	16	70-130/25
123-91-1	1,4-Dioxane	250	285	114	264	106	8	70-130/25
97-63-2	Ethyl methacrylate	50	55.0	110	45.6	91	19	76-141/25
100-41-4	Ethylbenzene	50	56.3	113	46.7	93	19	70-130/25
87-68-3	Hexachlorobutadiene	50	56.0	112	50.2	100	11	70-130/25
591-78-6	2-Hexanone	50	58.4	117	46.3	93	23	70-130/25
98-82-8	Isopropylbenzene	50	52.7	105	44.7	89	16	70-130/25
99-87-6	p-Isopropyltoluene	50	55.4	111	47.6	95	15	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	54.7	109	45.3	91	19	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	52.6	105	46.0	92	13	70-130/25
74-95-3	Methylene bromide	50	56.3	113	46.9	94	18	70-130/25
75-09-2	Methylene chloride	50	56.6	113	47.6	95	17	70-130/25
91-20-3	Naphthalene	50	55.0	110	54.7	109	1	70-130/25
103-65-1	n-Propylbenzene	50	50.3	101	42.3	85	17	70-130/25
100-42-5	Styrene	50	58.0	116	48.5	97	18	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	59.7	119	51.6	103	15	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	53.4	107	51.3	103	4	70-130/25
127-18-4	Tetrachloroethene	50	56.2	112	46.4	93	19	70-130/25
108-88-3	Toluene	50	56.4	113	46.6	93	19	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	55.6	111	54.3	109	2	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	56.2	112	53.4	107	5	70-130/25
71-55-6	1,1,1-Trichloroethane	50	58.1	116	47.1	94	21	70-130/25
79-00-5	1,1,2-Trichloroethane	50	55.3	111	47.5	95	15	70-130/25
79-01-6	Trichloroethene	50	52.7	105	43.5	87	19	70-130/25
75-69-4	Trichlorofluoromethane	50	48.4	97	58.5	117	19	70-130/25
96-18-4	1,2,3-Trichloropropane	50	53.1	106	48.4	97	9	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	53.0	106	45.6	91	15	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	53.8	108	45.6	91	16	70-130/25
108-05-4	Vinyl Acetate	50	52.2	104	38.5	77	30* b	70-130/25
75-01-4	Vinyl chloride	50	38.4	77	44.2	88	14	70-130/25
	m,p-Xylene	100	114	114	93.1	93	20	70-130/25
95-47-6	o-Xylene	50	56.3	113	46.7	93	19	70-130/25
1330-20-7	Xylene (total)	150	170	113	140	93	19	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2171-BS	M62137.D	1	12/13/13	KD	n/a	n/a	MSM2171
MSM2171-BSD	M62138.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	107%	105%	70-130%
2037-26-5	Toluene-D8	97%	99%	70-130%
460-00-4	4-Bromofluorobenzene	102%	104%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.
(b) Outside control limits. Individual spike recoveries within acceptance limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC26889-1MS	M62148.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1MSD	M62149.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1	M62145.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		54.7	48.6	89	57.5	58.7	102	19	70-130/30
107-02-8	Acrolein	ND		54.7	22.7	42* a	57.5	22.8	40* a	0	70-130/30
107-13-1	Acrylonitrile	ND		109	95.6	87	115	108	94	12	70-130/30
71-43-2	Benzene	ND		54.7	47.3	87	57.5	54.6	95	14	70-130/30
108-86-1	Bromobenzene	ND		54.7	47.4	87	57.5	53.1	92	11	70-130/30
74-97-5	Bromochloromethane	ND		54.7	49.6	91	57.5	57.5	100	15	70-130/30
75-27-4	Bromodichloromethane	ND		54.7	51.0	93	57.5	59.2	103	15	70-130/30
75-25-2	Bromoform	ND		54.7	56.8	104	57.5	67.2	117	17	70-130/30
74-83-9	Bromomethane	ND		54.7	41.4	76	57.5	43.4	75	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		54.7	49.4	90	57.5	59.3	103	18	70-130/30
104-51-8	n-Butylbenzene	ND		54.7	47.3	87	57.5	53.6	93	12	70-130/30
135-98-8	sec-Butylbenzene	ND		54.7	47.1	86	57.5	53.2	93	12	70-130/30
98-06-6	tert-Butylbenzene	ND		54.7	46.4	85	57.5	52.9	92	13	70-130/30
75-15-0	Carbon disulfide	ND		54.7	57.2	105	57.5	65.3	114	13	70-130/30
56-23-5	Carbon tetrachloride	ND		54.7	59.6	109	57.5	68.0	118	13	70-130/30
108-90-7	Chlorobenzene	ND		54.7	49.5	91	57.5	56.9	99	14	70-130/30
75-00-3	Chloroethane	ND		54.7	45.2	83	57.5	47.6	83	5	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		54.7	ND	0* a	57.5	ND	0* a	nc	10-160/30
67-66-3	Chloroform	ND		54.7	50.1	92	57.5	57.1	99	13	70-130/30
74-87-3	Chloromethane	ND		54.7	42.8	78	57.5	44.6	78	4	70-130/30
95-49-8	o-Chlorotoluene	ND		54.7	45.2	83	57.5	50.7	88	11	70-130/30
106-43-4	p-Chlorotoluene	ND		54.7	46.7	85	57.5	52.4	91	12	70-130/30
124-48-1	Dibromochloromethane	ND		54.7	53.6	98	57.5	62.8	109	16	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		54.7	45.7	84	57.5	52.4	91	14	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		54.7	46.8	86	57.5	52.6	92	12	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		54.7	47.4	87	57.5	53.2	93	12	70-130/30
75-71-8	Dichlorodifluoromethane	ND		54.7	36.2	66* a	57.5	38.1	66* a	5	70-130/30
75-34-3	1,1-Dichloroethane	ND		54.7	50.9	93	57.5	59.6	104	16	70-130/30
107-06-2	1,2-Dichloroethane	ND		54.7	51.3	94	57.5	59.1	103	14	70-130/30
75-35-4	1,1-Dichloroethene	ND		54.7	56.5	103	57.5	64.2	112	13	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		54.7	48.1	88	57.5	56.1	98	15	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		54.7	53.6	98	57.5	60.2	105	12	70-130/30
78-87-5	1,2-Dichloropropane	ND		54.7	46.1	84	57.5	53.5	93	15	70-130/30
142-28-9	1,3-Dichloropropane	ND		54.7	50.0	91	57.5	58.4	102	15	70-130/30
594-20-7	2,2-Dichloropropane	ND		54.7	55.7	102	57.5	63.7	111	13	70-130/30
563-58-6	1,1-Dichloropropene	ND		54.7	55.4	101	57.5	62.1	108	11	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC26889-1MS	M62148.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1MSD	M62149.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1	M62145.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		54.7	46.2	85	57.5	53.9	94	15	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		54.7	51.8	95	57.5	60.8	106	16	70-130/30
123-91-1	1,4-Dioxane	ND		273	372	136* [a]	287	424	148* [a]	13	70-130/30
97-63-2	Ethyl methacrylate	ND		54.7	52.3	96	57.5	60.0	104	14	41-160/30
100-41-4	Ethylbenzene	ND		54.7	52.5	96	57.5	60.1	105	13	70-130/30
87-68-3	Hexachlorobutadiene	ND		54.7	47.5	87	57.5	56.9	99	18	70-130/30
591-78-6	2-Hexanone	ND		54.7	49.0	90	57.5	57.9	101	17	70-130/30
98-82-8	Isopropylbenzene	ND		54.7	47.8	87	57.5	53.0	92	10	70-130/30
99-87-6	p-Isopropyltoluene	ND		54.7	48.3	88	57.5	54.7	95	12	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		54.7	48.5	89	57.5	56.4	98	15	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		54.7	57.5	105	57.5	67.0	117	15	70-130/30
74-95-3	Methylene bromide	ND		54.7	50.0	91	57.5	58.5	102	16	70-130/30
75-09-2	Methylene chloride	ND		54.7	47.3	87	57.5	54.2	94	14	70-130/30
91-20-3	Naphthalene	ND		54.7	45.7	84	57.5	56.5	98	21	70-130/30
103-65-1	n-Propylbenzene	ND		54.7	45.0	82	57.5	50.6	88	12	70-130/30
100-42-5	Styrene	ND		54.7	25.5	47* [a]	57.5	27.7	48* [a]	8	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		54.7	54.5	100	57.5	62.6	109	14	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		54.7	50.6	93	57.5	60.1	105	17	70-130/30
127-18-4	Tetrachloroethene	ND		54.7	55.3	101	57.5	62.1	108	12	70-130/30
108-88-3	Toluene	ND		54.7	51.8	95	57.5	59.3	103	14	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		54.7	43.3	79	57.5	52.4	91	19	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		54.7	43.8	80	57.5	53.1	92	19	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		54.7	55.5	102	57.5	62.7	109	12	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		54.7	49.5	91	57.5	57.8	101	15	70-130/30
79-01-6	Trichloroethene	ND		54.7	49.9	91	57.5	58.1	101	15	70-130/30
75-69-4	Trichlorofluoromethane	ND		54.7	48.1	88	57.5	46.6	81	3	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		54.7	51.8	95	57.5	59.7	104	14	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		54.7	44.4	81	57.5	49.8	87	11	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		54.7	48.9	89	57.5	54.6	95	11	70-130/30
108-05-4	Vinyl Acetate	ND		54.7	42.4	78	57.5	43.0	75	1	70-130/30
75-01-4	Vinyl chloride	ND		54.7	35.2	64* [a]	57.5	36.9	64* [a]	5	70-130/30
	m,p-Xylene	ND		109	105	96	115	120	104	13	70-130/30
95-47-6	o-Xylene	ND		54.7	51.3	94	57.5	58.4	102	13	70-130/30
1330-20-7	Xylene (total)	ND		164	156	95	172	179	104	14	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC26889-1MS	M62148.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1MSD	M62149.D	1	12/13/13	KD	n/a	n/a	MSM2171
MC26889-1	M62145.D	1	12/13/13	KD	n/a	n/a	MSM2171

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

MC26889-1, MC26889-2, MC26889-3

CAS No.	Surrogate Recoveries	MS	MSD	MC26889-1	Limits
1868-53-7	Dibromofluoromethane	111%	112%	111%	70-130%
2037-26-5	Toluene-D8	98%	98%	97%	70-130%
460-00-4	4-Bromofluorobenzene	100%	99%	100%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB55056-6MS	U16836.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6MSD	U16837.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6	U16831.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	JB55056-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	28.2	56* a	50	45.9	92	48* b	70-130/30
107-02-8	Acrolein	ND		50	56.9	114	50	66.9	134* a	16	70-130/30
107-13-1	Acrylonitrile	ND		100	94.2	94	100	90.8	91	4	70-130/30
71-43-2	Benzene	ND		50	49.2	98	50	46.9	94	5	70-130/30
108-86-1	Bromobenzene	ND		50	53.3	107	50	49.2	98	8	70-130/30
74-97-5	Bromochloromethane	ND		50	51.7	103	50	48.7	97	6	70-130/30
75-27-4	Bromodichloromethane	ND		50	44.3	89	50	44.6	89	1	70-130/30
75-25-2	Bromoform	ND		50	47.1	94	50	48.2	96	2	70-130/30
74-83-9	Bromomethane	ND		50	49.1	98	50	42.6	85	14	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	30.6	61* a	50	43.8	88	35* b	70-130/30
104-51-8	n-Butylbenzene	ND		50	49.4	99	50	46.3	93	6	70-130/30
135-98-8	sec-Butylbenzene	ND		50	49.8	100	50	45.5	91	9	70-130/30
98-06-6	tert-Butylbenzene	ND		50	48.7	97	50	44.6	89	9	70-130/30
75-15-0	Carbon disulfide	ND		50	54.3	109	50	49.1	98	10	70-130/30
56-23-5	Carbon tetrachloride	ND		50	54.3	109	50	50.0	100	8	70-130/30
108-90-7	Chlorobenzene	ND		50	48.4	97	50	46.0	92	5	70-130/30
75-00-3	Chloroethane	ND		50	53.6	107	50	48.6	97	10	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	1.7	3* a	50	2.0	4* a	16	70-130/30
67-66-3	Chloroform	ND		50	46.6	93	50	44.7	89	4	70-130/30
74-87-3	Chloromethane	ND		50	55.1	110	50	49.8	100	10	70-130/30
95-49-8	o-Chlorotoluene	ND		50	49.7	99	50	46.2	92	7	70-130/30
106-43-4	p-Chlorotoluene	ND		50	51.4	103	50	47.4	95	8	70-130/30
124-48-1	Dibromochloromethane	ND		50	51.7	103	50	50.3	101	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	47.3	95	50	45.9	92	3	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	48.2	96	50	45.5	91	6	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	48.8	98	50	46.6	93	5	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	43.7	87	50	41.1	82	6	70-130/30
75-34-3	1,1-Dichloroethane	1.9		50	52.6	101	50	49.9	96	5	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	45.3	91	50	45.5	91	0	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	61.9	124	50	58.4	117	6	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	54.9	110	50	51.7	103	6	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	58.1	116	50	55.0	110	5	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	48.4	97	50	47.4	95	2	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	50.7	101	50	49.6	99	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	56.8	114	50	51.6	103	10	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	54.6	109	50	51.6	103	6	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB55056-6MS	U16836.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6MSD	U16837.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6	U16831.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Compound	JB55056-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		50	48.8	98	50	48.2	96	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	49.0	98	50	48.4	97	1	70-130/30
123-91-1	1,4-Dioxane	ND		250	187	75	250	387	155* [a]	70* [b]	70-130/30
97-63-2	Ethyl methacrylate	ND		50	45.2	90	50	47.2	94	4	72-139/30
100-41-4	Ethylbenzene	0.65	J	50	51.3	101	50	48.9	97	5	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	48.2	96	50	49.3	99	2	70-130/30
591-78-6	2-Hexanone	ND		50	50.5	101	50	51.0	102	1	70-130/30
98-82-8	Isopropylbenzene	ND		50	51.9	104	50	46.6	93	11	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	50.0	100	50	46.2	92	8	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	49.7	99	50	45.6	91	9	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	47.2	94	50	50.5	101	7	70-130/30
74-95-3	Methylene bromide	ND		50	48.7	97	50	47.5	95	2	70-130/30
75-09-2	Methylene chloride	ND		50	53.4	107	50	50.6	101	5	70-130/30
91-20-3	Naphthalene	ND		50	46.8	94	50	50.8	102	8	70-130/30
103-65-1	n-Propylbenzene	ND		50	49.6	99	50	45.4	91	9	70-130/30
100-42-5	Styrene	ND		50	38.7	77	50	37.2	74	4	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	52.0	104	50	50.3	101	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	52.8	106	50	48.4	97	9	70-130/30
127-18-4	Tetrachloroethene	ND		50	52.0	104	50	48.7	97	7	70-130/30
108-88-3	Toluene	ND		50	49.4	99	50	47.6	95	4	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	44.2	88	50	48.8	98	10	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	45.6	91	50	49.4	99	8	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	49.9	100	50	44.0	88	13	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	45.4	91	50	45.1	90	1	70-130/30
79-01-6	Trichloroethene	ND		50	50.1	100	50	48.4	97	3	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	47.1	94	50	43.4	87	8	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	55.2	110	50	52.6	105	5	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	43.8	88	50	40.3	81	8	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	48.6	97	50	45.3	91	7	70-130/30
108-05-4	Vinyl Acetate	ND		50	43.9	88	50	42.5	85	3	70-130/30
75-01-4	Vinyl chloride	ND		50	44.0	88	50	40.1	80	9	70-130/30
	m,p-Xylene	2.5		100	101	99	100	98.0	96	3	70-130/30
95-47-6	o-Xylene	ND		50	49.4	99	50	47.0	94	5	70-130/30
1330-20-7	Xylene (total)	2.5		150	150	98	150	145	95	3	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB55056-6MS	U16836.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6MSD	U16837.D	1	12/16/13	GK	n/a	n/a	MSU802
JB55056-6	U16831.D	1	12/16/13	GK	n/a	n/a	MSU802

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

MC26889-4

CAS No.	Surrogate Recoveries	MS	MSD	JB55056-6	Limits
1868-53-7	Dibromofluoromethane	109%	109%	106%	70-130%
2037-26-5	Toluene-D8	112%	113%	111%	70-130%
460-00-4	4-Bromofluorobenzene	117%	114%	113%	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.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSM2171-CC2169	**Injection Date:**	12/13/13
Lab File ID:	M62136.D	**Injection Time:**	11:58
Instrument ID:	GCMSM	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	321957	9.35	507108	10.22	223473	13.50	276294	16.06	106786	6.84
Upper Limit [a]	643914	9.85	1014216	10.72	446946	14.00	552588	16.56	213572	7.34
Lower Limit [b]	160979	8.85	253554	9.72	111737	13.00	138147	15.56	53393	6.34

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSM2171-BS	321707	9.35	517543	10.23	230136	13.51	276861	16.06	115365	6.84
MSM2171-BSD	334268	9.35	531481	10.23	235659	13.51	278486	16.06	107891	6.84
MSM2171-MB	310152	9.35	491045	10.23	206486	13.51	255531	16.06	113869	6.84
ZZZZZZ	278713	9.35	440397	10.23	169109	13.50	153819	16.07	181661	6.84
ZZZZZZ	278877	9.34	446183	10.22	177803	13.51	173714	16.07	186512	6.83
ZZZZZZ	278106	9.35	439647	10.23	166082	13.51	138546	16.07	199724	6.84
ZZZZZZ	277213	9.35	435523	10.23	159991	13.51	129931[c]	16.07	190765	6.84
MC26889-1	296896	9.35	470867	10.23	198195	13.51	253005	16.06	197388	6.84
MC26889-2	288863	9.35	463228	10.23	200188	13.50	245304	16.06	186233	6.84
MC26889-3	295854	9.35	471002	10.23	200678	13.51	249917	16.07	179692	6.84
MC26889-1MS	289808	9.35	468496	10.23	209231	13.51	260737	16.06	199772	6.84
MC26889-1MSD	299591	9.35	483581	10.23	215153	13.50	273387	16.06	193870	6.84
ZZZZZZ	307371	9.35	495863	10.23	213113	13.50	265760	16.06	199360	6.84
ZZZZZZ	307777	9.35	488056	10.23	206994	13.50	259250	16.06	187577	6.84
ZZZZZZ	304510	9.35	486963	10.23	209242	13.51	264009	16.06	190208	6.84
ZZZZZZ	293438	9.35	463071	10.23	192931	13.50	212904	16.06	157725	6.84
ZZZZZZ	302835	9.35	479099	10.23	203894	13.51	259141	16.06	176777	6.83
ZZZZZZ	295668	9.35	470820	10.22	203447	13.50	255217	16.06	191891	6.84
ZZZZZZ	301325	9.35	468093	10.23	200951	13.51	255654	16.06	157161	6.84
ZZZZZZ	300345	9.35	471744	10.22	200268	13.51	257436	16.06	187450	6.83
ZZZZZZ	306497	9.35	479883	10.23	203894	13.51	258140	16.06	153880	6.84
ZZZZZZ	297641	9.35	470338	10.22	202709	13.51	251534	16.06	179732	6.84
ZZZZZZ	300207	9.35	476842	10.23	206196	13.50	265730	16.06	173742	6.84

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

Volatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSU802-CC801	**Injection Date:**	12/16/13
Lab File ID:	U16822.D	**Injection Time:**	09:32
Instrument ID:	GCMSU	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	130404	8.96	203304	9.84	102799	13.11	111490	15.67	67840	6.54
Upper Limit [a]	260808	9.46	406608	10.34	205598	13.61	222980	16.17	135680	7.04
Lower Limit [b]	65202	8.46	101652	9.34	51400	12.61	55745	15.17	33920	6.04

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSU802-BS	127930	8.97	199180	9.84	101134	13.11	109735	15.67	64862	6.54
MSU802-MB	123240	8.97	185310	9.84	95475	13.11	102934	15.68	61156	6.55
ZZZZZZ	119848	8.97	178398	9.84	91899	13.11	98362	15.68	61015	6.56
ZZZZZZ	118424	8.97	183055	9.84	93220	13.11	101136	15.68	58132	6.54
ZZZZZZ	121630	8.97	182623	9.84	94476	13.11	102479	15.68	57124	6.54
ZZZZZZ	120056	8.97	182237	9.84	94045	13.11	101461	15.68	59951	6.56
MC26889-4	117088	8.97	178403	9.84	92947	13.11	97555	15.68	59075	6.55
JB55056-6	118836	8.97	181273	9.84	94068	13.11	97919	15.68	48317	6.54
ZZZZZZ	126767	8.97	190442	9.84	108615	13.11	115125	15.68	68955	6.54
ZZZZZZ	136445	8.97	207442	9.84	105660	13.11	113064	15.68	74927	6.56
JB55056-6MS	134455	8.97	209177	9.84	103292	13.11	105559	15.67	51298	6.62
JB55056-6MSD	137387	8.97	209936	9.84	106761	13.11	115693	15.67	67643	6.53
ZZZZZZ	143275	8.97	220915	9.84	118133	13.11	122874	15.68	77330	6.54
ZZZZZZ	136015	8.97	203786	9.84	102802	13.11	114663	15.68	69230	6.57
ZZZZZZ	127902	8.97	201197	9.84	98642	13.11	109364	15.68	59587	6.54
ZZZZZZ	128962	8.97	195857	9.84	100523	13.11	107509	15.68	69663	6.57
ZZZZZZ	121117	8.97	184960	9.84	92507	13.11	102633	15.68	65455	6.57
ZZZZZZ	120860	8.97	180628	9.84	93057	13.11	99797	15.68	60697	6.56
ZZZZZZ	117606	8.97	175958	9.84	88272	13.11	93665	15.68	60640	6.56
ZZZZZZ	115017	8.97	173601	9.84	87937	13.11	96677	15.68	58671	6.56

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC26889-4	U16830.D	108	112	117
JB55056-6MS	U16836.D	109	112	117
JB55056-6MSD	U16837.D	109	113	114
MSU802-BS	U16823.D	104	110	110
MSU802-MB	U16825.D	107	112	115

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

Volatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8260C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC26889-1	M62145.D	111	97	100
MC26889-2	M62146.D	110	99	103
MC26889-3	M62147.D	110	97	103
MC26889-1MS	M62148.D	111	98	100
MC26889-1MSD	M62149.D	112	98	99
MSM2171-BS	M62137.D	107	97	102
MSM2171-BSD	M62138.D	105	99	104
MSM2171-MB	M62140.D	106	99	103

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

GC/MS Semi-volatiles

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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: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-MB	W16535.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	500	62	ug/kg	
95-57-8	2-Chlorophenol	ND	250	11	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	500	13	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	500	14	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	500	81	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1000	120	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	500	62	ug/kg	
95-48-7	2-Methylphenol	ND	500	20	ug/kg	
	3&4-Methylphenol	ND	500	24	ug/kg	
88-75-5	2-Nitrophenol	ND	500	13	ug/kg	
100-02-7	4-Nitrophenol	ND	1000	93	ug/kg	
87-86-5	Pentachlorophenol	ND	500	35	ug/kg	
108-95-2	Phenol	ND	250	14	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	500	12	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	500	12	ug/kg	
62-53-3	Aniline	ND	500	25	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	250	13	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	250	10	ug/kg	
100-51-6	Benzyl Alcohol	ND	500	25	ug/kg	
91-58-7	2-Chloronaphthalene	ND	250	14	ug/kg	
106-47-8	4-Chloroaniline	ND	500	12	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	250	12	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	250	15	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	250	18	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	250	15	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	250	11	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	500	33	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	500	12	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	250	25	ug/kg	
132-64-9	Dibenzofuran	ND	100	14	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	250	26	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	250	7.8	ug/kg	
84-66-2	Diethyl phthalate	ND	250	12	ug/kg	
131-11-3	Dimethyl phthalate	ND	250	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	250	9.2	ug/kg	
118-74-1	Hexachlorobenzene	ND	250	16	ug/kg	

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-MB	W16535.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	500	120	ug/kg	
67-72-1	Hexachloroethane	ND	250	12	ug/kg	
78-59-1	Isophorone	ND	250	11	ug/kg	
88-74-4	2-Nitroaniline	ND	500	12	ug/kg	
99-09-2	3-Nitroaniline	ND	500	27	ug/kg	
100-01-6	4-Nitroaniline	ND	500	12	ug/kg	
98-95-3	Nitrobenzene	ND	250	13	ug/kg	
62-75-9	n-Nitrosodimethylamine	ND	250	12	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	250	14	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	250	15	ug/kg	
110-86-1	Pyridine	ND	500	25	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	75%	30-130%
4165-62-2	Phenol-d5	75%	30-130%
118-79-6	2,4,6-Tribromophenol	77%	30-130%
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	80%	30-130%
1718-51-0	Terphenyl-d14	89%	30-130%

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

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36125-MB	R35992.D	1	12/18/13	KR	12/13/13	OP36125	MSR1318

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.58	ug/kg	
208-96-8	Acenaphthylene	ND	5.0	0.93	ug/kg	
120-12-7	Anthracene	ND	5.0	0.81	ug/kg	
56-55-3	Benzo(a)anthracene	ND	5.0	0.62	ug/kg	
50-32-8	Benzo(a)pyrene	ND	5.0	0.72	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.61	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	1.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.96	ug/kg	
218-01-9	Chrysene	ND	5.0	0.77	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	1.4	ug/kg	
206-44-0	Fluoranthene	ND	5.0	0.79	ug/kg	
86-73-7	Fluorene	ND	5.0	0.44	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	1.3	ug/kg	
90-12-0	1-Methylnaphthalene	ND	10	10	ug/kg	
91-57-6	2-Methylnaphthalene	ND	5.0	1.1	ug/kg	
85-01-8	Phenanthrene	ND	5.0	0.98	ug/kg	
129-00-0	Pyrene	ND	5.0	1.7	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	37%	15-110%
4165-62-2	Phenol-d5	39%	15-110%
118-79-6	2,4,6-Tribromophenol	32%	15-110%
4165-60-0	Nitrobenzene-d5	81%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	118%	30-130%

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-BS	W16536.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
65-85-0	Benzoic acid	2430	2110	87	30-130
95-57-8	2-Chlorophenol	2430	1670	69	30-130
59-50-7	4-Chloro-3-methyl phenol	2430	1780	73	30-130
120-83-2	2,4-Dichlorophenol	2430	1700	70	30-130
105-67-9	2,4-Dimethylphenol	2430	1790	74	30-130
51-28-5	2,4-Dinitrophenol	2430	1590	65	30-130
534-52-1	4,6-Dinitro-o-cresol	2430	1960	81	30-130
95-48-7	2-Methylphenol	2430	1570	64	30-130
	3&4-Methylphenol	4870	3150	65	30-130
88-75-5	2-Nitrophenol	2430	1670	69	30-130
100-02-7	4-Nitrophenol	2430	1670	69	30-130
87-86-5	Pentachlorophenol	2430	1640	67	30-130
108-95-2	Phenol	2430	1780	73	30-130
95-95-4	2,4,5-Trichlorophenol	2430	1830	75	30-130
88-06-2	2,4,6-Trichlorophenol	2430	1840	76	30-130
62-53-3	Aniline	2430	1060	44	40-140
101-55-3	4-Bromophenyl phenyl ether	2430	2540	104	40-140
85-68-7	Butyl benzyl phthalate	2430	2340	96	40-140
100-51-6	Benzyl Alcohol	2430	1860	76	40-140
91-58-7	2-Chloronaphthalene	2430	2150	88	40-140
106-47-8	4-Chloroaniline	2430	1480	61	40-140
111-91-1	bis(2-Chloroethoxy)methane	2430	1640	67	40-140
111-44-4	bis(2-Chloroethyl)ether	2430	2150	88	40-140
108-60-1	bis(2-Chloroisopropyl)ether	2430	2680	110	40-140
7005-72-3	4-Chlorophenyl phenyl ether	2430	2380	98	40-140
122-66-7	1,2-Diphenylhydrazine	2430	2620	108	40-140
121-14-2	2,4-Dinitrotoluene	2430	2220	91	40-140
606-20-2	2,6-Dinitrotoluene	2430	2160	89	40-140
91-94-1	3,3'-Dichlorobenzidine	2430	1520	62	40-140
132-64-9	Dibenzofuran	2430	2010	83	40-140
84-74-2	Di-n-butyl phthalate	2430	2200	90	40-140
117-84-0	Di-n-octyl phthalate	2430	2470	101	40-140
84-66-2	Diethyl phthalate	2430	2270	93	40-140
131-11-3	Dimethyl phthalate	2430	2350	97	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	2430	2440	100	40-140
118-74-1	Hexachlorobenzene	2430	2600	107	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-BS	W16536.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	2430	3570	147* [a]	40-140
67-72-1	Hexachloroethane	2430	1850	76	40-140
78-59-1	Isophorone	2430	2230	92	40-140
88-74-4	2-Nitroaniline	2430	2090	86	40-140
99-09-2	3-Nitroaniline	2430	1700	70	40-140
100-01-6	4-Nitroaniline	2430	1870	77	40-140
98-95-3	Nitrobenzene	2430	2210	91	40-140
62-75-9	n-Nitrosodimethylamine	2430	2050	84	40-140
621-64-7	N-Nitroso-di-n-propylamine	2430	2210	91	40-140
86-30-6	N-Nitrosodiphenylamine	2430	2060	85	40-140
110-86-1	Pyridine	2430	1540	63	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	74%	30-130%
4165-62-2	Phenol-d5	75%	30-130%
118-79-6	2,4,6-Tribromophenol	83%	30-130%
4165-60-0	Nitrobenzene-d5	78%	30-130%
321-60-8	2-Fluorobiphenyl	82%	30-130%
1718-51-0	Terphenyl-d14	91%	30-130%

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

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36125-BS	R35993.D	1	12/18/13	KR	12/13/13	OP36125	MSR1318

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	2430	2190	90	40-140
208-96-8	Acenaphthylene	2430	1850	76	40-140
120-12-7	Anthracene	2430	2180	90	40-140
56-55-3	Benzo(a)anthracene	2430	2420	99	40-140
50-32-8	Benzo(a)pyrene	2430	2210	91	40-140
205-99-2	Benzo(b)fluoranthene	2430	2320	95	40-140
191-24-2	Benzo(g,h,i)perylene	2430	2480	102	40-140
207-08-9	Benzo(k)fluoranthene	2430	2270	93	40-140
218-01-9	Chrysene	2430	2220	91	40-140
53-70-3	Dibenzo(a,h)anthracene	2430	2420	99	40-140
206-44-0	Fluoranthene	2430	2920	120	40-140
86-73-7	Fluorene	2430	2210	91	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	2430	2410	99	40-140
90-12-0	1-Methylnaphthalene	2430	1980	81	40-140
91-57-6	2-Methylnaphthalene	2430	1920	79	40-140
85-01-8	Phenanthrene	2430	2210	91	40-140
129-00-0	Pyrene	2430	2990	123	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	38%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	35%	15-110%
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	77%	30-130%
1718-51-0	Terphenyl-d14	122%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-MS	W16537.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
OP36124-MSD	W16538.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
MC26889-1	W16539.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: Method: SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic acid	ND		2820	1500	53	2830	1640	58	9	30-130/30
95-57-8	2-Chlorophenol	ND		2820	1880	67	2830	2160	76	14	30-130/30
59-50-7	4-Chloro-3-methyl phenol	ND		2820	2070	73	2830	2260	80	9	30-130/30
120-83-2	2,4-Dichlorophenol	ND		2820	1910	68	2830	2160	76	12	30-130/30
105-67-9	2,4-Dimethylphenol	ND		2820	2050	73	2830	2250	79	9	30-130/30
51-28-5	2,4-Dinitrophenol	ND		2820	1560	55	2830	1310	46	17	30-130/30
534-52-1	4,6-Dinitro-o-cresol	ND		2820	2160	77	2830	1930	68	11	30-130/30
95-48-7	2-Methylphenol	ND		2820	1800	64	2830	2010	71	11	30-130/30
	3&4-Methylphenol	ND		5640	3670	65	5670	4080	72	11	30-130/30
88-75-5	2-Nitrophenol	ND		2820	1870	66	2830	2110	74	12	30-130/30
100-02-7	4-Nitrophenol	ND		2820	1960	70	2830	2060	73	5	30-130/30
87-86-5	Pentachlorophenol	ND		2820	1950	69	2830	1950	69	0	30-130/30
108-95-2	Phenol	ND		2820	1990	71	2830	2270	80	13	30-130/30
95-95-4	2,4,5-Trichlorophenol	ND		2820	2070	73	2830	2250	79	8	30-130/30
88-06-2	2,4,6-Trichlorophenol	ND		2820	2120	75	2830	2320	82	9	30-130/30
62-53-3	Aniline	ND		2820	957	34* [a]	2830	1010	36* [a]	5	40-140/30
101-55-3	4-Bromophenyl phenyl ether	ND		2820	2920	104	2830	3220	114	10	40-140/30
85-68-7	Butyl benzyl phthalate	ND		2820	2670	95	2830	2980	105	11	40-140/30
100-51-6	Benzyl Alcohol	ND		2820	2080	74	2830	2220	78	7	40-140/30
91-58-7	2-Chloronaphthalene	ND		2820	2460	87	2830	2680	95	9	40-140/30
106-47-8	4-Chloroaniline	ND		2820	1750	62	2830	1750	62	0	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	ND		2820	1840	65	2830	2100	74	13	40-140/30
111-44-4	bis(2-Chloroethyl)ether	ND		2820	2370	84	2830	2700	95	13	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	ND		2820	3030	108	2830	3410	120	12	40-140/30
7005-72-3	4-Chlorophenyl phenyl ether	ND		2820	2730	97	2830	2980	105	9	40-140/30
122-66-7	1,2-Diphenylhydrazine	ND		2820	3020	107	2830	3330	118	10	40-140/30
121-14-2	2,4-Dinitrotoluene	ND		2820	2610	93	2830	2710	96	4	40-140/30
606-20-2	2,6-Dinitrotoluene	ND		2820	2480	88	2830	2660	94	7	40-140/30
91-94-1	3,3'-Dichlorobenzidine	ND		2820	1400	50	2830	1520	54	8	40-140/30
132-64-9	Dibenzofuran	ND		2820	2290	81	2830	2510	89	9	40-140/30
84-74-2	Di-n-butyl phthalate	ND		2820	2550	90	2830	2670	94	5	40-140/30
117-84-0	Di-n-octyl phthalate	ND		2820	2780	99	2830	3250	115	16	40-140/30
84-66-2	Diethyl phthalate	ND		2820	2620	93	2830	2810	99	7	40-140/30
131-11-3	Dimethyl phthalate	ND		2820	2700	96	2830	2890	102	7	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	ND		2820	2770	98	2830	3140	111	13	40-140/30
118-74-1	Hexachlorobenzene	ND		2820	3010	107	2830	3190	113	6	40-140/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36124-MS	W16537.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
OP36124-MSD	W16538.D	1	12/17/13	KR	12/13/13	OP36124	MSW738
MC26889-1	W16539.D	1	12/17/13	KR	12/13/13	OP36124	MSW738

The QC reported here applies to the following samples: Method: SW846 8270D

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		2820	3920	139	2830	4380	155* [b]	11	40-140/30
67-72-1	Hexachloroethane	ND		2820	2060	73	2830	2370	84	14	40-140/30
78-59-1	Isophorone	ND		2820	2450	87	2830	2740	97	11	40-140/30
88-74-4	2-Nitroaniline	ND		2820	2340	83	2830	2630	93	12	40-140/30
99-09-2	3-Nitroaniline	ND		2820	2110	75	2830	2120	75	0	40-140/30
100-01-6	4-Nitroaniline	ND		2820	2010	71	2830	2120	75	5	40-140/30
98-95-3	Nitrobenzene	ND		2820	2430	86	2830	2690	95	10	40-140/30
62-75-9	n-Nitrosodimethylamine	ND		2820	2120	75	2830	2380	84	12	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	ND		2820	2560	91	2830	2810	99	9	40-140/30
86-30-6	N-Nitrosodiphenylamine	ND		2820	2370	84	2830	2590	91	9	40-140/30
110-86-1	Pyridine	ND		2820	1240	44	2830	1550	55	22	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC26889-1	Limits
367-12-4	2-Fluorophenol	71%	80%	82%	30-130%
4165-62-2	Phenol-d5	73%	82%	82%	30-130%
118-79-6	2,4,6-Tribromophenol	81%	84%	86%	30-130%
4165-60-0	Nitrobenzene-d5	71%	80%	83%	30-130%
321-60-8	2-Fluorobiphenyl	77%	85%	87%	30-130%
1718-51-0	Terphenyl-d14	85%	97%	98%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36125-MS	R36007.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319
OP36125-MSD	R36008.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319
MC26889-1	R36009.D	1	12/18/13	KR	12/13/13	OP36125	MSR1319

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1.2	J	2820	2530	90	2830	2820	99	11	40-140/30
208-96-8	Acenaphthylene	1.2	J	2820	2100	74	2830	2330	82	10	40-140/30
120-12-7	Anthracene	1.5	J	2820	2480	88	2830	2660	94	7	40-140/30
56-55-3	Benzo(a)anthracene	3.2	J	2820	2800	99	2830	3040	107	8	40-140/30
50-32-8	Benzo(a)pyrene	2.5	J	2820	2510	89	2830	2700	95	7	40-140/30
205-99-2	Benzo(b)fluoranthene	1.7	J	2820	2840	101	2830	3080	109	8	40-140/30
191-24-2	Benzo(g,h,i)perylene	9.8		2820	2830	100	2830	3050	107	7	40-140/30
207-08-9	Benzo(k)fluoranthene	ND		2820	2580	92	2830	2770	98	7	40-140/30
218-01-9	Chrysene	4.6	J	2820	2540	90	2830	2740	97	8	40-140/30
53-70-3	Dibenzo(a,h)anthracene	ND		2820	2800	99	2830	3000	106	7	40-140/30
206-44-0	Fluoranthene	10.1		2820	3350	119	2830	3650	128	9	40-140/30
86-73-7	Fluorene	ND		2820	2540	90	2830	2790	98	9	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		2820	2780	99	2830	3000	106	8	40-140/30
90-12-0	1-Methylnaphthalene	ND		2820	2250	80	2830	2500	88	11	40-140/30
91-57-6	2-Methylnaphthalene	3.2	J	2820	2170	77	2830	2430	86	11	40-140/30
85-01-8	Phenanthrene	12.4		2820	2550	90	2830	2750	97	8	40-140/30
129-00-0	Pyrene	6.5		2820	3440	122	2830	3750	132	9	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC26889-1	Limits
367-12-4	2-Fluorophenol	35%	39%	41%	15-110%
4165-62-2	Phenol-d5	36%	40%	42%	15-110%
118-79-6	2,4,6-Tribromophenol	35%	38%	37%	15-110%
4165-60-0	Nitrobenzene-d5	77%	87%	89%	30-130%
321-60-8	2-Fluorobiphenyl	74%	83%	81%	30-130%
1718-51-0	Terphenyl-d14	118%	130%	128%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSR1318-CC1261	**Injection Date:**	12/18/13
Lab File ID:	R35977.D	**Injection Time:**	08:35
Instrument ID:	GCMSR	**Method:**	SW846 8270D 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	861273	3.47	2972051	4.51	1771510	6.02	3068313	7.32	2407555	10.08	2999832	11.50
Upper Limit [a]	1722546	3.97	5944102	5.01	3543020	6.52	6136626	7.82	4815110	10.58	5999664	12.00
Lower Limit [b]	430637	2.97	1486026	4.01	885755	5.52	1534157	6.82	1203778	9.58	1499916	11.00
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**
OP36182-MB	718325	3.47	2571320	4.51	1507155	6.01	2575576	7.31	1866751	10.08	2579576	11.50
OP36182-BS	877299	3.47	3039018	4.51	1742895	6.02	2905371	7.32	2084807	10.09	2919812	11.50
OP36182-MS	1340500	3.47	4353130	4.51	2469658	6.02	4401535	7.32	3061694	10.09	4324404	11.50
OP36182-MSD	939734	3.47	3193393	4.51	1826807	6.02	3217299	7.32	2297160	10.09	3248793	11.50
MC26961-1	772246	3.47	2686647	4.50	1601438	6.01	2719424	7.31	1927139	10.08	2730573	11.49
ZZZZZZ	759071	3.47	2582615	4.51	1452986	6.01	2434125	7.31	1794339	10.08	2520495	11.49
ZZZZZZ	809538	3.47	2758460	4.51	1598948	6.02	2736735	7.31	1962172	10.08	2725768	11.50
ZZZZZZ	716207	3.47	2439814	4.50	1403665	6.01	2382794	7.31	1709859	10.08	2363085	11.49
OP36067-MB	551393	3.47	1879737	4.51	1098894	6.01	1873279	7.31	1361428	10.08	1833973	11.49
OP36067-BS	882145	3.47	2987713	4.51	1700820	6.02	2968070	7.32	2108082	10.09	2924517	11.50
ZZZZZZ	616187	3.47	2114095	4.51	1239430	6.02	2124831	7.31	1536935	10.08	2121298	11.50
ZZZZZZ	757080	3.47	2601241	4.51	1525336	6.01	2600914	7.31	1871052	10.08	2583551	11.50
ZZZZZZ	679523	3.47	2345637	4.51	1364491	6.02	2321378	7.31	1673729	10.08	2297097	11.49
ZZZZZZ	602169	3.47	2083169	4.51	1208728	6.01	2059633	7.31	1509555	10.08	2001341	11.49
OP36125-MB	1022819	3.47	3442784	4.51	1999946	6.01	3415361	7.31	2426812	10.08	3346121	11.50
OP36125-BS	953552	3.47	3180042	4.51	1817483	6.02	3131128	7.32	2195310	10.09	3067414	11.50
OP36180-MB	727601	3.47	2494177	4.51	1347775	6.01	2561231	7.31	1814672	10.08	2494390	11.49
OP36180-BS	751469	3.47	2578789	4.51	1362777	6.02	2634844	7.31	1843932	10.09	2566735	11.50

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSR1319-CC1261	**Injection Date:**	12/18/13
Lab File ID:	R35997.D	**Injection Time:**	16:09
Instrument ID:	GCMSR	**Method:**	SW846 8270D 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	961474	3.47	3241151	4.51	1905674	6.02	3273317	7.31	2391744	10.09	3240930	11.50
Upper Limit [a]	1922948	3.97	6482302	5.01	3811348	6.52	6546634	7.81	4783488	10.59	6481860	12.00
Lower Limit [b]	480737	2.97	1620576	4.01	952837	5.52	1636659	6.81	1195872	9.59	1620465	11.00
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
OP36239-MB	650877	3.47	2237679	4.51	1212092	6.01	2302956	7.31	1711696	10.08	2366001	11.49
OP36239-BS	573169	3.47	1973162	4.50	1072428	6.01	2018805	7.31	1475253	10.08	2057432	11.49
OP36239-BSD	846291	3.47	2903723	4.51	1576093	6.01	2983693	7.31	2154057	10.08	3062269	11.50
ZZZZZZ	518181	3.47	1781213	4.51	962179	6.01	1830897	7.31	1305790	10.08	1850905	11.49
ZZZZZZ	554407	3.47	1922901	4.51	1036110	6.01	1976040	7.31	1409911	10.08	2001046	11.49
ZZZZZZ	836078	3.47	2836554	4.51	1540138	6.02	2918078	7.31	2088718	10.08	2951781	11.50
OP36180-MS	692283	3.47	2349995	4.51	1252867	6.02	2414790	7.31	1688331	10.09	2349633	11.50
OP36180-MSD	691910	3.47	2352498	4.51	1255327	6.02	2411424	7.32	1698569	10.09	2365613	11.50
MC27018-2	760508	3.47	2564389	4.50	1381829	6.02	2619248	7.31	1870029	10.08	2582872	11.50
OP36125-MS	905217	3.47	3051129	4.51	1733062	6.02	3008956	7.32	2102576	10.09	2956179	11.50
OP36125-MSD	972168	3.47	3248601	4.51	1847726	6.02	3227180	7.32	2237481	10.09	3150244	11.50
MC26889-1	786772	3.47	2654581	4.51	1574090	6.02	2680615	7.31	1961020	10.09	2750076	11.50
MC26889-2	766756	3.47	2594795	4.51	1518995	6.02	2592943	7.32	1860881	10.09	2579623	11.50
MC26889-3	796932	3.47	2687379	4.51	1561057	6.02	2658961	7.32	1907908	10.09	2639804	11.50
ZZZZZZ	813478	3.47	2657701	4.51	1326641	6.03	2391704	7.33	1936084	10.09	2672582	11.50
OP36195-MS	804149	3.47	2728000	4.51	1579384	6.02	2757586	7.32	1935837	10.09	2693556	11.50
OP36195-MSD	875381	3.47	2943659	4.51	1678668	6.02	2937779	7.32	2056175	10.09	2908658	11.50
MC27058-9	755644	3.47	2559485	4.51	1499866	6.02	2563805	7.31	1855150	10.08	2572571	11.50
ZZZZZZ	739771	3.47	2518305	4.51	1490413	6.02	2534844	7.31	1857890	10.08	2557587	11.50
ZZZZZZ	892326	3.47	3041737	4.51	1785565	6.02	2561211	7.32	2255395	10.09	3107985	11.50
ZZZZZZ	915389	3.47	3081662	4.51	1803768	6.02	2561953	7.32	2272026	10.09	3127570	11.50
ZZZZZZ	824823	3.47	2769250	4.51	1648979	6.02	2815013	7.32	2116357	10.09	2845324	11.50
ZZZZZZ	916788	3.47	3087738	4.51	1815317	6.02	3130599	7.32	2266045	10.09	3149972	11.50
ZZZZZZ	1095990	3.47	3703510	4.51	2160392	6.02	3696733	7.32	2783489	10.09	3808077	11.50

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSW738-CC729	**Injection Date:**	12/17/13
Lab File ID:	W16531.D	**Injection Time:**	15:35
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	39353	4.55	145980	5.61	93814	7.16	168347	8.46	186945	11.18	153982	12.96
Upper Limit [a]	78706	5.05	291960	6.11	187628	7.66	336694	8.96	373890	11.68	307964	13.46
Lower Limit [b]	19677	4.05	72990	5.11	46907	6.66	84174	7.96	93473	10.68	76991	12.46

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
ZZZZZZ	40929	4.54	154201	5.61	99749	7.15	172238	8.45	183409	11.17	163961	12.96
ZZZZZZ	41031	4.54	152042	5.61	100588	7.15	171976	8.45	189564	11.17	173909	12.96
ZZZZZZ	39289	4.54	147398	5.61	95555	7.15	165440	8.45	176716	11.17	157120	12.95
OP36124-MB	54201	4.54	199480	5.61	126674	7.15	217163	8.45	221347	11.17	184958	12.96
OP36124-BS	47412	4.54	172411	5.61	110147	7.16	191899	8.46	192686	11.18	162676	12.96
OP36124-MS	49076	4.54	184237	5.61	117649	7.16	204330	8.46	213363	11.18	181219	12.96
OP36124-MSD	44196	4.54	166522	5.61	105604	7.16	180215	8.46	169188	11.17	137849	12.96
MC26889-1	42967	4.54	159927	5.61	104507	7.15	176720	8.45	173785	11.17	144335	12.96
MC26889-2	39367	4.54	147615	5.61	96929	7.15	165700	8.45	171192	11.17	144035	12.95
MC26889-3	47907	4.54	177627	5.61	113394	7.16	199753	8.45	196632	11.17	167173	12.96
ZZZZZZ	44556	4.54	167747	5.61	108513	7.15	187106	8.45	195087	11.17	168162	12.96
ZZZZZZ	46274	4.54	173349	5.61	112935	7.15	193856	8.45	205883	11.17	183849	12.96
ZZZZZZ	48618	4.54	175031	5.61	113447	7.16	192888	8.45	189719	11.17	152747	12.96
ZZZZZZ	49140	4.54	181479	5.61	117026	7.16	202799	8.45	200281	11.17	161929	12.96
ZZZZZZ	45179	4.54	162312	5.61	102460	7.15	169853	8.45	157264	11.17	130847	12.96
ZZZZZZ	44296	4.54	163120	5.61	105691	7.15	179636	8.45	179424	11.17	148488	12.96
ZZZZZZ	48125	4.54	175916	5.61	109929	7.15	185153	8.45	179103	11.17	148689	12.96
ZZZZZZ	44243	4.54	165417	5.61	107556	7.15	183110	8.45	188182	11.17	163842	12.96
ZZZZZZ	40604	4.55	149650	5.62	104440	7.17	158251	8.47	163093	11.18	150190	12.96
ZZZZZZ	40840	4.54	154176	5.61	99259	7.15	170426	8.45	174263	11.17	153576	12.96
ZZZZZZ	38620	4.54	146682	5.61	96913	7.15	164991	8.45	175748	11.17	153798	12.95
ZZZZZZ	42511	4.54	156436	5.61	101872	7.15	171726	8.45	178959	11.17	154812	12.96
ZZZZZZ	48920	4.54	185010	5.61	120587	7.16	204715	8.46	222742	11.17	194419	12.96
ZZZZZZ	44739	4.54	166274	5.61	104804	7.15	179528	8.46	189768	11.18	169447	12.96
ZZZZZZ	40793	4.54	156854	5.61	102601	7.15	174697	8.45	184835	11.17	159212	12.96
ZZZZZZ	39859	4.54	150541	5.61	98998	7.15	170218	8.45	185339	11.17	161908	12.95
ZZZZZZ	43892	4.54	163102	5.61	103240	7.16	174527	8.45	187719	11.17	158846	12.96
ZZZZZZ	41494	4.54	156676	5.61	100035	7.15	166647	8.45	168777	11.17	146479	12.96

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

Semivolatile Internal Standard Area Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSW738-CC729	**Injection Date:**	12/17/13
Lab File ID:	W16531.D	**Injection Time:**	15:35
Instrument ID:	GCMSW	**Method:**	SW846 8270D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT	IS 5 AREA	IS 5 RT	IS 6 AREA	IS 6 RT

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC26889-1	W16539.D	82	82	86	83	87	98
MC26889-2	W16540.D	54	54	54	56	56	64
MC26889-3	W16541.D	69	68	74	71	74	93
OP36124-BS	W16536.D	74	75	83	78	82	91
OP36124-MB	W16535.D	75	75	77	76	80	89
OP36124-MS	W16537.D	71	73	81	71	77	85
OP36124-MSD	W16538.D	80	82	84	80	85	97

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	30-130%
S2 = Phenol-d5	30-130%
S3 = 2,4,6-Tribromophenol	30-130%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8270D BY SIM **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC26889-1	R36009.D	41	42	37	89	81	128
MC26889-2	R36010.D	27	27	24	59	54	85
MC26889-3	R36011.D	34	35	32	75	68	121
OP36125-BS	R35993.D	38	38	35	82	77	122
OP36125-MB	R35992.D	37	39	32	81	73	118
OP36125-MS	R36007.D	35	36	35	77	74	118
OP36125-MSD	R36008.D	39	40	38	87	83	130

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%

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: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36056-MB	BB53068.D	1	12/05/13	CZ	12/05/13	OP36056	GBB3103

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-5

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0054	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	107%	36-173%
460-00-4	Bromofluorobenzene (S)	105%	36-173%

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36082-MB	YZ86538.D	1	12/06/13	CZ	12/06/13	OP36082	GYZ7427

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.61	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.5	0.92	ug/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	142%	61-167%
460-00-4	Bromofluorobenzene (S)	110%	61-167%

Method Blank Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3391-MB	WX70639.D	1	12/09/13	TB	n/a	n/a	GWX3391

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	1.12	5.0	1.1	mg/kg	J

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	105%	61-116%

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36056-BS	BB53069.D	1	12/05/13	CZ	12/05/13	OP36056	GBB3103

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.083	117	60-140
106-93-4	1,2-Dibromoethane	0.071	0.073	103	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	105%	36-173%
460-00-4	Bromofluorobenzene (S)	101%	36-173%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36082-BS	YZ86539.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	33.1	34.9	105	59-142
106-93-4	1,2-Dibromoethane	33.1	36.6	111	56-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	147%	61-167%
460-00-4	Bromofluorobenzene (S)	116%	61-167%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3391-BSP	WX70640.D	1	12/09/13	TB	n/a	n/a	GWX3391

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (VOA)	20	18.6	93	66-126

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	108%	61-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36056-MS	BB53073.D	1	12/05/13	CZ	12/05/13	OP36056	GBB3103
OP36056-MSD	BB53074.D	1	12/05/13	CZ	12/05/13	OP36056	GBB3103
MC26600-15	BB53072.D	1	12/05/13	CZ	12/05/13	OP36056	GBB3103

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-5

CAS No.	Compound	MC26600-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.092	130	0.071	0.083	117	10	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.084	118	0.071	0.081	114	4	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC26600-15	Limits
460-00-4	Bromofluorobenzene (S)	118%	114%	109%	36-173%
460-00-4	Bromofluorobenzene (S)	114%	110%	106%	36-173%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36082-MS	YZ86540.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427
OP36082-MSD	YZ86541.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427
MC26889-1	YZ86542.D	1	12/07/13	CZ	12/06/13	OP36082	GYZ7427

The QC reported here applies to the following samples: **Method:** SW846 8011

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		38.4	42.0	109	37.8	41.6	110	1	40-156/27
106-93-4	1,2-Dibromoethane	ND		38.4	44.4	116	37.8	43.7	116	2	48-141/27

CAS No.	Surrogate Recoveries	MS	MSD	MC26889-1	Limits
460-00-4	Bromofluorobenzene (S)	145%	144%	150%	61-167%
460-00-4	Bromofluorobenzene (S)	108%	117%	99%	61-167%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC26889-1MS	WX70644.D	1	12/09/13	TB	n/a	n/a	GWX3391
MC26889-1MSD	WX70645.D	1	12/09/13	TB	n/a	n/a	GWX3391
MC26889-1	WX70643.D	1	12/09/13	TB	n/a	n/a	GWX3391

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26889-1, MC26889-2, MC26889-3

CAS No.	Compound	MC26889-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (VOA)	ND		48.1	42.7	89	48.1	41.4	86	3	41-150/20

CAS No.	Surrogate Recoveries	MS	MSD	MC26889-1	Limits
	2,3,4-Trifluorotoluene	108%	105%	106%	61-116%

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 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]
MC26889-5	BB53144.D	146	137
OP36056-BS	BB53069.D	105	101
OP36056-MB	BB53068.D	107	105
OP36056-MS	BB53073.D	118	114
OP36056-MSD	BB53074.D	114	110

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	36-173%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Volatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8011 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC26889-1	YZ86542.D	150	99
MC26889-2	YZ86553.D	140	73
MC26889-3	YZ86554.D	146	106
OP36082-BS	YZ86539.D	147	116
OP36082-MB	YZ86538.D	142	110
OP36082-MS	YZ86540.D	145	108
OP36082-MSD	YZ86541.D	144	117

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	61-167%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Volatile Surrogate Recovery Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8015 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
MC26889-1	WX70643.D	106
MC26889-2	WX70646.D	106
MC26889-3	WX70647.D	105
GWX3391-BSP	WX70640.D	108
GWX3391-MB	WX70639.D	105
MC26889-1MS	WX70644.D	108
MC26889-1MSD	WX70645.D	105

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-116%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3103-CC3098	**Injection Date:**	12/05/13
Lab File ID:	BB53067.D	**Injection Time:**	09:13
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.39	4.38

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP36056-MB	BB53068.D	12/05/13	09:43	5.38	4.38
OP36056-BS	BB53069.D	12/05/13	10:07	5.38	4.38
ZZZZZZ	BB53070.D	12/05/13	10:32	5.38	4.38
ZZZZZZ	BB53071.D	12/05/13	10:56	5.38	4.38
MC26600-15	BB53072.D	12/05/13	11:20	5.38	4.38
OP36056-MS	BB53073.D	12/05/13	11:44	5.38	4.38
OP36056-MSD	BB53074.D	12/05/13	12:08	5.38	4.38
GBB3103-ECC3098	BB53075.D	12/05/13	12:32	5.38	4.38

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3106-ICC3106	**Injection Date:**	12/09/13
Lab File ID:	BB53130.D	**Injection Time:**	09:33
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.38	4.38

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB53135A.D	12/09/13	11:32	5.38	4.38
OP36111-MB	BB53137.D	12/09/13	12:20	5.38	4.38
OP36111-BS	BB53138.D	12/09/13	12:44	5.37	4.38
ZZZZZZ	BB53139.D	12/09/13	13:08	5.37	4.38
ZZZZZZ	BB53140.D	12/09/13	13:32	5.38	4.38
MC26600-18	BB53141.D	12/09/13	13:56	5.38	4.38
OP36111-MS	BB53142.D	12/09/13	14:20	5.38	4.38
OP36111-MSD	BB53143.D	12/09/13	14:44	5.38	4.39
MC26889-5	BB53144.D	12/09/13	15:08	5.37	4.38
GBB3106-ECC3106	BB53145.D	12/09/13	15:32	5.38	4.38

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GYZ7427-ICC7427	**Injection Date:**	12/06/13
Lab File ID:	YZ86532.D	**Injection Time:**	21:05
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.77	3.51

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP36082-MB	YZ86538.D	12/06/13	23:37	3.77	3.51
OP36082-BS	YZ86539.D	12/07/13	00:02	3.77	3.51
OP36082-MS	YZ86540.D	12/07/13	00:27	3.77	3.51
OP36082-MSD	YZ86541.D	12/07/13	00:52	3.77	3.51
MC26889-1	YZ86542.D	12/07/13	01:17	3.77	3.51
ZZZZZZ	YZ86543.D	12/07/13	01:43	3.77	3.51
ZZZZZZ	YZ86544.D	12/07/13	02:08	3.77	3.51
ZZZZZZ	YZ86545.D	12/07/13	02:33	3.77	3.51
ZZZZZZ	YZ86546.D	12/07/13	02:58	3.77	3.51
ZZZZZZ	YZ86547.D	12/07/13	03:23	3.77	3.51

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GYZ7427-CC7427	**Injection Date:**	12/07/13
Lab File ID:	YZ86548.D	**Injection Time:**	03:48
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.77	3.51

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	YZ86549.D	12/07/13	04:14	3.77	3.51
ZZZZZZ	YZ86550.D	12/07/13	04:39	3.77	3.51
ZZZZZZ	YZ86551.D	12/07/13	05:04	3.77	3.51
ZZZZZZ	YZ86552.D	12/07/13	05:29	3.77	3.51
MC26889-2	YZ86553.D	12/07/13	05:54	3.77	3.51
MC26889-3	YZ86554.D	12/07/13	06:19	3.77	3.51
ZZZZZZ	YZ86555.D	12/07/13	06:43	3.77	3.51
ZZZZZZ	YZ86556.D	12/07/13	07:08	3.77	3.51
ZZZZZZ	YZ86557.D	12/07/13	07:33	3.77	3.51
ZZZZZZ	YZ86558.D	12/07/13	07:58	3.77	3.51

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GWX3391-CC3210	**Injection Date:**	12/09/13
Lab File ID:	WX70638.D	**Injection Time:**	09:34
Instrument ID:	GCWX	**Method:**	SW846 8015

	S1 [a] RT
Check Std	19.94

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
GWX3391-MB	WX70639.D	12/09/13	10:11	19.94
GWX3391-BSP	WX70640.D	12/09/13	10:48	19.95
ZZZZZZ	WX70641.D	12/09/13	14:06	19.94
ZZZZZZ	WX70642.D	12/09/13	14:43	19.94
MC26889-1	WX70643.D	12/09/13	15:20	19.95
MC26889-1MS	WX70644.D	12/09/13	15:56	19.95
MC26889-1MSD	WX70645.D	12/09/13	16:33	19.95
MC26889-2	WX70646.D	12/09/13	17:10	19.95
MC26889-3	WX70647.D	12/09/13	17:47	19.95
ZZZZZZ	WX70648.D	12/09/13	18:24	19.95

Surrogate Compounds

S1 = 2,3,4-Trifluorotoluene

(a) Retention time from GC signal #1

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: MC26889
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample: MC26889-1 **Analyzed:** 09-DEC-13 by MC **Method:** SM21 2540 B MOD.
ClientID: VMP63-120413(6-8')

Wet Weight (Total)	31.269	g
Tare Weight	23.175	g
Dry Weight (Total)	30.185	g
Solids, Percent	86.6	%

Sample: MC26889-2 **Analyzed:** 09-DEC-13 by MC **Method:** SM21 2540 B MOD.
ClientID: VMP63-120413(22-24')

Wet Weight (Total)	38.353	g
Tare Weight	28.831	g
Dry Weight (Total)	37.94	g
Solids, Percent	95.7	%

Sample: MC26889-3 **Analyzed:** 09-DEC-13 by MC **Method:** SM21 2540 B MOD.
ClientID: VMP63-120413(36-38')

Wet Weight (Total)	27.013	g
Tare Weight	18.88	g
Dry Weight (Total)	26.68	g
Solids, Percent	95.9	%

e-Hardcopy 2.0
Automated Report

Technical Report for

Shell Oil

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

21562850.15000

SGS Accutest Job Number: MC27073

Sampling Date: 12/11/13

Report to:

AECOM, INC.

elizabeth.kunkel@aecom.com

ATTN: Elizabeth Kunkel

Total number of pages in report: 121

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

H. (Brad) Madadian
Lab Director

Client Service contact: Jeremy Vienneau 508-481-6200

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

Test results relate only to samples analyzed.

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

January 10, 2014

Accutest Job MC27073

Ms. Kunkel,

The report of Accutest job number MC27073 has been revised to report Gasoline Range Organics (GRO) by method 8015, as requested on the chain of custody. These changes have been incorporated into the revised report which is attached.

Sincerely,

Matthew Morrell
Accutest Laboratories of New England, Inc.

SGS ACCUTEST

October 27, 2016

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

RE: SGS Accutest Job # MC27073

Dear Elizabeth Kunkel

As you are aware, SGS Accutest Inc. - Marlborough has been conducting an extensive review of data associated with some historical Gas Chromatography-Mass Spectroscopy volatiles analyses. As a result of this review it was determined that some revisions of the original test report for this job were needed. These corrections have been incorporated into the revised report.

Please be assured that corrective actions have been put in place to address this matter and prevent a recurrence.

We apologize for any inconvenience that this issue may have caused. Please don't hesitate to contact us if we can be of further assistance.

Sincerely,

H. (Brad) Madadian

Regional Laboratory Director
SGS Accutest Inc. - Marlborough

SGS ACCUTEST

January 18, 2017

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

RE: SGS Accutest Job # MC27073 (reissue #2)

Dear Elizabeth Kunkel,

The report of SGS Accutest job number MC27073 has been revised and reissued due to report corrected CCV for Carbon disulfide which is within method acceptance in sample MC27073-1. This correction has been incorporated into the revised report.

Sincerely,

H. (Brad) Madadian

Regional Laboratory Director
SGS Accutest Inc. - Marlborough

Sections: 1 2 3 4 5 6 7 8 9

Table of Contents

Sample Summary

Shell Oil

Job No: MC27073

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Project No: 21562850.15000

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC27073-1	12/11/13	16:30		12/12/13	SO	Soil	VMP64-121113(10-14')
MC27073-2	12/11/13	16:30		12/12/13	SO	Soil	VMP64-121113(10-14')DUP
MC27073-3	12/11/13	16:45		12/12/13	SO	Soil	VMP64-121113(28-30')
MC27073-4	12/11/13	17:00		12/12/13	SO	Soil	VMP64-121113(44-46')
MC27073-5	12/11/13	00:00		12/12/13	AQ	Trip Blank Water	TB-120413(HCL)
MC27073-6	12/11/13	00:00		12/12/13	AQ	Trip Blank Water	TB-120413(ST)

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: She O **Job No** MC27073

Site: URSMOSTL: Roxana VMP-47 Step Out, 900 South Centra Avenue **Report Date** 0/27/20 6 2:50:44 P

4 Samp e(s), 2 Tr p B ank(s) and 0 F e d B ank(s) were co ected on 2/ /20 3 and were rece ved at SGS Accutest New Eng and on 2/ 2/20 3 proper y preserved, at 0 4 Deg C and ntact These Samp es rece ved a job number of MC27073 A st ng of the Laboratory Samp e ID, C ent Samp e ID and dates of co ect on are presented n the Resu ts Summary Sect on of th s report - Ch orohexane, Benzeneth o , D benz(a,h)acr d ne, Indene and Qu no ne were searched n the brary search and reported on y f detect ons were found

Except as noted be ow, a method spec f ed ca brat ons and qua ty contro performance cr ter a were met for th s job For more nformat on, p ease refer to QC summary pages

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** MSP2422

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC27254-3MS, MC27254-3MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a
- B ank Sp ke Recove y(s) for , , -Tr ch oroethane, Bromod ch oromethane, c s- ,3-D ch oropropene, , -D ch oroethene, Carbon d su f de, D ch orod f uoromethane are outs de contro m ts
- Matr x Sp ke Recovery(s) for , , -Tr ch oroethane, 2-Ch oroethy v ny ether, Bromomethane, Carbon tetrach or de, m,p-Xy ene, Xy ene (tota) are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for , , -Tr ch oroethane, 2-Ch oroethy v ny ether, m,p-Xy ene, o-Xy ene, Xy ene (tota) are outs de contro m ts Probab e cause due to matr x nterference
- Matr x Sp ke/Matr x Sp ke Dup Recovery(s) for ,2,4-Tr methy benzene are outs de contro m ts Outs de contro m ts due to h gh eve n samp e re at ve to sp ke amount
- RPD(s) for MSD for Bromomethane are outs de contro m ts for samp e MC27254-3MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty
- MC27254-3MS/MSD: The pH of the samp e a quot for VOA ana ys s was >2 at t me of ana ys s
- MC27073-5 for Acetone: Cont nu ng Ca brat on Ver f cat on outs de of acceptance cr ter a Samp e resu t may be b ased h gh
- MSP2422-BS for Bromod ch oromethane, c s- ,3-D ch oropropene, , , -Tr ch oroethane: Outs de contro m ts Assoc ated samp es are non-detect for th s compound
- MC27073-5 for Acro e n: Cont nu ng Ca brat on Ver f cat on outs de of acceptance cr ter a Samp e resu t may be b ased ow
- Cont nu ng ca brat on check standard MSP2422-CC2403 for , , -tr ch oroethane exceeds 40% d fference(b ased h gh) Assoc ated samp es are non-detect for th s compound

Matrix: SO **Batch ID:** MSM2 76

- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC27073- MS, MC27073- MSD were used as the QC samp es nd cated
- Matr x Sp ke Recovery(s) for ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, ,2,4-Tr methy benzene, ,2-D ch orobenzene, ,2-D ch oroethane, ,3,5-Tr methy benzene, ,3-D ch orobenzene, ,4-D ch orobenzene, ,4-D oxane, 2-Ch oroethy v ny ether, 4-Methy -2-pentanone (MIBK), Acro e n, Bromobenzene, Bromomethane, Carbon tetrach or de, Ch oroethane, Ch oromethane, D ch orod f uoromethane, Hexach orobutad ene, n-Buty benzene, n-Propy benzene, Naphtha ene, o-Ch oroto uene, p-Ch oroto uene, p-Isopropy to uene, sec-Buty benzene, Styrene, V ny ch or de are outs de contro m ts Outs de contro m ts due to poss b e matr x nte ference
- Matr x Sp ke Dup cate Recovery(s) for ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, ,2,4-Tr methy benzene, ,2-D ch orobenzene, ,3,5-Tr methy benzene, ,3-D ch orobenzene, ,4-D ch orobenzene, ,4-D oxane, 2-Ch oroethy v ny ether, Acro e n, Bromobenzene, Bromomethane, Ch oroethane, Ch oromethane, D ch orod f uoromethane, Hexach orobutad ene, Isopropy benzene, n-Buty benzene, n-Propy benzene, Naphtha ene, o-Ch oroto uene, p-Ch oroto uene, p-Isopropy to uene, sec-Buty benzene, Styrene, tert-Buty benzene, V ny ch or de are outs de contro m ts Probab e cause due to matr x nterference
- Acro e n: In t a Ca brat on verication outs de of acceptance cr ter a Samp e resu t may be b ased ow

Volatiles by GCMS By Method SW846 8260C

Matrix: SO **Batch ID:** MSM2 76

- n-Propy benzene, ,2,3-Tr ch oropropane, ,2-D ch oropropane, Acry on tr e, , ,2,2-Tetrach oroethane, V ny ch or de: Cont nu ng Ca brat on outs de of acceptance cr ter a Samp e resu t may be b ased ow
- Acrolein: Continuing Calibration verification outside of acceptance criteria. Sample result may be biased low

Extractables by GCMS By Method SW846 8270D

Matrix: SO **Batch ID:** OP36230

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC27073-4MS, MC27073-4MSD were used as the QC samp es nd cated
- Matr x Sp ke Recovery(s) for 2,4-D n tropheno , 4,6-D n tro-o-creso , Benzo c ac d, Hexach orocyc opentad ene, Hexach oroethane, Pyr d ne are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- Matr x Sp ke Dup cate Recovery(s) for 2,4-D n tropheno , 4,6-D n tro-o-creso , Benzo c ac d, Hexach orocyc opentad ene, Hexach oroethane, Pentach oropheno , Pyr d ne are outs de contro m ts Probab e cause due to matr x nte ference
- MC27073- : E evated RL due to d ut on requ red for matr x nterference
- In t a ca brat on ver f cat on MSW729-ICV729 for An ne, b s(2-ch oro sopropy)ether exceeds 30% D fference These compounds are w th n cr ter a n cont nu ng ca brat on check MSW745-CC729

Extractables by GCMS By Method SW846 8270D BY SIM

Matrix: SO **Batch ID:** OP3623

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC27073-4MS, MC27073-4MSD were used as the QC samp es nd cated

Volatiles by GC By Method SW846 8011

Matrix: AQ **Batch ID:** OP36 7

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC27008- 3MS, MC27008- 3MSD were used as the QC samp es nd cated

Matrix: SO **Batch ID:** OP36 67

- A samp es were extracted w th n the recommended method ho d ng t me
- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) JB55 22- MS, JB55 22- MSD were used as the QC samp es nd cated
- A method b anks for th s batch meet method spec f c cr ter a

Volatiles by GC By Method SW846 8015

Matrix: SO **Batch ID:** GWX342

- A method b anks for th s batch meet method spec f c cr ter a
- Samp e(s) MC27499-5MS, MC27499-5MSD were used as the QC samp es nd cated
- Samp e ana ys s past recommended ho d t me

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO **Batch ID:** GN45493

- Samp e(s) MC27073- DUP were used as the QC samp es for So ds, Percent

SGS Accutest New Eng and ce t f es that a ana ys s were performed w th n method spec f cat on It s further recommended that th s report to be used n ts ent rety The Laborato y D rector for SGS Accutest New Eng and or ass gnee as ver f ed by the s gnature on the cover page has author zed the re ease of th s report(MC27073)

Summary of Hits

Job Number: MC27073
Account: Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Collected: 12/11/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC27073-1	VMP64-121113(10-14')					
Benzene		0.0018	0.00073	0.00036	mg/kg	SW846 8260C
sec-Butylbenzene		0.00042 J	0.0073	0.00023	mg/kg	SW846 8260C
Carbon disulfide		0.0010 J	0.0073	0.00022	mg/kg	SW846 8260C
Ethylbenzene		0.0026 J	0.0029	0.00026	mg/kg	SW846 8260C
Isopropylbenzene		0.00048 J	0.0073	0.00041	mg/kg	SW846 8260C
Toluene		0.0029 J	0.0073	0.00036	mg/kg	SW846 8260C
1,2,4-Trimethylbenzene		0.0018 J	0.0073	0.00030	mg/kg	SW846 8260C
1,3,5-Trimethylbenzene		0.0011 J	0.0073	0.00019	mg/kg	SW846 8260C
m,p-Xylene		0.0014 J	0.0029	0.00042	mg/kg	SW846 8260C
o-Xylene		0.0012 J	0.0029	0.00030	mg/kg	SW846 8260C
Xylene (total)		0.0027 J	0.0029	0.00030	mg/kg	SW846 8260C
Total TIC, Volatile		0.0813 J			mg/kg	
Acenaphthene		0.0042 J	0.029	0.0033	mg/kg	SW846 8270D BY SIM
Benzo(a)anthracene		0.0096 J	0.029	0.0036	mg/kg	SW846 8270D BY SIM
Benzo(a)pyrene		0.0079 J	0.029	0.0042	mg/kg	SW846 8270D BY SIM
Benzo(b)fluoranthene		0.0083 J	0.029	0.0035	mg/kg	SW846 8270D BY SIM
Benzo(g,h,i)perylene		0.0111 J	0.029	0.011	mg/kg	SW846 8270D BY SIM
Chrysene		0.0219 J	0.029	0.0044	mg/kg	SW846 8270D BY SIM
Fluoranthene		0.010 J	0.029	0.0046	mg/kg	SW846 8270D BY SIM
Fluorene		0.0103 J	0.029	0.0025	mg/kg	SW846 8270D BY SIM
1-Methylnaphthalene		0.0581	0.058	0.058	mg/kg	SW846 8270D BY SIM
2-Methylnaphthalene		0.0605	0.029	0.0062	mg/kg	SW846 8270D BY SIM
Phenanthrene		0.0405	0.029	0.0057	mg/kg	SW846 8270D BY SIM
Pyrene		0.0276 J	0.029	0.010	mg/kg	SW846 8270D BY SIM
MC27073-2	VMP64-121113(10-14')DUP					
Benzene		0.0014	0.00064	0.00032	mg/kg	SW846 8260C
Ethylbenzene		0.0029	0.0026	0.00023	mg/kg	SW846 8260C
Toluene		0.0033 J	0.0064	0.00031	mg/kg	SW846 8260C
1,2,4-Trimethylbenzene		0.00095 J	0.0064	0.00026	mg/kg	SW846 8260C
1,3,5-Trimethylbenzene		0.00053 J	0.0064	0.00017	mg/kg	SW846 8260C
m,p-Xylene		0.0011 J	0.0026	0.00037	mg/kg	SW846 8260C
o-Xylene		0.00085 J	0.0026	0.00026	mg/kg	SW846 8260C
Xylene (total)		0.0019 J	0.0026	0.00026	mg/kg	SW846 8260C
Total TIC, Volatile		0.0218 J			mg/kg	
bis(2-Ethylhexyl)phthalate		0.0153 J	0.30	0.011	mg/kg	SW846 8270D
Acenaphthene		0.0044 J	0.0059	0.00069	mg/kg	SW846 8270D BY SIM
Anthracene		0.0029 J	0.0059	0.00096	mg/kg	SW846 8270D BY SIM
Benzo(a)anthracene		0.0066	0.0059	0.00073	mg/kg	SW846 8270D BY SIM
Benzo(a)pyrene		0.0038 J	0.0059	0.00086	mg/kg	SW846 8270D BY SIM
Benzo(b)fluoranthene		0.0049 J	0.0059	0.00072	mg/kg	SW846 8270D BY SIM
Benzo(g,h,i)perylene		0.0061	0.0059	0.0023	mg/kg	SW846 8270D BY SIM

Summary of Hits

Job Number: MC27073
Account: Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Collected: 12/11/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(k)fluoranthene		0.0019 J	0.0059	0.0011	mg/kg	SW846 8270D BY SIM
Chrysene		0.0141	0.0059	0.00091	mg/kg	SW846 8270D BY SIM
Dibenzo(a,h)anthracene		0.0018 J	0.0059	0.0017	mg/kg	SW846 8270D BY SIM
Fluoranthene		0.0063	0.0059	0.00094	mg/kg	SW846 8270D BY SIM
Fluorene		0.0108	0.0059	0.00052	mg/kg	SW846 8270D BY SIM
Indeno(1,2,3-cd)pyrene		0.0026 J	0.0059	0.0015	mg/kg	SW846 8270D BY SIM
1-Methylnaphthalene		0.0587	0.012	0.012	mg/kg	SW846 8270D BY SIM
2-Methylnaphthalene		0.0606	0.0059	0.0013	mg/kg	SW846 8270D BY SIM
Phenanthrene		0.0304	0.0059	0.0012	mg/kg	SW846 8270D BY SIM
Pyrene		0.0175	0.0059	0.0021	mg/kg	SW846 8270D BY SIM
Total TIC, Semi-Volatile		2.64 J			mg/kg	
TPH-GRO (VOA) [a]		14.5 J	15	3.2	mg/kg	SW846 8015
MC27073-3	**VMP64-121113(28-30')**					
Benzene		0.00044 J	0.00054	0.00027	mg/kg	SW846 8260C
Ethylbenzene		0.00081 J	0.0022	0.00019	mg/kg	SW846 8260C
Toluene		0.00094 J	0.0054	0.00026	mg/kg	SW846 8260C
Total TIC, Volatile		0.018 J			mg/kg	
Benzo(a)anthracene		0.0010 J	0.0063	0.00079	mg/kg	SW846 8270D BY SIM
Chrysene		0.0018 J	0.0063	0.00098	mg/kg	SW846 8270D BY SIM
Fluoranthene		0.0019 J	0.0063	0.0010	mg/kg	SW846 8270D BY SIM
Phenanthrene		0.0014 J	0.0063	0.0013	mg/kg	SW846 8270D BY SIM
Pyrene		0.0031 J	0.0063	0.0022	mg/kg	SW846 8270D BY SIM
Total TIC, Semi-Volatile		0.31 J			mg/kg	
TPH-GRO (VOA) [a]		3.52 J	14	3.1	mg/kg	SW846 8015
MC27073-4	**VMP64-121113(44-46')**					
Benzene		0.00043 J	0.00055	0.00027	mg/kg	SW846 8260C
Ethylbenzene		0.00090 J	0.0022	0.00020	mg/kg	SW846 8260C
Toluene		0.00095 J	0.0055	0.00027	mg/kg	SW846 8260C
Total TIC, Volatile		0.0215 J			mg/kg	
bis(2-Ethylhexyl)phthalate		0.433	0.32	0.012	mg/kg	SW846 8270D
Acenaphthene		0.0011 J	0.0063	0.00074	mg/kg	SW846 8270D BY SIM
Anthracene		0.0010 J	0.0063	0.0010	mg/kg	SW846 8270D BY SIM
Benzo(a)anthracene		0.0013 J	0.0063	0.00079	mg/kg	SW846 8270D BY SIM
Benzo(g,h,i)perylene		0.0053 J	0.0063	0.0025	mg/kg	SW846 8270D BY SIM
Chrysene		0.0028 J	0.0063	0.00098	mg/kg	SW846 8270D BY SIM
Fluoranthene		0.0038 J	0.0063	0.0010	mg/kg	SW846 8270D BY SIM
Indeno(1,2,3-cd)pyrene		0.0043 J	0.0063	0.0016	mg/kg	SW846 8270D BY SIM
Phenanthrene		0.0018 J	0.0063	0.0013	mg/kg	SW846 8270D BY SIM
Pyrene		0.0074	0.0063	0.0022	mg/kg	SW846 8270D BY SIM
Total TIC, Semi-Volatile		0.85 J			mg/kg	
TPH-GRO (VOA) [a]		3.22 J	13	2.8	mg/kg	SW846 8015

Summary of Hits

Job Number: MC27073
Account: Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Collected: 12/11/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC27073-5	TB-120413(HCL)					
Acetone [b]		16.4	10	2.8	ug/l	SW846 8260C
MC27073-6	TB-120413(ST)					

No hits reported in this sample.

(a) Sample analyzed past recommended hold time.
(b) Continuing Calibration Verification outside of acceptance criteria. Sample result may be biased high.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62277.D	1	12/18/13	KD	n/a	n/a	MSM2176
Run #2							

	Initial Weight	Final Volume
Run #1	4.03 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.015	0.0057	mg/kg	
107-02-8	Acrolein [a]	ND	0.037	0.0055	mg/kg	
107-13-1	Acrylonitrile [b]	ND	0.037	0.0020	mg/kg	
71-43-2	Benzene	0.0018	0.00073	0.00036	mg/kg	
108-86-1	Bromobenzene	ND	0.0073	0.00040	mg/kg	
74-97-5	Bromochloromethane	ND	0.0073	0.00085	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0029	0.00053	mg/kg	
75-25-2	Bromoform	ND	0.0029	0.00043	mg/kg	
74-83-9	Bromomethane	ND	0.0029	0.0014	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0073	0.0045	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0073	0.00025	mg/kg	
135-98-8	sec-Butylbenzene	0.00042	0.0073	0.00023	mg/kg	J
98-06-6	tert-Butylbenzene	ND	0.0073	0.00052	mg/kg	
75-15-0	Carbon disulfide	0.0010	0.0073	0.00022	mg/kg	J
56-23-5	Carbon tetrachloride	ND	0.0029	0.0017	mg/kg	
108-90-7	Chlorobenzene	ND	0.0029	0.00040	mg/kg	
75-00-3	Chloroethane	ND	0.0073	0.00088	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0073	0.0069	mg/kg	
67-66-3	Chloroform	ND	0.0029	0.00042	mg/kg	
74-87-3	Chloromethane	ND	0.0073	0.0018	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0073	0.00060	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0073	0.00065	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0029	0.00062	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0029	0.00031	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0029	0.00033	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0029	0.00030	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0029	0.0016	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0029	0.00049	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0029	0.00080	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0029	0.00076	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0029	0.00075	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0029	0.00065	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane [b]	ND	0.0029	0.00062	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0073	0.00065	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0073	0.00096	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0073	0.00034	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0029	0.00042	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0029	0.00043	mg/kg	
123-91-1	1,4-Dioxane	ND	0.037	0.031	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0073	0.0048	mg/kg	
100-41-4	Ethylbenzene	0.0026	0.0029	0.00026	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0073	0.00083	mg/kg	
591-78-6	2-Hexanone	ND	0.0073	0.0036	mg/kg	
98-82-8	Isopropylbenzene	0.00048	0.0073	0.00041	mg/kg	J
99-87-6	p-Isopropyltoluene	ND	0.0073	0.00023	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0029	0.00058	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0073	0.0027	mg/kg	
74-95-3	Methylene bromide	ND	0.0073	0.00051	mg/kg	
75-09-2	Methylene chloride	ND	0.0029	0.0023	mg/kg	
91-20-3	Naphthalene	ND	0.0073	0.0012	mg/kg	
103-65-1	n-Propylbenzene [b]	ND	0.0073	0.00036	mg/kg	
100-42-5	Styrene	ND	0.0073	0.00030	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0073	0.00057	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane [b]	ND	0.0029	0.00043	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0029	0.00065	mg/kg	
108-88-3	Toluene	0.0029	0.0073	0.00036	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0073	0.00063	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0073	0.00053	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0029	0.00026	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0029	0.00051	mg/kg	
79-01-6	Trichloroethene	ND	0.0029	0.00069	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0029	0.0015	mg/kg	
96-18-4	1,2,3-Trichloropropane [b]	ND	0.0073	0.00056	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.0018	0.0073	0.00030	mg/kg	J
108-67-8	1,3,5-Trimethylbenzene	0.0011	0.0073	0.00019	mg/kg	J
108-05-4	Vinyl Acetate	ND	0.0073	0.0018	mg/kg	
75-01-4	Vinyl chloride [b]	ND	0.0029	0.00083	mg/kg	
	m,p-Xylene	0.0014	0.0029	0.00042	mg/kg	J
95-47-6	o-Xylene	0.0012	0.0029	0.00030	mg/kg	J
1330-20-7	Xylene (total)	0.0027	0.0029	0.00030	mg/kg	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:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 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	95%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.06	.013	mg/kg	JN
109-66-0	Pentane	6.49	.0062	mg/kg	JN
79-29-8	Butane, 2,3-dimethyl-	7.83	.0058	mg/kg	JN
108-87-2	Cyclohexane, methyl-	11.17	.021	mg/kg	JN
	Unknown Cyclohexane	12.24	.0084	mg/kg	JN
1678-91-7	Cyclohexane, ethyl-	13.20	.0077	mg/kg	JN
51756-29-7	1-Cyclohexanone, 3-butyl-3-methyl-	13.32	.011	mg/kg	JN
	Unknow Cyclohexane	14.09	.0082	mg/kg	JN
	Total TIC, Volatile		.0813	mg/kg	J

(a) Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.
(b) Continuing Calibration outside of acceptance criteria. Sample result may be biased low.

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	W16747.D	5	12/23/13	KR	12/16/13	OP36230	MSW745
Run #2							

	Initial Weight	Final Volume
Run #1	20.5 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	2.9	0.36	mg/kg	
95-57-8	2-Chlorophenol	ND	1.4	0.065	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	2.9	0.073	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	2.9	0.083	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	2.9	0.47	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	5.8	0.72	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	2.9	0.36	mg/kg	
95-48-7	2-Methylphenol	ND	2.9	0.11	mg/kg	
	3&4-Methylphenol	ND	2.9	0.14	mg/kg	
88-75-5	2-Nitrophenol	ND	2.9	0.077	mg/kg	
100-02-7	4-Nitrophenol	ND	5.8	0.54	mg/kg	
87-86-5	Pentachlorophenol	ND	2.9	0.20	mg/kg	
108-95-2	Phenol	ND	1.4	0.082	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	2.9	0.072	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	2.9	0.071	mg/kg	
62-53-3	Aniline	ND	2.9	0.14	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	1.4	0.073	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	1.4	0.059	mg/kg	
100-51-6	Benzyl Alcohol	ND	2.9	0.14	mg/kg	
91-58-7	2-Chloronaphthalene	ND	1.4	0.078	mg/kg	
106-47-8	4-Chloroaniline	ND	2.9	0.072	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	1.4	0.068	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	1.4	0.088	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	1.4	0.10	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	1.4	0.088	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	1.4	0.065	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	2.9	0.19	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	2.9	0.072	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	1.4	0.14	mg/kg	
132-64-9	Dibenzofuran	ND	0.58	0.080	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	1.4	0.15	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	1.4	0.045	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	1.4	0.072	mg/kg	
131-11-3	Dimethyl phthalate	ND	1.4	0.083	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.4	0.053	mg/kg	
118-74-1	Hexachlorobenzene	ND	1.4	0.090	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	2.9	0.72	mg/kg	
67-72-1	Hexachloroethane	ND	1.4	0.069	mg/kg	
78-59-1	Isophorone	ND	1.4	0.066	mg/kg	
88-74-4	2-Nitroaniline	ND	2.9	0.072	mg/kg	
99-09-2	3-Nitroaniline	ND	2.9	0.16	mg/kg	
100-01-6	4-Nitroaniline	ND	2.9	0.072	mg/kg	
98-95-3	Nitrobenzene	ND	1.4	0.078	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	1.4	0.069	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	1.4	0.082	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	1.4	0.087	mg/kg	
110-86-1	Pyridine	ND	2.9	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	67%		30-130%
4165-62-2	Phenol-d5	62%		30-130%
118-79-6	2,4,6-Tribromophenol	58%		30-130%
4165-60-0	Nitrobenzene-d5	63%		30-130%
321-60-8	2-Fluorobiphenyl	78%		30-130%
1718-51-0	Terphenyl-d14	75%		30-130%

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

(a) Elevated RL due to dilution required for 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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36100.D	5	12/20/13	KR	12/16/13	OP36231	MSR1323
Run #2							

	Initial Weight	Final Volume
Run #1	20.5 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.0042	0.029	0.0033	mg/kg	J
208-96-8	Acenaphthylene	ND	0.029	0.0054	mg/kg	
120-12-7	Anthracene	ND	0.029	0.0047	mg/kg	
56-55-3	Benzo(a)anthracene	0.0096	0.029	0.0036	mg/kg	J
50-32-8	Benzo(a)pyrene	0.0079	0.029	0.0042	mg/kg	J
205-99-2	Benzo(b)fluoranthene	0.0083	0.029	0.0035	mg/kg	J
191-24-2	Benzo(g,h,i)perylene	0.0111	0.029	0.011	mg/kg	J
207-08-9	Benzo(k)fluoranthene	ND	0.029	0.0055	mg/kg	
218-01-9	Chrysene	0.0219	0.029	0.0044	mg/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.029	0.0083	mg/kg	
206-44-0	Fluoranthene	0.010	0.029	0.0046	mg/kg	J
86-73-7	Fluorene	0.0103	0.029	0.0025	mg/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.029	0.0073	mg/kg	
90-12-0	1-Methylnaphthalene	0.0581	0.058	0.058	mg/kg	
91-57-6	2-Methylnaphthalene	0.0605	0.029	0.0062	mg/kg	
85-01-8	Phenanthrene	0.0405	0.029	0.0057	mg/kg	
129-00-0	Pyrene	0.0276	0.029	0.010	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	27%		15-110%
4165-60-0	Nitrobenzene-d5	70%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	101%		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:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB53246.D	1	12/13/13	CZ	12/13/13	OP36167	GBB3111
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0029	0.00072	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0029	0.0011	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	120%		61-167%
460-00-4	Bromofluorobenzene (S)	101%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')		
Lab Sample ID:	MC27073-1	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8015	**Percent Solids:**	84.7
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	WX71060.D	1	01/08/14	TB	n/a	n/a	GWX3421
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.69 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	13	3.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	106%		61-116%

(a) Sample analyzed past recommended hold time.

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62278.D	1	12/18/13	KD	n/a	n/a	MSM2176
Run #2							

	Initial Weight	Final Volume
Run #1	4.62 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.013	0.0050	mg/kg	
107-02-8	Acrolein [a]	ND	0.032	0.0048	mg/kg	
107-13-1	Acrylonitrile [b]	ND	0.032	0.0017	mg/kg	
71-43-2	Benzene	0.0014	0.00064	0.00032	mg/kg	
108-86-1	Bromobenzene	ND	0.0064	0.00035	mg/kg	
74-97-5	Bromochloromethane	ND	0.0064	0.00075	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0026	0.00047	mg/kg	
75-25-2	Bromoform	ND	0.0026	0.00037	mg/kg	
74-83-9	Bromomethane	ND	0.0026	0.0013	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0064	0.0040	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0064	0.00022	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0064	0.00020	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0064	0.00046	mg/kg	
75-15-0	Carbon disulfide	ND	0.0064	0.00019	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0026	0.0015	mg/kg	
108-90-7	Chlorobenzene	ND	0.0026	0.00035	mg/kg	
75-00-3	Chloroethane	ND	0.0064	0.00077	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0064	0.0061	mg/kg	
67-66-3	Chloroform	ND	0.0026	0.00037	mg/kg	
74-87-3	Chloromethane	ND	0.0064	0.0016	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0064	0.00052	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0064	0.00057	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0026	0.00055	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0026	0.00027	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0026	0.00029	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0026	0.00026	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0026	0.0014	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0026	0.00043	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0026	0.00070	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0026	0.00067	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0026	0.00065	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0026	0.00057	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane [b]	ND	0.0026	0.00054	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0064	0.00057	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0064	0.00084	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0064	0.00030	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0026	0.00037	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0026	0.00038	mg/kg	
123-91-1	1,4-Dioxane	ND	0.032	0.027	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0064	0.0043	mg/kg	
100-41-4	Ethylbenzene	0.0029	0.0026	0.00023	mg/kg	
87-68-3	Hexachlorobutadiene	ND	0.0064	0.00073	mg/kg	
591-78-6	2-Hexanone	ND	0.0064	0.0031	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0064	0.00036	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0064	0.00020	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0026	0.00051	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0064	0.0024	mg/kg	
74-95-3	Methylene bromide	ND	0.0064	0.00045	mg/kg	
75-09-2	Methylene chloride	ND	0.0026	0.0020	mg/kg	
91-20-3	Naphthalene	ND	0.0064	0.0010	mg/kg	
103-65-1	n-Propylbenzene [b]	ND	0.0064	0.00031	mg/kg	
100-42-5	Styrene	ND	0.0064	0.00026	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0064	0.00050	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane [b]	ND	0.0026	0.00038	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0026	0.00057	mg/kg	
108-88-3	Toluene	0.0033	0.0064	0.00031	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0064	0.00055	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0064	0.00047	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0026	0.00023	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0026	0.00045	mg/kg	
79-01-6	Trichloroethene	ND	0.0026	0.00061	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0026	0.0013	mg/kg	
96-18-4	1,2,3-Trichloropropane [b]	ND	0.0064	0.00050	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.00095	0.0064	0.00026	mg/kg	J
108-67-8	1,3,5-Trimethylbenzene	0.00053	0.0064	0.00017	mg/kg	J
108-05-4	Vinyl Acetate	ND	0.0064	0.0016	mg/kg	
75-01-4	Vinyl chloride [b]	ND	0.0026	0.00073	mg/kg	
	m,p-Xylene	0.0011	0.0026	0.00037	mg/kg	J
95-47-6	o-Xylene	0.00085	0.0026	0.00026	mg/kg	J
1330-20-7	Xylene (total)	0.0019	0.0026	0.00026	mg/kg	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:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		70-130%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.07	.012	mg/kg	JN
108-87-2	Cyclohexane, methyl-	11.17	.0098	mg/kg	JN
	Total TIC, Volatile		.0218	mg/kg	J

(a) Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.
(b) Continuing Calibration outside of acceptance criteria. Sample result may be biased low.

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16748.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
Run #2							

	Initial Weight	Final Volume
Run #1	20.1 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.59	0.074	mg/kg	
95-57-8	2-Chlorophenol	ND	0.30	0.013	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.59	0.015	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.59	0.017	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.59	0.096	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.2	0.15	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.59	0.074	mg/kg	
95-48-7	2-Methylphenol	ND	0.59	0.023	mg/kg	
	3&4-Methylphenol	ND	0.59	0.029	mg/kg	
88-75-5	2-Nitrophenol	ND	0.59	0.016	mg/kg	
100-02-7	4-Nitrophenol	ND	1.2	0.11	mg/kg	
87-86-5	Pentachlorophenol	ND	0.59	0.042	mg/kg	
108-95-2	Phenol	ND	0.30	0.017	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.59	0.015	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.59	0.015	mg/kg	
62-53-3	Aniline	ND	0.59	0.030	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.30	0.015	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.30	0.012	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.59	0.030	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.30	0.016	mg/kg	
106-47-8	4-Chloroaniline	ND	0.59	0.015	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.30	0.014	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.30	0.018	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.30	0.021	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.30	0.018	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.30	0.013	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.59	0.039	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.59	0.015	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.30	0.030	mg/kg	
132-64-9	Dibenzofuran	ND	0.12	0.016	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.30	0.031	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.30	0.0092	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.30	0.015	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.30	0.017	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	0.0153	0.30	0.011	mg/kg	J
118-74-1	Hexachlorobenzene	ND	0.30	0.019	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.59	0.15	mg/kg	
67-72-1	Hexachloroethane	ND	0.30	0.014	mg/kg	
78-59-1	Isophorone	ND	0.30	0.014	mg/kg	
88-74-4	2-Nitroaniline	ND	0.59	0.015	mg/kg	
99-09-2	3-Nitroaniline	ND	0.59	0.032	mg/kg	
100-01-6	4-Nitroaniline	ND	0.59	0.015	mg/kg	
98-95-3	Nitrobenzene	ND	0.30	0.016	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.30	0.014	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.30	0.017	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.30	0.018	mg/kg	
110-86-1	Pyridine	ND	0.59	0.030	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	72%		30-130%
4165-62-2	Phenol-d5	69%		30-130%
118-79-6	2,4,6-Tribromophenol	65%		30-130%
4165-60-0	Nitrobenzene-d5	66%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	78%		30-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
629-50-5	Tridecane	6.02	.37	mg/kg	JN
629-62-9	Pentadecane	6.98	.58	mg/kg	JN
544-76-3	Hexadecane	7.42	.39	mg/kg	JN
301-02-0	9-Octadecenamide, (Z)-	10.38	1.3	mg/kg	JN
	Total TIC, Semi-Volatile		2.64	mg/kg	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:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36101.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
Run #2							

	Initial Weight	Final Volume
Run #1	20.1 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.0044	0.0059	0.00069	mg/kg	J
208-96-8	Acenaphthylene	ND	0.0059	0.0011	mg/kg	
120-12-7	Anthracene	0.0029	0.0059	0.00096	mg/kg	J
56-55-3	Benzo(a)anthracene	0.0066	0.0059	0.00073	mg/kg	
50-32-8	Benzo(a)pyrene	0.0038	0.0059	0.00086	mg/kg	J
205-99-2	Benzo(b)fluoranthene	0.0049	0.0059	0.00072	mg/kg	J
191-24-2	Benzo(g,h,i)perylene	0.0061	0.0059	0.0023	mg/kg	
207-08-9	Benzo(k)fluoranthene	0.0019	0.0059	0.0011	mg/kg	J
218-01-9	Chrysene	0.0141	0.0059	0.00091	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	0.0018	0.0059	0.0017	mg/kg	J
206-44-0	Fluoranthene	0.0063	0.0059	0.00094	mg/kg	
86-73-7	Fluorene	0.0108	0.0059	0.00052	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0026	0.0059	0.0015	mg/kg	J
90-12-0	1-Methylnaphthalene	0.0587	0.012	0.012	mg/kg	
91-57-6	2-Methylnaphthalene	0.0606	0.0059	0.0013	mg/kg	
85-01-8	Phenanthrene	0.0304	0.0059	0.0012	mg/kg	
129-00-0	Pyrene	0.0175	0.0059	0.0021	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	104%		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:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB53247.D	1	12/13/13	CZ	12/13/13	OP36167	GBB3111
Run #2							

	Initial Weight	Final Volume
Run #1	30.9 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0029	0.00071	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0029	0.0011	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	125%		61-167%
460-00-4	Bromofluorobenzene (S)	105%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(10-14')DUP		
Lab Sample ID:	MC27073-2	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8015	**Percent Solids:**	84.2
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	WX71061.D	1	01/08/14	TB	n/a	n/a	GWX3421
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.33 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	14.5	15	3.2	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	109%		61-116%

(a) Sample analyzed past recommended hold time.

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62279.D	1	12/18/13	KD	n/a	n/a	MSM2176
Run #2							

	Initial Weight	Final Volume
Run #1	5.96 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.011	0.0042	mg/kg	
107-02-8	Acrolein [a]	ND	0.027	0.0041	mg/kg	
107-13-1	Acrylonitrile [b]	ND	0.027	0.0015	mg/kg	
71-43-2	Benzene	0.00044	0.00054	0.00027	mg/kg	J
108-86-1	Bromobenzene	ND	0.0054	0.00030	mg/kg	
74-97-5	Bromochloromethane	ND	0.0054	0.00063	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0022	0.00039	mg/kg	
75-25-2	Bromoform	ND	0.0022	0.00032	mg/kg	
74-83-9	Bromomethane	ND	0.0022	0.0011	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0054	0.0033	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0054	0.00019	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0054	0.00017	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0054	0.00038	mg/kg	
75-15-0	Carbon disulfide	ND	0.0054	0.00016	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0022	0.0013	mg/kg	
108-90-7	Chlorobenzene	ND	0.0022	0.00029	mg/kg	
75-00-3	Chloroethane	ND	0.0054	0.00065	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0054	0.0051	mg/kg	
67-66-3	Chloroform	ND	0.0022	0.00031	mg/kg	
74-87-3	Chloromethane	ND	0.0054	0.0013	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0054	0.00044	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0054	0.00048	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0022	0.00046	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0022	0.00023	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0022	0.00024	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0022	0.00022	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0022	0.0012	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0022	0.00036	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0022	0.00059	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0022	0.00056	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0022	0.00055	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0022	0.00048	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane [b]	ND	0.0022	0.00046	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0054	0.00048	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0054	0.00071	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0054	0.00025	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0022	0.00031	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0022	0.00032	mg/kg	
123-91-1	1,4-Dioxane	ND	0.027	0.023	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0054	0.0036	mg/kg	
100-41-4	Ethylbenzene	0.00081	0.0022	0.00019	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0054	0.00061	mg/kg	
591-78-6	2-Hexanone	ND	0.0054	0.0026	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0054	0.00030	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0054	0.00017	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0022	0.00043	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0054	0.0020	mg/kg	
74-95-3	Methylene bromide	ND	0.0054	0.00038	mg/kg	
75-09-2	Methylene chloride	ND	0.0022	0.0017	mg/kg	
91-20-3	Naphthalene	ND	0.0054	0.00085	mg/kg	
103-65-1	n-Propylbenzene [b]	ND	0.0054	0.00026	mg/kg	
100-42-5	Styrene	ND	0.0054	0.00022	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0054	0.00042	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane [b]	ND	0.0022	0.00032	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0022	0.00048	mg/kg	
108-88-3	Toluene	0.00094	0.0054	0.00026	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0054	0.00047	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0054	0.00039	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0022	0.00020	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0022	0.00038	mg/kg	
79-01-6	Trichloroethene	ND	0.0022	0.00051	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0022	0.0011	mg/kg	
96-18-4	1,2,3-Trichloropropane [b]	ND	0.0054	0.00042	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0054	0.00022	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0054	0.00014	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0054	0.0014	mg/kg	
75-01-4	Vinyl chloride [b]	ND	0.0022	0.00062	mg/kg	
	m,p-Xylene	ND	0.0022	0.00031	mg/kg	
95-47-6	o-Xylene	ND	0.0022	0.00022	mg/kg	
1330-20-7	Xylene (total)	ND	0.0022	0.00022	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 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	91%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.07	.0094	mg/kg	JN
109-66-0	Pentane	6.49	.0086	mg/kg	JN
	Total TIC, Volatile		.018	mg/kg	J

(a) Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.
(b) Continuing Calibration outside of acceptance criteria. Sample result may be biased low.

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16749.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
Run #2							

	Initial Weight	Final Volume
Run #1	20.3 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.63	0.079	mg/kg	
95-57-8	2-Chlorophenol	ND	0.32	0.014	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.63	0.016	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.63	0.018	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.63	0.10	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.3	0.16	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.63	0.079	mg/kg	
95-48-7	2-Methylphenol	ND	0.63	0.025	mg/kg	
	3&4-Methylphenol	ND	0.63	0.031	mg/kg	
88-75-5	2-Nitrophenol	ND	0.63	0.017	mg/kg	
100-02-7	4-Nitrophenol	ND	1.3	0.12	mg/kg	
87-86-5	Pentachlorophenol	ND	0.63	0.045	mg/kg	
108-95-2	Phenol	ND	0.32	0.018	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.63	0.016	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.63	0.016	mg/kg	
62-53-3	Aniline	ND	0.63	0.032	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.32	0.016	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.32	0.013	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.63	0.032	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.32	0.017	mg/kg	
106-47-8	4-Chloroaniline	ND	0.63	0.016	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.32	0.015	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.32	0.019	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.32	0.023	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.32	0.019	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.32	0.014	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.63	0.042	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.63	0.016	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.32	0.032	mg/kg	
132-64-9	Dibenzofuran	ND	0.13	0.018	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.32	0.034	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.32	0.0099	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.32	0.016	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.32	0.018	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.32	0.012	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.32	0.020	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.63	0.16	mg/kg	
67-72-1	Hexachloroethane	ND	0.32	0.015	mg/kg	
78-59-1	Isophorone	ND	0.32	0.015	mg/kg	
88-74-4	2-Nitroaniline	ND	0.63	0.016	mg/kg	
99-09-2	3-Nitroaniline	ND	0.63	0.035	mg/kg	
100-01-6	4-Nitroaniline	ND	0.63	0.016	mg/kg	
98-95-3	Nitrobenzene	ND	0.32	0.017	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.32	0.015	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.32	0.018	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.32	0.019	mg/kg	
110-86-1	Pyridine	ND	0.63	0.032	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		30-130%
4165-62-2	Phenol-d5	54%		30-130%
118-79-6	2,4,6-Tribromophenol	48%		30-130%
4165-60-0	Nitrobenzene-d5	51%		30-130%
321-60-8	2-Fluorobiphenyl	66%		30-130%
1718-51-0	Terphenyl-d14	72%		30-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
301-02-0	9-Octadecenamide, (Z)-	10.38	.31	mg/kg	JN
	Total TIC, Semi-Volatile		.31	mg/kg	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:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36102.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
Run #2							

	Initial Weight	Final Volume
Run #1	20.3 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0063	0.00074	mg/kg	
208-96-8	Acenaphthylene	ND	0.0063	0.0012	mg/kg	
120-12-7	Anthracene	ND	0.0063	0.0010	mg/kg	
56-55-3	Benzo(a)anthracene	0.0010	0.0063	0.00079	mg/kg	J
50-32-8	Benzo(a)pyrene	ND	0.0063	0.00092	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0063	0.00077	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0063	0.0025	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0063	0.0012	mg/kg	
218-01-9	Chrysene	0.0018	0.0063	0.00098	mg/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.0063	0.0018	mg/kg	
206-44-0	Fluoranthene	0.0019	0.0063	0.0010	mg/kg	J
86-73-7	Fluorene	ND	0.0063	0.00056	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0063	0.0016	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.013	0.013	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0063	0.0014	mg/kg	
85-01-8	Phenanthrene	0.0014	0.0063	0.0013	mg/kg	J
129-00-0	Pyrene	0.0031	0.0063	0.0022	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%		30-130%
321-60-8	2-Fluorobiphenyl	63%		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:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB53248.D	1	12/13/13	CZ	12/13/13	OP36167	GBB3111
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0032	0.00078	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0032	0.0012	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	116%		61-167%
460-00-4	Bromofluorobenzene (S)	101%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(28-30')		
Lab Sample ID:	MC27073-3	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8015	**Percent Solids:**	77.5
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	WX71062.D	1	01/08/14	TB	n/a	n/a	GWX3421
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.09 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	3.52	14	3.1	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	107%		61-116%

(a) Sample analyzed past recommended hold time.

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62280.D	1	12/18/13	KD	n/a	n/a	MSM2176
Run #2							

	Initial Weight	Final Volume
Run #1	5.96 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.011	0.0043	mg/kg	
107-02-8	Acrolein [a]	ND	0.028	0.0041	mg/kg	
107-13-1	Acrylonitrile [b]	ND	0.028	0.0015	mg/kg	
71-43-2	Benzene	0.00043	0.00055	0.00027	mg/kg	J
108-86-1	Bromobenzene	ND	0.0055	0.00030	mg/kg	
74-97-5	Bromochloromethane	ND	0.0055	0.00064	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0022	0.00040	mg/kg	
75-25-2	Bromoform	ND	0.0022	0.00032	mg/kg	
74-83-9	Bromomethane	ND	0.0022	0.0011	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0055	0.0034	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0055	0.00019	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0055	0.00017	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0055	0.00039	mg/kg	
75-15-0	Carbon disulfide	ND	0.0055	0.00017	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0022	0.0013	mg/kg	
108-90-7	Chlorobenzene	ND	0.0022	0.00030	mg/kg	
75-00-3	Chloroethane	ND	0.0055	0.00066	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0055	0.0052	mg/kg	
67-66-3	Chloroform	ND	0.0022	0.00032	mg/kg	
74-87-3	Chloromethane	ND	0.0055	0.0013	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0055	0.00045	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0055	0.00049	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0022	0.00047	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0022	0.00023	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0022	0.00025	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0022	0.00022	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0022	0.0012	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0022	0.00037	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0022	0.00060	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0022	0.00058	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0022	0.00056	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0022	0.00049	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane [b]	ND	0.0022	0.00047	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0055	0.00049	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0055	0.00072	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0055	0.00025	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0022	0.00032	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0022	0.00032	mg/kg	
123-91-1	1,4-Dioxane	ND	0.028	0.023	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0055	0.0036	mg/kg	
100-41-4	Ethylbenzene	0.00090	0.0022	0.00020	mg/kg	J
87-68-3	Hexachlorobutadiene	ND	0.0055	0.00063	mg/kg	
591-78-6	2-Hexanone	ND	0.0055	0.0027	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0055	0.00031	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0055	0.00018	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0022	0.00044	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0055	0.0020	mg/kg	
74-95-3	Methylene bromide	ND	0.0055	0.00039	mg/kg	
75-09-2	Methylene chloride	ND	0.0022	0.0017	mg/kg	
91-20-3	Naphthalene	ND	0.0055	0.00087	mg/kg	
103-65-1	n-Propylbenzene [b]	ND	0.0055	0.00027	mg/kg	
100-42-5	Styrene	ND	0.0055	0.00023	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0055	0.00043	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane [b]	ND	0.0022	0.00032	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0022	0.00049	mg/kg	
108-88-3	Toluene	0.00095	0.0055	0.00027	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0055	0.00048	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0055	0.00040	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0022	0.00020	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0022	0.00038	mg/kg	
79-01-6	Trichloroethene	ND	0.0022	0.00052	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0022	0.0012	mg/kg	
96-18-4	1,2,3-Trichloropropane [b]	ND	0.0055	0.00042	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0055	0.00023	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0055	0.00014	mg/kg	
108-05-4	Vinyl Acetate	ND	0.0055	0.0014	mg/kg	
75-01-4	Vinyl chloride [b]	ND	0.0022	0.00063	mg/kg	
	m,p-Xylene	ND	0.0022	0.00031	mg/kg	
95-47-6	o-Xylene	ND	0.0022	0.00023	mg/kg	
1330-20-7	Xylene (total)	ND	0.0022	0.00023	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	117%		70-130%
2037-26-5	Toluene-D8	89%		70-130%
460-00-4	4-Bromofluorobenzene	113%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.07	.012	mg/kg	JN
109-66-0	Pentane	6.50	.0095	mg/kg	JN
	Total TIC, Volatile		.0215	mg/kg	J

(a) Initial & Continuing Calibration outside of acceptance criteria. Sample result may be biased low.
(b) Continuing Calibration outside of acceptance criteria. Sample result may be biased low.

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16746.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
Run #2							

	Initial Weight	Final Volume
Run #1	20.7 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	0.63	0.079	mg/kg	
95-57-8	2-Chlorophenol	ND	0.32	0.014	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.63	0.016	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.63	0.018	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.63	0.10	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.3	0.16	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.63	0.079	mg/kg	
95-48-7	2-Methylphenol	ND	0.63	0.025	mg/kg	
	3&4-Methylphenol	ND	0.63	0.031	mg/kg	
88-75-5	2-Nitrophenol	ND	0.63	0.017	mg/kg	
100-02-7	4-Nitrophenol	ND	1.3	0.12	mg/kg	
87-86-5	Pentachlorophenol	ND	0.63	0.045	mg/kg	
108-95-2	Phenol	ND	0.32	0.018	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.63	0.016	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.63	0.016	mg/kg	
62-53-3	Aniline	ND	0.63	0.032	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.32	0.016	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.32	0.013	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.63	0.032	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.32	0.017	mg/kg	
106-47-8	4-Chloroaniline	ND	0.63	0.016	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.32	0.015	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.32	0.019	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.32	0.023	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.32	0.019	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.32	0.014	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.63	0.042	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.63	0.016	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.32	0.032	mg/kg	
132-64-9	Dibenzofuran	ND	0.13	0.018	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.32	0.034	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.32	0.0099	mg/kg	

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.32	0.016	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.32	0.018	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	0.433	0.32	0.012	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.32	0.020	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.63	0.16	mg/kg	
67-72-1	Hexachloroethane	ND	0.32	0.015	mg/kg	
78-59-1	Isophorone	ND	0.32	0.015	mg/kg	
88-74-4	2-Nitroaniline	ND	0.63	0.016	mg/kg	
99-09-2	3-Nitroaniline	ND	0.63	0.035	mg/kg	
100-01-6	4-Nitroaniline	ND	0.63	0.016	mg/kg	
98-95-3	Nitrobenzene	ND	0.32	0.017	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.32	0.015	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.32	0.018	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.32	0.019	mg/kg	
110-86-1	Pyridine	ND	0.63	0.032	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	72%		30-130%
4165-62-2	Phenol-d5	71%		30-130%
118-79-6	2,4,6-Tribromophenol	42%		30-130%
4165-60-0	Nitrobenzene-d5	48%		30-130%
321-60-8	2-Fluorobiphenyl	79%		30-130%
1718-51-0	Terphenyl-d14	78%		30-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
301-02-0	9-Octadecenamide, (Z)-	10.38	.3	mg/kg	JN
7225-64-1	Heptadecane, 9-octyl-	11.66	.27	mg/kg	JN
593-45-3	Octadecane	12.47	.28	mg/kg	JN
	Total TIC, Semi-Volatile		.85	mg/kg	J

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:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8270D BY SIM SW846 3546	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R36099.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
Run #2							

	Initial Weight	Final Volume
Run #1	20.7 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.0011	0.0063	0.00074	mg/kg	J
208-96-8	Acenaphthylene	ND	0.0063	0.0012	mg/kg	
120-12-7	Anthracene	0.0010	0.0063	0.0010	mg/kg	J
56-55-3	Benzo(a)anthracene	0.0013	0.0063	0.00079	mg/kg	J
50-32-8	Benzo(a)pyrene	ND	0.0063	0.00092	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0063	0.00077	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.0053	0.0063	0.0025	mg/kg	J
207-08-9	Benzo(k)fluoranthene	ND	0.0063	0.0012	mg/kg	
218-01-9	Chrysene	0.0028	0.0063	0.00098	mg/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	0.0063	0.0018	mg/kg	
206-44-0	Fluoranthene	0.0038	0.0063	0.0010	mg/kg	J
86-73-7	Fluorene	ND	0.0063	0.00056	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0043	0.0063	0.0016	mg/kg	J
90-12-0	1-Methylnaphthalene	ND	0.013	0.013	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0063	0.0014	mg/kg	
85-01-8	Phenanthrene	0.0018	0.0063	0.0013	mg/kg	J
129-00-0	Pyrene	0.0074	0.0063	0.0022	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	56%		30-130%
321-60-8	2-Fluorobiphenyl	75%		30-130%
1718-51-0	Terphenyl-d14	103%		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:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB53249.D	1	12/13/13	CZ	12/13/13	OP36167	GBB3111
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	50.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0032	0.00080	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0032	0.0012	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	113%		61-167%
460-00-4	Bromofluorobenzene (S)	105%		61-167%

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

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

Report of Analysis

Client Sample ID:	VMP64-121113(44-46')		
Lab Sample ID:	MC27073-4	**Date Sampled:**	12/11/13
Matrix:	SO - Soil	**Date Received:**	12/12/13
Method:	SW846 8015	**Percent Solids:**	76.1
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	WX71063.D	1	01/08/14	TB	n/a	n/a	GWX3421
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.89 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	3.22	13	2.8	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	108%		61-116%

(a) Sample analyzed past recommended hold time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC27073-5	**Date Sampled:**	12/11/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P73934.D	1	12/20/13	KD	n/a	n/a	MSP2422
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	16.4	10	2.8	ug/l	
107-02-8	Acrolein [b]	ND	25	6.3	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.5	ug/l	
71-43-2	Benzene	ND	0.50	0.45	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.64	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.33	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.5	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.6	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.54	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.58	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.87	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.59	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.62	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.48	ug/l	
75-00-3	Chloroethane	ND	2.0	0.84	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	1.4	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.55	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.33	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.35	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.30	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.37	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	

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

J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC27073-5	**Date Sampled:**	12/11/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	0.45	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.97	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.3	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.63	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.29	ug/l	
123-91-1	1,4-Dioxane	ND	25	16	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.38	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.3	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.64	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.55	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.43	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	0.43	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.41	ug/l	
91-20-3	Naphthalene	ND	5.0	0.79	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.59	ug/l	
100-42-5	Styrene	ND	5.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.42	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.61	ug/l	
108-88-3	Toluene	ND	1.0	0.46	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.76	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.45	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.94	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.49	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.45	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.61	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	0.47	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	1.1	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.61	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.41	ug/l	

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

J = Indicates 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-120413(HCL)		
Lab Sample ID:	MC27073-5	**Date Sampled:**	12/11/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/12/13
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	122%		70-130%
2037-26-5	Toluene-D8	114%		70-130%
460-00-4	4-Bromofluorobenzene	104%		70-130%

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

(a) Continuing Calibration Verification outside of acceptance criteria. Sample result may be biased high.
(b) Continuing Calibration Verification outside of acceptance criteria. Sample result may be biased low.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates 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-120413(ST)		
Lab Sample ID:	MC27073-6	**Date Sampled:**	12/11/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/12/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86856.D	1	12/17/13	CZ	12/13/13	OP36171	GYZ7442
Run #2							

	Initial Volume	Final Volume
Run #1	35.5 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0053	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	103%		31-181%
460-00-4	Bromofluorobenzene (S)	90%		31-181%

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

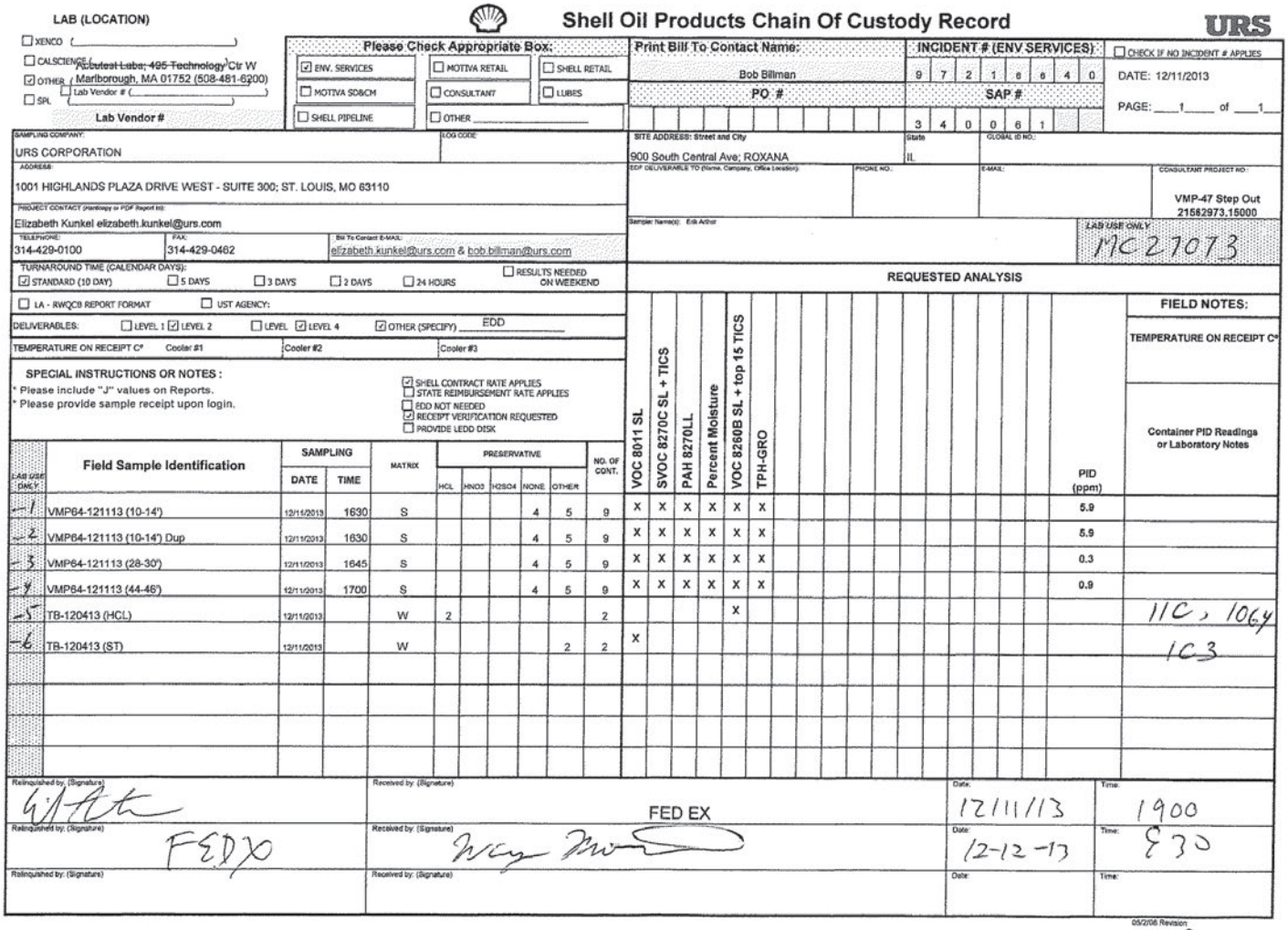
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- REPROC Form: Reprocessed/Corrected Data
- Sample Tracking Chronicle
- Internal Chain of Custody



LAB (LOCATION)

☐ XENCO (_____)
☐ CALSCIENCE (_____)
☑ OTHER (Accutest Labs; 495 Technology Ctr W Marlborough, MA 01752 (508-481-6200))
☐ SPL (_____)
Lab Vendor # (_____)

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:
☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name: Bob Billman
INCIDENT # (ENV SERVICES): 9 7 2 1 6 6 4 0
☐ CHECK IF NO INCIDENT # APPLIES
PO #:
SAP #: 3 4 0 0 6 1
DATE: 12/11/2013
PAGE: 1 of 1

SAMPLING COMPANY: URS CORPORATION
LOG CODE:
SITE ADDRESS: Street and City: 900 South Central Ave; ROXANA
State: IL
GLOBAL ID NO.:
ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300; ST. LOUIS, MO 63110
EDF DELIVERABLE TO (Name, Company, Office Location):
PHONE NO.:
E-MAIL:
CONSULTANT PROJECT NO.: VMP-47 Step Out 21582973.15000
PROJECT CONTACT (Hardcopy or PDF Report to): Elizabeth Kunkel elizabeth.kunkel@urs.com
Sampler Name(s): Erik Arthur
LAB USE ONLY: MC27073
TELEPHONE: 314-429-0100
FAX: 314-429-0462
Bill To Contact E-MAIL: elizabeth.kunkel@urs.com & bob.billman@urs.com
TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (10 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDD
TEMPERATURE ON RECEIPT C°: Cooler #1: Cooler #2: Cooler #3:

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

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

FIELD NOTES:
TEMPERATURE ON RECEIPT C°
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	VOC 8011 SL	SVOC 8270C SL + TICS	PAH 8270LL	Percent Moisture	VOC 8260B SL + top 15 TICS	TPH-GRO	PID (ppm)	Container PID Readings or Laboratory Notes
-1	VMP64-121113 (10-14')	12/11/2013	1630	S				4	5	9	x	x	x	x	x	x	5.9	
-2	VMP64-121113 (10-14') Dup	12/11/2013	1630	S				4	5	9	x	x	x	x	x	x	5.9	
-3	VMP64-121113 (28-30')	12/11/2013	1645	S				4	5	9	x	x	x	x	x	x	0.3	
-4	VMP64-121113 (44-46')	12/11/2013	1700	S				4	5	9	x	x	x	x	x	x	0.9	
-5	TB-120413 (HCL)	12/11/2013		W	2					2					x			11C, 10C4
-6	TB-120413 (ST)	12/11/2013		W					2	2	x							1C3

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	FED EX	12/11/13	1900
FEDX		12-12-13	830

05/2/06 Revision

0.4°C

MC27073: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC27073 **Client:** URS **Immediate Client Services Action Required:** No

Date / Time Received: 12/12/2013 **Delivery Method:** **Client Service Action Required at Login:** No

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

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

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

Quality Control 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:508.481.6200

495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www/accutest.com

5.1

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MC27073: Chain of Custody
Page 2 of 2

Initial Calibration Verification

Job Number: MC27073 **Sample:** MSM2169-ICV2169
Account: SHELLWIC Shell Oil **Lab FileID:** M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Evaluate Continuing Calibration Report

Data File : O:\msm\1\data.back-up\m131212s\m62084.d Vial: 4
Acq On : 12 Dec 2013 10:00 am Operator: krystend
Sample : cc2169-50 Inst : GCMS M
Misc : MS30736,MSM2169,5,,,5,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : O:\msm\1\methods\m131211s.m (RTE Integrator)
Title : SW-846 Method 8260
Last Update : Thu Dec 12 09:23:12 2013
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	88	0.00	6.84
2	P	tertiary butyl alcohol	1.708	2.110	-23.5#	116	0.00	6.92
3	P	Ethanol	0.128	0.142	-10.9	108	0.00	5.64
4	I	pentafluorobenzene	1.000	1.000	0.0	97	0.00	9.35
5	P	dichlorodifluoromethane	0.475	0.399	16.0	90	0.02	4.45
6	P	chloromethane	0.725	0.756	-4.3	111	0.01	4.71
7	P	vinyl chloride	0.700	0.594	15.1	87	0.02	4.98
8	P	bromomethane	0.461	0.437	5.2	105	0.01	5.50
9	P	chloroethane	0.340	0.353	-3.8	106	0.00	5.67
10	P	ethyl ether	0.393	0.486	-23.7#	132	0.00	6.58
11	P	acetonitrile	0.126	0.131	-4.0	117	0.00	6.57
12	P	trichlorofluoromethane	0.810	0.789	2.6	99	0.00	6.34
13	P	freon-113	0.391	0.533	-36.3#	130	0.00	7.15
14	P	acrolein	0.114	0.017#	85.1#	16#	0.03	6.36
15	P	1,1-dichloroethene	0.466	0.579	-24.2#	139	0.00	6.94
16	P	acetone	0.094	0.140	-48.9#	171	0.00	6.47
17	P	Methyl Acetate	0.588	0.608	-3.4	105	0.00	7.13
18	P	methylene chloride	0.511	0.624	-22.1#	133	0.00	7.10
19	P	methyl tert butyl ether	1.059	1.181	-11.5	121	0.00	7.91
20	P	acrylonitrile	0.231	0.456	-97.4#	209#	-0.01	7.00
21	P	allyl chloride	0.916	1.090	-19.0	127	0.00	7.19
22	P	trans-1,2-dichloroethene	0.519	0.616	-18.7	128	0.00	7.81
23	P	iodomethane	0.884	1.165	-31.8#	135	0.00	7.00
24	P	carbon disulfide	1.334	1.788	-34.0#	143	0.00	7.39
25	P	propionitrile	0.078	0.087	-11.5	122	0.00	8.16
26	P	vinyl acetate	1.093	1.115	-2.0	104	0.00	8.17
27	P	chloroprene	0.825	1.024	-24.1#	132	0.00	8.44
28	P	di-isopropyl ether	2.028	2.246	-10.7	120	0.00	8.48
29	P	methacrylonitrile	0.356	0.389	-9.3	125	0.00	8.60
30	P	2-butanone	0.078	0.118	-51.3#	167	0.00	8.49
31	P	1,1-dichloroethane	0.904	1.075	-18.9	126	0.00	8.07
32	P	tert-butyl ethyl ether	1.271	1.493	-17.5	124	0.00	8.88
33	P	isobutyl alcohol	0.056	0.053	5.4	110	0.00	8.88
34	P	2,2-dichloropropane	0.533	0.628	-17.8	123	0.00	8.94
35	P	cis-1,2-dichloroethene	0.601	0.679	-13.0	124	0.00	8.65
36	P	ethyl acetate	0.370	0.354	4.3	108	0.00	8.88
37	P	bromochloromethane	0.331	0.382	-15.4	127	0.00	8.82
38	P	chloroform	0.887	1.002	-13.0	121	0.00	8.86
			Amount	Calc.	%Drift			
39	S	dibromofluoromethane (s)	45.000	52.242	-16.1	93	0.00	8.99

Job Number: MC27073 Sample: MSM2169-ICV2169
Account: SHELLWIC Shell Oil Lab FileID: M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

			AvgRF	CCRF	%Dev			
40	P	Tetrahydrofuran	0.224	0.226	-0.9	123	0.00	9.19
41	P	1,1,1-trichloroethane	0.719	0.823	-14.5	121	0.00	9.62
42	I	1,4-difluorobenzene	1.000	1.000	0.0	95	0.00	10.23
43	P	Cyclohexane	0.578	0.666	-15.2	119	0.00	9.91
44	P	carbon tetrachloride	0.459	0.547	-19.2	123	0.00	10.00
45	P	1,1-dichloropropene	0.401	0.470	-17.2	125	0.00	9.80
46	P	benzene	1.324	1.465	-10.6	124	0.00	10.03
47	P	1,2-dichloroethane	0.417	0.473	-13.4	123	0.00	9.52
48	P	tert-amyl methyl ether	0.614	0.717	-16.8	121	0.00	10.14
49	P	heptane	0.648	0.699	-7.9	116	0.00	10.51
50	P	trichloroethene	0.382	0.416	-8.9	122	0.00	10.66
51	P	1,2-dichloropropane	0.366	0.413	-12.8	120	0.00	10.62
52	P	dibromomethane	0.216	0.248	-14.8	125	0.00	10.60
53	P	bromodichloromethane	0.435	0.505	-16.1	121	0.00	10.71
54	P	Methylcyclohexane	0.543	0.657	-21.0#	125	0.00	11.17
55	P	2-chloroethyl vinyl ether	0.096	0.114	-18.8	127	0.00	11.08
56	P	methyl methacrylate	0.211	0.236	-11.8	122	0.00	10.80
			Amount	Calc.	%Drift			
57	P	1,4-dioxane	250.000	273.767	-9.5	115	0.00	10.80
			AvgRF	CCRF	%Dev			
58	P	cis-1,3-dichloropropene	0.525	0.584	-11.2	117	0.00	11.33
			Amount	Calc.	%Drift			
59	S	toluene-d8 (s)	45.000	49.920	-10.9	102	0.00	12.04
			AvgRF	CCRF	%Dev			
60	P	4-methyl-2-pentanone	0.411	0.460	-11.9	125	0.00	11.42
61	P	toluene	0.832	0.973	-16.9	122	0.00	12.11
62	P	trans-1,3-dichloropropene	0.428	0.528	-23.4#	130	0.00	11.75
63	P	1,1,2-trichloroethane	0.243	0.280	-15.2	120	0.00	11.92
64	P	ethyl methacrylate	0.389	0.445	-14.4	121	0.00	12.12
65	I	chlorobenzene-d5	1.000	1.000	0.0	96	0.00	13.51
66	P	tetrachloroethene	0.923	1.051	-13.9	122	0.00	12.85
67	P	1,3-dichloropropane	1.033	1.222	-18.3	124	0.00	12.16
68	P	dibromochloromethane	0.942	1.130	-20.0	124	0.00	12.45
69	P	1,2-dibromoethane	0.738	0.868	-17.6	122	0.00	12.71
70	P	2-hexanone	0.802	1.082	-34.9#	167	0.00	12.28
71	P	chlorobenzene	2.471	2.805	-13.5	117	0.00	13.54
72	P	1,1,1,2-tetrachloroethane	0.893	1.085	-21.5#	125	0.00	13.46
73	P	ethylbenzene	3.647	4.238	-16.2	121	0.00	13.71
74	P	m,p-xylene	1.552	1.811	-16.7	120	0.00	13.90
75	P	o-xylene	1.566	1.807	-15.4	118	0.00	14.31
76	P	styrene	2.493	2.989	-19.9	122	0.00	14.23
77	P	bromoform	0.626	0.752	-20.1#	126	0.00	14.06
78	P	trans-1,4-dichloro-2-bute	0.301	0.354	-17.6	129	0.00	14.45
79	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	16.06
80	P	isopropylbenzene	3.606	3.897	-8.1	117	0.00	14.67
			Amount	Calc.	%Drift			
81	S	bromofluorobenzene (s)	45.000	51.683	-14.9	95	0.00	14.73
			AvgRF	CCRF	%Dev			
82	P	bromobenzene	0.960	1.081	-12.6	123	0.00	14.97

Job Number: MC27073 **Sample:** MSM2169-ICV2169
Account: SHELLWIC Shell Oil **Lab FileID:** M62084.D
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

83	P	1,1,2,2-tetrachloroethane	0.844	0.979	-16.0	129	0.00	14.31
84	P	1,2,3-trichloropropane	0.904	1.025	-13.4	125	0.00	14.46
85	P	n-propylbenzene	3.960	4.128	-4.2	112	0.00	15.12
86	P	2-chlorotoluene	2.423	2.577	-6.4	117	0.00	15.24
87	P	4-chlorotoluene	2.391	2.669	-11.6	121	0.00	15.31
88	P	1,3,5-trimethylbenzene	3.022	3.298	-9.1	119	0.00	15.39
89	P	tert-butylbenzene	1.637	1.727	-5.5	115	0.00	15.70
90	P	1,2,4-trimethylbenzene	2.990	3.254	-8.8	119	0.00	15.80
91	P	sec-butylbenzene	4.117	4.440	-7.8	118	0.00	15.92
92	P	1,3-dichlorobenzene	1.941	2.184	-12.5	124	0.00	16.03
93	P	p-isopropyltoluene	3.578	3.977	-11.2	123	0.00	16.09
94	P	1,4-dichlorobenzene	1.987	2.282	-14.8	129	0.00	16.10
95	P	1,2-dichlorobenzene	1.933	2.168	-12.2	122	0.00	16.46
96	P	n-butylbenzene	3.011	3.363	-11.7	123	0.00	16.51
97	P	1,2-dibromo-3-chloropropa	0.184	0.189	-2.7	124	0.00	16.94
98	P	1,3,5-trichlorobenzene	1.412	1.608	-13.9	129	0.00	17.75
99	P	1,2,4-trichlorobenzene	1.349	1.573	-16.6	131	0.00	18.30
100	P	hexachlorobutadiene	0.630	0.710	-12.7	128	0.00	18.59
101	P	naphthalene	3.804	4.166	-9.5	125	0.00	18.57
102	P	1,2,3-trichlorobenzene	1.317	1.495	-13.5	128	0.00	18.78
103	P	2-methylnaphthalene	2.146	2.377	-10.8	121	0.00	19.97
			Amount	Calc.	%Drift			
104	P	1-methylnaphthalene	25.000	27.233	-8.9	121	0.00	20.22

(#) = Out of Range SPCC's out = 1 CCC's out = 0
m62074.D m131211s.m Fri Jan 29 11:39:28 2016

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC27073

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Project No: 21562850.15000

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC27073-1 Collected: 11-DEC-13 16:30 By: VMP64-121113(10-14')		Received: 12-DEC-13 By: NT				
MC27073-1	SW846 8011	13-DEC-13 11:19	CZ	13-DEC-13	MR	V8011SL
MC27073-1	SM21 2540 B MOD.	16-DEC-13	HS			%SOL
MC27073-1	SW846 8260C	18-DEC-13 14:46	KD			V8260SL+
MC27073-1	SW846 8270D BY SIM	20-DEC-13 17:32	KR	16-DEC-13	AJ	B8270SIMSL
MC27073-1	SW846 8270D	23-DEC-13 22:59	KR	16-DEC-13	AJ	AB8270SL+
MC27073-1	SW846 8015	08-JAN-14 19:02	TB			V8015GRO
MC27073-2 Collected: 11-DEC-13 16:30 By: VMP64-121113(10-14')DUP		Received: 12-DEC-13 By: NT				
MC27073-2	SW846 8011	13-DEC-13 11:44	CZ	13-DEC-13	MR	V8011SL
MC27073-2	SM21 2540 B MOD.	16-DEC-13	HS			%SOL
MC27073-2	SW846 8260C	18-DEC-13 15:15	KD			V8260SL+
MC27073-2	SW846 8270D BY SIM	20-DEC-13 17:54	KR	16-DEC-13	AJ	B8270SIMSL
MC27073-2	SW846 8270D	23-DEC-13 23:23	KR	16-DEC-13	AJ	AB8270SL+
MC27073-2	SW846 8015	08-JAN-14 19:40	TB			V8015GRO
MC27073-3 Collected: 11-DEC-13 16:45 By: VMP64-121113(28-30')		Received: 12-DEC-13 By: NT				
MC27073-3	SW846 8011	13-DEC-13 12:08	CZ	13-DEC-13	MR	V8011SL
MC27073-3	SM21 2540 B MOD.	16-DEC-13	HS			%SOL
MC27073-3	SW846 8260C	18-DEC-13 15:44	KD			V8260SL+
MC27073-3	SW846 8270D BY SIM	20-DEC-13 18:16	KR	16-DEC-13	AJ	B8270SIMSL
MC27073-3	SW846 8270D	23-DEC-13 23:46	KR	16-DEC-13	AJ	AB8270SL+
MC27073-3	SW846 8015	08-JAN-14 20:17	TB			V8015GRO
MC27073-4 Collected: 11-DEC-13 17:00 By: VMP64-121113(44-46')		Received: 12-DEC-13 By: NT				
MC27073-4	SW846 8011	13-DEC-13 12:32	CZ	13-DEC-13	MR	V8011SL
MC27073-4	SM21 2540 B MOD.	16-DEC-13	HS			%SOL
MC27073-4	SW846 8260C	18-DEC-13 16:13	KD			V8260SL+
MC27073-4	SW846 8270D BY SIM	20-DEC-13 17:11	KR	16-DEC-13	AJ	B8270SIMSL
MC27073-4	SW846 8270D	23-DEC-13 22:36	KR	16-DEC-13	AJ	AB8270SL+
MC27073-4	SW846 8015	08-JAN-14 20:54	TB			V8015GRO

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC27073

URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Project No: 21562850.15000

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC27073-5 Collected: 11-DEC-13 00:00 By: TB-120413(HCL)			Received: 12-DEC-13 By: NT			
MC27073-5	SW846 8260C	20-DEC-13 16:32	KD			V8260SL+
MC27073-6 Collected: 11-DEC-13 00:00 By: TB-120413(ST)			Received: 12-DEC-13 By: NT			
MC27073-6	SW846 8011	17-DEC-13 00:03	CZ	13-DEC-13	MR	V8011SL

SGS Accutest Internal Chain of Custody

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/12/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC27073-1.1	Walk In Ref #9	Hamid Siamak	12/16/13 07:36	Retrieve from Storage
MC27073-1.1	Hamid Siamak	Walk In Ref #9	12/16/13 08:32	Return to Storage
MC27073-1.1	Walk In Ref #9	Krysten Dufort	12/18/13 16:23	Retrieve from Storage
MC27073-1.1	Krysten Dufort	Walk In Ref #9	12/18/13 16:24	Return to Storage
MC27073-1.1	Scott Parsick		03/03/14 15:47	Disposed
MC27073-1.2	Walk In Ref #9	Michael Rolo	12/13/13 07:47	Retrieve from Storage
MC27073-1.2	Michael Rolo	Walk In Ref #9	12/13/13 10:46	Return to Storage
MC27073-1.2	Walk In Ref #9	Aysia Wood	12/16/13 14:58	Retrieve from Storage
MC27073-1.2	Aysia Wood	Walk In Ref #9	12/16/13 22:03	Return to Storage
MC27073-1.2	Scott Parsick		03/03/14 15:47	Disposed
MC27073-1.5	VOC Ref #10	Krysten Dufort	12/18/13 12:20	Retrieve from Storage
MC27073-1.5	Krysten Dufort	GCMSM	12/18/13 12:20	Load on Instrument
MC27073-1.5	GCMSM	Krysten Dufort	12/23/13 09:48	Unload from Instrument
MC27073-1.5	Krysten Dufort	VOC Ref #10	12/23/13 09:48	Return to Storage
MC27073-1.5	Scott Parsick		03/03/14 15:47	Disposed
MC27073-1.7	VOC Ref #10	Sona Liskova	01/08/14 17:42	Retrieve from Storage
MC27073-1.7	Sona Liskova	GCWX	01/08/14 17:42	Load on Instrument
MC27073-1.7	GCWX	Sona Liskova	01/08/14 18:06	Unload from Instrument
MC27073-1.7	Sona Liskova	VOC Ref #10	01/08/14 18:06	Return to Storage
MC27073-1.7	Scott Parsick		03/03/14 15:47	Disposed
MC27073-1.9	VOC Ref #10	Gary Krasinski	12/13/13 11:34	Retrieve from Storage
MC27073-1.9	Gary Krasinski	VOC Ref #10	12/16/13 11:36	Return to Storage
MC27073-1.9	Scott Parsick		03/03/14 15:47	Disposed
MC27073-2.1	Walk In Ref #9	Hamid Siamak	12/16/13 07:36	Retrieve from Storage
MC27073-2.1	Hamid Siamak	Walk In Ref #9	12/16/13 08:32	Return to Storage
MC27073-2.1	Scott Parsick		03/03/14 15:47	Disposed
MC27073-2.2	Walk In Ref #9	Michael Rolo	12/13/13 07:47	Retrieve from Storage
MC27073-2.2	Michael Rolo	Walk In Ref #9	12/13/13 10:46	Return to Storage
MC27073-2.2	Walk In Ref #9	Aysia Wood	12/16/13 14:58	Retrieve from Storage
MC27073-2.2	Aysia Wood	Walk In Ref #9	12/16/13 22:03	Return to Storage
MC27073-2.2	Scott Parsick		03/03/14 15:47	Disposed
MC27073-2.5	VOC Ref #10	Krysten Dufort	12/18/13 12:20	Retrieve from Storage
MC27073-2.5	Krysten Dufort	GCMSM	12/18/13 12:20	Load on Instrument
MC27073-2.5	GCMSM	Krysten Dufort	12/23/13 09:48	Unload from Instrument
MC27073-2.5	Krysten Dufort	VOC Ref #10	12/23/13 09:48	Return to Storage
MC27073-2.5	Scott Parsick		03/03/14 15:47	Disposed

SGS Accutest Internal Chain of Custody

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/12/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC27073-2.7	VOC Ref #10	Sona Liskova	01/08/14 17:42	Retrieve from Storage
MC27073-2.7	Sona Liskova	GCWX	01/08/14 17:42	Load on Instrument
MC27073-2.7	GCWX	Sona Liskova	01/08/14 18:06	Unload from Instrument
MC27073-2.7	Sona Liskova	VOC Ref #10	01/08/14 18:06	Return to Storage
MC27073-2.7	Scott Parsick		03/03/14 15:47	Disposed
MC27073-2.9	VOC Ref #10	Gary Krasinski	12/13/13 11:34	Retrieve from Storage
MC27073-2.9	Gary Krasinski	VOC Ref #10	12/16/13 11:36	Return to Storage
MC27073-2.9	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.1	Walk In Ref #9	Hamid Siamak	12/16/13 07:36	Retrieve from Storage
MC27073-3.1	Hamid Siamak	Walk In Ref #9	12/16/13 08:32	Return to Storage
MC27073-3.1	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.2	Walk In Ref #9	Aysia Wood	12/16/13 14:58	Retrieve from Storage
MC27073-3.2	Aysia Wood	Walk In Ref #9	12/16/13 22:03	Return to Storage
MC27073-3.2	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.3	Walk In Ref #9	Michael Rolo	12/13/13 07:47	Retrieve from Storage
MC27073-3.3	Michael Rolo	Walk In Ref #9	12/13/13 10:46	Return to Storage
MC27073-3.3	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.5	VOC Ref #10	Krysten Dufort	12/18/13 12:20	Retrieve from Storage
MC27073-3.5	Krysten Dufort	GCMSM	12/18/13 12:20	Load on Instrument
MC27073-3.5	GCMSM	Krysten Dufort	12/23/13 09:48	Unload from Instrument
MC27073-3.5	Krysten Dufort	VOC Ref #10	12/23/13 09:48	Return to Storage
MC27073-3.5	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.7	VOC Ref #10	Gary Krasinski	12/13/13 11:34	Retrieve from Storage
MC27073-3.7	Gary Krasinski	VOC Ref #10	12/16/13 11:36	Return to Storage
MC27073-3.7	Scott Parsick		03/03/14 15:47	Disposed
MC27073-3.9	VOC Ref #10	Sona Liskova	01/08/14 17:42	Retrieve from Storage
MC27073-3.9	Sona Liskova	GCWX	01/08/14 17:42	Load on Instrument
MC27073-3.9	GCWX	Sona Liskova	01/08/14 18:06	Unload from Instrument
MC27073-3.9	Sona Liskova	VOC Ref #10	01/08/14 18:06	Return to Storage
MC27073-3.9	Scott Parsick		03/03/14 15:47	Disposed
MC27073-4.1	Walk In Ref #9	Michael Rolo	12/13/13 07:47	Retrieve from Storage
MC27073-4.1	Michael Rolo	Walk In Ref #9	12/13/13 10:46	Return to Storage
MC27073-4.1	Walk In Ref #9	Hamid Siamak	12/16/13 07:36	Retrieve from Storage
MC27073-4.1	Hamid Siamak	Walk In Ref #9	12/16/13 08:32	Return to Storage
MC27073-4.1	Walk In Ref #9	Aysia Wood	12/16/13 14:58	Retrieve from Storage
MC27073-4.1	Aysia Wood	Walk In Ref #9	12/16/13 22:03	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL
Received: 12/12/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC27073-4.1	Scott Parsick		03/03/14 15:47	Disposed
MC27073-4.5	VOC Ref #10	Krysten Dufort	12/18/13 12:20	Retrieve from Storage
MC27073-4.5	Krysten Dufort	GCMSM	12/18/13 12:20	Load on Instrument
MC27073-4.5	GCMSM	Krysten Dufort	12/23/13 09:48	Unload from Instrument
MC27073-4.5	Krysten Dufort	VOC Ref #10	12/23/13 09:48	Return to Storage
MC27073-4.5	Scott Parsick		03/03/14 15:47	Disposed
MC27073-4.7	VOC Ref #10	Sona Liskova	01/08/14 17:42	Retrieve from Storage
MC27073-4.7	Sona Liskova	GCWX	01/08/14 17:42	Load on Instrument
MC27073-4.7	GCWX	Sona Liskova	01/08/14 18:06	Unload from Instrument
MC27073-4.7	Sona Liskova	VOC Ref #10	01/08/14 18:06	Return to Storage
MC27073-4.7	Scott Parsick		03/03/14 15:47	Disposed
MC27073-4.9	VOC Ref #10	Gary Krasinski	12/13/13 11:34	Retrieve from Storage
MC27073-4.9	Gary Krasinski	VOC Ref #10	12/16/13 11:36	Return to Storage
MC27073-4.9	Scott Parsick		03/03/14 15:47	Disposed
MC27073-5.9	VOC Ref #1	Krysten Dufort	12/20/13 14:03	Retrieve from Storage
MC27073-5.9	Krysten Dufort	GCMSP	12/20/13 14:03	Load on Instrument
MC27073-5.9	GCMSP	Krysten Dufort	12/23/13 10:26	Unload from Instrument
MC27073-5.9	Krysten Dufort	VOC Ref #1	12/23/13 10:27	Return to Storage
MC27073-5.9	Scott Parsick		03/03/14 15:47	Disposed
MC27073-6.9	VOC Ref #1	Michael Rolo	12/13/13 07:46	Retrieve from Storage
MC27073-6.9	Michael Rolo		12/13/13 07:46	Depleted

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: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-MB	M62273.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.9	ug/kg	
107-02-8	Acrolein	ND	25	3.8	ug/kg	
107-13-1	Acrylonitrile	ND	25	1.3	ug/kg	
71-43-2	Benzene	ND	0.50	0.25	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.27	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.58	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.36	ug/kg	
75-25-2	Bromoform	ND	2.0	0.29	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.97	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	3.1	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.17	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.16	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.36	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.15	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	1.2	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.27	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.60	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	4.7	ug/kg	
67-66-3	Chloroform	ND	2.0	0.29	ug/kg	
74-87-3	Chloromethane	ND	5.0	1.2	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	0.41	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.44	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.43	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.21	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.22	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.20	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.33	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.54	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.52	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.51	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.45	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.42	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.45	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.66	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.23	ug/kg	

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-MB	M62273.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
123-91-1	1,4-Dioxane	ND	25	21	ug/kg	
97-63-2	Ethyl methacrylate	ND	5.0	3.3	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.18	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.57	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.4	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.28	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.40	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.8	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.35	ug/kg	
75-09-2	Methylene chloride	ND	2.0	1.5	ug/kg	
91-20-3	Naphthalene	ND	5.0	0.79	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	0.24	ug/kg	
100-42-5	Styrene	ND	5.0	0.21	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.39	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.44	ug/kg	
108-88-3	Toluene	ND	5.0	0.24	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.43	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.36	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.18	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.35	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.47	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	1.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.39	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.13	ug/kg	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.57	ug/kg	
	m,p-Xylene	ND	2.0	0.29	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.20	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.20	ug/kg	

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-MB	M62273.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	109%	70-130%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

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

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-MB	P73931.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	2.8	ug/l	
107-02-8	Acrolein	ND	25	6.3	ug/l	
107-13-1	Acrylonitrile	ND	5.0	3.5	ug/l	
71-43-2	Benzene	ND	0.50	0.45	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.44	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.64	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.33	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.5	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.6	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.54	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.58	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.87	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.59	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.62	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.48	ug/l	
75-00-3	Chloroethane	ND	2.0	0.84	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	10	1.3	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	2.0	1.4	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.55	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.48	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.33	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.35	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.30	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.2	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.37	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.67	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.45	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.97	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	1.3	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.63	ug/l	

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-MB	P73931.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.22	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.29	ug/l	
123-91-1	1,4-Dioxane	ND	25	16	ug/l	
97-63-2	Ethyl methacrylate	ND	5.0	0.81	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.38	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	1.3	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.3	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.64	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.55	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.43	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	0.43	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.41	ug/l	
91-20-3	Naphthalene	ND	5.0	0.79	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.59	ug/l	
100-42-5	Styrene	ND	5.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.46	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.42	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.61	ug/l	
108-88-3	Toluene	ND	1.0	0.46	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.76	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.45	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.94	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.49	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.45	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.61	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	0.47	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	1.1	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	1.3	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.61	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.41	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.41	ug/l	

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-MB	P73931.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	119%	70-130%
2037-26-5	Toluene-D8	115%	70-130%
460-00-4	4-Bromofluorobenzene	106%	70-130%

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

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-BS	M62270.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	50	52.6	105	70-130
107-02-8	Acrolein	50	36.2	72	70-130
107-13-1	Acrylonitrile	100	78.8	79	70-130
71-43-2	Benzene	50	41.8	84	70-130
108-86-1	Bromobenzene	50	45.4	91	70-130
74-97-5	Bromochloromethane	50	49.3	99	70-130
75-27-4	Bromodichloromethane	50	54.1	108	70-130
75-25-2	Bromoform	50	54.8	110	70-130
74-83-9	Bromomethane	50	48.2	96	70-130
78-93-3	2-Butanone (MEK)	50	53.8	108	70-130
104-51-8	n-Butylbenzene	50	42.6	85	70-130
135-98-8	sec-Butylbenzene	50	42.4	85	70-130
98-06-6	tert-Butylbenzene	50	43.5	87	70-130
75-15-0	Carbon disulfide	50	46.8	94	70-130
56-23-5	Carbon tetrachloride	50	63.4	127	70-130
108-90-7	Chlorobenzene	50	47.7	95	70-130
75-00-3	Chloroethane	50	47.2	94	70-130
110-75-8	2-Chloroethyl vinyl ether	50	45.7	91	10-160
67-66-3	Chloroform	50	49.6	99	70-130
74-87-3	Chloromethane	50	45.0	90	70-130
95-49-8	o-Chlorotoluene	50	40.5	81	70-130
106-43-4	p-Chlorotoluene	50	42.6	85	70-130
124-48-1	Dibromochloromethane	50	56.2	112	70-130
95-50-1	1,2-Dichlorobenzene	50	45.0	90	70-130
541-73-1	1,3-Dichlorobenzene	50	46.0	92	70-130
106-46-7	1,4-Dichlorobenzene	50	47.3	95	70-130
75-71-8	Dichlorodifluoromethane	50	42.1	84	70-130
75-34-3	1,1-Dichloroethane	50	46.0	92	70-130
107-06-2	1,2-Dichloroethane	50	57.7	115	70-130
75-35-4	1,1-Dichloroethene	50	47.8	96	70-130
156-59-2	cis-1,2-Dichloroethene	50	43.7	87	70-130
156-60-5	trans-1,2-Dichloroethene	50	47.2	94	70-130
78-87-5	1,2-Dichloropropane	50	39.9	80	70-130
142-28-9	1,3-Dichloropropane	50	44.1	88	70-130
594-20-7	2,2-Dichloropropane	50	55.7	111	70-130
563-58-6	1,1-Dichloropropene	50	49.3	99	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-BS	M62270.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	43.8	88	70-130
10061-02-6	trans-1,3-Dichloropropene	50	52.3	105	70-130
123-91-1	1,4-Dioxane	250	225	90	70-130
97-63-2	Ethyl methacrylate	50	41.4	83	76-141
100-41-4	Ethylbenzene	50	47.4	95	70-130
87-68-3	Hexachlorobutadiene	50	49.5	99	70-130
591-78-6	2-Hexanone	50	47.1	94	70-130
98-82-8	Isopropylbenzene	50	42.3	85	70-130
99-87-6	p-Isopropyltoluene	50	46.6	93	70-130
1634-04-4	Methyl Tert Butyl Ether	50	45.0	90	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	43.3	87	70-130
74-95-3	Methylene bromide	50	49.5	99	70-130
75-09-2	Methylene chloride	50	44.3	89	70-130
91-20-3	Naphthalene	50	44.1	88	70-130
103-65-1	n-Propylbenzene	50	39.2	78	70-130
100-42-5	Styrene	50	47.2	94	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	56.2	112	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	37.3	75	70-130
127-18-4	Tetrachloroethene	50	51.7	103	70-130
108-88-3	Toluene	50	47.3	95	70-130
87-61-6	1,2,3-Trichlorobenzene	50	46.0	92	70-130
120-82-1	1,2,4-Trichlorobenzene	50	46.5	93	70-130
71-55-6	1,1,1-Trichloroethane	50	57.2	114	70-130
79-00-5	1,1,2-Trichloroethane	50	43.3	87	70-130
79-01-6	Trichloroethene	50	46.9	94	70-130
75-69-4	Trichlorofluoromethane	50	50.6	101	70-130
96-18-4	1,2,3-Trichloropropane	50	38.7	77	70-130
95-63-6	1,2,4-Trimethylbenzene	50	43.5	87	70-130
108-67-8	1,3,5-Trimethylbenzene	50	44.2	88	70-130
108-05-4	Vinyl Acetate	50	40.7	81	70-130
75-01-4	Vinyl chloride	50	36.8	74	70-130
	m,p-Xylene	100	96.7	97	70-130
95-47-6	o-Xylene	50	47.8	96	70-130
1330-20-7	Xylene (total)	150	145	97	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2176-BS	M62270.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	110%	70-130%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-BS	P73927.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	49.0	98	70-130
107-02-8	Acrolein	50	50.9	102	70-130
107-13-1	Acrylonitrile	100	97.0	97	70-130
71-43-2	Benzene	50	45.1	90	70-130
108-86-1	Bromobenzene	50	53.4	107	70-130
74-97-5	Bromochloromethane	50	52.9	106	70-130
75-27-4	Bromodichloromethane	50	70.0	140* [a]	70-130
75-25-2	Bromoform	50	61.3	123	70-130
74-83-9	Bromomethane	50	42.8	86	70-130
78-93-3	2-Butanone (MEK)	50	55.8	112	70-130
104-51-8	n-Butylbenzene	50	60.9	122	70-130
135-98-8	sec-Butylbenzene	50	56.4	113	70-130
98-06-6	tert-Butylbenzene	50	53.6	107	70-130
75-15-0	Carbon disulfide	50	32.6	65* [b]	70-130
56-23-5	Carbon tetrachloride	50	64.8	130	70-130
108-90-7	Chlorobenzene	50	46.3	93	70-130
75-00-3	Chloroethane	50	61.6	123	70-130
110-75-8	2-Chloroethyl vinyl ether	50	53.4	107	70-130
67-66-3	Chloroform	50	53.1	106	70-130
74-87-3	Chloromethane	50	52.0	104	70-130
95-49-8	o-Chlorotoluene	50	52.5	105	70-130
106-43-4	p-Chlorotoluene	50	55.1	110	70-130
124-48-1	Dibromochloromethane	50	60.6	121	70-130
95-50-1	1,2-Dichlorobenzene	50	51.2	102	70-130
541-73-1	1,3-Dichlorobenzene	50	51.0	102	70-130
106-46-7	1,4-Dichlorobenzene	50	53.8	108	70-130
75-71-8	Dichlorodifluoromethane	50	30.1	60* [b]	70-130
75-34-3	1,1-Dichloroethane	50	47.0	94	70-130
107-06-2	1,2-Dichloroethane	50	53.7	107	70-130
75-35-4	1,1-Dichloroethene	50	34.5	69* [b]	70-130
156-59-2	cis-1,2-Dichloroethene	50	47.1	94	70-130
156-60-5	trans-1,2-Dichloroethene	50	43.2	86	70-130
78-87-5	1,2-Dichloropropane	50	48.5	97	70-130
142-28-9	1,3-Dichloropropane	50	52.8	106	70-130
594-20-7	2,2-Dichloropropane	50	53.6	107	70-130
563-58-6	1,1-Dichloropropene	50	51.5	103	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-BS	P73927.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	68.1	136* [a]	70-130
10061-02-6	trans-1,3-Dichloropropene	50	59.3	119	70-130
123-91-1	1,4-Dioxane	250	288	115	70-130
97-63-2	Ethyl methacrylate	50	54.0	108	77-137
100-41-4	Ethylbenzene	50	50.2	100	70-130
87-68-3	Hexachlorobutadiene	50	62.6	125	70-130
591-78-6	2-Hexanone	50	51.7	103	70-130
98-82-8	Isopropylbenzene	50	53.9	108	70-130
99-87-6	p-Isopropyltoluene	50	58.5	117	70-130
1634-04-4	Methyl Tert Butyl Ether	50	55.0	110	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	53.8	108	70-130
74-95-3	Methylene bromide	50	54.4	109	70-130
75-09-2	Methylene chloride	50	41.8	84	70-130
91-20-3	Naphthalene	50	56.8	114	70-130
103-65-1	n-Propylbenzene	50	53.1	106	70-130
100-42-5	Styrene	50	50.2	100	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	62.6	125	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	54.7	109	70-130
127-18-4	Tetrachloroethene	50	48.1	96	70-130
108-88-3	Toluene	50	49.9	100	70-130
87-61-6	1,2,3-Trichlorobenzene	50	55.1	110	70-130
120-82-1	1,2,4-Trichlorobenzene	50	54.4	109	70-130
71-55-6	1,1,1-Trichloroethane	50	79.0	158* [a]	70-130
79-00-5	1,1,2-Trichloroethane	50	53.4	107	70-130
79-01-6	Trichloroethene	50	49.7	99	70-130
75-69-4	Trichlorofluoromethane	50	62.5	125	70-130
96-18-4	1,2,3-Trichloropropane	50	62.4	125	70-130
95-63-6	1,2,4-Trimethylbenzene	50	54.8	110	70-130
108-67-8	1,3,5-Trimethylbenzene	50	52.4	105	70-130
108-05-4	Vinyl Acetate	50	46.6	93	70-130
75-01-4	Vinyl chloride	50	49.0	98	70-130
	m,p-Xylene	100	92.4	92	70-130
95-47-6	o-Xylene	50	46.5	93	70-130
1330-20-7	Xylene (total)	150	139	93	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSP2422-BS	P73927.D	1	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	118%	70-130%
2037-26-5	Toluene-D8	115%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27073-1MS	M62289.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1MSD	M62290.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1	M62277.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27073-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		61.6	58.4	95	59.4	54.7	92	7	70-130/30
107-02-8	Acrolein	ND		61.6	34.1	55* a	59.4	31.0	52* a	10	70-130/30
107-13-1	Acrylonitrile	ND		123	126	102	119	112	94	12	70-130/30
71-43-2	Benzene	1.8		61.6	55.9	88	59.4	45.1	73	21	70-130/30
108-86-1	Bromobenzene	ND		61.6	41.1	67* a	59.4	34.9	59* a	16	70-130/30
74-97-5	Bromochloromethane	ND		61.6	66.7	108	59.4	56.7	95	16	70-130/30
75-27-4	Bromodichloromethane	ND		61.6	72.0	117	59.4	58.1	98	21	70-130/30
75-25-2	Bromoform	ND		61.6	69.6	113	59.4	64.9	109	7	70-130/30
74-83-9	Bromomethane	ND		61.6	42.0	68* a	59.4	39.1	66* a	7	70-130/30
78-93-3	2-Butanone (MEK)	ND		61.6	57.3	93	59.4	60.0	101	5	70-130/30
104-51-8	n-Butylbenzene	ND		61.6	33.1	54* a	59.4	29.3	49* a	12	70-130/30
135-98-8	sec-Butylbenzene	0.42	J	61.6	40.1	64* a	59.4	34.7	58* a	14	70-130/30
98-06-6	tert-Butylbenzene	ND		61.6	43.0	70	59.4	37.4	63* a	14	70-130/30
75-15-0	Carbon disulfide	1.0	J	61.6	62.3	100	59.4	51.6	85	19	70-130/30
56-23-5	Carbon tetrachloride	ND		61.6	90.8	148* a	59.4	72.7	122	22	70-130/30
108-90-7	Chlorobenzene	ND		61.6	51.3	83	59.4	43.5	73	16	70-130/30
75-00-3	Chloroethane	ND		61.6	42.0	68* a	59.4	40.4	68* a	4	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		61.6	ND	0* a	59.4	ND	0* a	nc	10-160/30
67-66-3	Chloroform	ND		61.6	67.1	109	59.4	54.5	92	21	70-130/30
74-87-3	Chloromethane	ND		61.6	40.7	66* a	59.4	38.8	65* a	5	70-130/30
95-49-8	o-Chlorotoluene	ND		61.6	36.4	59* a	59.4	31.1	52* a	16	70-130/30
106-43-4	p-Chlorotoluene	ND		61.6	36.0	58* a	59.4	30.2	51* a	18	70-130/30
124-48-1	Dibromochloromethane	ND		61.6	73.6	120	59.4	62.9	106	16	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		61.6	28.2	46* a	59.4	25.9	44* a	9	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		61.6	31.4	51* a	59.4	27.0	45* a	15	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		61.6	30.9	50* a	59.4	27.2	46* a	13	70-130/30
75-71-8	Dichlorodifluoromethane	ND		61.6	36.3	59* a	59.4	36.5	61* a	1	70-130/30
75-34-3	1,1-Dichloroethane	ND		61.6	61.7	100	59.4	50.0	84	21	70-130/30
107-06-2	1,2-Dichloroethane	ND		61.6	83.4	135* a	59.4	67.1	113	22	70-130/30
75-35-4	1,1-Dichloroethene	ND		61.6	61.7	100	59.4	51.9	87	17	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		61.6	58.5	95	59.4	46.1	78	24	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		61.6	62.6	102	59.4	48.1	81	26	70-130/30
78-87-5	1,2-Dichloropropane	ND		61.6	52.5	85	59.4	43.2	73	19	70-130/30
142-28-9	1,3-Dichloropropane	ND		61.6	59.0	96	59.4	50.3	85	16	70-130/30
594-20-7	2,2-Dichloropropane	ND		61.6	74.1	120	59.4	59.3	100	22	70-130/30
563-58-6	1,1-Dichloropropene	ND		61.6	66.1	107	59.4	52.4	88	23	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27073-1MS	M62289.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1MSD	M62290.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1	M62277.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27073-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		61.6	56.6	92	59.4	45.8	77	21	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		61.6	65.8	107	59.4	54.7	92	18	70-130/30
123-91-1	1,4-Dioxane	ND		308	463	150* a	297	483	163* a	4	70-130/30
97-63-2	Ethyl methacrylate	ND		61.6	58.3	95	59.4	51.3	86	13	41-160/30
100-41-4	Ethylbenzene	2.6	J	61.6	57.0	88	59.4	48.4	77	16	70-130/30
87-68-3	Hexachlorobutadiene	ND		61.6	29.0	47* a	59.4	29.1	49* a	0	70-130/30
591-78-6	2-Hexanone	ND		61.6	68.0	110	59.4	66.9	113	2	70-130/30
98-82-8	Isopropylbenzene	0.48	J	61.6	45.7	73	59.4	39.0	65* a	16	70-130/30
99-87-6	p-Isopropyltoluene	ND		61.6	40.3	65* a	59.4	35.2	59* a	14	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		61.6	66.5	108	59.4	55.4	93	18	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		61.6	80.7	131* a	59.4	75.1	126	7	70-130/30
74-95-3	Methylene bromide	ND		61.6	69.6	113	59.4	56.6	95	21	70-130/30
75-09-2	Methylene chloride	ND		61.6	59.7	97	59.4	50.1	84	17	70-130/30
91-20-3	Naphthalene	ND		61.6	20.4	33* a	59.4	23.1	39* a	12	70-130/30
103-65-1	n-Propylbenzene	ND		61.6	39.1	64* a	59.4	32.2	54* a	19	70-130/30
100-42-5	Styrene	ND		61.6	27.5	45* a	59.4	24.3	41* a	12	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		61.6	67.9	110	59.4	57.7	97	16	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		61.6	48.8	79	59.4	46.0	77	6	70-130/30
127-18-4	Tetrachloroethene	ND		61.6	63.9	104	59.4	53.2	90	18	70-130/30
108-88-3	Toluene	2.9	J	61.6	61.7	96	59.4	51.2	81	19	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		61.6	14.0	23* a	59.4	16.2	27* a	15	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		61.6	15.2	25* a	59.4	16.9	28* a	11	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		61.6	76.3	124	59.4	60.9	103	22	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		61.6	58.1	94	59.4	49.2	83	17	70-130/30
79-01-6	Trichloroethene	ND		61.6	61.7	100	59.4	50.2	85	21	70-130/30
75-69-4	Trichlorofluoromethane	ND		61.6	58.2	95	59.4	50.6	85	14	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		61.6	55.0	89	59.4	48.8	82	12	70-130/30
95-63-6	1,2,4-Trimethylbenzene	1.8	J	61.6	38.6	60* a	59.4	33.7	54* a	14	70-130/30
108-67-8	1,3,5-Trimethylbenzene	1.1	J	61.6	41.6	66* a	59.4	35.9	59* a	15	70-130/30
108-05-4	Vinyl Acetate	ND		61.6	53.5	87	59.4	44.3	75	19	70-130/30
75-01-4	Vinyl chloride	ND		61.6	32.6	53* a	59.4	31.8	54* a	2	70-130/30
	m,p-Xylene	1.4	J	123	107	86	119	90.8	75	16	70-130/30
95-47-6	o-Xylene	1.2	J	61.6	50.1	79	59.4	44.9	74	11	70-130/30
1330-20-7	Xylene (total)	2.7	J	185	157	84	178	136	75	14	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27073-1MS	M62289.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1MSD	M62290.D	1	12/18/13	KD	n/a	n/a	MSM2176
MC27073-1	M62277.D	1	12/18/13	KD	n/a	n/a	MSM2176

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

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Surrogate Recoveries	MS	MSD	MC27073-1	Limits
1868-53-7	Dibromofluoromethane	115%	114%	116%	70-130%
2037-26-5	Toluene-D8	92%	94%	95%	70-130%
460-00-4	4-Bromofluorobenzene	102%	100%	100%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27254-3MS [a]	P73948.D	5	12/20/13	KD	n/a	n/a	MSP2422
MC27254-3MSD [a]	P73949.D	5	12/21/13	KD	n/a	n/a	MSP2422
MC27254-3 [a]	P73944.D	2.5	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	MC27254-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		250	182	73	250	190	76	4	70-130/30
107-02-8	Acrolein	ND		250	225	90	250	235	94	4	70-130/30
107-13-1	Acrylonitrile	ND		500	485	97	500	472	94	3	70-130/30
71-43-2	Benzene	1.2		250	239	95	250	234	93	2	70-130/30
108-86-1	Bromobenzene	ND		250	250	100	250	247	99	1	70-130/30
74-97-5	Bromochloromethane	ND		250	251	100	250	254	102	1	70-130/30
75-27-4	Bromodichloromethane	ND		250	324	130	250	322	129	1	70-130/30
75-25-2	Bromoform	ND		250	281	112	250	277	111	1	70-130/30
74-83-9	Bromomethane	ND		250	163	65* [b]	250	223	89	31* [c]	70-130/30
78-93-3	2-Butanone (MEK)	ND		250	231	92	250	230	92	0	70-130/30
104-51-8	n-Butylbenzene	ND		250	304	122	250	307	123	1	70-130/30
135-98-8	sec-Butylbenzene	11.1		250	265	102	250	266	102	0	70-130/30
98-06-6	tert-Butylbenzene	ND		250	247	99	250	246	98	0	70-130/30
75-15-0	Carbon disulfide	ND		250	253	101	250	256	102	1	70-130/30
56-23-5	Carbon tetrachloride	ND		250	329	132* [b]	250	322	129	2	70-130/30
108-90-7	Chlorobenzene	ND		250	219	88	250	218	87	0	70-130/30
75-00-3	Chloroethane	ND		250	301	120	250	302	121	0	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		250	346	138* [b]	250	353	141* [b]	2	70-130/30
67-66-3	Chloroform	ND		250	258	103	250	256	102	1	70-130/30
74-87-3	Chloromethane	ND		250	255	102	250	261	104	2	70-130/30
95-49-8	o-Chlorotoluene	ND		250	245	98	250	244	98	0	70-130/30
106-43-4	p-Chlorotoluene	ND		250	273	109	250	270	108	1	70-130/30
124-48-1	Dibromochloromethane	ND		250	278	111	250	279	112	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		250	236	94	250	234	94	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		250	234	94	250	234	94	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		250	246	98	250	244	98	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		250	304	122	250	299	120	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		250	247	99	250	248	99	0	70-130/30
107-06-2	1,2-Dichloroethane	ND		250	261	104	250	258	103	1	70-130/30
75-35-4	1,1-Dichloroethene	ND		250	226	90	250	225	90	0	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		250	231	92	250	234	94	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		250	245	98	250	243	97	1	70-130/30
78-87-5	1,2-Dichloropropane	ND		250	236	94	250	233	93	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		250	248	99	250	246	98	1	70-130/30
594-20-7	2,2-Dichloropropane	ND		250	263	105	250	258	103	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		250	267	107	250	262	105	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27254-3MS [a]	P73948.D	5	12/20/13	KD	n/a	n/a	MSP2422
MC27254-3MSD [a]	P73949.D	5	12/21/13	KD	n/a	n/a	MSP2422
MC27254-3 [a]	P73944.D	2.5	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Compound	MC27254-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		250	318	127	250	316	126	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		250	273	109	250	275	110	1	70-130/30
123-91-1	1,4-Dioxane	ND		1250	1280	102	1250	1240	99	3	70-130/30
97-63-2	Ethyl methacrylate	ND		250	247	99	250	252	101	2	72-139/30
100-41-4	Ethylbenzene	93.3		250	297	81	250	288	78	3	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	269	108	250	274	110	2	70-130/30
591-78-6	2-Hexanone	ND		250	210	84	250	216	86	3	70-130/30
98-82-8	Isopropylbenzene	30.0		250	272	97	250	269	96	1	70-130/30
99-87-6	p-Isopropyltoluene	10		250	279	108	250	277	107	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	8.8		250	285	110	250	292	113	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		250	233	93	250	235	94	1	70-130/30
74-95-3	Methylene bromide	ND		250	263	105	250	261	104	1	70-130/30
75-09-2	Methylene chloride	ND		250	249	100	250	218	87	13	70-130/30
91-20-3	Naphthalene	131		250	363	93	250	397	106	9	70-130/30
103-65-1	n-Propylbenzene	91.0		250	310	88	250	308	87	1	70-130/30
100-42-5	Styrene	ND		250	235	94	250	235	94	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	291	116	250	288	115	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	242	97	250	242	97	0	70-130/30
127-18-4	Tetrachloroethene	ND		250	232	93	250	228	91	2	70-130/30
108-88-3	Toluene	ND		250	244	98	250	242	97	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	262	105	250	278	111	6	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	263	105	250	273	109	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	400	160* [b]	250	393	157* [b]	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	257	103	250	256	102	0	70-130/30
79-01-6	Trichloroethene	ND		250	243	97	250	240	96	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	306	122	250	299	120	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	275	110	250	276	110	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	1300	E	250	1360	24* [d]	250	1360	24* [d]	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	76.1		250	266	76	250	263	75	1	70-130/30
108-05-4	Vinyl Acetate	ND		250	218	87	250	218	87	0	70-130/30
75-01-4	Vinyl chloride	ND		250	238	95	250	238	95	0	70-130/30
	m,p-Xylene	230		500	509	56* [b]	500	495	53* [b]	3	70-130/30
95-47-6	o-Xylene	70.3		250	246	70	250	242	69* [b]	2	70-130/30
1330-20-7	Xylene (total)	301		750	755	61* [b]	750	737	58* [b]	2	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27254-3MS [a]	P73948.D	5	12/20/13	KD	n/a	n/a	MSP2422
MC27254-3MSD [a]	P73949.D	5	12/21/13	KD	n/a	n/a	MSP2422
MC27254-3 [a]	P73944.D	2.5	12/20/13	KD	n/a	n/a	MSP2422

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

MC27073-5

CAS No.	Surrogate Recoveries	MS	MSD	MC27254-3	Limits
1868-53-7	Dibromofluoromethane	117%	118%	117%	70-130%
2037-26-5	Toluene-D8	116%	116%	119%	70-130%
460-00-4	4-Bromofluorobenzene	101%	102%	99%	70-130%

(a) The pH of the sample aliquot for VOA analysis was > 2 at time of analysis.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.
(d) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSM2176-CC2169	**Injection Date:**	12/18/13
Lab File ID:	M62270.D	**Injection Time:**	11:21
Instrument ID:	GCMSM	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	419552	9.35	653448	10.23	295885	13.50	387935	16.06	139939	6.83
Upper Limit [a]	839104	9.85	1306896	10.73	591770	14.00	775870	16.56	279878	7.33
Lower Limit [b]	209776	8.85	326724	9.73	147943	13.00	193968	15.56	69970	6.33

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSM2176-BS	419552	9.35	653448	10.23	295885	13.50	387935	16.06	139939	6.83
MSM2176-MB	408654	9.35	618712	10.23	261735	13.50	354631	16.07	140295	6.84
ZZZZZZ	393422	9.35	591862	10.23	260904	13.51	355902	16.07	251847	6.84
ZZZZZZ	394768	9.34	596315	10.23	253518	13.50	342894	16.07	130607	6.84
ZZZZZZ	393920	9.35	602220	10.23	259651	13.50	347817	16.07	144751	6.83
MC27073-1	352745	9.35	548799	10.23	243671	13.50	321253	16.07	217552	6.84
MC27073-2	360968	9.35	552471	10.23	245021	13.51	332317	16.07	236748	6.83
MC27073-3	349119	9.35	545913	10.23	225441	13.50	280987	16.06	223637	6.83
MC27073-4	329651	9.35	507397	10.23	203773	13.51	219389	16.07	234463	6.84
ZZZZZZ	386051	9.35	585822	10.23	257534	13.51	340511	16.06	247546	6.84
ZZZZZZ	366731	9.35	576794	10.23	248271	13.50	343785	16.07	240851	6.84
ZZZZZZ	385455	9.35	593232	10.23	251372	13.51	344397	16.06	236417	6.84
ZZZZZZ	356063	9.35	548135	10.23	238955	13.50	321085	16.06	150947	6.84
ZZZZZZ	369757	9.35	573086	10.23	248558	13.51	335456	16.06	234769	6.84
ZZZZZZ	361893	9.35	557402	10.23	248766	13.50	330259	16.06	242747	6.84
ZZZZZZ	378631	9.35	585865	10.23	255499	13.50	340138	16.07	213410	6.84
ZZZZZZ	382287	9.35	581470	10.23	251821	13.51	341529	16.06	220180	6.84
MC27073-1MS	365073	9.35	565778	10.23	256682	13.51	331176	16.06	243100	6.84
MC27073-1MSD	367197	9.35	571606	10.23	253564	13.51	334459	16.06	268399	6.84
ZZZZZZ	445934	9.35	685151	10.23	300221	13.51	401681	16.06	231979	6.84
ZZZZZZ	451272	9.35	688165	10.23	295490	13.51	406001	16.06	220848	6.84
ZZZZZZ	484045	9.35	747708	10.23	348371	13.50	461045	16.06	249380	6.84

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSP2422-CC2403	Injection Date:	12/20/13
Lab File ID:	P73926.D	Injection Time:	12:35
Instrument ID:	GCMSP	Method:	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	1382953	8.44	1709593	9.29	948216	12.53	938453	15.09	492208	6.05
Upper Limit [a]	2765906	8.94	3419186	9.79	1896432	13.03	1876906	15.59	984416	6.55
Lower Limit [b]	691477	7.94	854797	8.79	474108	12.03	469227	14.59	246104	5.55

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSP2422-BS	1400474	8.44	1726376	9.29	958368	12.53	944588	15.09	500620	6.05
MSP2422-MB	1260165	8.44	1531933	9.30	814739	12.53	770161	15.10	443797	6.06
ZZZZZZ	1256183	8.44	1516588	9.30	804870	12.53	755943	15.10	432051	6.06
ZZZZZZ	1232007	8.44	1473839	9.30	779965	12.53	742264	15.10	435146	6.06
MC27073-5	1187172	8.44	1428822	9.30	752044	12.53	720347	15.10	452010	6.06
ZZZZZZ	1190805	8.44	1428114	9.30	768346	12.53	750080	15.10	422684	6.06
ZZZZZZ	1198056	8.44	1445445	9.30	783217	12.53	784353	15.10	453146	6.06
ZZZZZZ	1181519	8.44	1419593	9.30	766958	12.53	730293	15.10	422739	6.06
ZZZZZZ	1175301	8.44	1401190	9.30	746158	12.53	698455	15.10	391414	6.06
ZZZZZZ	1142815	8.44	1379950	9.30	735058	12.53	688453	15.10	406346	6.06
ZZZZZZ	1197383	8.44	1417548	9.30	792066	12.53	786923	15.09	427603	6.06
ZZZZZZ	1187674	8.44	1440943	9.30	761384	12.53	821570	15.09	448603	6.06
ZZZZZZ	1187546	8.44	1418923	9.30	757638	12.53	741763	15.10	397436	6.06
MC27254-3	1229861	8.44	1469350	9.30	818319	12.53	867911	15.09	382092	6.06
ZZZZZZ	1375249	8.44	1651953	9.29	892482	12.53	927814	15.09	491424	6.06
ZZZZZZ	1388172	8.44	1691936	9.30	897059	12.53	921249	15.09	515490	6.06
ZZZZZZ	1379561	8.44	1704405	9.30	886303	12.53	881919	15.10	492188	6.06
MC27254-3MS [c]	1450111	8.44	1787801	9.29	986648	12.53	976740	15.09	480036	6.05
MC27254-3MSD [c]	1467517	8.44	1812426	9.29	1006344	12.53	984756	15.09	488662	6.05

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

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) The pH of the sample aliquot for VOA analysis was >2 at time of analysis.

Volatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC27073-5	P73934.D	122	114	104
MC27254-3MS	P73948.D	117	116	101
MC27254-3MSD	P73949.D	118	116	102
MSP2422-BS	P73927.D	118	115	101
MSP2422-MB	P73931.D	119	115	106

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

Volatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8260C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC27073-1	M62277.D	116	95	100
MC27073-2	M62278.D	113	96	100
MC27073-3	M62279.D	118	91	105
MC27073-4	M62280.D	117	89	113
MC27073-1MS	M62289.D	115	92	102
MC27073-1MSD	M62290.D	114	94	100
MSM2176-BS	M62270.D	110	95	96
MSM2176-MB	M62273.D	109	95	97

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

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: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-MB	W16728.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	490	61	ug/kg	
95-57-8	2-Chlorophenol	ND	240	11	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	490	12	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	490	14	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	490	79	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	970	120	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	490	61	ug/kg	
95-48-7	2-Methylphenol	ND	490	19	ug/kg	
	3&4-Methylphenol	ND	490	24	ug/kg	
88-75-5	2-Nitrophenol	ND	490	13	ug/kg	
100-02-7	4-Nitrophenol	ND	970	91	ug/kg	
87-86-5	Pentachlorophenol	ND	490	34	ug/kg	
108-95-2	Phenol	ND	240	14	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	490	12	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	490	12	ug/kg	
62-53-3	Aniline	ND	490	24	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	240	12	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	240	9.9	ug/kg	
100-51-6	Benzyl Alcohol	ND	490	24	ug/kg	
91-58-7	2-Chloronaphthalene	ND	240	13	ug/kg	
106-47-8	4-Chloroaniline	ND	490	12	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	240	11	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	240	15	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	240	17	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	240	15	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	240	11	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	490	32	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	490	12	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	240	24	ug/kg	
132-64-9	Dibenzofuran	ND	97	13	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	240	26	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	240	7.6	ug/kg	
84-66-2	Diethyl phthalate	ND	240	12	ug/kg	
131-11-3	Dimethyl phthalate	ND	240	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	240	9.0	ug/kg	
118-74-1	Hexachlorobenzene	ND	240	15	ug/kg	

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-MB	W16728.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
77-47-4	Hexachlorocyclopentadiene	ND	490	120	ug/kg	
67-72-1	Hexachloroethane	ND	240	12	ug/kg	
78-59-1	Isophorone	ND	240	11	ug/kg	
88-74-4	2-Nitroaniline	ND	490	12	ug/kg	
99-09-2	3-Nitroaniline	ND	490	27	ug/kg	
100-01-6	4-Nitroaniline	ND	490	12	ug/kg	
98-95-3	Nitrobenzene	ND	240	13	ug/kg	
62-75-9	n-Nitrosodimethylamine	ND	240	12	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	240	14	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	240	15	ug/kg	
110-86-1	Pyridine	ND	490	24	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	79%	30-130%
4165-62-2	Phenol-d5	76%	30-130%
118-79-6	2,4,6-Tribromophenol	59%	30-130%
4165-60-0	Nitrobenzene-d5	73%	30-130%
321-60-8	2-Fluorobiphenyl	85%	30-130%
1718-51-0	Terphenyl-d14	89%	30-130%

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

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36231-MB	R36094.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.56	ug/kg	
208-96-8	Acenaphthylene	ND	4.9	0.90	ug/kg	
120-12-7	Anthracene	ND	4.9	0.79	ug/kg	
56-55-3	Benzo(a)anthracene	ND	4.9	0.60	ug/kg	
50-32-8	Benzo(a)pyrene	ND	4.9	0.70	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.59	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	1.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.93	ug/kg	
218-01-9	Chrysene	ND	4.9	0.75	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	1.4	ug/kg	
206-44-0	Fluoranthene	ND	4.9	0.77	ug/kg	
86-73-7	Fluorene	ND	4.9	0.43	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	1.2	ug/kg	
90-12-0	1-Methylnaphthalene	ND	9.7	9.7	ug/kg	
91-57-6	2-Methylnaphthalene	ND	4.9	1.0	ug/kg	
85-01-8	Phenanthrene	ND	4.9	0.96	ug/kg	
129-00-0	Pyrene	ND	4.9	1.7	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	39%	15-110%
4165-62-2	Phenol-d5	38%	15-110%
118-79-6	2,4,6-Tribromophenol	28%	15-110%
4165-60-0	Nitrobenzene-d5	84%	30-130%
321-60-8	2-Fluorobiphenyl	80%	30-130%
1718-51-0	Terphenyl-d14	117%	30-130%

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-BS	W16729.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
65-85-0	Benzoic acid	2390	1930	81	30-130
95-57-8	2-Chlorophenol	2390	1970	82	30-130
59-50-7	4-Chloro-3-methyl phenol	2390	1850	77	30-130
120-83-2	2,4-Dichlorophenol	2390	1840	77	30-130
105-67-9	2,4-Dimethylphenol	2390	1750	73	30-130
51-28-5	2,4-Dinitrophenol	2390	1100	46	30-130
534-52-1	4,6-Dinitro-o-cresol	2390	1660	69	30-130
95-48-7	2-Methylphenol	2390	1800	75	30-130
	3&4-Methylphenol	4790	3660	76	30-130
88-75-5	2-Nitrophenol	2390	1930	81	30-130
100-02-7	4-Nitrophenol	2390	1680	70	30-130
87-86-5	Pentachlorophenol	2390	1400	58	30-130
108-95-2	Phenol	2390	2040	85	30-130
95-95-4	2,4,5-Trichlorophenol	2390	2050	86	30-130
88-06-2	2,4,6-Trichlorophenol	2390	2060	86	30-130
62-53-3	Aniline	2390	1140	48	40-140
101-55-3	4-Bromophenyl phenyl ether	2390	2010	84	40-140
85-68-7	Butyl benzyl phthalate	2390	2070	86	40-140
100-51-6	Benzyl Alcohol	2390	1670	70	40-140
91-58-7	2-Chloronaphthalene	2390	1960	82	40-140
106-47-8	4-Chloroaniline	2390	1290	54	40-140
111-91-1	bis(2-Chloroethoxy)methane	2390	1450	61	40-140
111-44-4	bis(2-Chloroethyl)ether	2390	2110	88	40-140
108-60-1	bis(2-Chloroisopropyl)ether	2390	2780	116	40-140
7005-72-3	4-Chlorophenyl phenyl ether	2390	2060	86	40-140
122-66-7	1,2-Diphenylhydrazine	2390	2080	87	40-140
121-14-2	2,4-Dinitrotoluene	2390	1970	82	40-140
606-20-2	2,6-Dinitrotoluene	2390	1920	80	40-140
91-94-1	3,3'-Dichlorobenzidine	2390	1650	69	40-140
132-64-9	Dibenzofuran	2390	1890	79	40-140
84-74-2	Di-n-butyl phthalate	2390	1820	76	40-140
117-84-0	Di-n-octyl phthalate	2390	2330	97	40-140
84-66-2	Diethyl phthalate	2390	2010	84	40-140
131-11-3	Dimethyl phthalate	2390	2090	87	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	2390	2140	89	40-140
118-74-1	Hexachlorobenzene	2390	2030	85	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-BS	W16729.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	2390	2390	100	40-140
67-72-1	Hexachloroethane	2390	1760	74	40-140
78-59-1	Isophorone	2390	1830	76	40-140
88-74-4	2-Nitroaniline	2390	2090	87	40-140
99-09-2	3-Nitroaniline	2390	1640	69	40-140
100-01-6	4-Nitroaniline	2390	1770	74	40-140
98-95-3	Nitrobenzene	2390	1890	79	40-140
62-75-9	n-Nitrosodimethylamine	2390	2070	86	40-140
621-64-7	N-Nitroso-di-n-propylamine	2390	1950	81	40-140
86-30-6	N-Nitrosodiphenylamine	2390	1680	70	40-140
110-86-1	Pyridine	2390	1560	65	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	81%	30-130%
4165-62-2	Phenol-d5	77%	30-130%
118-79-6	2,4,6-Tribromophenol	69%	30-130%
4165-60-0	Nitrobenzene-d5	72%	30-130%
321-60-8	2-Fluorobiphenyl	84%	30-130%
1718-51-0	Terphenyl-d14	84%	30-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36231-BS	R36095.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
OP36231-BSD	R36096.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	2390	2070	86	2020	83	2	40-140/30
208-96-8	Acenaphthylene	2390	1690	71	1660	68	2	40-140/30
120-12-7	Anthracene	2390	1790	75	1770	73	1	40-140/30
56-55-3	Benzo(a)anthracene	2390	2140	89	2060	85	4	40-140/30
50-32-8	Benzo(a)pyrene	2390	1870	78	1830	75	2	40-140/30
205-99-2	Benzo(b)fluoranthene	2390	2120	89	2040	84	4	40-140/30
191-24-2	Benzo(g,h,i)perylene	2390	2020	84	1960	81	3	40-140/30
207-08-9	Benzo(k)fluoranthene	2390	1920	80	1890	78	2	40-140/30
218-01-9	Chrysene	2390	1920	80	1860	77	3	40-140/30
53-70-3	Dibenzo(a,h)anthracene	2390	1980	83	1930	80	3	40-140/30
206-44-0	Fluoranthene	2390	2660	111	2570	106	3	40-140/30
86-73-7	Fluorene	2390	2020	84	1990	82	1	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	2390	1990	83	1930	80	3	40-140/30
90-12-0	1-Methylnaphthalene	2390	1760	74	1700	70	3	40-140/30
91-57-6	2-Methylnaphthalene	2390	1710	71	1670	69	2	40-140/30
85-01-8	Phenanthrene	2390	1810	76	1800	74	1	40-140/30
129-00-0	Pyrene	2390	2690	112	2590	107	4	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	38%	35%	15-110%
4165-62-2	Phenol-d5	36%	34%	15-110%
118-79-6	2,4,6-Tribromophenol	32%	31%	15-110%
4165-60-0	Nitrobenzene-d5	83%	78%	30-130%
321-60-8	2-Fluorobiphenyl	83%	79%	30-130%
1718-51-0	Terphenyl-d14	117%	111%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-MS	W16744.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
OP36230-MSD	W16745.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
MC27073-4	W16746.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: Method: SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27073-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic acid	ND		3250	454	14* a	3240	392	12* a	15	30-130/30
95-57-8	2-Chlorophenol	ND		3250	2180	67	3240	2350	73	8	30-130/30
59-50-7	4-Chloro-3-methyl phenol	ND		3250	2410	74	3240	2410	74	0	30-130/30
120-83-2	2,4-Dichlorophenol	ND		3250	2080	64	3240	2220	69	7	30-130/30
105-67-9	2,4-Dimethylphenol	ND		3250	2240	69	3240	2360	73	5	30-130/30
51-28-5	2,4-Dinitrophenol	ND		3250	ND	0* a	3240	ND	0* a	nc	30-130/30
534-52-1	4,6-Dinitro-o-cresol	ND		3250	ND	0* a	3240	ND	0* a	nc	30-130/30
95-48-7	2-Methylphenol	ND		3250	2110	65	3240	2260	70	7	30-130/30
	3&4-Methylphenol	ND		6500	4190	64	6470	4430	68	6	30-130/30
88-75-5	2-Nitrophenol	ND		3250	1250	38	3240	1200	37	4	30-130/30
100-02-7	4-Nitrophenol	ND		3250	1880	58	3240	1820	56	3	30-130/30
87-86-5	Pentachlorophenol	ND		3250	979	30	3240	902	28* a	8	30-130/30
108-95-2	Phenol	ND		3250	2420	74	3240	2580	80	6	30-130/30
95-95-4	2,4,5-Trichlorophenol	ND		3250	2440	75	3240	2460	76	1	30-130/30
88-06-2	2,4,6-Trichlorophenol	ND		3250	2370	73	3240	2470	76	4	30-130/30
62-53-3	Aniline	ND		3250	1360	42	3240	1690	52	22	40-140/30
101-55-3	4-Bromophenyl phenyl ether	ND		3250	2620	81	3240	2640	82	1	40-140/30
85-68-7	Butyl benzyl phthalate	ND		3250	2710	83	3240	2740	85	1	40-140/30
100-51-6	Benzyl Alcohol	ND		3250	1890	58	3240	2020	62	7	40-140/30
91-58-7	2-Chloronaphthalene	ND		3250	2330	72	3240	2480	77	6	40-140/30
106-47-8	4-Chloroaniline	ND		3250	1420	44	3240	1550	48	9	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	ND		3250	1630	50	3240	1790	55	9	40-140/30
111-44-4	bis(2-Chloroethyl)ether	ND		3250	2340	72	3240	2560	79	9	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	ND		3250	3060	94	3240	3310	102	8	40-140/30
7005-72-3	4-Chlorophenyl phenyl ether	ND		3250	2540	78	3240	2550	79	0	40-140/30
122-66-7	1,2-Diphenylhydrazine	ND		3250	2590	80	3240	2540	78	2	40-140/30
121-14-2	2,4-Dinitrotoluene	ND		3250	1970	61	3240	1800	56	9	40-140/30
606-20-2	2,6-Dinitrotoluene	ND		3250	1920	59	3240	1800	56	6	40-140/30
91-94-1	3,3'-Dichlorobenzidine	ND		3250	2070	64	3240	2130	66	3	40-140/30
132-64-9	Dibenzofuran	ND		3250	2340	72	3240	2360	73	1	40-140/30
84-74-2	Di-n-butyl phthalate	ND		3250	2320	71	3240	2360	73	2	40-140/30
117-84-0	Di-n-octyl phthalate	ND		3250	2990	92	3240	2910	90	3	40-140/30
84-66-2	Diethyl phthalate	ND		3250	2560	79	3240	2590	80	1	40-140/30
131-11-3	Dimethyl phthalate	ND		3250	2660	82	3240	2710	84	2	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	433		3250	2810	73	3240	2850	75	1	40-140/30
118-74-1	Hexachlorobenzene	ND		3250	2590	80	3240	2610	81	1	40-140/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36230-MS	W16744.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
OP36230-MSD	W16745.D	1	12/23/13	KR	12/16/13	OP36230	MSW745
MC27073-4	W16746.D	1	12/23/13	KR	12/16/13	OP36230	MSW745

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27073-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
77-47-4	Hexachlorocyclopentadiene	ND		3250	ND	0* [a]	3240	ND	0* [a]	nc	40-140/30
67-72-1	Hexachloroethane	ND		3250	329	10* [a]	3240	432	13* [a]	27	40-140/30
78-59-1	Isophorone	ND		3250	2150	66	3240	2310	71	7	40-140/30
88-74-4	2-Nitroaniline	ND		3250	2270	70	3240	2100	65	8	40-140/30
99-09-2	3-Nitroaniline	ND		3250	1710	53	3240	1630	50	5	40-140/30
100-01-6	4-Nitroaniline	ND		3250	1960	60	3240	1840	57	6	40-140/30
98-95-3	Nitrobenzene	ND		3250	1820	56	3240	1820	56	0	40-140/30
62-75-9	n-Nitrosodimethylamine	ND		3250	1940	60	3240	2080	64	7	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	ND		3250	2230	69	3240	2380	74	7	40-140/30
86-30-6	N-Nitrosodiphenylamine	ND		3250	2200	68	3240	2260	70	3	40-140/30
110-86-1	Pyridine	ND		3250	1260	39* [a]	3240	1270	39* [a]	1	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC27073-4	Limits
367-12-4	2-Fluorophenol	64%	70%	72%	30-130%
4165-62-2	Phenol-d5	63%	68%	71%	30-130%
118-79-6	2,4,6-Tribromophenol	59%	62%	42%	30-130%
4165-60-0	Nitrobenzene-d5	51%	52%	48%	30-130%
321-60-8	2-Fluorobiphenyl	71%	76%	79%	30-130%
1718-51-0	Terphenyl-d14	78%	81%	78%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36231-MS	R36097.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
OP36231-MSD	R36098.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323
MC27073-4	R36099.D	1	12/20/13	KR	12/16/13	OP36231	MSR1323

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27073-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1.1	J	3250	2520	78	3240	2600	80	3	40-140/30
208-96-8	Acenaphthylene	ND		3250	2030	62	3240	2110	65	4	40-140/30
120-12-7	Anthracene	1.0	J	3250	2320	71	3240	2330	72	0	40-140/30
56-55-3	Benzo(a)anthracene	1.3	J	3250	2670	82	3240	2690	83	1	40-140/30
50-32-8	Benzo(a)pyrene	ND		3250	2250	69	3240	2230	69	1	40-140/30
205-99-2	Benzo(b)fluoranthene	ND		3250	2610	80	3240	2490	77	5	40-140/30
191-24-2	Benzo(g,h,i)perylene	5.3	J	3250	2420	74	3240	2410	74	0	40-140/30
207-08-9	Benzo(k)fluoranthene	ND		3250	2380	73	3240	2290	71	4	40-140/30
218-01-9	Chrysene	2.8	J	3250	2410	74	3240	2360	73	2	40-140/30
53-70-3	Dibenzo(a,h)anthracene	ND		3250	2450	75	3240	2440	75	0	40-140/30
206-44-0	Fluoranthene	3.8	J	3250	3390	104	3240	3430	106	1	40-140/30
86-73-7	Fluorene	ND		3250	2560	79	3240	2580	80	1	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	4.3	J	3250	2430	75	3240	2420	75	0	40-140/30
90-12-0	1-Methylnaphthalene	ND		3250	2030	62	3240	2160	67	6	40-140/30
91-57-6	2-Methylnaphthalene	ND		3250	1980	61	3240	2110	65	6	40-140/30
85-01-8	Phenanthrene	1.8	J	3250	2370	73	3240	2380	73	0	40-140/30
129-00-0	Pyrene	7.4		3250	3420	105	3240	3440	106	1	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC27073-4	Limits
367-12-4	2-Fluorophenol	30%	33%		15-110%
4165-62-2	Phenol-d5	30%	33%		15-110%
118-79-6	2,4,6-Tribromophenol	27%	28%		15-110%
4165-60-0	Nitrobenzene-d5	58%	59%	56%	30-130%
321-60-8	2-Fluorobiphenyl	70%	75%	75%	30-130%
1718-51-0	Terphenyl-d14	108%	110%	103%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSR1323-CC1261	**Injection Date:**	12/20/13
Lab File ID:	R36079.D	**Injection Time:**	09:58
Instrument ID:	GCMSR	**Method:**	SW846 8270D 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	712159	3.45	2287333	4.48	1283845	5.99	2215269	7.29	1649936	10.06	2106105	11.47
Upper Limit [a]	1424318	3.95	4574666	4.98	2567690	6.49	4430538	7.79	3299872	10.56	4212210	11.97
Lower Limit [b]	356080	2.95	1143667	3.98	641923	5.49	1107635	6.79	824968	9.56	1053053	10.97

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP36113-MB	588401	3.45	1947352	4.48	1017492	5.99	1901922	7.28	1288096	10.05	1761839	11.46
OP36113-BS	626335	3.45	2052691	4.48	1023102	5.99	1968867	7.29	1283738	10.06	1847810	11.47
ZZZZZZ	591253	3.45	1979748	4.48	1049822	5.99	1950052	7.29	1347126	10.05	1830822	11.46
ZZZZZZ	596875	3.45	1993947	4.48	1058199	5.99	1987591	7.29	1371367	10.05	1880352	11.47
ZZZZZZ	651468	3.45	2179133	4.48	1142052	5.99	2130973	7.28	1487408	10.05	2025675	11.47
OP36114-MB	620755	3.45	2044681	4.48	1069560	5.99	1981358	7.29	1358291	10.05	1853930	11.46
OP36114-BS	678255	3.45	2216761	4.48	1113588	5.99	2149103	7.29	1389890	10.06	2007478	11.47
OP36114-MS	615458	3.45	2013675	4.48	1002853	5.99	1929617	7.29	1241202	10.06	1793636	11.47
ZZZZZZ	666548	3.45	2204218	4.48	1159313	5.99	2134920	7.28	1458288	10.05	1978152	11.47
OP36114-MSD	585770	3.45	1947641	4.48	977861	5.99	1896628	7.29	1237390	10.06	1794768	11.47
MC27008-1	590213	3.45	1961453	4.48	1024379	5.99	1900578	7.29	1322798	10.05	1845698	11.47
ZZZZZZ	662666	3.45	2193098	4.48	1141908	5.99	2121771	7.28	1508711	10.05	2049105	11.46
OP36272-MB	630830	3.45	2094991	4.48	1107141	5.99	2064101	7.28	1442338	10.05	1977331	11.46
OP36272-BS	637839	3.45	2111050	4.48	1057527	5.99	2048670	7.29	1336882	10.06	1891217	11.47
OP36231-MB	624883	3.45	2077187	4.48	1078622	5.99	1989907	7.28	1302667	10.05	1700500	11.46
OP36231-BS	648900	3.45	2130105	4.48	1069905	5.99	2026960	7.29	1254796	10.06	1733659	11.47
OP36231-BSD	643795	3.45	2108119	4.48	1059570	5.99	2016700	7.29	1287325	10.06	1761013	11.47
OP36231-MS	628805	3.45	2061549	4.48	1045224	5.99	1949371	7.29	1218996	10.06	1690291	11.47
OP36231-MSD	665317	3.45	2175390	4.48	1094112	5.99	2016060	7.29	1244826	10.06	1714893	11.47
MC27073-4	626179	3.45	2041675	4.48	1052297	5.99	1907151	7.29	1241105	10.05	1618328	11.47
MC27073-1	580695	3.45	1915248	4.48	987121	5.99	1834490	7.28	1265968	10.05	1773791	11.46
MC27073-2	628940	3.45	2029587	4.48	1016047	5.99	1844112	7.29	1195943	10.05	1632491	11.47
MC27073-3	615412	3.45	2001450	4.48	1027530	5.99	1854978	7.29	1219424	10.05	1657277	11.47
ZZZZZZ	546457	3.45	1816695	4.48	965689	5.99	1800569	7.29	1256449	10.06	1724153	11.47
ZZZZZZ	539595	3.45	1797053	4.48	944905	5.99	1758048	7.29	1243555	10.06	1711182	11.47
ZZZZZZ	533943	3.45	1786138	4.48	951271	5.99	1775907	7.29	1249173	10.05	1710563	11.47
ZZZZZZ	541455	3.45	1799752	4.48	960431	5.99	1806431	7.29	1289392	10.05	1808940	11.47
ZZZZZZ	562568	3.45	1880760	4.48	988238	5.99	1821726	7.29	1278602	10.06	1748731	11.47

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSR1323-CC1261	**Injection Date:**	12/20/13
Lab File ID:	R36079.D	**Injection Time:**	09:58
Instrument ID:	GCMSR	**Method:**	SW846 8270D BY SIM

Lab	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSW745-CC729	**Injection Date:**	12/23/13
Lab File ID:	W16727.D	**Injection Time:**	15:18
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	69905	4.46	269272	5.53	172854	7.07	295015	8.37	296526	11.07	243297	12.84
Upper Limit [a]	139810	4.96	538544	6.03	345708	7.57	590030	8.87	593052	11.57	486594	13.34
Lower Limit [b]	34953	3.96	134636	5.03	86427	6.57	147508	7.87	148263	10.57	121649	12.34
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
OP36230-MB	85150	4.46	329086	5.52	188777	7.07	352336	8.36	327400	11.06	260323	12.83
OP36230-BS	81071	4.46	312563	5.52	183294	7.07	347020	8.37	324968	11.07	249724	12.83
OP36311-MB	72115	4.46	273164	5.52	160082	7.07	287577	8.36	273595	11.06	242671	12.83
OP36311-BS	67412	4.46	255167	5.52	150676	7.07	274721	8.37	262281	11.07	233560	12.83
OP36311-MS	69014	4.46	264314	5.52	156166	7.07	284223	8.37	276170	11.07	240461	12.83
OP36311-MSD	69930	4.46	266342	5.52	153985	7.07	274049	8.37	257210	11.07	224490	12.83
MC27301-4	70550	4.46	274063	5.52	157991	7.07	288107	8.36	285081	11.06	250936	12.83
ZZZZZZ	67964	4.46	259809	5.52	153175	7.07	273063	8.36	264677	11.06	234282	12.83
ZZZZZZ	66605	4.46	250551	5.52	142170	7.07	247527	8.37	224170	11.09	194521	12.88
ZZZZZZ	63403	4.46	240964	5.52	143141	7.07	249398	8.37	231485	11.07	204743	12.83
ZZZZZZ	63807	4.46	244902	5.52	145094	7.07	262692	8.37	249389	11.07	220592	12.83
ZZZZZZ	77106	4.46	298033	5.52	177103	7.07	309885	8.37	277378	11.07	226801	12.83
ZZZZZZ	71566	4.46	281325	5.52	161990	7.07	300058	8.37	273221	11.07	225276	12.83
ZZZZZZ	71161	4.46	276958	5.52	160244	7.07	282014	8.37	248320	11.07	204083	12.83
ZZZZZZ	71350	4.46	275879	5.52	157649	7.07	268707	8.37	235144	11.07	194993	12.83
ZZZZZZ	73116	4.46	279622	5.52	164386	7.07	283747	8.37	249379	11.07	202415	12.83
OP36230-MS	80025	4.46	308115	5.53	178633	7.07	327211	8.37	290053	11.07	224889	12.84
OP36230-MSD	83766	4.46	320219	5.53	185864	7.07	333894	8.37	290431	11.07	232625	12.84
MC27073-4	74544	4.46	287812	5.52	168019	7.07	306417	8.37	274623	11.07	216573	12.84
MC27073-1 [c]	81055	4.46	301621	5.52	174660	7.07	324922	8.37	307914	11.07	257449	12.84
MC27073-2	72692	4.46	275453	5.52	154053	7.07	277200	8.37	254297	11.07	216675	12.84
MC27073-3	78573	4.46	302455	5.53	175309	7.07	319949	8.37	282585	11.07	225920	12.84
ZZZZZZ	71414	4.46	269731	5.52	147869	7.07	240181	8.37	234282	11.12	211850	12.93
ZZZZZZ	61159	4.46	239779	5.53	136942	7.07	225389	8.37	215828	11.09	199262	12.89
ZZZZZZ	64674	4.46	228621	5.53	135688	7.09	256250	8.41	250388	11.14	209653	12.92
ZZZZZZ	69911	4.47	270094	5.53	154105	7.07	253937	8.37	212693	11.08	187529	12.86
ZZZZZZ	62951	4.46	245337	5.53	143053	7.07	245403	8.37	225294	11.08	202819	12.86

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

Semivolatile Internal Standard Area Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	MSW745-CC729	**Injection Date:**	12/23/13
Lab File ID:	W16727.D	**Injection Time:**	15:18
Instrument ID:	GCMSW	**Method:**	SW846 8270D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

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

Semivolatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC27073-1	W16747.D	67	62	58	63	78	75
MC27073-2	W16748.D	72	69	65	66	81	78
MC27073-3	W16749.D	56	54	48	51	66	72
MC27073-4	W16746.D	72	71	42	48	79	78
OP36230-BS	W16729.D	81	77	69	72	84	84
OP36230-MB	W16728.D	79	76	59	73	85	89
OP36230-MS	W16744.D	64	63	59	51	71	78
OP36230-MSD	W16745.D	70	68	62	52	76	81

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	30-130%
S2 = Phenol-d5	30-130%
S3 = 2,4,6-Tribromophenol	30-130%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

Semivolatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8270D BY SIM **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC27073-1	R36100.D	31	30	27	70	74	101
MC27073-2	R36101.D				76	77	104
MC27073-3	R36102.D				59	63	94
MC27073-4	R36099.D				56	75	103
OP36231-BS	R36095.D	38	36	32	83	83	117
OP36231-BSD	R36096.D	35	34	31	78	79	111
OP36231-MB	R36094.D	39	38	28	84	80	117
OP36231-MS	R36097.D	30	30	27	58	70	108
OP36231-MSD	R36098.D	33	33	28	59	75	110

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%

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: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36171-MB	BB53208.D	1	12/12/13	CZ	12/12/13	OP36171	GBB3110

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-6

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0054	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.011	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	93%	36-173%
460-00-4	Bromofluorobenzene (S)	90%	36-173%

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36167-MB	BB53251.D	1	12/13/13	CZ	12/12/13	OP36167	GBB3111

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.61	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.5	0.92	ug/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	122%	61-167%
460-00-4	Bromofluorobenzene (S)	111%	61-167%

Method Blank Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3421-MB	WX71049.D	1	01/08/14	TB	n/a	n/a	GWX3421

The QC reported here applies to the following samples: **Method:** SW846 8015

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	5.0	1.1	mg/kg	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	106%	61-116%

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36171-BS	BB53209.D	1	12/12/13	CZ	12/12/13	OP36171	GBB3110

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.060	85	60-140
106-93-4	1,2-Dibromoethane	0.071	0.059	83	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	91%	36-173%
460-00-4	Bromofluorobenzene (S)	92%	36-173%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36167-BS	BB53252.D	1	12/13/13	CZ	12/12/13	OP36167	GBB3111

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	33.1	29.1	88	59-142
106-93-4	1,2-Dibromoethane	33.1	35.1	106	56-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	110%	61-167%
460-00-4	Bromofluorobenzene (S)	90%	61-167%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3421-BSP	WX71050.D	1	01/08/14	TB	n/a	n/a	GWX3421

The QC reported here applies to the following samples: **Method:** SW846 8015

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (VOA)	20	17.2	86	66-126

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	108%	61-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36171-MS	BB53214.D	1	12/12/13	CZ	12/12/13	OP36171	GBB3110
OP36171-MSD	BB53215.D	1	12/12/13	CZ	12/12/13	OP36171	GBB3110
MC27008-13	BB53216.D	1	12/12/13	CZ	12/12/13	OP36171	GBB3110

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-6

CAS No.	Compound	MC27008-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.071	0.061	86	0.071	0.067	94	9	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.054	76	0.071	0.064	90	17	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC27008-13	Limits
460-00-4	Bromofluorobenzene (S)	84%	97%	90%	36-173%
460-00-4	Bromofluorobenzene (S)	84%	96%	92%	36-173%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36167-MS	BB53264.D	1	12/13/13	CZ	12/12/13	OP36167	GBB3111
OP36167-MSD	BB53265.D	1	12/13/13	CZ	12/12/13	OP36167	GBB3111
JB55122-1	BB53253.D	1	12/13/13	CZ	12/12/13	OP36167	GBB3111

The QC reported here applies to the following samples: **Method:** SW846 8011

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	JB55122-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		38.7	39.6	102	39.7	40.7	103	3	40-156/27
106-93-4	1,2-Dibromoethane	ND		38.7	37.4	96	39.7	36.8	93	2	48-141/27

CAS No.	Surrogate Recoveries	MS	MSD	JB55122-1	Limits
460-00-4	Bromofluorobenzene (S)	99%	94%	122%	61-167%
460-00-4	Bromofluorobenzene (S)	82%	73%	112%	61-167%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27499-5MS	WX71052.D	1	01/08/14	TB	n/a	n/a	GWX3421
MC27499-5MSD	WX71053.D	1	01/08/14	TB	n/a	n/a	GWX3421
MC27499-5	WX71051.D	1	01/08/14	TB	n/a	n/a	GWX3421

The QC reported here applies to the following samples: **Method:** SW846 8015

MC27073-1, MC27073-2, MC27073-3, MC27073-4

CAS No.	Compound	MC27499-5 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (VOA)	ND		56.4	50.7	90	56.4	46.2	82	9	41-150/20

CAS No.	Surrogate Recoveries	MS	MSD	MC27499-5	Limits
	2,3,4-Trifluorotoluene	108%	109%	107%	61-116%

8.3.3

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 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]
MC27073-6	YZ86856.D	103	90
OP36171-BS	BB53209.D	91	92
OP36171-MB	BB53208.D	93	90
OP36171-MS	BB53214.D	84	84
OP36171-MSD	BB53215.D	97	96

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	31-181%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Volatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8011 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC27073-1	BB53246.D	120	101
MC27073-2	BB53247.D	125	105
MC27073-3	BB53248.D	116	101
MC27073-4	BB53249.D	113	105
OP36167-BS	BB53252.D	110	90
OP36167-MB	BB53251.D	122	111
OP36167-MS	BB53264.D	99	82
OP36167-MSD	BB53265.D	94	73

Surrogate Compounds	Recovery Limits
S1 = Bromofluorobenzene (S)	61-167%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Volatile Surrogate Recovery Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Method: SW846 8015 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
MC27073-1	WX71060.D	106
MC27073-2	WX71061.D	109
MC27073-3	WX71062.D	107
MC27073-4	WX71063.D	108
GWX3421-BSP	WX71050.D	108
GWX3421-MB	WX71049.D	106
MC27499-5MS	WX71052.D	108
MC27499-5MSD	WX71053.D	109

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-116%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3110-ICC3110	**Injection Date:**	12/12/13
Lab File ID:	BB53203.D	**Injection Time:**	15:21
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.36	4.36

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB53206A.D	12/12/13	16:33	5.36	4.36
OP36171-MB	BB53208.D	12/12/13	17:21	5.36	4.36
OP36171-BS	BB53209.D	12/12/13	17:44	5.36	4.36
ZZZZZZ	BB53210.D	12/12/13	18:08	5.36	4.36
ZZZZZZ	BB53211.D	12/12/13	18:32	5.36	4.36
ZZZZZZ	BB53212.D	12/12/13	18:56	5.36	4.36
ZZZZZZ	BB53213.D	12/12/13	19:21	5.36	4.36
OP36171-MS	BB53214.D	12/12/13	19:45	5.36	4.36
OP36171-MSD	BB53215.D	12/12/13	20:09	5.35	4.36
MC27008-13	BB53216.D	12/12/13	20:34	5.35	4.35

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3111-CC3111	**Injection Date:**	12/13/13
Lab File ID:	BB53239.D	**Injection Time:**	08:31
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.35	4.35

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB53240.D	12/13/13	08:54	5.35	4.36
ZZZZZZ	BB53241.D	12/13/13	09:19	5.35	4.36
ZZZZZZ	BB53242.D	12/13/13	09:43	5.35	4.35
ZZZZZZ	BB53243.D	12/13/13	10:07	5.35	4.35
ZZZZZZ	BB53244.D	12/13/13	10:31	5.35	4.36
ZZZZZZ	BB53245.D	12/13/13	10:55	5.35	4.35
MC27073-1	BB53246.D	12/13/13	11:19	5.35	4.36
MC27073-2	BB53247.D	12/13/13	11:44	5.35	4.36
MC27073-3	BB53248.D	12/13/13	12:08	5.35	4.36
MC27073-4	BB53249.D	12/13/13	12:32	5.35	4.36

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3111-CC3111	**Injection Date:**	12/13/13
Lab File ID:	BB53250.D	**Injection Time:**	12:56
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.35	4.36

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP36167-MB	BB53251.D	12/13/13	13:19	5.35	4.36
OP36167-BS	BB53252.D	12/13/13	13:43	5.35	4.36
JB55122-1	BB53253.D	12/13/13	14:07	5.35	4.36
ZZZZZZ	BB53254.D	12/13/13	14:31	5.35	4.36
ZZZZZZ	BB53255.D	12/13/13	14:55	5.35	4.36
ZZZZZZ	BB53256.D	12/13/13	15:19	5.35	4.36
ZZZZZZ	BB53257.D	12/13/13	15:43	5.35	4.36
ZZZZZZ	BB53258.D	12/13/13	16:07	5.35	4.36
ZZZZZZ	BB53259.D	12/13/13	16:31	5.35	4.36

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GBB3111-CC3111	**Injection Date:**	12/13/13
Lab File ID:	BB53260.D	**Injection Time:**	16:55
Instrument ID:	GCBB	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	5.35	4.36

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	BB53261.D	12/13/13	17:41	5.34	4.36
ZZZZZZ	BB53262.D	12/13/13	18:05	5.35	4.36
ZZZZZZ	BB53263.D	12/13/13	18:29	5.35	4.36
OP36167-MS	BB53264.D	12/13/13	18:53	5.35	4.36
OP36167-MSD	BB53265.D	12/13/13	19:17	5.35	4.36
GBB3111-ECC311	BB53266.D	12/13/13	19:41	5.34	4.36

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GYZ7442-ICC7442	**Injection Date:**	12/16/13
Lab File ID:	YZ86850.D	**Injection Time:**	21:32
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.77	3.52

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	YZ86855.D	12/16/13	23:38	3.77	3.51
MC27073-6	YZ86856.D	12/17/13	00:03	3.78	3.52
GYZ7442-ECC7442	YZ86857.D	12/17/13	00:28	3.77	3.52

Surrogate Compounds

S1 = Bromofluorobenzene (S)

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

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GWX3421-CC3210	**Injection Date:**	01/08/14
Lab File ID:	WX71048.D	**Injection Time:**	11:39
Instrument ID:	GCWX	**Method:**	SW846 8015

	S1 [a] RT
Check Std	19.95

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
GWX3421-MB	WX71049.D	01/08/14	12:17	19.95
GWX3421-BSP	WX71050.D	01/08/14	12:54	19.95
MC27499-5	WX71051.D	01/08/14	13:31	19.95
MC27499-5MS	WX71052.D	01/08/14	14:08	19.95
MC27499-5MSD	WX71053.D	01/08/14	14:45	19.95
ZZZZZZ	WX71054.D	01/08/14	15:22	19.95
ZZZZZZ	WX71055.D	01/08/14	15:59	19.95
ZZZZZZ	WX71056.D	01/08/14	16:35	19.94
ZZZZZZ	WX71057.D	01/08/14	17:12	19.95
ZZZZZZ	WX71058.D	01/08/14	17:49	19.95

Surrogate Compounds

S1 = 2,3,4-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Check Std:	GWX3421-CC3210	**Injection Date:**	01/08/14
Lab File ID:	WX71059.D	**Injection Time:**	18:26
Instrument ID:	GCWX	**Method:**	SW846 8015

	S1 [a] RT
Check Std	19.95

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
MC27073-1	WX71060.D	01/08/14	19:02	19.95
MC27073-2	WX71061.D	01/08/14	19:40	19.95
MC27073-3	WX71062.D	01/08/14	20:17	19.95
MC27073-4	WX71063.D	01/08/14	20:54	19.95
ZZZZZZ	WX71064.D	01/08/14	21:31	19.95
ZZZZZZ	WX71065.D	01/08/14	22:08	19.95

Surrogate Compounds

S1 = 2,3,4-Trifluorotoluene

(a) Retention time from GC signal #1

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: MC27073
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana VMP-47 Step Out, 900 South Central Avenue, Roxana, IL

Sample: MC27073-1 **Analyzed:** 16-DEC-13 by HS **Method:** SM21 2540 B MOD.
ClientID: VMP64-121113(10-14')

Wet Weight (Total)	31.14	g
Tare Weight	20.377	g
Dry Weight (Total)	29.494	g
Solids, Percent	84.7	%

Sample: MC27073-2 **Analyzed:** 16-DEC-13 by HS **Method:** SM21 2540 B MOD.
ClientID: VMP64-121113(10-14')DUP

Wet Weight (Total)	30.446	g
Tare Weight	20.043	g
Dry Weight (Total)	28.8	g
Solids, Percent	84.2	%

Sample: MC27073-3 **Analyzed:** 16-DEC-13 by HS **Method:** SM21 2540 B MOD.
ClientID: VMP64-121113(28-30')

Wet Weight (Total)	35.43	g
Tare Weight	26.147	g
Dry Weight (Total)	33.342	g
Solids, Percent	77.5	%

Sample: MC27073-4 **Analyzed:** 16-DEC-13 by HS **Method:** SM21 2540 B MOD.
ClientID: VMP64-121113(44-46')

Wet Weight (Total)	31.708	g
Tare Weight	20.534	g
Dry Weight (Total)	29.037	g
Solids, Percent	76.1	%