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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
SVE System Construction Completion Report Addendum No. 2
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 Review 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 Files

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: Kevin Edlyn 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: _____ 5/17/2017 Date:

Professional's Name: Steven P. Tierney

Professional's Address: AECOM Technical Services, Inc.

345 East Ash Avenue

Decatur, MO 62704

Professional's Phone No.: 217-875-4800

Professional's Seal:

LICENSED PROFESSIONAL ENGINEER
STEVEN P. TIERNEY
062-055841
Exp. 11-30-17
CML
STATE OF ILLINOIS

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

Mailing Address of Laboratory:

_____ Signature of Laboratory Responsible Officer Date

_____ 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) MADADIAN

Name and Title of Laboratory Responsible Officer

LAB Director

Mailing Address of Laboratory:

50 D'Angelo Drive

495 Technology Center West, Building 1

Marlboro, MA 01752

LEGAL REVIEWED
BY: MP
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 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Acetone	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Acrolein	ND	ND		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low. Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	UJ
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Acrylonitrile	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Benzene	0.0010	0.0010		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Bromobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Bromochloromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Bromodichloromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Bromoform	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Bromomethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	2-Butanone (MEK)	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	n-Butylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	sec-Butylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	tert-Butylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Carbon disulfide	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Carbon tetrachloride	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Chlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Chloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	2-Chloroethyl vinyl ether	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Chloroform	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Chloromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	o-Chlorotoluene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	p-Chlorotoluene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Dibromochloromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2-Dichlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,3-Dichlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,4-Dichlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Dichlorodifluoromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1-Dichloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2-Dichloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1-Dichloroethene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	cis-1,2-Dichloroethene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	trans-1,2-Dichloroethene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2-Dichloropropane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,3-Dichloropropane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	2,2-Dichloropropane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1-Dichloropropene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	cis-1,3-Dichloropropene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	trans-1,3-Dichloropropene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,4-Dioxane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Ethyl methacrylate	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Ethylbenzene	0.0026	0.0026		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Hexachlorobutadiene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	2-Hexanone	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Isopropylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	p-Isopropyltoluene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Methyl Tert Butyl Ether	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	4-Methyl-2-pentanone (MIBK)	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Methylene bromide	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Methylene chloride	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Naphthalene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	n-Propylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Styrene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1,1,2-Tetrachloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1,2,2-Tetrachloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Tetrachloroethene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Toluene	0.0030	0.0030	J	mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2,3-Trichlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2,4-Trichlorobenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1,1-Trichloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,1,2-Trichloroethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Trichloroethene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Trichlorofluoromethane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2,3-Trichloropropane	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,2,4-Trimethylbenzene	0.00043	0.00043	J	mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	1,3,5-Trimethylbenzene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Vinyl Acetate	ND	ND		mg/kg	Ana: Initial Calibration Verification outside of acceptance criteria. Sample result may be biased low. Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	UJ
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Vinyl chloride	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	m,p-Xylene	0.00070	0.00070	J	mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	o-Xylene	ND	ND		mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	

Analytical Method	Sample ID	Lab Sample ID	Sample Date	Analyte	Original Result	Corrected Result	Laboratory Qualifier	Units	Laboratory Footnote	AECOM Qualifier
SW846 8260B	SVE-40-091813(30-32')	MC24546-3	09/18/2013	Xylene (total)	0.00070	0.00070	J	mg/kg	Inj: Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.	J

LABORATORY QUALIFIERS:

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

ND = Not detected.

AECOM QUALIFIERS:

J = The result is estimated.

UJ = Estimated nondetect.

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOCs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Benzene**			**sec-Butylbenzene**			**Cymene (p-Isopropyltoluene)**			**Ethylbenzene**			**Isopropylbenzene (Cumene)**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	< 0.08	U		< 0.8	U		< 0.8	U		< 0.32	U		< 0.8	U	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.0097		J	0.0021	J		0.0013	J		0.0143			0.0035	J	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	0.0016		J	< 0.0058	U		< 0.0058	U		0.0053			0.00037	J	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.0012			0.00029	J		< 0.0052	U		0.0028			< 0.0052	U	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	0.001		J	< 0.0062	U		< 0.0062	U		0.0026		J	< 0.0062	U	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOCs													
Location	**Sample ID**	**Depth**	**Sample Date**	**Naphthalene**			**n-Propylbenzene**			**Toluene**			**1,2,4-Trimethylbenzene**			**1,3,5-Trimethylbenzene**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	< 0.8	U		< 0.8	U		< 0.8	U		< 0.8	U		< 0.8	U	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.0043	J		0.0049	J		0.0054	J		0.033		J	0.0155		
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	0.0015	J		0.00086	J		0.0043	J		0.0031	J	J	0.0014	J	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	< 0.0052	U		0.0003	J		0.0029	J		0.00062	J		0.00079	J	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	< 0.0062	U		< 0.0062	U		0.003	J	J	0.00043	J	J	< 0.0062	U	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOCs									VOC TICs					
Location	Sample ID	Depth	Sample Date	m,p-Xylenes			o-Xylenes			Xylenes (total)			Benzene, 1-ethyl-2-methyl-			Benzene, 1-ethyl-3-methyl-		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	< 0.32	U		< 0.32	U		< 0.32	U							
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.0587		J	0.0278		J	0.0865		J	0.071	JN				
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	0.0043		J	0.002	J	J	0.0064		J				0.0064	JN	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.00085	J		< 0.0021	U		0.00085	J							
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	0.0007	J	J	< 0.0025	U		0.0007	J	J						

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Butane**			**Butane, 2,2-dimethyl-**			**Butane, 2,2,3,3-tetramethyl-**			**2-Butene, 2-methyl-**			**Cyclohexane, methyl-**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013							5.9	JN							
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.37	JN		0.0087	JN					0.028	JN				
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013													0.0094	JN	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.067	JN											0.02	JN	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013															

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Cyclohexane, 1-ethyl-2-methyl-**			**Cyclohexane, 1-ethyl-4-methyl-, ci**			**Cyclopentane, 1-ethyl-2-methyl-, c**			**Cyclopentane, methyl-**			**Cyclopropane, methylmethylene-**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013																
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013										0.081	JN		0.0056	JN		
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013										0.0077	JN					
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.0054	JN		0.0072	JN		0.0065	JN								
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013																

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Dimethyl Sulfoxide**			**Heptafluorobutyric acid, n-pentyl ester**			**Heptane, 2-methyl-**			**Hexane**			**Hexane, 2-methyl-**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	2.1	JN													
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013										0.044	JN		0.05	JN	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013							0.0082	JN		0.011	JN		0.0071	JN	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013										0.0084	JN		0.0075	JN	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013				0.0079	JN										

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Hexane, 2,2,3-trimethyl-**			**Hexane, 2,2,5,5-tetramethyl-**			**Isopentane**			**Octane**			**Pentane**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013							3	JN							
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013							0.19	JN					0.11	JN	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013				0.0067	JN		0.026	JN		0.0062	JN		0.017	JN	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.019	JN					0.045	JN					0.021	JN	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013							0.015	JN					0.012	JN	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Pentane, 2-methyl-**			**Pentane, 2,2,4-trimethyl-**			**Pentane, 2,3,3-trimethyl-**			**Pentane, 2,3,4-trimethyl-**			**Pentane, 2,4-dimethyl-**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	2.6	JN					3.9	JN		2.7	JN		3	JN	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013				0.066	JN					0.043	JN				
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	0.012	JN													
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	0.027	JN		0.027	JN		0.025	JN		0.018	JN		0.023	JN	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013															

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				VOC TICs						SVOCs								
Location	Sample ID	Depth	Sample Date	Pentane, 3-ethyl-2-methyl-			Pentane, 3-methyl-			2-Methylnaphthalene			Acenaphthene			Acenaphthylene		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013				2.6	JN		0.0019	J		0.0019	J		0.0013	J	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.074	JN		0.054	JN		0.0049	J		< 0.006	U		< 0.006	U	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013				0.0068	JN		0.0039	J		< 0.006	U		< 0.006	U	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013							< 0.0056	U		< 0.0056	U		< 0.0056	U	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013							< 0.0057	U		< 0.0057	U		< 0.0057	U	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				SVOCs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Anthracene**			**Benzo(a)anthracene**			**Benzo(a)pyrene**			**Benzo(b)fluoranthene**			**Benzo(g,h,i)perylene**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	0.0019	J		0.0018	J		0.0021	J		0.0034	J		0.0028	J	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	< 0.006	U		< 0.006	U		< 0.006	U		< 0.006	U		0.0218		
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	< 0.006	U		< 0.006	U		< 0.006	U		< 0.006	U		0.0057	J	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	< 0.0056	U		< 0.0056	U		< 0.0056	U		< 0.0056	U		< 0.0056	U	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	< 0.0057	U		< 0.0057	U		< 0.0057	U		< 0.0057	U		< 0.0057	U	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				SVOCs															
Location	**Sample ID**	**Depth**	**Sample Date**	**Benzo(k)fluoranthene**			**Chrysene (1,2-Benzphenanthracene)**			**Dibenzo(a,h)anthracene**			**Fluoranthene**			**Fluorene**		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	0.0024	J		0.0021	J		0.0018	J		0.0025	J		0.0022	J	
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	< 0.006	U		< 0.006	U		0.022			0.001	J		< 0.006	U	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	< 0.006	U		< 0.006	U		0.0056	J		< 0.006	U		< 0.006	U	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	< 0.0056	U		< 0.0056	U		< 0.0056	U		< 0.0056	U		< 0.0056	U	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	< 0.0057	U		< 0.0057	U		< 0.0057	U		< 0.0057	U		< 0.0057	U	

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TABLE 2
SVE EXTENSION: SUMMARY OF ANALYTES DETECTED

				SVOCs									Hydrocarbons		
Location	Sample ID	Depth	Sample Date	Indeno(1,2,3-cd)pyrene			Phenanthrene			Pyrene			TPH GRO (C6-C10)		
				Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals	Result (mg/kg)	Lab Quals	URS Quals
SVE-37	SVE37-091313 (33-35')	33 - 35 ft	9/13/2013	0.0025	J		0.0026	J		0.0027	J		21		
SVE-38	SVE38-091613 (34-36')	34 - 36 ft	9/16/2013	0.0228			0.0014	J		< 0.006	U		< 13	U	
	SVE38-091613 (34-36')DUP	34 - 36 ft	9/16/2013	0.0063			< 0.006	U		< 0.006	U		< 13	U	
SVE-39	SVE39-091713(34-36')	34 - 36 ft	9/17/2013	< 0.0056	U		< 0.0056	U		< 0.0056	U		< 12	U	
SVE-40	SVE-40-091813(30-32')	30 - 32 ft	9/18/2013	< 0.0057	U		< 0.0057	U		< 0.0057	U		< 15	U	

Laboratory Qualifiers

< "U" = Not detected at the reporting limit.

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

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

Note: Library searches for TICs are used to look for the presence of non-target analytes.

TICs reported are those present at levels above ten percent of associated internal standard responses.

URS Qualifiers

J **=** The result is estimated.

e-Hardcopy 2.0
Automated Report

Technical Report for

Shell Oil

URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

21562850.18000

SGS Accutest Job Number: MC24546

Sampling Date: 09/18/13

Report to:

AECOM, INC.

Melissa.mansker@aecom.com

ATTN: Melissa Mansker

Total number of pages in report: 83

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.

SGS ACCUTEST

October 27, 2016

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

RE: SGS Accutest Job # MC24546

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

Table of Contents

Sample Summary

Shell Oil

Job No: MC24546

URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL
Project No: 21562850.18000

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
MC24546-1	09/18/13	00:00	EA	09/19/13	AQ	Trip Blank Water	TB-091813-ST
MC24546-2	09/18/13	00:00	EA	09/19/13	AQ	Trip Blank Water	TB-091813-HCL
MC24546-3	09/18/13	12:10	EA	09/19/13	SO	Soil	SVE-40-091813(30-32')

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: She O **Job No** MC24546

Site: URSMOSTL: Roxana SVE System Extens on, 900 South Centra A **Report Date** 0/27/20 6 :58: 0 A

Samp e(s), 2 Tr p B ank(s) and 0 F e d B ank(s) were co ected on 09/ 8/20 3 and were rece ved at SGS Accutest New Eng and on 09/ 9/20 3 proper y preserved, at 8 Deg C and ntact These Samp es rece ved a job number of MC24546 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

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 8260B

Matrix: AQ **Batch ID:** MSV907

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC24544-5MS, MC24544-5MSD 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
- Matr x Sp ke Recovery(s) for 2-Ch oroethy v ny ether, 2-Hexanone, Acetone, Hexach orobutad ene, Naphtha ene 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, 2-Hexanone, Acetone, Naphtha ene are outs de contro m ts Probab e cause due to matr x nterference

Matrix: SO **Batch ID:** MSM2074

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC24582-5MS, MC24582-5MSD 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), 2-Hexanone, Acetone, Acro e n, V ny Acetate are outs de contro m ts
- Matr x Sp ke Recovery(s) for , , ,2-Tetrach oroethane, ,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-Butanone (MEK), 2-Ch oroethy v ny ether, Acetone, Acro e n, Benzene, Bromobenzene, Ch orobenzene, c s- ,3-D ch oropropene, Ethy benzene, Hexach orobutad ene, m,p-Xy ene, n-Buty benzene, n-Propy benzene, Naphtha ene, o-Ch oroto uene, o-Xy ene, p-Ch oroto uene, p-Isopropy to uene, sec-Buty benzene, Styrene, tert-Buty benzene, To uene, V ny Acetate, 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 ,2,3-Tr ch orobenzene, ,2,4-Tr ch orobenzene, ,2,4-Tr methy benzene, ,2-D ch orobenzene, ,3-D ch orobenzene, ,4-D ch orobenzene, 2-Butanone (MEK), 2-Ch oroethy v ny ether, Acro e n, Acry on tr e, Bromobenzene, Ch orobenzene, Hexach orobutad ene, Naphtha ene, o-Ch oroto uene, o-Xy ene, p-Ch oroto uene, Styrene, V ny Acetate, ,4-D oxane, Acetone are outs de contro m ts H gh RPD due to poss b e matr x nte ference and/or samp e non-homogene ty
- RPD(s) for MSD for ,4-D oxane, Acetone are outs de contro m ts for samp e MC24582-5MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty
- To uene (CCC's) do not meet the reference method acceptance cr ter a n nstrument QC and resu ts may be b ased h gh
- V ny Acetate, 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
- MSM2074-BS for 2-Hexanone: Outs de contro m ts Assoc ated samp es are non-detect for th s compound
- MSM2074-BS for 2-Butanone (MEK): Outs de contro m ts Assoc ated samp es are non-detect for th s compound

Extractables by GCMS By Method SW846 8270C

Matrix: SO **Batch ID:** OP34998

- 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) MC24546-3MS, MC24546-3MSD 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 Hexach orocyc opentad ene are outs de contro m ts
- Matr x Sp ke/Matr x Sp ke Dup cate Recovery(s) for 2,4-D n tropheno , Benzo c ac d, Hexach orocyc opentad ene are outs de contro m ts Outs de contro m ts due to poss b e matr x nterference
- RPD(s) for MSD for 2,4-D n tropheno , 4,6-D n tro-o-creso are outs de contro m ts for samp e OP34998-MSD H gh RPD due to poss b e matr x nterference and/or samp e non-homogene ty

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix: SO **Batch ID:** OP34999

- 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) MC24546-3MS, MC24546-3MSD were used as the QC samp es nd cated

Volatiles by GC By Method SW846 8011

Matrix: AQ **Batch ID:** OP35070

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC24800-9MS, MC24800-9MSD 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

Matrix: SO **Batch ID:** OP34909

- 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) MC24403-3MS, MC24403-3MSD 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

Volatiles by GC By Method SW846 8015

Matrix: SO **Batch ID:** GBH 842

- A samp es were ana yzed w th n the recommended method ho d ng t me
- Samp e(s) MC24505- 0MS, MC24505- 0MSD 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

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO **Batch ID:** GN44399

- Samp e(s) MC24546-3DUP 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(MC24546)

Summary of Hits

Job Number: MC24546
Account: Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL
Collected: 09/18/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC24546-1	TB-091813-ST					
No hits reported in this sample.						
MC24546-2	TB-091813-HCL					
No hits reported in this sample.						
MC24546-3	SVE-40-091813(30-32')					
Benzene [a]		0.0010	0.00062	0.00030	mg/kg	SW846 8260B
Ethylbenzene [a]		0.0026	0.0025	0.00022	mg/kg	SW846 8260B
Toluene [a]		0.0030 J	0.0062	0.00030	mg/kg	SW846 8260B
1,2,4-Trimethylbenzene [a]		0.00043 J	0.0062	0.00025	mg/kg	SW846 8260B
m,p-Xylene [a]		0.00070 J	0.0025	0.00035	mg/kg	SW846 8260B
Xylene (total) [a]		0.00070 J	0.0025	0.00025	mg/kg	SW846 8260B
Total TIC, Volatile		0.0349 J			mg/kg	

(a) Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB-091813-ST		
Lab Sample ID:	MC24546-1	**Date Sampled:**	09/18/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/19/13
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ84347.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320
Run #2							

	Initial Volume	Final Volume
Run #1	35.0 ml	2.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0045	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.0097	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	92%		36-173%
460-00-4	Bromofluorobenzene (S)	89%		36-173%

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

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

Report of Analysis

Client Sample ID:	TB-091813-HCL		
Lab Sample ID:	MC24546-2	**Date Sampled:**	09/18/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V23704.D	1	10/01/13	AMY	n/a	n/a	MSV907
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	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	

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

J = Indicates 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-091813-HCL		
Lab Sample ID:	MC24546-2	**Date Sampled:**	09/18/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, 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-091813-HCL		
Lab Sample ID:	MC24546-2	**Date Sampled:**	09/18/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

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

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

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

Report of Analysis

Client Sample ID:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	M59856.D	1	10/02/13	KD	n/a	n/a	MSM2074
Run #2							

	Initial Weight	Final Volume
Run #1	4.77 g	5.0 ml
Run #2		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	0.012	0.0048	mg/kg	
107-02-8	Acrolein [b]	ND	0.031	0.0046	mg/kg	
107-13-1	Acrylonitrile	ND	0.031	0.0017	mg/kg	
71-43-2	Benzene	0.0010	0.00062	0.00030	mg/kg	
108-86-1	Bromobenzene	ND	0.0062	0.00034	mg/kg	
74-97-5	Bromochloromethane	ND	0.0062	0.00072	mg/kg	
75-27-4	Bromodichloromethane	ND	0.0025	0.00045	mg/kg	
75-25-2	Bromoform	ND	0.0025	0.00036	mg/kg	
74-83-9	Bromomethane	ND	0.0025	0.0012	mg/kg	
78-93-3	2-Butanone (MEK)	ND	0.0062	0.0038	mg/kg	
104-51-8	n-Butylbenzene	ND	0.0062	0.00021	mg/kg	
135-98-8	sec-Butylbenzene	ND	0.0062	0.00020	mg/kg	
98-06-6	tert-Butylbenzene	ND	0.0062	0.00044	mg/kg	
75-15-0	Carbon disulfide	ND	0.0062	0.00019	mg/kg	
56-23-5	Carbon tetrachloride	ND	0.0025	0.0014	mg/kg	
108-90-7	Chlorobenzene	ND	0.0025	0.00033	mg/kg	
75-00-3	Chloroethane	ND	0.0062	0.00074	mg/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	0.0062	0.0058	mg/kg	
67-66-3	Chloroform	ND	0.0025	0.00036	mg/kg	
74-87-3	Chloromethane	ND	0.0062	0.0015	mg/kg	
95-49-8	o-Chlorotoluene	ND	0.0062	0.00050	mg/kg	
106-43-4	p-Chlorotoluene	ND	0.0062	0.00054	mg/kg	
124-48-1	Dibromochloromethane	ND	0.0025	0.00052	mg/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.0025	0.00026	mg/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.0025	0.00027	mg/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.0025	0.00025	mg/kg	
75-71-8	Dichlorodifluoromethane	ND	0.0025	0.0014	mg/kg	
75-34-3	1,1-Dichloroethane	ND	0.0025	0.00041	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0025	0.00067	mg/kg	
75-35-4	1,1-Dichloroethene	ND	0.0025	0.00064	mg/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.0025	0.00063	mg/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.0025	0.00055	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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	0.0025	0.00052	mg/kg	
142-28-9	1,3-Dichloropropane	ND	0.0062	0.00055	mg/kg	
594-20-7	2,2-Dichloropropane	ND	0.0062	0.00081	mg/kg	
563-58-6	1,1-Dichloropropene	ND	0.0062	0.00029	mg/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0025	0.00036	mg/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0025	0.00036	mg/kg	
123-91-1	1,4-Dioxane	ND	0.031	0.026	mg/kg	
97-63-2	Ethyl methacrylate	ND	0.0062	0.0041	mg/kg	
100-41-4	Ethylbenzene	0.0026	0.0025	0.00022	mg/kg	
87-68-3	Hexachlorobutadiene	ND	0.0062	0.00070	mg/kg	
591-78-6	2-Hexanone	ND	0.0062	0.0030	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0062	0.00034	mg/kg	
99-87-6	p-Isopropyltoluene	ND	0.0062	0.00020	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0025	0.00049	mg/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	0.0062	0.0023	mg/kg	
74-95-3	Methylene bromide	ND	0.0062	0.00043	mg/kg	
75-09-2	Methylene chloride	ND	0.0025	0.0019	mg/kg	
91-20-3	Naphthalene	ND	0.0062	0.00097	mg/kg	
103-65-1	n-Propylbenzene	ND	0.0062	0.00030	mg/kg	
100-42-5	Styrene	ND	0.0062	0.00025	mg/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0062	0.00048	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.0025	0.00036	mg/kg	
127-18-4	Tetrachloroethene	ND	0.0025	0.00055	mg/kg	
108-88-3	Toluene	0.0030	0.0062	0.00030	mg/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	0.0062	0.00053	mg/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0062	0.00045	mg/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.0025	0.00022	mg/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.0025	0.00043	mg/kg	
79-01-6	Trichloroethene	ND	0.0025	0.00058	mg/kg	
75-69-4	Trichlorofluoromethane	ND	0.0025	0.0013	mg/kg	
96-18-4	1,2,3-Trichloropropane	ND	0.0062	0.00048	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.00043	0.0062	0.00025	mg/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	0.0062	0.00016	mg/kg	
108-05-4	Vinyl Acetate [b]	ND	0.0062	0.0015	mg/kg	
75-01-4	Vinyl chloride	ND	0.0025	0.00070	mg/kg	
	m,p-Xylene	0.00070	0.0025	0.00035	mg/kg	J
95-47-6	o-Xylene	ND	0.0025	0.00025	mg/kg	
1330-20-7	Xylene (total)	0.00070	0.0025	0.00025	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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8260B	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		70-130%
2037-26-5	Toluene-D8	83%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
78-78-4	Butane, 2-methyl-	6.07	.015	mg/kg	JN
109-66-0	Pentane	6.49	.012	mg/kg	JN
425-26-3	Heptafluorobutyric acid, n-pentyl ester	7.84	.0079	mg/kg	JN
	Total TIC, Volatile		.0349	mg/kg	J

(a) Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.
(b) 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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8270C SW846 3546	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R33855.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231
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	0.57	0.071	mg/kg	
95-57-8	2-Chlorophenol	ND	0.29	0.013	mg/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	0.57	0.014	mg/kg	
120-83-2	2,4-Dichlorophenol	ND	0.57	0.016	mg/kg	
105-67-9	2,4-Dimethylphenol	ND	0.57	0.093	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	1.1	0.14	mg/kg	
534-52-1	4,6-Dinitro-o-cresol	ND	0.57	0.071	mg/kg	
95-48-7	2-Methylphenol	ND	0.57	0.023	mg/kg	
	3&4-Methylphenol	ND	0.57	0.028	mg/kg	
88-75-5	2-Nitrophenol	ND	0.57	0.015	mg/kg	
100-02-7	4-Nitrophenol	ND	1.1	0.11	mg/kg	
87-86-5	Pentachlorophenol	ND	0.57	0.040	mg/kg	
108-95-2	Phenol	ND	0.29	0.016	mg/kg	
95-95-4	2,4,5-Trichlorophenol	ND	0.57	0.014	mg/kg	
88-06-2	2,4,6-Trichlorophenol	ND	0.57	0.014	mg/kg	
62-53-3	Aniline	ND	0.57	0.029	mg/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	0.29	0.014	mg/kg	
85-68-7	Butyl benzyl phthalate	ND	0.29	0.012	mg/kg	
100-51-6	Benzyl Alcohol	ND	0.57	0.029	mg/kg	
91-58-7	2-Chloronaphthalene	ND	0.29	0.015	mg/kg	
106-47-8	4-Chloroaniline	ND	0.57	0.014	mg/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.29	0.013	mg/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	0.29	0.017	mg/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	0.29	0.021	mg/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.29	0.017	mg/kg	
122-66-7	1,2-Diphenylhydrazine	ND	0.29	0.013	mg/kg	
121-14-2	2,4-Dinitrotoluene	ND	0.57	0.038	mg/kg	
606-20-2	2,6-Dinitrotoluene	ND	0.57	0.014	mg/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	0.29	0.029	mg/kg	
132-64-9	Dibenzofuran	ND	0.11	0.016	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.29	0.030	mg/kg	
117-84-0	Di-n-octyl phthalate	ND	0.29	0.0089	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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8270C SW846 3546	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
84-66-2	Diethyl phthalate	ND	0.29	0.014	mg/kg	
131-11-3	Dimethyl phthalate	ND	0.29	0.017	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.29	0.011	mg/kg	
118-74-1	Hexachlorobenzene	ND	0.29	0.018	mg/kg	
77-47-4	Hexachlorocyclopentadiene	ND	0.57	0.14	mg/kg	
67-72-1	Hexachloroethane	ND	0.29	0.014	mg/kg	
78-59-1	Isophorone	ND	0.29	0.013	mg/kg	
88-74-4	2-Nitroaniline	ND	0.57	0.014	mg/kg	
99-09-2	3-Nitroaniline	ND	0.57	0.031	mg/kg	
100-01-6	4-Nitroaniline	ND	0.57	0.014	mg/kg	
98-95-3	Nitrobenzene	ND	0.29	0.015	mg/kg	
62-75-9	n-Nitrosodimethylamine	ND	0.29	0.014	mg/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.29	0.016	mg/kg	
86-30-6	N-Nitrosodiphenylamine	ND	0.29	0.017	mg/kg	
110-86-1	Pyridine	ND	0.57	0.029	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	73%		30-130%
4165-62-2	Phenol-d5	70%		30-130%
118-79-6	2,4,6-Tribromophenol	72%		30-130%
4165-60-0	Nitrobenzene-d5	65%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	82%		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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W14641.D	1	09/27/13	KR	09/26/13	OP34999	MSW660
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	ND	0.0057	0.00066	mg/kg	
208-96-8	Acenaphthylene	ND	0.0057	0.0011	mg/kg	
120-12-7	Anthracene	ND	0.0057	0.00093	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0057	0.00071	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0057	0.00083	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0057	0.00070	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0057	0.0022	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0057	0.0011	mg/kg	
218-01-9	Chrysene	ND	0.0057	0.00088	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0057	0.0017	mg/kg	
206-44-0	Fluoranthene	ND	0.0057	0.00091	mg/kg	
86-73-7	Fluorene	ND	0.0057	0.00050	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0057	0.0015	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.011	0.011	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0057	0.0012	mg/kg	
85-01-8	Phenanthrene	ND	0.0057	0.0011	mg/kg	
129-00-0	Pyrene	ND	0.0057	0.0020	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		15-110%
4165-62-2	Phenol-d5	36%		15-110%
118-79-6	2,4,6-Tribromophenol	41%		15-110%
4165-60-0	Nitrobenzene-d5	76%		30-130%
321-60-8	2-Fluorobiphenyl	72%		30-130%
1718-51-0	Terphenyl-d14	95%		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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8011 SW846 3550B	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK29880.D	1	09/25/13	NK	09/20/13	OP34909	GBK996
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)	135%		61-167%
460-00-4	Bromofluorobenzene (S)	120%		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:	SVE-40-091813(30-32')		
Lab Sample ID:	MC24546-3	**Date Sampled:**	09/18/13
Matrix:	SO - Soil	**Date Received:**	09/19/13
Method:	SW846 8015	**Percent Solids:**	85.0
Project:	URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BH31604.D	1	09/28/13	TB	n/a	n/a	GBH1842
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.29 g	10.0 ml	100 ul
Run #2			

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	76%		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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)

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

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

PO #

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

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 9/18/2013

PAGE: 1 of 1

SAMPLING COMPANY: URS CORPORATION

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

PROJECT CONTACT: Elizabeth Kunkel elizabeth.kunkel@urs.com

TELEPHONE: 314-429-0100 FAX: 314-429-0462

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

SITE ADDRESS: 200 South Central Ave; ROXANA

STATE: IL

CONSULTANT PROJECT NO.: SVE System Extension 21562850.18000

Sampler Name(s): Erik Arthur

LAB USE ONLY: MC24546

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

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☑ LEVEL 4 ☑ OTHER (SPECIFY) EDO

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 LLDD DISK

REQUESTED ANALYSIS

FIELD NOTES:

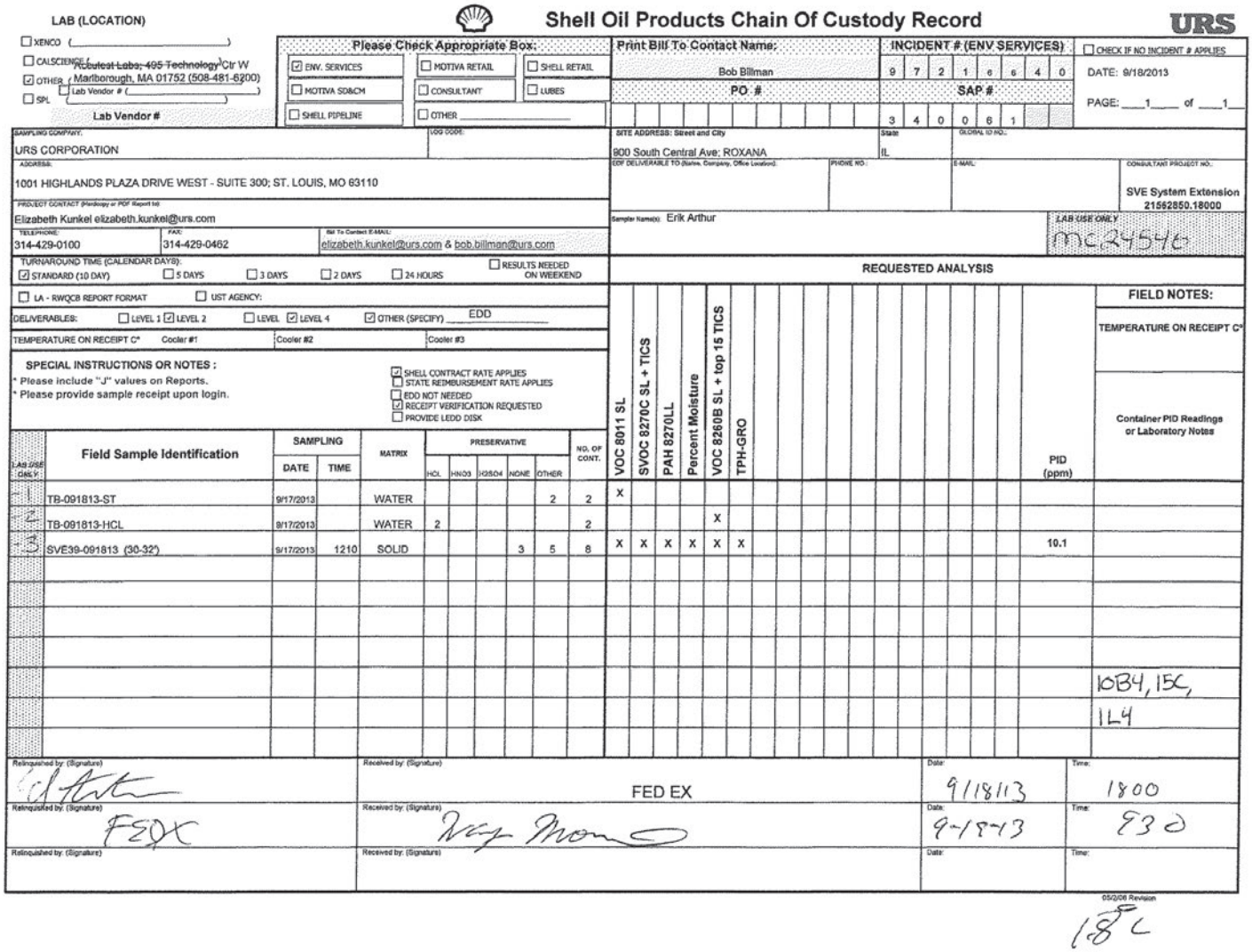
TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	DATE	TIME	MATRIX	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	TB-091813-ST	9/18/2013		WATER					2	2	X							
2	TB-091813-HCL	9/18/2013		WATER	2					2					X			
3	SVE30-091813 (30-32)	9/17/2013	1210	SOLID				3	5	8	X	X	X	X	X	X	10.1	

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	FED EX	9/18/13	1800
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

REVISED 9/20/13 TF

MC24546: Chain of Custody
Page 1 of 3



Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)

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

PO #:

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

SAP #: 3 4 0 0 6 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 9/18/2013

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.: SVE System Extension 21562850.18000

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

Sampler Name(s): Erik Arthur

LAB USE ONLY: MC24546

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

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)	FIELD NOTES: TEMPERATURE ON RECEIPT C° / Container PID Readings or Laboratory Notes
1	TB-091813-ST	9/17/2013		WATER					2	2	X							
2	TB-091813-HCL	9/17/2013		WATER	2					2					X			
3	SVE39-091813 (30-32')	9/17/2013	1210	SOLID				3	5	8	X	X	X	X	X	X	10.1	
																		1034, 15C,
																		1L4

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	FED EX	9/18/13	1800
FEDX	[signature]	9-18-13	930

05/2/06 Revision

18 C

MC24546: Chain of Custody
Page 2 of 3

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC24546 **Client:** URS **Immediate Client Services Action Required:** No

Date / Time Received: 9/19/2013 **Delivery Method:** **Client Service Action Required at Login:** No

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

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

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

Quality Control 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

5

MC24546: Chain of Custody
Page 3 of 3

Internal Sample Tracking Chronicle

Shell Oil

Job No: MC24546

URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL
Project No: 21562850.18000

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC24546-1 Collected: 18-SEP-13 00:00 By: EA			Received: 19-SEP-13 By: AF			
TB-091813-ST						
MC24546-1	SW846 8011	02-OCT-13 13:46	CZ	02-OCT-13	MR	V8011SL
MC24546-2 Collected: 18-SEP-13 00:00 By: EA			Received: 19-SEP-13 By: AF			
TB-091813-HCL						
MC24546-2	SW846 8260B	01-OCT-13 12:31	AMY			V8260SL+
MC24546-3 Collected: 18-SEP-13 12:10 By: EA			Received: 19-SEP-13 By: AF			
SVE-40-091813(30-32')						
MC24546-3	SM21 2540 B MOD.	23-SEP-13	HS			%SOL
MC24546-3	SW846 8011	25-SEP-13 18:51	NK	20-SEP-13	NE	V8011SL
MC24546-3	SW846 8270C	27-SEP-13 14:42	KR	26-SEP-13	MT	AB8270SL+
MC24546-3	SW846 8270C BY SIM	27-SEP-13 20:15	KR	26-SEP-13	MT	B8270SIMSL
MC24546-3	SW846 8015	28-SEP-13 09:37	TB			V8015GRO
MC24546-3	SW846 8260B	02-OCT-13 15:51	KD			V8260SL+

SGS Accutest Internal Chain of Custody

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL
Received: 09/19/13

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC24546-1.1	VOC Ref #1	Michael Rolo	10/02/13 06:48	Retrieve from Storage
MC24546-1.1	Michael Rolo		10/03/13 07:45	Depleted
MC24546-2.1	VOC Ref #1	Amy Min Yang	10/01/13 12:11	Retrieve from Storage
MC24546-2.1	Amy Min Yang	GCMSV	10/01/13 12:12	Load on Instrument
MC24546-2.1	GCMSV	Amy Min Yang	10/02/13 16:23	Unload from Instrument
MC24546-2.1	Amy Min Yang	VOC Ref #1	10/02/13 16:23	Return to Storage
MC24546-2.1	Scott Parsick		01/08/14 17:06	Disposed
MC24546-3.1	Walk In Ref #9	Hamid Siamak	09/23/13 08:55	Retrieve from Storage
MC24546-3.1	Hamid Siamak	Walk In Ref #9	09/23/13 08:55	Return to Storage
MC24546-3.1	Scott Parsick		01/08/14 17:06	Disposed
MC24546-3.3	Walk In Ref #9	Chris Cataldo	09/20/13 15:47	Retrieve from Storage
MC24546-3.3	Chris Cataldo	Walk In Ref #9	09/20/13 23:22	Return to Storage
MC24546-3.3	Walk In Ref #9	Nicole Estey	09/26/13 16:54	Retrieve from Storage
MC24546-3.3	Nicole Estey	Walk In Ref #9	09/26/13 22:32	Return to Storage
MC24546-3.3	Scott Parsick		01/08/14 17:06	Disposed
MC24546-3.4	VOC Ref #10	Krysten Dufort	10/02/13 10:23	Retrieve from Storage
MC24546-3.4	Krysten Dufort	GCMSM	10/02/13 10:23	Load on Instrument
MC24546-3.4	GCMSM	Krysten Dufort	10/03/13 09:55	Unload from Instrument
MC24546-3.4	Krysten Dufort	VOC Ref #10	10/03/13 09:55	Return to Storage
MC24546-3.4	Scott Parsick		01/08/14 17:06	Disposed
MC24546-3.8	VOC Ref #10	Jaime Maslowski	09/20/13 15:10	Retrieve from Storage
MC24546-3.8	Jaime Maslowski	VOC Ref #10	09/23/13 10:19	Return to Storage
MC24546-3.8	VOC Ref #10	Todd Bahosh	09/27/13 19:08	Retrieve from Storage
MC24546-3.8	Todd Bahosh	GCBH	09/27/13 19:08	Load on Instrument
MC24546-3.8	GCBH	Todd Bahosh	09/30/13 17:14	Unload from Instrument
MC24546-3.8	Todd Bahosh	VOC Ref #10	09/30/13 17:14	Return to Storage
MC24546-3.8	Scott Parsick		01/08/14 17:06	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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-MB	V23703.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-MB	V23703.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-MB	V23703.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	105%	70-130%

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

Method Blank Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-MB	M59846.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-MB	M59846.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-MB	M59846.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	80%	70-130%
2037-26-5	Toluene-D8	82%	70-130%
460-00-4	4-Bromofluorobenzene	86%	70-130%

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

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-BS	M59843.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	50	113	226* [a]	70-130
107-02-8	Acrolein	250	156	62* [b]	70-130
107-13-1	Acrylonitrile	50	59.8	120	70-130
71-43-2	Benzene	50	55.9	112	70-130
108-86-1	Bromobenzene	50	57.9	116	70-130
74-97-5	Bromochloromethane	50	63.8	128	70-130
75-27-4	Bromodichloromethane	50	57.1	114	70-130
75-25-2	Bromoform	50	61.4	123	70-130
74-83-9	Bromomethane	50	57.1	114	70-130
78-93-3	2-Butanone (MEK)	50	78.3	157* [c]	70-130
104-51-8	n-Butylbenzene	50	61.0	122	70-130
135-98-8	sec-Butylbenzene	50	55.2	110	70-130
98-06-6	tert-Butylbenzene	50	53.5	107	70-130
75-15-0	Carbon disulfide	50	59.7	119	70-130
56-23-5	Carbon tetrachloride	50	62.4	125	70-130
108-90-7	Chlorobenzene	50	54.9	110	70-130
75-00-3	Chloroethane	50	61.8	124	70-130
110-75-8	2-Chloroethyl vinyl ether	50	40.0	80	10-160
67-66-3	Chloroform	50	61.7	123	70-130
74-87-3	Chloromethane	50	61.5	123	70-130
95-49-8	o-Chlorotoluene	50	53.8	108	70-130
106-43-4	p-Chlorotoluene	50	57.4	115	70-130
124-48-1	Dibromochloromethane	50	57.2	114	70-130
95-50-1	1,2-Dichlorobenzene	50	55.6	111	70-130
541-73-1	1,3-Dichlorobenzene	50	58.1	116	70-130
106-46-7	1,4-Dichlorobenzene	50	60.2	120	70-130
75-71-8	Dichlorodifluoromethane	50	51.7	103	70-130
75-34-3	1,1-Dichloroethane	50	62.5	125	70-130
107-06-2	1,2-Dichloroethane	50	56.4	113	70-130
75-35-4	1,1-Dichloroethene	50	58.0	116	70-130
156-59-2	cis-1,2-Dichloroethene	50	55.8	112	70-130
156-60-5	trans-1,2-Dichloroethene	50	59.6	119	70-130
78-87-5	1,2-Dichloropropane	50	55.3	111	70-130
142-28-9	1,3-Dichloropropane	50	53.2	106	70-130
594-20-7	2,2-Dichloropropane	50	62.3	125	70-130
563-58-6	1,1-Dichloropropene	50	57.8	116	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-BS	M59843.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	50	56.9	114	70-130
10061-02-6	trans-1,3-Dichloropropene	50	59.9	120	70-130
123-91-1	1,4-Dioxane	250	294	118	70-130
97-63-2	Ethyl methacrylate	50	50.9	102	76-141
100-41-4	Ethylbenzene	50	56.4	113	70-130
87-68-3	Hexachlorobutadiene	50	58.0	116	70-130
591-78-6	2-Hexanone	50	65.9	132* [c]	70-130
98-82-8	Isopropylbenzene	50	55.7	111	70-130
99-87-6	p-Isopropyltoluene	50	61.3	123	70-130
1634-04-4	Methyl Tert Butyl Ether	50	55.8	112	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	57.8	116	70-130
74-95-3	Methylene bromide	50	63.1	126	70-130
75-09-2	Methylene chloride	50	59.1	118	70-130
91-20-3	Naphthalene	50	58.0	116	70-130
103-65-1	n-Propylbenzene	50	55.9	112	70-130
100-42-5	Styrene	50	58.4	117	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	54.4	109	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	55.0	110	70-130
127-18-4	Tetrachloroethene	50	62.4	125	70-130
108-88-3	Toluene	50	58.4	117	70-130
87-61-6	1,2,3-Trichlorobenzene	50	59.8	120	70-130
120-82-1	1,2,4-Trichlorobenzene	50	64.8	130	70-130
71-55-6	1,1,1-Trichloroethane	50	61.6	123	70-130
79-00-5	1,1,2-Trichloroethane	50	57.0	114	70-130
79-01-6	Trichloroethene	50	56.0	112	70-130
75-69-4	Trichlorofluoromethane	50	57.5	115	70-130
96-18-4	1,2,3-Trichloropropane	50	56.9	114	70-130
95-63-6	1,2,4-Trimethylbenzene	50	57.3	115	70-130
108-67-8	1,3,5-Trimethylbenzene	50	56.7	113	70-130
108-05-4	Vinyl Acetate	50	34.2	68* [b]	70-130
75-01-4	Vinyl chloride	50	49.1	98	70-130
	m,p-Xylene	100	113	113	70-130
95-47-6	o-Xylene	50	54.2	108	70-130
1330-20-7	Xylene (total)	150	168	112	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2074-BS	M59843.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	80%	70-130%
2037-26-5	Toluene-D8	81%	70-130%
460-00-4	4-Bromofluorobenzene	81%	70-130%

(a) Outside control limits. Associated samples may be biased high.
(b) Outside control limits. Associated samples may be biased low.
(c) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-BS	V23699.D	1	10/01/13	AMY	n/a	n/a	MSV907
MSV907-BSD	V23700.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	49.2	98	51.3	103	4	70-130/25
107-02-8	Acrolein	250	271	108	271	108	0	70-130/25
107-13-1	Acrylonitrile	50	47.1	94	46.6	93	1	70-130/25
71-43-2	Benzene	50	55.1	110	53.4	107	3	70-130/25
108-86-1	Bromobenzene	50	55.6	111	54.5	109	2	70-130/25
74-97-5	Bromochloromethane	50	54.5	109	53.3	107	2	70-130/25
75-27-4	Bromodichloromethane	50	54.7	109	53.5	107	2	70-130/25
75-25-2	Bromoform	50	46.7	93	45.2	90	3	70-130/25
74-83-9	Bromomethane	50	54.9	110	53.1	106	3	70-130/25
78-93-3	2-Butanone (MEK)	50	57.4	115	56.0	112	2	70-130/25
104-51-8	n-Butylbenzene	50	58.0	116	55.1	110	5	70-130/25
135-98-8	sec-Butylbenzene	50	58.3	117	56.2	112	4	70-130/25
98-06-6	tert-Butylbenzene	50	58.7	117	56.7	113	3	70-130/25
75-15-0	Carbon disulfide	50	56.8	114	55.0	110	3	70-130/25
56-23-5	Carbon tetrachloride	50	55.0	110	52.2	104	5	70-130/25
108-90-7	Chlorobenzene	50	46.2	92	45.1	90	2	70-130/25
75-00-3	Chloroethane	50	60.1	120	58.1	116	3	70-130/25
110-75-8	2-Chloroethyl vinyl ether	50	37.1	74	36.5	73	2	70-130/25
67-66-3	Chloroform	50	56.7	113	55.6	111	2	70-130/25
74-87-3	Chloromethane	50	57.8	116	55.4	111	4	70-130/25
95-49-8	o-Chlorotoluene	50	57.1	114	55.8	112	2	70-130/25
106-43-4	p-Chlorotoluene	50	57.4	115	55.6	111	3	70-130/25
124-48-1	Dibromochloromethane	50	49.0	98	48.3	97	1	70-130/25
95-50-1	1,2-Dichlorobenzene	50	50.8	102	50.5	101	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	52.8	106	51.4	103	3	70-130/25
106-46-7	1,4-Dichlorobenzene	50	52.1	104	51.2	102	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	48.9	98	48.2	96	1	70-130/25
75-34-3	1,1-Dichloroethane	50	63.6	127	62.0	124	3	70-130/25
107-06-2	1,2-Dichloroethane	50	47.7	95	46.8	94	2	70-130/25
75-35-4	1,1-Dichloroethene	50	58.2	116	56.2	112	3	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	58.5	117	56.7	113	3	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	56.4	113	55.6	111	1	70-130/25
78-87-5	1,2-Dichloropropane	50	53.3	107	52.4	105	2	70-130/25
142-28-9	1,3-Dichloropropane	50	50.5	101	50.0	100	1	70-130/25
594-20-7	2,2-Dichloropropane	50	58.4	117	56.2	112	4	70-130/25
563-58-6	1,1-Dichloropropene	50	59.4	119	57.8	116	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-BS	V23699.D	1	10/01/13	AMY	n/a	n/a	MSV907
MSV907-BSD	V23700.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	50.9	102	49.7	99	2	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.9	104	51.1	102	2	70-130/25
123-91-1	1,4-Dioxane	250	256	102	240	96	6	70-130/25
97-63-2	Ethyl methacrylate	50	52.0	104	51.5	103	1	77-137/25
100-41-4	Ethylbenzene	50	52.3	105	51.3	103	2	70-130/25
87-68-3	Hexachlorobutadiene	50	63.8	128	60.8	122	5	70-130/25
591-78-6	2-Hexanone	50	47.3	95	48.0	96	1	70-130/25
98-82-8	Isopropylbenzene	50	58.4	117	56.7	113	3	70-130/25
99-87-6	p-Isopropyltoluene	50	59.6	119	57.5	115	4	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	58.1	116	57.5	115	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	47.2	94	46.9	94	1	70-130/25
74-95-3	Methylene bromide	50	54.5	109	53.6	107	2	70-130/25
75-09-2	Methylene chloride	50	55.1	110	54.0	108	2	70-130/25
91-20-3	Naphthalene	50	53.1	106	52.8	106	1	70-130/25
103-65-1	n-Propylbenzene	50	56.9	114	54.9	110	4	70-130/25
100-42-5	Styrene	50	51.9	104	51.1	102	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	46.7	93	46.0	92	2	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	52.2	104	51.3	103	2	70-130/25
127-18-4	Tetrachloroethene	50	58.1	116	56.1	112	4	70-130/25
108-88-3	Toluene	50	59.5	119	58.1	116	2	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	57.2	114	56.2	112	2	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	56.3	113	54.3	109	4	70-130/25
71-55-6	1,1,1-Trichloroethane	50	55.6	111	54.3	109	2	70-130/25
79-00-5	1,1,2-Trichloroethane	50	51.7	103	51.2	102	1	70-130/25
79-01-6	Trichloroethene	50	51.6	103	50.0	100	3	70-130/25
75-69-4	Trichlorofluoromethane	50	47.2	94	44.3	89	6	70-130/25
96-18-4	1,2,3-Trichloropropane	50	52.6	105	52.4	105	0	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	54.8	110	52.9	106	4	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	55.0	110	53.5	107	3	70-130/25
108-05-4	Vinyl Acetate	50	45.0	90	44.3	89	2	70-130/25
75-01-4	Vinyl chloride	50	44.7	89	43.6	87	2	70-130/25
	m,p-Xylene	100	103	103	101	101	2	70-130/25
95-47-6	o-Xylene	50	49.3	99	48.0	96	3	70-130/25
1330-20-7	Xylene (total)	150	152	101	149	99	2	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSV907-BS	V23699.D	1	10/01/13	AMY	n/a	n/a	MSV907
MSV907-BSD	V23700.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	92%	92%	70-130%
2037-26-5	Toluene-D8	104%	105%	70-130%
460-00-4	4-Bromofluorobenzene	104%	105%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24544-5MS	V23713.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5MSD	V23714.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5	V23707.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Compound	MC24544-5 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	25.0	50* [a]	50	24.6	49* [a]	2	70-130/30
107-02-8	Acrolein	ND		250	243	97	250	242	97	0	70-130/30
107-13-1	Acrylonitrile	ND		50	47.9	96	50	47.1	94	2	70-130/30
71-43-2	Benzene	22.8		50	75.6	106	50	74.3	103	2	70-130/30
108-86-1	Bromobenzene	ND		50	55.1	110	50	55.4	111	1	70-130/30
74-97-5	Bromochloromethane	ND		50	53.9	108	50	53.1	106	1	70-130/30
75-27-4	Bromodichloromethane	ND		50	55.7	111	50	54.3	109	3	70-130/30
75-25-2	Bromoform	ND		50	48.1	96	50	48.0	96	0	70-130/30
74-83-9	Bromomethane	ND		50	55.9	112	50	55.0	110	2	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	36.4	73	50	35.8	72	2	70-130/30
104-51-8	n-Butylbenzene	ND		50	58.8	118	50	57.6	115	2	70-130/30
135-98-8	sec-Butylbenzene	ND		50	58.7	117	50	58.2	116	1	70-130/30
98-06-6	tert-Butylbenzene	ND		50	59.0	118	50	58.0	116	2	70-130/30
75-15-0	Carbon disulfide	ND		50	58.1	116	50	57.8	116	1	70-130/30
56-23-5	Carbon tetrachloride	ND		50	58.6	117	50	56.7	113	3	70-130/30
108-90-7	Chlorobenzene	ND		50	44.6	89	50	44.6	89	0	70-130/30
75-00-3	Chloroethane	ND		50	60.9	122	50	60.3	121	1	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	ND	0* [a]	50	ND	0* [a]	nc	70-130/30
67-66-3	Chloroform	ND		50	58.4	117	50	57.2	114	2	70-130/30
74-87-3	Chloromethane	ND		50	58.8	118	50	58.7	117	0	70-130/30
95-49-8	o-Chlorotoluene	ND		50	57.5	115	50	56.1	112	2	70-130/30
106-43-4	p-Chlorotoluene	ND		50	57.6	115	50	56.9	114	1	70-130/30
124-48-1	Dibromochloromethane	ND		50	48.7	97	50	48.4	97	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	51.4	103	50	51.6	103	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	52.5	105	50	52.1	104	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	52.0	104	50	52.2	104	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	56.1	112	50	55.2	110	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	64.7	129	50	63.8	128	1	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	49.8	100	50	48.6	97	2	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	59.2	118	50	58.4	117	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	58.7	117	50	57.5	115	2	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	57.4	115	50	57.5	115	0	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	52.9	106	50	52.3	105	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	50.0	100	50	50.3	101	1	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	59.6	119	50	58.7	117	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	61.9	124	50	60.2	120	3	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24544-5MS	V23713.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5MSD	V23714.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5	V23707.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Compound	MC24544-5 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	49.9	100	50	49.0	98	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	53.0	106	50	51.8	104	2	70-130/30
123-91-1	1,4-Dioxane	ND		250	233	93	250	216	86	8	70-130/30
97-63-2	Ethyl methacrylate	ND		50	56.3	113	50	56.8	114	1	72-139/30
100-41-4	Ethylbenzene	ND		50	51.9	104	50	51.4	103	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	65.7	131* a	50	62.9	126	4	70-130/30
591-78-6	2-Hexanone	ND		50	33.9	68* a	50	33.3	67* a	2	70-130/30
98-82-8	Isopropylbenzene	ND		50	58.6	117	50	58.1	116	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	59.9	120	50	59.0	118	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	58.6	117	50	59.3	119	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		50	50.6	101	50	50.2	100	1	70-130/30
74-95-3	Methylene bromide	ND		50	55.3	111	50	54.6	109	1	70-130/30
75-09-2	Methylene chloride	ND		50	54.8	110	50	54.6	109	0	70-130/30
91-20-3	Naphthalene	ND		50	65.7	131* a	50	66.9	134* a	2	70-130/30
103-65-1	n-Propylbenzene	ND		50	56.8	114	50	56.3	113	1	70-130/30
100-42-5	Styrene	ND		50	51.3	103	50	50.3	101	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	46.4	93	50	46.4	93	0	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	55.4	111	50	56.0	112	1	70-130/30
127-18-4	Tetrachloroethene	ND		50	56.8	114	50	56.8	114	0	70-130/30
108-88-3	Toluene	ND		50	59.2	118	50	58.7	117	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	64.9	130	50	62.7	125	3	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	59.6	119	50	58.6	117	2	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	58.2	116	50	57.5	115	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	51.9	104	50	51.8	104	0	70-130/30
79-01-6	Trichloroethene	ND		50	51.9	104	50	50.6	101	3	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	51.1	102	50	50.1	100	2	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	55.9	112	50	56.7	113	1	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	54.4	109	50	54.4	109	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	55.4	111	50	54.7	109	1	70-130/30
108-05-4	Vinyl Acetate	ND		50	44.6	89	50	44.5	89	0	70-130/30
75-01-4	Vinyl chloride	ND		50	46.3	93	50	45.8	92	1	70-130/30
	m,p-Xylene	ND		100	102	102	100	101	101	1	70-130/30
95-47-6	o-Xylene	ND		50	48.8	98	50	48.3	97	1	70-130/30
1330-20-7	Xylene (total)	ND		150	151	101	150	150	100	1	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24544-5MS	V23713.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5MSD	V23714.D	1	10/01/13	AMY	n/a	n/a	MSV907
MC24544-5	V23707.D	1	10/01/13	AMY	n/a	n/a	MSV907

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

MC24546-2

CAS No.	Surrogate Recoveries	MS	MSD	MC24544-5	Limits
1868-53-7	Dibromofluoromethane	93%	92%	93%	70-130%
2037-26-5	Toluene-D8	105%	104%	103%	70-130%
460-00-4	4-Bromofluorobenzene	104%	104%	105%	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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24582-5MS	M59858.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5MSD	M59859.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5 [a]	M59857.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Compound	MC24582-5 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		53.5	91.6	171* [b]	55.6	143	257* [b]	44* [c]	70-130/30
107-02-8	Acrolein	ND		268	80.6	30* [b]	278	93.6	34* [b]	15	70-130/30
107-13-1	Acrylonitrile	ND		53.5	61.3	115	55.6	79.7	143* [b]	26	70-130/30
71-43-2	Benzene	6.9		53.5	43.4	68* [b]	55.6	53.4	84	21	70-130/30
108-86-1	Bromobenzene	ND		53.5	28.2	53* [b]	55.6	32.3	58* [b]	14	70-130/30
74-97-5	Bromochloromethane	ND		53.5	48.4	90	55.6	60.9	110	23	70-130/30
75-27-4	Bromodichloromethane	ND		53.5	41.7	78	55.6	48.9	88	16	70-130/30
75-25-2	Bromoform	ND		53.5	38.6	72	55.6	43.1	77	11	70-130/30
74-83-9	Bromomethane	ND		53.5	46.9	88	55.6	61.6	111	27	70-130/30
78-93-3	2-Butanone (MEK)	ND		53.5	70.0	131* [b]	55.6	93.5	168* [b]	29	70-130/30
104-51-8	n-Butylbenzene	ND		53.5	33.1	62* [b]	55.6	41.3	74	22	70-130/30
135-98-8	sec-Butylbenzene	ND		53.5	35.1	66* [b]	55.6	43.8	79	22	70-130/30
98-06-6	tert-Butylbenzene	ND		53.5	36.4	68* [b]	55.6	45.0	81	21	70-130/30
75-15-0	Carbon disulfide	ND		53.5	47.7	89	55.6	59.3	107	22	70-130/30
56-23-5	Carbon tetrachloride	ND		53.5	50.1	94	55.6	62.8	113	22	70-130/30
108-90-7	Chlorobenzene	ND		53.5	30.4	57* [b]	55.6	35.1	63* [b]	14	70-130/30
75-00-3	Chloroethane	ND		53.5	50.7	95	55.6	66.3	119	27	70-130/30
110-75-8	2-Chloroethyl vinyl ether	ND		53.5	ND	0* [b]	55.6	ND	0* [b]	nc	10-160/30
67-66-3	Chloroform	ND		53.5	47.0	88	55.6	58.2	105	21	70-130/30
74-87-3	Chloromethane	ND		53.5	51.4	96	55.6	66.1	119	25	70-130/30
95-49-8	o-Chlorotoluene	ND		53.5	29.8	56* [b]	55.6	34.7	62* [b]	15	70-130/30
106-43-4	p-Chlorotoluene	ND		53.5	28.3	53* [b]	55.6	32.3	58* [b]	13	70-130/30
124-48-1	Dibromochloromethane	ND		53.5	39.0	73	55.6	46.0	83	16	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		53.5	21.3	40* [b]	55.6	23.1	42* [b]	8	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		53.5	23.5	44* [b]	55.6	26.1	47* [b]	10	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		53.5	23.5	44* [b]	55.6	25.7	46* [b]	9	70-130/30
75-71-8	Dichlorodifluoromethane	ND		53.5	44.2	83	55.6	57.4	103	26	70-130/30
75-34-3	1,1-Dichloroethane	ND		53.5	49.6	93	55.6	61.3	110	21	70-130/30
107-06-2	1,2-Dichloroethane	ND		53.5	43.5	81	55.6	52.9	95	20	70-130/30
75-35-4	1,1-Dichloroethene	ND		53.5	48.9	91	55.6	60.8	109	22	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		53.5	41.8	78	55.6	52.2	94	22	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		53.5	45.5	85	55.6	56.7	102	22	70-130/30
78-87-5	1,2-Dichloropropane	ND		53.5	40.1	75	55.6	49.0	88	20	70-130/30
142-28-9	1,3-Dichloropropane	ND		53.5	39.1	73	55.6	46.5	84	17	70-130/30
594-20-7	2,2-Dichloropropane	ND		53.5	50.4	94	55.6	63.2	114	23	70-130/30
563-58-6	1,1-Dichloropropene	ND		53.5	44.8	84	55.6	55.7	100	22	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24582-5MS	M59858.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5MSD	M59859.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5 [a]	M59857.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Compound	MC24582-5 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		53.5	37.1	69* [b]	55.6	44.4	80	18	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		53.5	38.3	72	55.6	44.9	81	16	70-130/30
123-91-1	1,4-Dioxane	ND		268	364	136* [b]	278	534	192* [b]	38* [c]	70-130/30
97-63-2	Ethyl methacrylate	ND		53.5	39.8	74	55.6	46.0	83	14	41-160/30
100-41-4	Ethylbenzene	0.75		53.5	36.1	66* [b]	55.6	43.7	77	19	70-130/30
87-68-3	Hexachlorobutadiene	ND		53.5	27.2	51* [b]	55.6	36.2	65* [b]	28	70-130/30
591-78-6	2-Hexanone	ND		53.5	53.4	100	55.6	69.5	125	26	70-130/30
98-82-8	Isopropylbenzene	ND		53.5	38.2	71	55.6	47.1	85	21	70-130/30
99-87-6	p-Isopropyltoluene	ND		53.5	36.6	68* [b]	55.6	45.2	81	21	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		53.5	46.8	87	55.6	57.9	104	21	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		53.5	58.8	110	55.6	69.1	124	16	70-130/30
74-95-3	Methylene bromide	ND		53.5	48.0	90	55.6	58.3	105	19	70-130/30
75-09-2	Methylene chloride	ND		53.5	46.8	87	55.6	58.7	106	23	70-130/30
91-20-3	Naphthalene	ND		53.5	11.1	21* [b]	55.6	12.4	22* [b]	11	70-130/30
103-65-1	n-Propylbenzene	ND		53.5	35.3	66* [b]	55.6	43.0	77	20	70-130/30
100-42-5	Styrene	ND		53.5	24.0	45* [b]	55.6	28.2	51* [b]	16	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		53.5	35.4	66* [b]	55.6	42.2	76	18	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		53.5	39.5	74	55.6	45.9	83	15	70-130/30
127-18-4	Tetrachloroethene	ND		53.5	44.0	82	55.6	54.9	99	22	70-130/30
108-88-3	Toluene	4.1		53.5	40.6	68* [b]	55.6	49.3	81	19	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		53.5	13.4	25* [b]	55.6	15.4	28* [b]	14	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		53.5	15.4	29* [b]	55.6	17.9	32* [b]	15	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		53.5	50.4	94	55.6	61.9	111	20	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		53.5	40.9	76	55.6	48.4	87	17	70-130/30
79-01-6	Trichloroethene	ND		53.5	40.9	76	55.6	49.5	89	19	70-130/30
75-69-4	Trichlorofluoromethane	ND		53.5	48.9	91	55.6	59.3	107	19	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		53.5	42.8	80	55.6	49.2	88	14	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		53.5	31.4	59* [b]	55.6	36.5	66* [b]	15	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		53.5	33.9	63* [b]	55.6	40.4	73	17	70-130/30
108-05-4	Vinyl Acetate	ND		53.5	29.3	55* [b]	55.6	36.9	66* [b]	23	70-130/30
75-01-4	Vinyl chloride	ND		53.5	41.9	78	55.6	53.2	96	24	70-130/30
	m,p-Xylene	0.90		107	67.6	62* [b]	111	80.5	72	17	70-130/30
95-47-6	o-Xylene	ND		53.5	31.3	58* [b]	55.6	36.7	66* [b]	16	70-130/30
1330-20-7	Xylene (total)	0.90		161	98.8	61* [b]	167	117	70	17	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24582-5MS	M59858.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5MSD	M59859.D	1	10/02/13	KD	n/a	n/a	MSM2074
MC24582-5 [a]	M59857.D	1	10/02/13	KD	n/a	n/a	MSM2074

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

MC24546-3

CAS No.	Surrogate Recoveries	MS	MSD	MC24582-5	Limits
1868-53-7	Dibromofluoromethane	83%	83%	83%	70-130%
2037-26-5	Toluene-D8	81%	81%	81%	70-130%
460-00-4	4-Bromofluorobenzene	90%	90%	93%	70-130%

(a) Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	MSM2074-CC2064	**Injection Date:**	10/02/13
Lab File ID:	M59842.D	**Injection Time:**	08:59
Instrument ID:	GCMSM	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	258611	9.36	398687	10.23	172210	13.51	213084	16.07	104032	6.84
Upper Limit [a]	517222	9.86	797374	10.73	344420	14.01	426168	16.57	208064	7.34
Lower Limit [b]	129306	8.86	199344	9.73	86105	13.01	106542	15.57	52016	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**
MSM2074-BS	258868	9.36	404389	10.23	172976	13.51	212579	16.07	107228	6.85
MSM2074-MB	248203	9.35	388596	10.23	156398	13.51	188219	16.07	102756	6.85
ZZZZZZ	234854	9.35	369275	10.23	151348	13.51	184119	16.07	168198	6.84
ZZZZZZ	242890	9.35	381260	10.23	153377	13.51	180094	16.07	91871	6.84
ZZZZZZ	240578	9.35	381710	10.23	155086	13.50	182098	16.07	99866	6.85
ZZZZZZ	237998	9.35	370346	10.23	150955	13.50	175318	16.07	92999	6.84
ZZZZZZ	239937	9.35	378793	10.23	152259	13.51	178306	16.07	94762	6.84
ZZZZZZ	241504	9.35	378852	10.23	153437	13.51	180253	16.07	99025	6.84
ZZZZZZ	240875	9.35	379453	10.23	153021	13.51	183372	16.07	99025	6.84
ZZZZZZ	238206	9.35	367918	10.23	149828	13.50	174340	16.07	100333	6.84
ZZZZZZ	241279	9.35	374900	10.23	154333	13.51	182042	16.07	103028	6.85
MC24546-3 [c]	220886	9.35	350650	10.23	144416	13.51	171891	16.07	171136	6.84
MC24582-5	210930	9.35	333356	10.23	130365	13.51	140924	16.07	176859	6.84
MC24582-5MS	235287	9.35	370722	10.23	155624	13.51	174075	16.07	186008	6.84
MC24582-5MSD	223343	9.36	351608	10.23	144756	13.51	159748	16.07	195814	6.84
ZZZZZZ	242502	9.35	377645	10.23	155543	13.50	187829	16.07	168470	6.84
ZZZZZZ	237991	9.36	376795	10.23	155283	13.51	185473	16.07	182936	6.84
ZZZZZZ	243938	9.36	382969	10.23	158275	13.51	191926	16.07	135160	6.84
ZZZZZZ	238887	9.35	376982	10.23	155949	13.51	186516	16.07	155178	6.84
ZZZZZZ	241700	9.36	387139	10.23	156905	13.50	199216	16.07	139553	6.84
ZZZZZZ	203820	9.35	325821	10.23	137889	13.50	163164	16.07	140749	6.84
ZZZZZZ	230951	9.35	362442	10.23	148676	13.51	175604	16.07	95443	6.84
ZZZZZZ	229878	9.35	360065	10.23	146534	13.51	173515	16.07	87658	6.84
ZZZZZZ	222321	9.35	355494	10.23	144870	13.51	176770	16.07	160431	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) Toluene (CCC's) do not meet the reference method acceptance criteria in instrument QC and results may be biased high.

Volatile Internal Standard Area Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	MSV907-CC864	**Injection Date:**	10/01/13
Lab File ID:	V23699.D	**Injection Time:**	10:16
Instrument ID:	GCMSV	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	369960	6.57	531401	7.75	302298	11.08	292135	13.29	101223	3.51
Upper Limit [a]	739920	7.07	1062802	8.25	604596	11.58	584270	13.79	202446	4.01
Lower Limit [b]	184980	6.07	265701	7.25	151149	10.58	146068	12.79	50612	3.01

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSV907-BS	369960	6.57	531401	7.75	302298	11.08	292135	13.29	101223	3.51
MSV907-BSD	372071	6.58	539618	7.76	308388	11.08	296305	13.29	104019	3.52
MSV907-MB	325775	6.58	494065	7.76	280559	11.09	256703	13.30	86942	3.52
MC24546-2	336902	6.58	503999	7.76	289306	11.09	265590	13.30	91269	3.52
ZZZZZZ	315692	6.57	475665	7.75	275983	11.09	251396	13.30	82193	3.51
MC24647-2	313435	6.58	464174	7.76	271740	11.09	245873	13.30	87678	3.51
MC24544-5	314530	6.58	461412	7.76	271063	11.09	259149	13.30	83953	3.52
ZZZZZZ	302254	6.58	451662	7.76	262707	11.09	245876	13.30	87598	3.52
ZZZZZZ	297676	6.58	442224	7.75	262228	11.09	242729	13.30	91058	3.54
ZZZZZZ	294785	6.58	444505	7.76	261630	11.09	236095	13.30	80251	3.54
MC24647-2MS	325391	6.58	467463	7.76	275914	11.09	262095	13.30	86839	3.53
MC24647-2MSD	332060	6.58	481256	7.76	284322	11.09	267218	13.30	98062	3.53
MC24544-5MS	345466	6.58	494109	7.76	289566	11.09	276562	13.30	99020	3.53
MC24544-5MSD	350295	6.58	508066	7.76	293995	11.09	280367	13.30	100673	3.53
ZZZZZZ	319216	6.58	477679	7.76	275052	11.09	254393	13.30	94107	3.53
ZZZZZZ	313744	6.58	467579	7.76	269347	11.09	248891	13.30	85915	3.54
ZZZZZZ	332977	6.58	463304	7.76	275733	11.09	266416	13.30	81954	3.54
ZZZZZZ	328984	6.58	494412	7.76	283716	11.09	271436	13.30	97313	3.53
ZZZZZZ	326752	6.58	487899	7.76	280401	11.09	268275	13.30	99271	3.53
ZZZZZZ	344839	6.58	496858	7.76	290370	11.09	280686	13.30	105273	3.52
ZZZZZZ	360490	6.58	515486	7.76	301136	11.09	290749	13.30	112457	3.53
ZZZZZZ	353548	6.58	524411	7.76	297647	11.09	277717	13.30	100201	3.53
ZZZZZZ	329514	6.57	492107	7.75	281605	11.09	264395	13.30	91853	3.51

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

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

Volatile Surrogate Recovery Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Method: SW846 8260B **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC24546-2	V23704.D	94	103	105
MC24544-5MS	V23713.D	93	105	104
MC24544-5MSD	V23714.D	92	104	104
MSV907-BS	V23699.D	92	104	104
MSV907-BSD	V23700.D	92	105	105
MSV907-MB	V23703.D	95	102	105

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

Volatile Surrogate Recovery Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

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

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC24546-3	M59856.D	83	83	87
MC24582-5MS	M59858.D	83	81	90
MC24582-5MSD	M59859.D	83	81	90
MSM2074-BS	M59843.D	80	81	81
MSM2074-MB	M59846.D	80	82	86

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-MB	R33851.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

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	33	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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-MB	R33851.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

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	82%	30-130%
4165-62-2	Phenol-d5	82%	30-130%
118-79-6	2,4,6-Tribromophenol	84%	30-130%
4165-60-0	Nitrobenzene-d5	74%	30-130%
321-60-8	2-Fluorobiphenyl	86%	30-130%
1718-51-0	Terphenyl-d14	88%	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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34999-MB	W14637.D	1	09/27/13	KR	09/26/13	OP34999	MSW660

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

MC24546-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.57	ug/kg	
208-96-8	Acenaphthylene	ND	4.9	0.91	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	0.71	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	0.94	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	42%	15-110%
4165-62-2	Phenol-d5	40%	15-110%
118-79-6	2,4,6-Tribromophenol	45%	15-110%
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	80%	30-130%
1718-51-0	Terphenyl-d14	105%	30-130%

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-BS	R33852.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
65-85-0	Benzoic acid	2410	2190	91	30-130
95-57-8	2-Chlorophenol	2410	2160	90	30-130
59-50-7	4-Chloro-3-methyl phenol	2410	2040	85	30-130
120-83-2	2,4-Dichlorophenol	2410	2300	95	30-130
105-67-9	2,4-Dimethylphenol	2410	2050	85	30-130
51-28-5	2,4-Dinitrophenol	2410	1350	56	30-130
534-52-1	4,6-Dinitro-o-cresol	2410	1720	71	30-130
95-48-7	2-Methylphenol	2410	2210	92	30-130
	3&4-Methylphenol	4820	4230	88	30-130
88-75-5	2-Nitrophenol	2410	2240	93	30-130
100-02-7	4-Nitrophenol	2410	1740	72	30-130
87-86-5	Pentachlorophenol	2410	1950	81	30-130
108-95-2	Phenol	2410	2330	97	30-130
95-95-4	2,4,5-Trichlorophenol	2410	2360	98	30-130
88-06-2	2,4,6-Trichlorophenol	2410	2300	95	30-130
62-53-3	Aniline	2410	1710	71	40-140
101-55-3	4-Bromophenyl phenyl ether	2410	2310	96	40-140
85-68-7	Butyl benzyl phthalate	2410	2470	102	40-140
100-51-6	Benzyl Alcohol	2410	2020	84	40-140
91-58-7	2-Chloronaphthalene	2410	2290	95	40-140
106-47-8	4-Chloroaniline	2410	1760	73	40-140
111-91-1	bis(2-Chloroethoxy)methane	2410	2030	84	40-140
111-44-4	bis(2-Chloroethyl)ether	2410	2070	86	40-140
108-60-1	bis(2-Chloroisopropyl)ether	2410	2570	107	40-140
7005-72-3	4-Chlorophenyl phenyl ether	2410	2350	97	40-140
122-66-7	1,2-Diphenylhydrazine	2410	1980	82	40-140
121-14-2	2,4-Dinitrotoluene	2410	2340	97	40-140
606-20-2	2,6-Dinitrotoluene	2410	2290	95	40-140
91-94-1	3,3'-Dichlorobenzidine	2410	2340	97	40-140
132-64-9	Dibenzofuran	2410	2060	85	40-140
84-74-2	Di-n-butyl phthalate	2410	2410	100	40-140
117-84-0	Di-n-octyl phthalate	2410	2570	107	40-140
84-66-2	Diethyl phthalate	2410	2340	97	40-140
131-11-3	Dimethyl phthalate	2410	2320	96	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	2410	2390	99	40-140
118-74-1	Hexachlorobenzene	2410	2170	90	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-BS	R33852.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
77-47-4	Hexachlorocyclopentadiene	2410	853	35* [a]	40-140
67-72-1	Hexachloroethane	2410	1850	77	40-140
78-59-1	Isophorone	2410	2040	85	40-140
88-74-4	2-Nitroaniline	2410	2400	100	40-140
99-09-2	3-Nitroaniline	2410	1960	81	40-140
100-01-6	4-Nitroaniline	2410	2220	92	40-140
98-95-3	Nitrobenzene	2410	1790	74	40-140
62-75-9	n-Nitrosodimethylamine	2410	1860	77	40-140
621-64-7	N-Nitroso-di-n-propylamine	2410	1990	83	40-140
86-30-6	N-Nitrosodiphenylamine	2410	2280	95	40-140
110-86-1	Pyridine	2410	1510	63	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	87%	30-130%
4165-62-2	Phenol-d5	85%	30-130%
118-79-6	2,4,6-Tribromophenol	89%	30-130%
4165-60-0	Nitrobenzene-d5	76%	30-130%
321-60-8	2-Fluorobiphenyl	89%	30-130%
1718-51-0	Terphenyl-d14	95%	30-130%

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

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34999-BS	W14638.D	1	09/27/13	KR	09/26/13	OP34999	MSW660

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	2410	1880	78	40-140
208-96-8	Acenaphthylene	2410	1820	75	40-140
120-12-7	Anthracene	2410	1930	80	40-140
56-55-3	Benzo(a)anthracene	2410	2410	100	40-140
50-32-8	Benzo(a)pyrene	2410	2120	88	40-140
205-99-2	Benzo(b)fluoranthene	2410	2550	106	40-140
191-24-2	Benzo(g,h,i)perylene	2410	2170	90	40-140
207-08-9	Benzo(k)fluoranthene	2410	2360	98	40-140
218-01-9	Chrysene	2410	1860	77	40-140
53-70-3	Dibenzo(a,h)anthracene	2410	2230	92	40-140
206-44-0	Fluoranthene	2410	2250	93	40-140
86-73-7	Fluorene	2410	2020	84	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	2410	2250	93	40-140
90-12-0	1-Methylnaphthalene	2410	1930	80	40-140
91-57-6	2-Methylnaphthalene	2410	1950	81	40-140
85-01-8	Phenanthrene	2410	1880	78	40-140
129-00-0	Pyrene	2410	2150	89	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	42%	15-110%
4165-62-2	Phenol-d5	40%	15-110%
118-79-6	2,4,6-Tribromophenol	53%	15-110%
4165-60-0	Nitrobenzene-d5	87%	30-130%
321-60-8	2-Fluorobiphenyl	82%	30-130%
1718-51-0	Terphenyl-d14	105%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-MS	R33853.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231
OP34998-MSD	R33854.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231
MC24546-3	R33855.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

CAS No.	Compound	MC24546-3 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		2860	344	12* [a]	2850	352	12* [a]	2	30-130/30
95-57-8	2-Chlorophenol	ND		2860	2070	72	2850	2500	88	19	30-130/30
59-50-7	4-Chloro-3-methyl phenol	ND		2860	2020	71	2850	2380	84	16	30-130/30
120-83-2	2,4-Dichlorophenol	ND		2860	2140	75	2850	2640	93	21	30-130/30
105-67-9	2,4-Dimethylphenol	ND		2860	1800	63	2850	2240	79	22	30-130/30
51-28-5	2,4-Dinitrophenol	ND		2860	ND	0* [a]	2850	185	7* [a]	200* [b]	30-130/30
534-52-1	4,6-Dinitro-o-cresol	ND		2860	872	31	2850	1530	54	55* [b]	30-130/30
95-48-7	2-Methylphenol	ND		2860	2090	73	2850	2560	90	20	30-130/30
	3&4-Methylphenol	ND		5720	4030	70	5690	4900	86	19	30-130/30
88-75-5	2-Nitrophenol	ND		2860	2150	75	2850	2580	91	18	30-130/30
100-02-7	4-Nitrophenol	ND		2860	1760	62	2850	1870	66	6	30-130/30
87-86-5	Pentachlorophenol	ND		2860	1830	64	2850	2130	75	15	30-130/30
108-95-2	Phenol	ND		2860	2290	80	2850	2680	94	16	30-130/30
95-95-4	2,4,5-Trichlorophenol	ND		2860	2410	84	2850	2790	98	15	30-130/30
88-06-2	2,4,6-Trichlorophenol	ND		2860	2260	79	2850	2570	90	13	30-130/30
62-53-3	Aniline	ND		2860	1640	57	2850	2050	72	22	40-140/30
101-55-3	4-Bromophenyl phenyl ether	ND		2860	2390	84	2850	2680	94	11	40-140/30
85-68-7	Butyl benzyl phthalate	ND		2860	2650	93	2850	2800	98	6	40-140/30
100-51-6	Benzyl Alcohol	ND		2860	1850	65	2850	2350	83	24	40-140/30
91-58-7	2-Chloronaphthalene	ND		2860	2200	77	2850	2610	92	17	40-140/30
106-47-8	4-Chloroaniline	ND		2860	1750	61	2850	2170	76	21	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	ND		2860	1930	68	2850	2400	84	22	40-140/30
111-44-4	bis(2-Chloroethyl)ether	ND		2860	1980	69	2850	2460	86	22	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	ND		2860	2420	85	2850	2910	102	18	40-140/30
7005-72-3	4-Chlorophenyl phenyl ether	ND		2860	2330	82	2850	2620	92	12	40-140/30
122-66-7	1,2-Diphenylhydrazine	ND		2860	2010	70	2850	2520	89	23	40-140/30
121-14-2	2,4-Dinitrotoluene	ND		2860	2460	86	2850	2670	94	8	40-140/30
606-20-2	2,6-Dinitrotoluene	ND		2860	2320	81	2850	2610	92	12	40-140/30
91-94-1	3,3'-Dichlorobenzidine	ND		2860	2610	91	2850	2780	98	6	40-140/30
132-64-9	Dibenzofuran	ND		2860	2070	72	2850	2440	86	16	40-140/30
84-74-2	Di-n-butyl phthalate	ND		2860	2530	89	2850	2730	96	8	40-140/30
117-84-0	Di-n-octyl phthalate	ND		2860	2750	96	2850	2940	103	7	40-140/30
84-66-2	Diethyl phthalate	ND		2860	2390	84	2850	2760	97	14	40-140/30
131-11-3	Dimethyl phthalate	ND		2860	2330	82	2850	2670	94	14	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	ND		2860	2600	91	2850	2760	97	6	40-140/30
118-74-1	Hexachlorobenzene	ND		2860	2300	80	2850	2600	91	12	40-140/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34998-MS	R33853.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231
OP34998-MSD	R33854.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231
MC24546-3	R33855.D	1	09/27/13	KR	09/26/13	OP34998	MSR1231

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

MC24546-3

CAS No.	Compound	MC24546-3 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		2860	763	27* [a]	2850	937	33* [a]	20	40-140/30
67-72-1	Hexachloroethane	ND		2860	1710	60	2850	2180	77	24	40-140/30
78-59-1	Isophorone	ND		2860	1900	66	2850	2320	82	20	40-140/30
88-74-4	2-Nitroaniline	ND		2860	2460	86	2850	2750	97	11	40-140/30
99-09-2	3-Nitroaniline	ND		2860	2120	74	2850	2510	88	17	40-140/30
100-01-6	4-Nitroaniline	ND		2860	2390	84	2850	2620	92	9	40-140/30
98-95-3	Nitrobenzene	ND		2860	1720	60	2850	2130	75	21	40-140/30
62-75-9	n-Nitrosodimethylamine	ND		2860	1750	61	2850	2170	76	21	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	ND		2860	1880	66	2850	2320	82	21	40-140/30
86-30-6	N-Nitrosodiphenylamine	ND		2860	2410	84	2850	2670	94	10	40-140/30
110-86-1	Pyridine	ND		2860	1410	49	2850	1860	65	28	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC24546-3	Limits
367-12-4	2-Fluorophenol	70%	83%	73%	30-130%
4165-62-2	Phenol-d5	69%	83%	70%	30-130%
118-79-6	2,4,6-Tribromophenol	74%	82%	72%	30-130%
4165-60-0	Nitrobenzene-d5	62%	77%	65%	30-130%
321-60-8	2-Fluorobiphenyl	73%	87%	74%	30-130%
1718-51-0	Terphenyl-d14	86%	92%	82%	30-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(b) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34999-MS	W14639.D	1	09/27/13	KR	09/26/13	OP34999	MSW660
OP34999-MSD	W14640.D	1	09/27/13	KR	09/26/13	OP34999	MSW660
MC24546-3	W14641.D	1	09/27/13	KR	09/26/13	OP34999	MSW660

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

MC24546-3

CAS No.	Compound	MC24546-3 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	ND		2860	1860	65	2850	2180	77	16	40-140/30
208-96-8	Acenaphthylene	ND		2860	1830	64	2850	2140	75	16	40-140/30
120-12-7	Anthracene	ND		2860	2110	74	2850	2270	80	7	40-140/30
56-55-3	Benzo(a)anthracene	ND		2860	2620	92	2850	2790	98	6	40-140/30
50-32-8	Benzo(a)pyrene	ND		2860	2300	80	2850	2460	86	7	40-140/30
205-99-2	Benzo(b)fluoranthene	ND		2860	2730	96	2850	2930	103	7	40-140/30
191-24-2	Benzo(g,h,i)perylene	ND		2860	2320	81	2850	2520	89	8	40-140/30
207-08-9	Benzo(k)fluoranthene	ND		2860	2590	91	2850	2750	97	6	40-140/30
218-01-9	Chrysene	ND		2860	2010	70	2850	2160	76	7	40-140/30
53-70-3	Dibenzo(a,h)anthracene	ND		2860	2370	83	2850	2590	91	9	40-140/30
206-44-0	Fluoranthene	ND		2860	2460	86	2850	2590	91	5	40-140/30
86-73-7	Fluorene	ND		2860	2080	73	2850	2350	83	12	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		2860	2390	84	2850	2610	92	9	40-140/30
90-12-0	1-Methylnaphthalene	ND		2860	1900	66	2850	2230	78	16	40-140/30
91-57-6	2-Methylnaphthalene	ND		2860	1930	68	2850	2250	79	15	40-140/30
85-01-8	Phenanthrene	ND		2860	2030	71	2850	2200	77	8	40-140/30
129-00-0	Pyrene	ND		2860	2340	82	2850	2490	87	6	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC24546-3	Limits
367-12-4	2-Fluorophenol	35%	40%	37%	15-110%
4165-62-2	Phenol-d5	33%	39%	36%	15-110%
118-79-6	2,4,6-Tribromophenol	46%	51%	41%	15-110%
4165-60-0	Nitrobenzene-d5	72%	84%	76%	30-130%
321-60-8	2-Fluorobiphenyl	68%	81%	72%	30-130%
1718-51-0	Terphenyl-d14	99%	104%	95%	30-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	MSR1231-CC1159	**Injection Date:**	09/27/13
Lab File ID:	R33837.D	**Injection Time:**	07:48
Instrument ID:	GCMSR	**Method:**	SW846 8270C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	71081	3.83	266294	4.88	161625	6.39	285718	7.75	320038	10.66	300208	12.24
Upper Limit [a]	142162	4.33	532588	5.38	323250	6.89	571436	8.25	640076	11.16	600416	12.74
Lower Limit [b]	35541	3.33	133147	4.38	80813	5.89	142859	7.25	160019	10.16	150104	11.74

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
OP34971-MB	69141	3.83	253156	4.87	154986	6.39	262679	7.74	276239	10.66	271774	12.23
OP34971-BS	70251	3.83	254225	4.88	156620	6.39	266699	7.75	287171	10.66	272501	12.23
ZZZZZZ	67642	3.83	239552	4.87	149777	6.39	255409	7.75	277966	10.66	264654	12.23
OP34972-MB	84129	3.83	299892	4.87	187524	6.39	325376	7.75	357264	10.66	348804	12.23
OP34972-BS	78607	3.83	285463	4.88	174089	6.39	302280	7.75	329562	10.66	319496	12.24
ZZZZZZ	79320	3.83	288025	4.87	181075	6.39	309165	7.75	341858	10.66	330155	12.23
ZZZZZZ	72344	3.83	264338	4.87	162695	6.39	283055	7.75	312862	10.66	303169	12.23
ZZZZZZ	75572	3.83	282434	4.87	174807	6.39	304295	7.75	335140	10.66	317723	12.23
ZZZZZZ	73588	3.83	274230	4.88	173842	6.39	294161	7.75	334389	10.66	320813	12.23
ZZZZZZ	75459	3.83	270187	4.87	171432	6.39	291245	7.75	328319	10.66	328074	12.23
ZZZZZZ	75960	3.83	267393	4.87	166225	6.39	296751	7.75	323919	10.66	318859	12.23
ZZZZZZ	77510	3.83	290588	4.87	179969	6.39	312465	7.74	341583	10.66	329193	12.24
ZZZZZZ	76698	3.83	278719	4.87	173950	6.39	299107	7.75	327559	10.66	328089	12.24
OP34998-MB	77543	3.83	278497	4.87	169910	6.39	285377	7.75	325133	10.66	312520	12.23
OP34998-BS	78587	3.83	287391	4.88	175848	6.39	301343	7.75	336974	10.66	328864	12.24
OP34998-MS	83092	3.83	305289	4.88	185401	6.39	313219	7.75	341617	10.66	332423	12.24
OP34998-MSD	78723	3.83	290315	4.87	179034	6.39	310199	7.75	345810	10.66	334520	12.23
MC24546-3	80467	3.83	293122	4.87	181984	6.39	315477	7.74	340877	10.66	329731	12.23
ZZZZZZ	78978	3.83	284077	4.87	178560	6.39	312929	7.74	340930	10.66	324198	12.23
ZZZZZZ	87016	3.86	264226	4.90	183572	6.40	303082	7.75	330296	10.66	314248	12.24
ZZZZZZ	75420	3.83	269854	4.87	163872	6.39	286691	7.75	309334	10.66	297324	12.23
ZZZZZZ	70705	3.83	258130	4.87	158011	6.39	276364	7.74	301279	10.66	286553	12.23
ZZZZZZ	69055	3.83	257834	4.87	158535	6.39	274032	7.74	301308	10.66	296222	12.23
ZZZZZZ	78891	3.83	297498	4.87	186188	6.39	316269	7.75	340182	10.67	336469	12.24

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	MSW660-CC657	**Injection Date:**	09/27/13
Lab File ID:	W14631.D	**Injection Time:**	16:14
Instrument ID:	GCMSW	**Method:**	SW846 8270C BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	78082	4.52	200030	5.66	106261	7.31	177606	8.69	155352	11.57	296946	13.54
Upper Limit [a]	156164	5.02	400060	6.16	212522	7.81	355212	9.19	310704	12.07	593892	14.04
Lower Limit [b]	39041	4.02	100015	5.16	53131	6.81	88803	8.19	77676	11.07	148473	13.04

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
OP34882-MB	74592	4.52	193340	5.66	100688	7.31	170249	8.69	141053	11.57	279750	13.54
OP34882-BS	75263	4.52	194343	5.66	102803	7.31	172486	8.69	146830	11.57	281382	13.54
OP34882-MS	76188	4.52	197004	5.66	104404	7.31	173583	8.69	150027	11.57	287334	13.54
OP34882-MSD	65803	4.52	172660	5.66	91091	7.31	152437	8.70	131168	11.57	251603	13.54
MC24300-20	63596	4.52	168414	5.66	87506	7.31	148561	8.69	124012	11.56	244528	13.54
OP34999-MB	79601	4.52	204263	5.66	106998	7.31	178712	8.69	149263	11.57	284647	13.54
OP34999-BS	82226	4.52	210046	5.66	111043	7.31	184237	8.70	154017	11.57	288715	13.54
OP34999-MS	83395	4.52	215478	5.66	114528	7.31	188510	8.70	157345	11.57	297503	13.54
OP34999-MSD	73293	4.52	192497	5.66	100828	7.31	168796	8.69	142164	11.57	270514	13.54
MC24546-3	63784	4.52	167540	5.66	87335	7.31	148837	8.69	123833	11.57	245138	13.54
ZZZZZZ	73133	4.52	188261	5.66	97147	7.31	161257	8.69	131849	11.57	254538	13.54
ZZZZZZ	71743	4.52	185300	5.66	96741	7.31	157594	8.69	129378	11.57	247802	13.54
ZZZZZZ	65781	4.52	171935	5.66	90602	7.31	151028	8.69	124386	11.57	239063	13.54
ZZZZZZ	60914	4.52	162752	5.66	86057	7.31	146626	8.69	124653	11.57	245557	13.54
ZZZZZZ	63942	4.52	170429	5.66	89961	7.31	152504	8.69	129234	11.57	252365	13.54
ZZZZZZ	58287	4.52	156841	5.66	82094	7.31	138801	8.69	118710	11.57	233058	13.54
ZZZZZZ	59145	4.52	157065	5.66	82490	7.31	140997	8.69	119348	11.57	234092	13.54
ZZZZZZ	52828	4.52	143922	5.66	74218	7.31	126194	8.69	106707	11.57	211406	13.54
ZZZZZZ	59204	4.52	159855	5.66	84858	7.31	142673	8.69	122117	11.57	241530	13.54
ZZZZZZ	54147	4.52	144231	5.66	74787	7.31	122559	8.70	106158	11.57	212063	13.54
ZZZZZZ	51857	4.52	140290	5.66	73904	7.31	127208	8.69	107762	11.57	212348	13.54
ZZZZZZ	57164	4.52	150322	5.66	77857	7.31	127079	8.70	109452	11.57	217803	13.54

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

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

Semivolatile Surrogate Recovery Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Method: SW846 8270C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC24546-3	R33855.D	73	70	72	65	74	82
OP34998-BS	R33852.D	87	85	89	76	89	95
OP34998-MB	R33851.D	82	82	84	74	86	88
OP34998-MS	R33853.D	70	69	74	62	73	86
OP34998-MSD	R33854.D	83	83	82	77	87	92

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Method: SW846 8270C 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
MC24546-3	W14641.D	37	36	41	76	72	95
OP34999-BS	W14638.D	42	40	53	87	82	105
OP34999-MB	W14637.D	42	40	45	85	80	105
OP34999-MS	W14639.D	35	33	46	72	68	99
OP34999-MSD	W14640.D	40	39	51	84	81	104

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34909-MB	BK29872.D	1	09/25/13	NK	09/20/13	OP34909	GBK996

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

MC24546-3

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.60	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.4	0.90	ug/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	129%	61-167%
460-00-4	Bromofluorobenzene (S)	119%	61-167%

Method Blank Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35070-MB	YZ84345.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320

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

MC24546-1

CAS No.	Compound	Result	RL	MDL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.015	0.0045	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.015	0.0097	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	85%	36-173%
460-00-4	Bromofluorobenzene (S)	82%	36-173%

Method Blank Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBH1842-MB	BH31579.D	1	09/27/13	TB	n/a	n/a	GBH1842

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

MC24546-3

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	77%	61-116%

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34909-BS	BK29873.D	1	09/25/13	NK	09/20/13	OP34909	GBK996

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

MC24546-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	32.73	46.0	141	59-142
106-93-4	1,2-Dibromoethane	32.73	43.7	134	56-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	152%	61-167%
460-00-4	Bromofluorobenzene (S)	127%	61-167%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35070-BS	YZ84346.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320

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

MC24546-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
96-12-8	1,2-Dibromo-3-chloropropane	0.071	0.066	93	60-140
106-93-4	1,2-Dibromoethane	0.071	0.063	89	60-140

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	90%	36-173%
460-00-4	Bromofluorobenzene (S)	89%	36-173%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBH1842-BSP	BH31580.D	1	09/27/13	TB	n/a	n/a	GBH1842

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

MC24546-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (VOA)	20	15.7	79	66-126

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	77%	61-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP34909-MS	BK29874.D	1	09/25/13	NK	09/20/13	OP34909	GBK996
OP34909-MSD	BK29875.D	1	09/25/13	NK	09/20/13	OP34909	GBK996
MC24403-3	BK29876.D	1	09/25/13	NK	09/20/13	OP34909	GBK996

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

MC24546-3

CAS No.	Compound	MC24403-3 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		40.95	61.0	149	41.32	60.1	145	1	40-156/27
106-93-4	1,2-Dibromoethane	ND		40.95	56.6	138	41.32	56.3	136	1	48-141/27

CAS No.	Surrogate Recoveries	MS	MSD	MC24403-3	Limits
460-00-4	Bromofluorobenzene (S)	155%	159%	148%	61-167%
460-00-4	Bromofluorobenzene (S)	135%	133%	130%	61-167%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35070-MS	YZ84348.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320
OP35070-MSD	YZ84349.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320
MC24800-9	YZ84350.D	1	10/02/13	CZ	10/02/13	OP35070	GYZ7320

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

MC24546-1

CAS No.	Compound	MC24800-9 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	0.077	108	0.071	0.065	92	17	64-141/29
106-93-4	1,2-Dibromoethane	ND		0.071	0.072	101	0.071	0.064	90	12	63-163/27

CAS No.	Surrogate Recoveries	MS	MSD	MC24800-9	Limits
460-00-4	Bromofluorobenzene (S)	105%	97%	96%	36-173%
460-00-4	Bromofluorobenzene (S)	104%	94%	95%	36-173%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC24505-10MS	BH31595.D	1	09/28/13	TB	n/a	n/a	GBH1842
MC24505-10MSD	BH31596.D	1	09/28/13	TB	n/a	n/a	GBH1842
MC24505-10	BH31594.D	1	09/28/13	TB	n/a	n/a	GBH1842

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

MC24546-3

CAS No.	Compound	MC24505-10 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (VOA)	10 U		41.5	31.5	76	41.5	34.9	84	10	41-150/20

CAS No.	Surrogate Recoveries	MS	MSD	MC24505-10	Limits
	2,3,4-Trifluorotoluene	77%	77%	76%	61-116%

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, 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]
MC24546-1	YZ84347.D	92	89
OP35070-BS	YZ84346.D	90	89
OP35070-MB	YZ84345.D	85	82
OP35070-MS	YZ84348.D	105	104
OP35070-MSD	YZ84349.D	97	94

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, 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]
MC24546-3	BK29880.D	135	120
OP34909-BS	BK29873.D	152	127
OP34909-MB	BK29872.D	129	119
OP34909-MS	BK29874.D	155	135
OP34909-MSD	BK29875.D	159	133

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Method: SW846 8015	**Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
MC24546-3	BH31604.D	76
GBH1842-BSP	BH31580.D	77
GBH1842-MB	BH31579.D	77
MC24505-10MS	BH31595.D	77
MC24505-10MSD	BH31596.D	77

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

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	GBK996-ICC996	**Injection Date:**	09/25/13
Lab File ID:	BK29866.D	**Injection Time:**	12:06
Instrument ID:	GCBK	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	4.11	5.11

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP34909-MB	BK29872.D	09/25/13	15:39	4.11	5.12
OP34909-BS	BK29873.D	09/25/13	16:02	4.12	5.12
OP34909-MS	BK29874.D	09/25/13	16:25	4.12	5.12
OP34909-MSD	BK29875.D	09/25/13	16:48	4.12	5.12
MC24403-3	BK29876.D	09/25/13	17:16	4.12	5.12
ZZZZZZ	BK29877.D	09/25/13	17:39	4.12	5.12
ZZZZZZ	BK29878.D	09/25/13	18:03	4.12	5.12
ZZZZZZ	BK29879.D	09/25/13	18:27	4.12	5.12
MC24546-3	BK29880.D	09/25/13	18:51	4.12	5.12
ZZZZZZ	BK29881.D	09/25/13	19:15	4.12	5.12

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	GYZ7320-ICC7320	**Injection Date:**	10/02/13
Lab File ID:	YZ84340.D	**Injection Time:**	10:49
Instrument ID:	GCYZ	**Method:**	SW846 8011

	S1 [a] RT	S1 [b] RT
Check Std	3.11	3.02

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	YZ84342A.D	10/02/13	11:40	3.11	3.02
OP35070-MB	YZ84345.D	10/02/13	12:56	3.11	3.02
OP35070-BS	YZ84346.D	10/02/13	13:21	3.11	3.02
MC24546-1	YZ84347.D	10/02/13	13:46	3.11	3.02
OP35070-MS	YZ84348.D	10/02/13	14:11	3.11	3.02
OP35070-MSD	YZ84349.D	10/02/13	14:36	3.11	3.02
MC24800-9	YZ84350.D	10/02/13	15:02	3.11	3.02
GYZ7320-ECC732	YZ84351.D	10/02/13	15:27	3.11	3.02

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	GBH1842-CC1786	**Injection Date:**	09/27/13
Lab File ID:	BH31578.D	**Injection Time:**	15:40
Instrument ID:	GCBH	**Method:**	SW846 8015

	S1 [a] RT
Check Std	20.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
GBH1842-MB	BH31579.D	09/27/13	16:15	20.20
GBH1842-BSP	BH31580.D	09/27/13	16:50	20.20
ZZZZZZ	BH31581.D	09/27/13	20:29	20.21
ZZZZZZ	BH31582.D	09/27/13	21:03	20.20
ZZZZZZ	BH31583.D	09/27/13	21:38	20.20
ZZZZZZ	BH31584.D	09/27/13	22:12	20.20
ZZZZZZ	BH31585.D	09/27/13	22:46	20.20
ZZZZZZ	BH31586.D	09/27/13	23:21	20.20
ZZZZZZ	BH31587.D	09/27/13	23:55	20.20
ZZZZZZ	BH31588.D	09/28/13	00:29	20.20

Surrogate Compounds

S1 = 2,3,4-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	GBH1842-CC1786	**Injection Date:**	09/28/13
Lab File ID:	BH31589.D	**Injection Time:**	01:03
Instrument ID:	GCBH	**Method:**	SW846 8015

	S1 [a] RT
Check Std	20.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
ZZZZZZ	BH31590.D	09/28/13	01:38	20.20
ZZZZZZ	BH31591.D	09/28/13	02:12	20.20
ZZZZZZ	BH31592.D	09/28/13	02:46	20.20
ZZZZZZ	BH31593.D	09/28/13	03:20	20.20
MC24505-10	BH31594.D	09/28/13	03:55	20.20
MC24505-10MS	BH31595.D	09/28/13	04:29	20.20
MC24505-10MSD	BH31596.D	09/28/13	05:03	20.20
ZZZZZZ	BH31597.D	09/28/13	05:37	20.20
ZZZZZZ	BH31598.D	09/28/13	06:12	20.20
ZZZZZZ	BH31599.D	09/28/13	06:46	20.20

Surrogate Compounds

S1 = 2,3,4-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Check Std:	GBH1842-CC1786	**Injection Date:**	09/28/13
Lab File ID:	BH31600.D	**Injection Time:**	07:20
Instrument ID:	GCBH	**Method:**	SW846 8015

	S1 [a] RT
Check Std	20.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
ZZZZZZ	BH31601.D	09/28/13	07:54	20.20
ZZZZZZ	BH31602.D	09/28/13	08:29	20.20
ZZZZZZ	BH31603.D	09/28/13	09:03	20.20
MC24546-3	BH31604.D	09/28/13	09:37	20.20

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: MC24546
Account: SHELLWIC Shell Oil
Project: URSMOSTL: Roxana SVE System Extension, 900 South Central Ave, IL

Sample: MC24546-3 **Analyzed:** 23-SEP-13 by HS **Method:** SM21 2540 B MOD.
ClientID: SVE-40-091813(30-32')

Wet Weight (Total)	38.757	g
Tare Weight	26.906	g
Dry Weight (Total)	36.977	g
Solids, Percent	85	%