URS

April 8, 2014

Illinois Department of Transportation
Kirk H. Brown, PE
Project Support Engineer
Division of Highways/Region 5/District 8
1102 Eastport Plaza Drive
Collinsville, Illinois 62234-6198

Subject: **Analytical Data for Soil Vapor Sampling according to Illinois Department of Transportation (IDOT) Permit No. 8-28548**

Dear Mr. Brown:

URS Corporation, on behalf of Shell Oil Products US (SOPUS), is submitting analytical results for soil vapor sampling conducted according to IDOT Permit No. 8-28548. Enclosed are the analytical results for the following sampling activities recently conducted:

- VMP-55 (Vapor Samples)

If you have any questions or require further information please contact Bob Billman at bob.billman@urs.com (314/743-4108).

Sincerely,
URS Corporation, on behalf of Shell Oil Products US

Michael Currier
Environmental Scientist

Bob Billman
Senior Project Manager

Attachments

cc: Kevin Dyer, SOPUS
Repositories – Roxana Public Works, Roxana Public Library, website
Project File

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

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5/15/2013
Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04002
Workorder #: 1305032A

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/2/2013 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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

Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	14000	22000	51000	76000
Cyclohexane	14000	92000	50000	320000
2,2,4-Trimethylpentane	14000	170000	68000	780000
Butane	58000	2000000	140000	4700000
Isopentane	58000	3700000	170000	11000000

Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5800	17000	20000	61000

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

Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03B

Cyclohexane	5800	90000	20000	310000
2,2,4-Trimethylpentane	5800	150000	27000	700000
Butane	23000	1800000	55000	4400000
Isopentane	23000	3400000 E	68000	9900000 E

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Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2050610**	**Date of Collection:**	**5/1/13 2:30:00 PM**
Dil. Factor:	**28900**	**Date of Analysis:**	**5/6/13 03:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	14000	Not Detected	71000	Not Detected
Freon 114	14000	Not Detected	100000	Not Detected
Chloromethane	140000	Not Detected	300000	Not Detected
Vinyl Chloride	14000	Not Detected	37000	Not Detected
1,3-Butadiene	14000	Not Detected	32000	Not Detected
Bromomethane	140000	Not Detected	560000	Not Detected
Chloroethane	58000	Not Detected	150000	Not Detected
Freon 11	14000	Not Detected	81000	Not Detected
Ethanol	58000	Not Detected	110000	Not Detected
Freon 113	14000	Not Detected	110000	Not Detected
1,1-Dichloroethene	14000	Not Detected	57000	Not Detected
Acetone	140000	Not Detected	340000	Not Detected
2-Propanol	58000	Not Detected	140000	Not Detected
Carbon Disulfide	58000	Not Detected	180000	Not Detected
3-Chloropropene	58000	Not Detected	180000	Not Detected
Methylene Chloride	140000	Not Detected	500000	Not Detected
Methyl tert-butyl ether	14000	Not Detected	52000	Not Detected
trans-1,2-Dichloroethene	14000	Not Detected	57000	Not Detected
Hexane	14000	22000	51000	76000
1,1-Dichloroethane	14000	Not Detected	58000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	58000	Not Detected	170000	Not Detected
cis-1,2-Dichloroethene	14000	Not Detected	57000	Not Detected
Tetrahydrofuran	14000	Not Detected	43000	Not Detected
Chloroform	14000	Not Detected	70000	Not Detected
1,1,1-Trichloroethane	14000	Not Detected	79000	Not Detected
Cyclohexane	14000	92000	50000	320000
Carbon Tetrachloride	14000	Not Detected	91000	Not Detected
2,2,4-Trimethylpentane	14000	170000	68000	780000
Benzene	14000	Not Detected	46000	Not Detected
1,2-Dichloroethane	14000	Not Detected	58000	Not Detected
Heptane	14000	Not Detected	59000	Not Detected
Trichloroethene	14000	Not Detected	78000	Not Detected
1,2-Dichloropropane	14000	Not Detected	67000	Not Detected
1,4-Dioxane	58000	Not Detected	210000	Not Detected
Bromodichloromethane	14000	Not Detected	97000	Not Detected
cis-1,3-Dichloropropene	14000	Not Detected	66000	Not Detected
4-Methyl-2-pentanone	14000	Not Detected	59000	Not Detected
Toluene	14000	Not Detected	54000	Not Detected
trans-1,3-Dichloropropene	14000	Not Detected	66000	Not Detected
1,1,2-Trichloroethane	14000	Not Detected	79000	Not Detected
Tetrachloroethene	14000	Not Detected	98000	Not Detected
2-Hexanone	58000	Not Detected	240000	Not Detected

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Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2050610**	**Date of Collection:**	**5/1/13 2:30:00 PM**
Dil. Factor:	**28900**	**Date of Analysis:**	**5/6/13 03:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	14000	Not Detected	120000	Not Detected
1,2-Dibromoethane (EDB)	14000	Not Detected	110000	Not Detected
Chlorobenzene	14000	Not Detected	66000	Not Detected
Ethyl Benzene	14000	Not Detected	63000	Not Detected
m,p-Xylene	14000	Not Detected	63000	Not Detected
o-Xylene	14000	Not Detected	63000	Not Detected
Styrene	14000	Not Detected	62000	Not Detected
Bromoform	14000	Not Detected	150000	Not Detected
Cumene	14000	Not Detected	71000	Not Detected
1,1,2,2-Tetrachloroethane	14000	Not Detected	99000	Not Detected
Propylbenzene	14000	Not Detected	71000	Not Detected
4-Ethyltoluene	14000	Not Detected	71000	Not Detected
1,3,5-Trimethylbenzene	14000	Not Detected	71000	Not Detected
1,2,4-Trimethylbenzene	14000	Not Detected	71000	Not Detected
1,3-Dichlorobenzene	14000	Not Detected	87000	Not Detected
1,4-Dichlorobenzene	14000	Not Detected	87000	Not Detected
alpha-Chlorotoluene	14000	Not Detected	75000	Not Detected
1,2-Dichlorobenzene	14000	Not Detected	87000	Not Detected
1,2,4-Trichlorobenzene	58000	Not Detected	430000	Not Detected
Hexachlorobutadiene	58000	Not Detected	620000	Not Detected
Butane	58000	2000000	140000	4700000
Isopentane	58000	3700000	170000	11000000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2050609**	**Date of Collection:**	**5/1/13 2:30:00 PM**
Dil. Factor:	**11600**	**Date of Analysis:**	**5/6/13 02:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5800	Not Detected	29000	Not Detected
Freon 114	5800	Not Detected	40000	Not Detected
Chloromethane	58000	Not Detected	120000	Not Detected
Vinyl Chloride	5800	Not Detected	15000	Not Detected
1,3-Butadiene	5800	Not Detected	13000	Not Detected
Bromomethane	58000	Not Detected	220000	Not Detected
Chloroethane	23000	Not Detected	61000	Not Detected
Freon 11	5800	Not Detected	32000	Not Detected
Ethanol	23000	Not Detected	44000	Not Detected
Freon 113	5800	Not Detected	44000	Not Detected
1,1-Dichloroethene	5800	Not Detected	23000	Not Detected
Acetone	58000	Not Detected	140000	Not Detected
2-Propanol	23000	Not Detected	57000	Not Detected
Carbon Disulfide	23000	Not Detected	72000	Not Detected
3-Chloropropene	23000	Not Detected	73000	Not Detected
Methylene Chloride	58000	Not Detected	200000	Not Detected
Methyl tert-butyl ether	5800	Not Detected	21000	Not Detected
trans-1,2-Dichloroethene	5800	Not Detected	23000	Not Detected
Hexane	5800	17000	20000	61000
1,1-Dichloroethane	5800	Not Detected	23000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	23000	Not Detected	68000	Not Detected
cis-1,2-Dichloroethene	5800	Not Detected	23000	Not Detected
Tetrahydrofuran	5800	Not Detected	17000	Not Detected
Chloroform	5800	Not Detected	28000	Not Detected
1,1,1-Trichloroethane	5800	Not Detected	32000	Not Detected
Cyclohexane	5800	90000	20000	310000
Carbon Tetrachloride	5800	Not Detected	36000	Not Detected
2,2,4-Trimethylpentane	5800	150000	27000	700000
Benzene	5800	Not Detected	18000	Not Detected
1,2-Dichloroethane	5800	Not Detected	23000	Not Detected
Heptane	5800	Not Detected	24000	Not Detected
Trichloroethene	5800	Not Detected	31000	Not Detected
1,2-Dichloropropane	5800	Not Detected	27000	Not Detected
1,4-Dioxane	23000	Not Detected	84000	Not Detected
Bromodichloromethane	5800	Not Detected	39000	Not Detected
cis-1,3-Dichloropropene	5800	Not Detected	26000	Not Detected
4-Methyl-2-pentanone	5800	Not Detected	24000	Not Detected
Toluene	5800	Not Detected	22000	Not Detected
trans-1,3-Dichloropropene	5800	Not Detected	26000	Not Detected
1,1,2-Trichloroethane	5800	Not Detected	32000	Not Detected
Tetrachloroethene	5800	Not Detected	39000	Not Detected
2-Hexanone	23000	Not Detected	95000	Not Detected

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Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032A-03B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2050609**	**Date of Collection:**	**5/1/13 2:30:00 PM**
Dil. Factor:	**11600**	**Date of Analysis:**	**5/6/13 02:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5800	Not Detected	49000	Not Detected
1,2-Dibromoethane (EDB)	5800	Not Detected	44000	Not Detected
Chlorobenzene	5800	Not Detected	27000	Not Detected
Ethyl Benzene	5800	Not Detected	25000	Not Detected
m,p-Xylene	5800	Not Detected	25000	Not Detected
o-Xylene	5800	Not Detected	25000	Not Detected
Styrene	5800	Not Detected	25000	Not Detected
Bromoform	5800	Not Detected	60000	Not Detected
Cumene	5800	Not Detected	28000	Not Detected
1,1,2,2-Tetrachloroethane	5800	Not Detected	40000	Not Detected
Propylbenzene	5800	Not Detected	28000	Not Detected
4-Ethyltoluene	5800	Not Detected	28000	Not Detected
1,3,5-Trimethylbenzene	5800	Not Detected	28000	Not Detected
1,2,4-Trimethylbenzene	5800	Not Detected	28000	Not Detected
1,3-Dichlorobenzene	5800	Not Detected	35000	Not Detected
1,4-Dichlorobenzene	5800	Not Detected	35000	Not Detected
alpha-Chlorotoluene	5800	Not Detected	30000	Not Detected
1,2-Dichlorobenzene	5800	Not Detected	35000	Not Detected
1,2,4-Trichlorobenzene	23000	Not Detected	170000	Not Detected
Hexachlorobutadiene	23000	Not Detected	250000	Not Detected
Butane	23000	1800000	55000	4400000
Isopentane	23000	3400000 E	68000	9900000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	96	70-130

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5/17/2013
Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04002
Workorder #: 1305032B

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/2/2013 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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

Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.29	1.6
Nitrogen	1.4	58
Methane	0.00029	20
Carbon Dioxide	0.029	19
Ethane	0.0029	0.012

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Client Sample ID: VMP-55-20-050113

Lab ID#: 1305032B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051214**	**Date of Collection: 5/1/13 2:30:00 PM**	
Dil. Factor:	**2.89**	**Date of Analysis: 5/12/13 12:59 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.29	1.6
Nitrogen	1.4	58
Carbon Monoxide	0.029	Not Detected
Methane	0.00029	20
Carbon Dioxide	0.029	19
Ethane	0.0029	0.012
Ethene	0.0029	Not Detected
Helium	0.14	Not Detected

Container Type: 1 Liter Summa Canister

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8/21/2013
Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04003
Workorder #: 1308198A

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 8/8/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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

Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	790	280 J	2800	970 J
Cyclohexane	790	4200	2700	15000
2,2,4-Trimethylpentane	790	180000	3700	830000
Benzene	790	650 J	2500	2100 J
Trichloroethene	790	370 J	4200	2000 J
Butane	3200	76000	7500	180000
Isopentane	3200	610000	9300	1800000

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Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14081428**	**Date of Collection:**	**8/7/13 1:45:00 PM**
Dil. Factor:	**158**	**Date of Analysis:**	**8/14/13 11:36 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	790	Not Detected	3900	Not Detected
Freon 114	790	Not Detected	5500	Not Detected
Chloromethane	3200	Not Detected	6500	Not Detected
Vinyl Chloride	790	Not Detected	2000	Not Detected
1,3-Butadiene	790	Not Detected	1700	Not Detected
Bromomethane	790	Not Detected	3100	Not Detected
Chloroethane	3200	Not Detected	8300	Not Detected
Freon 11	790	Not Detected	4400	Not Detected
Ethanol	3200	Not Detected	6000	Not Detected
Freon 113	790	Not Detected	6000	Not Detected
1,1-Dichloroethene	790	Not Detected	3100	Not Detected
Acetone	3200	Not Detected	7500	Not Detected
2-Propanol	3200	Not Detected	7800	Not Detected
Carbon Disulfide	790	Not Detected	2500	Not Detected
3-Chloropropene	3200	Not Detected	9900	Not Detected
Methylene Chloride	790	Not Detected	2700	Not Detected
Methyl tert-butyl ether	790	Not Detected	2800	Not Detected
trans-1,2-Dichloroethene	790	Not Detected	3100	Not Detected
Hexane	790	280 J	2800	970 J
1,1-Dichloroethane	790	Not Detected	3200	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3200	Not Detected	9300	Not Detected
cis-1,2-Dichloroethene	790	Not Detected	3100	Not Detected
Tetrahydrofuran	790	Not Detected	2300	Not Detected
Chloroform	790	Not Detected	3800	Not Detected
1,1,1-Trichloroethane	790	Not Detected	4300	Not Detected
Cyclohexane	790	4200	2700	15000
Carbon Tetrachloride	790	Not Detected	5000	Not Detected
2,2,4-Trimethylpentane	790	180000	3700	830000
Benzene	790	650 J	2500	2100 J
1,2-Dichloroethane	790	Not Detected	3200	Not Detected
Heptane	790	Not Detected	3200	Not Detected
Trichloroethene	790	370 J	4200	2000 J
1,2-Dichloropropane	790	Not Detected	3600	Not Detected
1,4-Dioxane	3200	Not Detected	11000	Not Detected
Bromodichloromethane	790	Not Detected	5300	Not Detected
cis-1,3-Dichloropropene	790	Not Detected	3600	Not Detected
4-Methyl-2-pentanone	790	Not Detected	3200	Not Detected
Toluene	790	Not Detected	3000	Not Detected
trans-1,3-Dichloropropene	790	Not Detected	3600	Not Detected
1,1,2-Trichloroethane	790	Not Detected	4300	Not Detected
Tetrachloroethene	790	Not Detected	5400	Not Detected
2-Hexanone	3200	Not Detected	13000	Not Detected

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Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14081428**	**Date of Collection:**	**8/7/13 1:45:00 PM**
Dil. Factor:	**158**	**Date of Analysis:**	**8/14/13 11:36 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	790	Not Detected	6700	Not Detected
1,2-Dibromoethane (EDB)	790	Not Detected	6100	Not Detected
Chlorobenzene	790	Not Detected	3600	Not Detected
Ethyl Benzene	790	Not Detected	3400	Not Detected
m,p-Xylene	790	Not Detected	3400	Not Detected
o-Xylene	790	Not Detected	3400	Not Detected
Styrene	790	Not Detected	3400	Not Detected
Bromoform	790	Not Detected	8200	Not Detected
Cumene	790	Not Detected	3900	Not Detected
1,1,2,2-Tetrachloroethane	790	Not Detected	5400	Not Detected
Propylbenzene	790	Not Detected	3900	Not Detected
4-Ethyltoluene	790	Not Detected	3900	Not Detected
1,3,5-Trimethylbenzene	790	Not Detected	3900	Not Detected
1,2,4-Trimethylbenzene	790	Not Detected	3900	Not Detected
1,3-Dichlorobenzene	790	Not Detected	4800	Not Detected
1,4-Dichlorobenzene	790	Not Detected	4800	Not Detected
alpha-Chlorotoluene	790	Not Detected	4100	Not Detected
1,2-Dichlorobenzene	790	Not Detected	4700	Not Detected
1,2,4-Trichlorobenzene	3200	Not Detected	23000	Not Detected
Hexachlorobutadiene	3200	Not Detected	34000	Not Detected
Butane	3200	76000	7500	180000
Isopentane	3200	610000	9300	1800000

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	90	70-130

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9/5/2013

Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04003
Workorder #: 1308198B

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 8/8/2013 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

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

Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.32	2.9
Nitrogen	1.6	70
Methane	0.00032	9.6
Carbon Dioxide	0.032	18

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

Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198B-04A

Ethane	0.0032	0.036

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Client Sample ID: VMP-55-20-080713

Lab ID#: 1308198B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10081615**	**Date of Collection: 8/7/13 1:45:00 PM**	
Dil. Factor:	**3.15**	**Date of Analysis: 8/16/13 01:26 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.32	2.9
Nitrogen	1.6	70
Carbon Monoxide	0.032	Not Detected
Methane	0.00032	9.6
Carbon Dioxide	0.032	18
Ethane	0.0032	0.036
Ethene	0.0032	Not Detected
Helium	0.16	Not Detected

Container Type: 1 Liter Summa Canister

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11/30/2013
Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04004
Workorder #: 1311235A

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 11/13/2013 at Air Toxics Ltd.

The data and associated QC analyzed by 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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

Client Sample ID: VMP-55-20-110813

Lab ID#: 1311235A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	220	1200	760	4200
2,2,4-Trimethylpentane	220	36000	1000	170000
Toluene	220	450	830	1700
Ethyl Benzene	220	92 J	960	400 J
m,p-Xylene	220	200 J	960	890 J
o-Xylene	220	75 J	960	330 J
Butane	880	15000	2100	36000
Isopentane	880	97000	2600	280000

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Client Sample ID: VMP-55-20-110813

Lab ID#: 1311235A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14112110**	**Date of Collection:**	**11/8/13 4:14:00 PM**
Dil. Factor:	**44.2**	**Date of Analysis:**	**11/21/13 05:07 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	220	Not Detected	1100	Not Detected
Freon 114	220	Not Detected	1500	Not Detected
Chloromethane	880	Not Detected	1800	Not Detected
Vinyl Chloride	220	Not Detected	560	Not Detected
1,3-Butadiene	220	Not Detected	490	Not Detected
Bromomethane	220	Not Detected	860	Not Detected
Chloroethane	880	Not Detected	2300	Not Detected
Freon 11	220	Not Detected	1200	Not Detected
Ethanol	880	Not Detected	1700	Not Detected
Freon 113	220	Not Detected	1700	Not Detected
1,1-Dichloroethene	220	Not Detected	880	Not Detected
Acetone	880	Not Detected	2100	Not Detected
2-Propanol	880	Not Detected	2200	Not Detected
Carbon Disulfide	220	Not Detected	690	Not Detected
3-Chloropropene	880	Not Detected	2800	Not Detected
Methylene Chloride	220	Not Detected	770	Not Detected
Methyl tert-butyl ether	220	Not Detected	800	Not Detected
trans-1,2-Dichloroethene	220	Not Detected	880	Not Detected
Hexane	220	Not Detected	780	Not Detected
1,1-Dichloroethane	220	Not Detected	890	Not Detected
2-Butanone (Methyl Ethyl Ketone)	880	Not Detected	2600	Not Detected
cis-1,2-Dichloroethene	220	Not Detected	880	Not Detected
Tetrahydrofuran	220	Not Detected	650	Not Detected
Chloroform	220	Not Detected	1100	Not Detected
1,1,1-Trichloroethane	220	Not Detected	1200	Not Detected
Cyclohexane	220	1200	760	4200
Carbon Tetrachloride	220	Not Detected	1400	Not Detected
2,2,4-Trimethylpentane	220	36000	1000	170000
Benzene	220	Not Detected	710	Not Detected
1,2-Dichloroethane	220	Not Detected	890	Not Detected
Heptane	220	Not Detected	900	Not Detected
Trichloroethene	220	Not Detected	1200	Not Detected
1,2-Dichloropropane	220	Not Detected	1000	Not Detected
1,4-Dioxane	880	Not Detected	3200	Not Detected
Bromodichloromethane	220	Not Detected	1500	Not Detected
cis-1,3-Dichloropropene	220	Not Detected	1000	Not Detected
4-Methyl-2-pentanone	220	Not Detected	900	Not Detected
Toluene	220	450	830	1700
trans-1,3-Dichloropropene	220	Not Detected	1000	Not Detected
1,1,2-Trichloroethane	220	Not Detected	1200	Not Detected
Tetrachloroethene	220	Not Detected	1500	Not Detected
2-Hexanone	880	Not Detected	3600	Not Detected

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Client Sample ID: VMP-55-20-110813

Lab ID#: 1311235A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14112110**	**Date of Collection:**	**11/8/13 4:14:00 PM**
Dil. Factor:	**44.2**	**Date of Analysis:**	**11/21/13 05:07 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	220	Not Detected	1900	Not Detected
1,2-Dibromoethane (EDB)	220	Not Detected	1700	Not Detected
Chlorobenzene	220	Not Detected	1000	Not Detected
Ethyl Benzene	220	92 J	960	400 J
m,p-Xylene	220	200 J	960	890 J
o-Xylene	220	75 J	960	330 J
Styrene	220	Not Detected	940	Not Detected
Bromoform	220	Not Detected	2300	Not Detected
Cumene	220	Not Detected	1100	Not Detected
1,1,2,2-Tetrachloroethane	220	Not Detected	1500	Not Detected
Propylbenzene	220	Not Detected	1100	Not Detected
4-Ethyltoluene	220	Not Detected	1100	Not Detected
1,3,5-Trimethylbenzene	220	Not Detected	1100	Not Detected
1,2,4-Trimethylbenzene	220	Not Detected	1100	Not Detected
1,3-Dichlorobenzene	220	Not Detected	1300	Not Detected
1,4-Dichlorobenzene	220	Not Detected	1300	Not Detected
alpha-Chlorotoluene	220	Not Detected	1100	Not Detected
1,2-Dichlorobenzene	220	Not Detected	1300	Not Detected
1,2,4-Trichlorobenzene	880	Not Detected	6600	Not Detected
Hexachlorobutadiene	880	Not Detected	9400	Not Detected
Butane	880	15000	2100	36000
Isopentane	880	97000	2600	280000

J = Estimated value.

Container Type: 1 Liter Summa Canister

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

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11/27/2013
Ms. Elizabeth Kunkel
URS Corporation
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Soil Vapor
Project #: 21562850.04004
Workorder #: 1311235B

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 11/13/2013 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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

Client Sample ID: VMP-55-20-110813

Lab ID#: 1311235B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.4
Nitrogen	1.3	75
Methane	0.00026	5.7
Carbon Dioxide	0.026	18
Ethane	0.0026	0.020

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Client Sample ID: VMP-55-20-110813

Lab ID#: 1311235B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10112121**	**Date of Collection: 11/8/13 4:14:00 PM**	
Dil. Factor:	**2.65**	**Date of Analysis: 11/21/13 05:41 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.4
Nitrogen	1.3	75
Carbon Monoxide	0.026	Not Detected
Methane	0.00026	5.7
Carbon Dioxide	0.026	18
Ethane	0.0026	0.020
Ethene	0.0026	Not Detected
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister