URS

January 19, 2011

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

Subject: **Supplemental Data**
Soil Vapor Sampling Report – 4th Quarter 2010
Roxana, Illinois
119115002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43-CA-16 and 18

Dear Mr. Nightingale:

On behalf of Shell Oil Products US, URS Corporation is submitting the enclosed laboratory report as additional information for the subject report (submitted January 14, 2011). As mentioned in the report (page 3-2), location VMP-4 at 5 feet was resampled on January 10, 2011, as the analytical results from the 4th quarter sampling event appeared anomalous. The results from the resampling appear more consistent with the results from prior events.

If you have any questions during your review, please contact Kevin Dyer, SOPUS project manager, at kevin.dyer@shell.com (618/288-7237), or me at bob_billman@urscorp.com (314/743-4108).

Sincerely,

Robert B. Billman
Senior Project Manager

Enclosures: URS Roxana Vapor Data Review form and Air Toxics laboratory report (original plus 2 copies)

Cc: Kevin Dyer, SOPUS
Marty Reynolds, Village of Roxana
David Webb, IDPH

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

Roxana Vapor Data Review

Laboratory SDG: 1101126A, B

Reviewer: Elizabeth Kunkel

Date Reviewed: 1/17/2011

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

Work Plan: Dissolved Phase Groundwater Investigation and P-60 Free Phase Product Delineation (2009)

Sample Identification
VMP-4-5-011011

1.0 Data Package Completeness

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

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

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

Yes, the laboratory case narrative indicated that LCS/LCSD recoveries for the compound chloromethane were outside evaluation criteria. Sample VMP-4-5-011011 was diluted due to high levels of non-target analytes. Although not indicated in the laboratory case narrative, analytes were detected in the method blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

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

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
1101126A-02A	TO-15	1,2-Dichlorobenzene	2.3 ppbv /14 µg/m^3
1101126B-02A	Natural gases	Oxygen	0.0094%
1101126B-02A	Natural gases	Nitrogen	0.034%

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. No qualification of data was

required.

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/RPD Criteria
1101126A-04A/AA	TO-15	Chloromethane	**63/60**	5	70-130/25

Analytical data that required qualification based on LCS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
VMP-4-5-011011	TO-15	Chloromethane	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

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

MS/MSD samples are not applicable for vapor samples, due to inability to spike the samples.

8.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

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

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

Air Toxics LTD.
Laboratory Services Since 1989

1/14/2011
Mr. Jeff Adams
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Dissolved Phase
Project #:
Workorder #: 1101126A

Dear Mr. Jeff Adams

The following report includes the data for the above referenced project for sample(s) received on 1/11/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jacquelyn Luta at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Jacquelyn Luta

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1101126A

Work Order Summary

CLIENT:	Mr. Jeff Adams URS Corporation 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	**BILL TO:**	Accounts Payable Austin URS Corporation P.O. BOX 203970 Austin, TX 78720-1088
PHONE:	314-429-0100	**P.O. #**	21562291.00005
FAX:		**PROJECT #**	Roxana Dissolved Phase
DATE RECEIVED:	01/11/2011	**CONTACT:**	Jacquelyn Luta
DATE COMPLETED:	01/14/2011		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VMP-4-5-011011	Modified TO-15	2.6 "Hg	15 psi
02A	Lab Blank	Modified TO-15	NA	NA
03A	CCV	Modified TO-15	NA	NA
04A	LCS	Modified TO-15	NA	NA
04AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 01/14/11

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
URS Corporation
Workorder# 1101126A

One 1 Liter Summa Canister sample was received on January 11, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

Dilution was performed on sample VMP-4-5-011011 due to the presence of high level non-target species.

All Quality Control Limit exceedences and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV and/or LCS.
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS

Client Sample ID: VMP-4-5-011011

Lab ID#: 1101126A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	7600	1200 J	18000	2800 J
Hexane	1900	220000	6700	790000
Cyclohexane	1900	220000	6600	770000
2,2,4-Trimethylpentane	1900	290000	8900	1400000
Benzene	1900	3300	6100	11000
Heptane	1900	73000	7800	300000

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Laboratory Services Since 1989

Client Sample ID: VMP-4-5-011011

Lab ID#: 1101126A-01A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011308**	**Date of Collection: 1/10/11 2:38:00 PM**	
Dil. Factor:	**381**	**Date of Analysis: 1/13/11 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1900	Not Detected	9400	Not Detected
Freon 114	1900	Not Detected	13000	Not Detected
Chloromethane	7600	Not Detected UJ	16000	Not Detected UJ
Vinyl Chloride	1900	Not Detected	4900	Not Detected
1,3-Butadiene	1900	Not Detected	4200	Not Detected
Bromomethane	1900	Not Detected	7400	Not Detected
Chloroethane	1900	Not Detected	5000	Not Detected
Freon 11	1900	Not Detected	11000	Not Detected
Ethanol	7600	Not Detected	14000	Not Detected
Freon 113	1900	Not Detected	15000	Not Detected
1,1-Dichloroethene	1900	Not Detected	7600	Not Detected
Acetone	7600	1200 J	18000	2800 J
2-Propanol	7600	Not Detected	19000	Not Detected
Carbon Disulfide	1900	Not Detected	5900	Not Detected
3-Chloropropene	7600	Not Detected	24000	Not Detected
Methylene Chloride	1900	Not Detected	6600	Not Detected
Methyl tert-butyl ether	1900	Not Detected	6900	Not Detected
trans-1,2-Dichloroethene	1900	Not Detected	7600	Not Detected
Hexane	1900	220000	6700	790000
1,1-Dichloroethane	1900	Not Detected	7700	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1900	Not Detected	5600	Not Detected
cis-1,2-Dichloroethene	1900	Not Detected	7600	Not Detected
Tetrahydrofuran	1900	Not Detected	5600	Not Detected
Chloroform	1900	Not Detected	9300	Not Detected
1,1,1-Trichloroethane	1900	Not Detected	10000	Not Detected
Cyclohexane	1900	220000	6600	770000
Carbon Tetrachloride	1900	Not Detected	12000	Not Detected
2,2,4-Trimethylpentane	1900	290000	8900	1400000
Benzene	1900	3300	6100	11000
1,2-Dichloroethane	1900	Not Detected	7700	Not Detected
Heptane	1900	73000	7800	300000
Trichloroethene	1900	Not Detected	10000	Not Detected
1,2-Dichloropropane	1900	Not Detected	8800	Not Detected
1,4-Dioxane	7600	Not Detected	27000	Not Detected
Bromodichloromethane	1900	Not Detected	13000	Not Detected
cis-1,3-Dichloropropene	1900	Not Detected	8600	Not Detected
4-Methyl-2-pentanone	1900	Not Detected	7800	Not Detected
Toluene	1900	Not Detected	7200	Not Detected
trans-1,3-Dichloropropene	1900	Not Detected	8600	Not Detected
1,1,2-Trichloroethane	1900	Not Detected	10000	Not Detected
Tetrachloroethene	1900	Not Detected	13000	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: VMP-4-5-011011

Lab ID#: 1101126A-01A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011308**	**Date of Collection: 1/10/11 2:38:00 PM**	
Dil. Factor:	**381**	**Date of Analysis: 1/13/11 01:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	7600	Not Detected	31000	Not Detected
Dibromochloromethane	1900	Not Detected	16000	Not Detected
1,2-Dibromoethane (EDB)	1900	Not Detected	15000	Not Detected
Chlorobenzene	1900	Not Detected	8800	Not Detected
Ethyl Benzene	1900	Not Detected	8300	Not Detected
m,p-Xylene	1900	Not Detected	8300	Not Detected
o-Xylene	1900	Not Detected	8300	Not Detected
Styrene	1900	Not Detected	8100	Not Detected
Bromoform	1900	Not Detected	20000	Not Detected
Cumene	1900	Not Detected	9400	Not Detected
1,1,2,2-Tetrachloroethane	1900	Not Detected	13000	Not Detected
Propylbenzene	1900	Not Detected	9400	Not Detected
4-Ethyltoluene	1900	Not Detected	9400	Not Detected
1,3,5-Trimethylbenzene	1900	Not Detected	9400	Not Detected
1,2,4-Trimethylbenzene	1900	Not Detected	9400	Not Detected
1,3-Dichlorobenzene	1900	Not Detected	11000	Not Detected
1,4-Dichlorobenzene	1900	Not Detected	11000	Not Detected
alpha-Chlorotoluene	1900	Not Detected	9900	Not Detected
1,2-Dichlorobenzene	1900	Not Detected	11000	Not Detected
1,2,4-Trichlorobenzene	7600	Not Detected	56000	Not Detected
Hexachlorobutadiene	7600	Not Detected	81000	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.
J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1101126A-02A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011306c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 11:19 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected UJ	41	Not Detected UJ
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	Not Detected	15	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1101126A-02A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011306c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 11:19 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	20	Not Detected	82	Not Detected
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	2.3 J	30	14 J
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.
J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1101126A-03A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 08:51 AM**	

Compound	%Recovery
Freon 12	111
Freon 114	117
Chloromethane	62 Q
Vinyl Chloride	101
1,3-Butadiene	97
Bromomethane	115
Chloroethane	111
Freon 11	113
Ethanol	82
Freon 113	111
1,1-Dichloroethene	105
Acetone	98
2-Propanol	82
Carbon Disulfide	110
3-Chloropropene	110
Methylene Chloride	96
Methyl tert-butyl ether	86
trans-1,2-Dichloroethene	106
Hexane	99
1,1-Dichloroethane	104
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	104
Tetrahydrofuran	92
Chloroform	110
1,1,1-Trichloroethane	104
Cyclohexane	109
Carbon Tetrachloride	113
2,2,4-Trimethylpentane	99
Benzene	109
1,2-Dichloroethane	101
Heptane	110
Trichloroethene	108
1,2-Dichloropropane	103
1,4-Dioxane	109
Bromodichloromethane	110
cis-1,3-Dichloropropene	104
4-Methyl-2-pentanone	103
Toluene	108
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	112
Tetrachloroethene	107

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1101126A-03A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 08:51 AM**	

Compound	%Recovery
2-Hexanone	98
Dibromochloromethane	115
1,2-Dibromoethane (EDB)	113
Chlorobenzene	109
Ethyl Benzene	111
m,p-Xylene	107
o-Xylene	106
Styrene	104
Bromoform	116
Cumene	108
1,1,2,2-Tetrachloroethane	110
Propylbenzene	107
4-Ethyltoluene	105
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	98
1,3-Dichlorobenzene	103
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	81
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	72
Hexachlorobutadiene	82

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	109	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1101126A-04A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 09:28 AM**	

Compound	%Recovery
Freon 12	112
Freon 114	116
Chloromethane	63 Q
Vinyl Chloride	99
1,3-Butadiene	97
Bromomethane	115
Chloroethane	107
Freon 11	112
Ethanol	94
Freon 113	110
1,1-Dichloroethene	107
Acetone	104
2-Propanol	89
Carbon Disulfide	119
3-Chloropropene	118
Methylene Chloride	95
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	112
Hexane	96
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	110
cis-1,2-Dichloroethene	104
Tetrahydrofuran	91
Chloroform	109
1,1,1-Trichloroethane	103
Cyclohexane	110
Carbon Tetrachloride	113
2,2,4-Trimethylpentane	98
Benzene	110
1,2-Dichloroethane	101
Heptane	111
Trichloroethene	108
1,2-Dichloropropane	105
1,4-Dioxane	111
Bromodichloromethane	114
cis-1,3-Dichloropropene	106
4-Methyl-2-pentanone	108
Toluene	109
trans-1,3-Dichloropropene	111
1,1,2-Trichloroethane	116
Tetrachloroethene	106

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1101126A-04A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 09:28 AM**	

Compound	%Recovery
2-Hexanone	101
Dibromochloromethane	120
1,2-Dibromoethane (EDB)	115
Chlorobenzene	113
Ethyl Benzene	113
m,p-Xylene	111
o-Xylene	113
Styrene	119
Bromoform	125
Cumene	114
1,1,2,2-Tetrachloroethane	116
Propylbenzene	116
4-Ethyltoluene	109
1,3,5-Trimethylbenzene	115
1,2,4-Trimethylbenzene	110
1,3-Dichlorobenzene	111
1,4-Dichlorobenzene	111
alpha-Chlorotoluene	120
1,2-Dichlorobenzene	120
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	111

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1101126A-04AA

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 10:11 AM**	

Compound	%Recovery
Freon 12	98
Freon 114	106
Chloromethane	60 Q
Vinyl Chloride	94
1,3-Butadiene	92
Bromomethane	109
Chloroethane	103
Freon 11	108
Ethanol	91
Freon 113	106
1,1-Dichloroethene	104
Acetone	100
2-Propanol	87
Carbon Disulfide	117
3-Chloropropene	115
Methylene Chloride	95
Methyl tert-butyl ether	85
trans-1,2-Dichloroethene	110
Hexane	96
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	107
cis-1,2-Dichloroethene	102
Tetrahydrofuran	90
Chloroform	108
1,1,1-Trichloroethane	103
Cyclohexane	108
Carbon Tetrachloride	114
2,2,4-Trimethylpentane	99
Benzene	108
1,2-Dichloroethane	101
Heptane	109
Trichloroethene	108
1,2-Dichloropropane	105
1,4-Dioxane	109
Bromodichloromethane	114
cis-1,3-Dichloropropene	107
4-Methyl-2-pentanone	105
Toluene	109
trans-1,3-Dichloropropene	112
1,1,2-Trichloroethane	116
Tetrachloroethene	106

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1101126A-04AA

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**b011304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/13/11 10:11 AM**	

Compound	%Recovery
2-Hexanone	101
Dibromochloromethane	120
1,2-Dibromoethane (EDB)	116
Chlorobenzene	112
Ethyl Benzene	113
m,p-Xylene	108
o-Xylene	111
Styrene	116
Bromoform	123
Cumene	114
1,1,2,2-Tetrachloroethane	116
Propylbenzene	114
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	114
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	112
1,4-Dichlorobenzene	110
alpha-Chlorotoluene	122
1,2-Dichlorobenzene	115
1,2,4-Trichlorobenzene	107
Hexachlorobutadiene	109

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	107	70-130

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1/14/2011
Mr. Jeff Adams
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Dissolved Phase
Project #:
Workorder #: 1101126B

Dear Mr. Jeff Adams

The following report includes the data for the above referenced project for sample(s) received on 1/11/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jacquelyn Luta at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Jacquelyn Luta

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1101126B

Work Order Summary

CLIENT:	Mr. Jeff Adams URS Corporation 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	**BILL TO:**	Accounts Payable Austin URS Corporation P.O. BOX 203970 Austin, TX 78720-1088
PHONE:	314-429-0100	**P.O. #**	21562291.00005
FAX:		**PROJECT #**	Roxana Dissolved Phase
DATE RECEIVED:	01/11/2011	**CONTACT:**	Jacquelyn Luta
DATE COMPLETED:	01/14/2011		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VMP-4-5-011011	Modified ASTM D-1946	2.6 "Hg	15 psi
02A	Lab Blank	Modified ASTM D-1946	NA	NA
02B	Lab Blank	Modified ASTM D-1946	NA	NA
03A	LCS	Modified ASTM D-1946	NA	NA
03AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Linda D. Frumarx DATE: 01/14/11

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
URS Corporation
Workorder# 1101126B

One 1 Liter Summa Canister sample was received on January 11, 2011. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-4-5-011011

Lab ID#: 1101126B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	0.22	75
Methane	0.00022	10
Carbon Dioxide	0.022	12
Ethane	0.0022	0.0040
Helium	0.11	0.0039 J

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Laboratory Services Since 1989

Client Sample ID: VMP-4-5-011011

Lab ID#: 1101126B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011217**	**Date of Collection: 1/10/11 2:38:00 PM**	
Dil. Factor:	**2.21**	**Date of Analysis: 1/12/11 01:53 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.22	1.3
Nitrogen	0.22	75
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	10
Carbon Dioxide	0.022	12
Ethane	0.0022	0.0040
Ethene	0.0022	Not Detected
Helium	0.11	0.0039 J

J = Estimated value.

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1101126B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011208a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/12/11 10:07 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.10	0.0094 J
Nitrogen	0.10	0.034 J
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1101126B-02B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011205ba**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/12/11 08:23 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1101126B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/12/11 07:05 AM**	

Compound	%Recovery
Oxygen	99
Nitrogen	100
Carbon Monoxide	100
Methane	98
Carbon Dioxide	99
Ethane	99
Ethene	99
Helium	96

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1101126B-03AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011234**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/12/11 10:08 PM**	

Compound	%Recovery
Oxygen	99
Nitrogen	100
Carbon Monoxide	98
Methane	98
Carbon Dioxide	99
Ethane	100
Ethene	100
Helium	95

Container Type: NA - Not Applicable