

August 6, 2018

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) Permits No. 8-28548 and No. 8-28875

Dear Mr. Brown,

AECOM, on behalf of Shell Oil Products US (SOPUS), is submitting the attached analytical results for soil vapor samples collected from the following vapor monitoring points in accordance with IDOT Permits No. 8-28548 and No. 8-28875:

- VMP-15
- VMP-55

If you have any questions or require further information, please contact Robert Mooshegian at robert.mooshegian@aecom.com (314/802-1185) or Samuel Fisher at samuel.fisher@aecom.com (314/802-1152).

Sincerely,
AECOM, on behalf of Shell Oil Products US



Samuel Fisher
Environmental Scientist

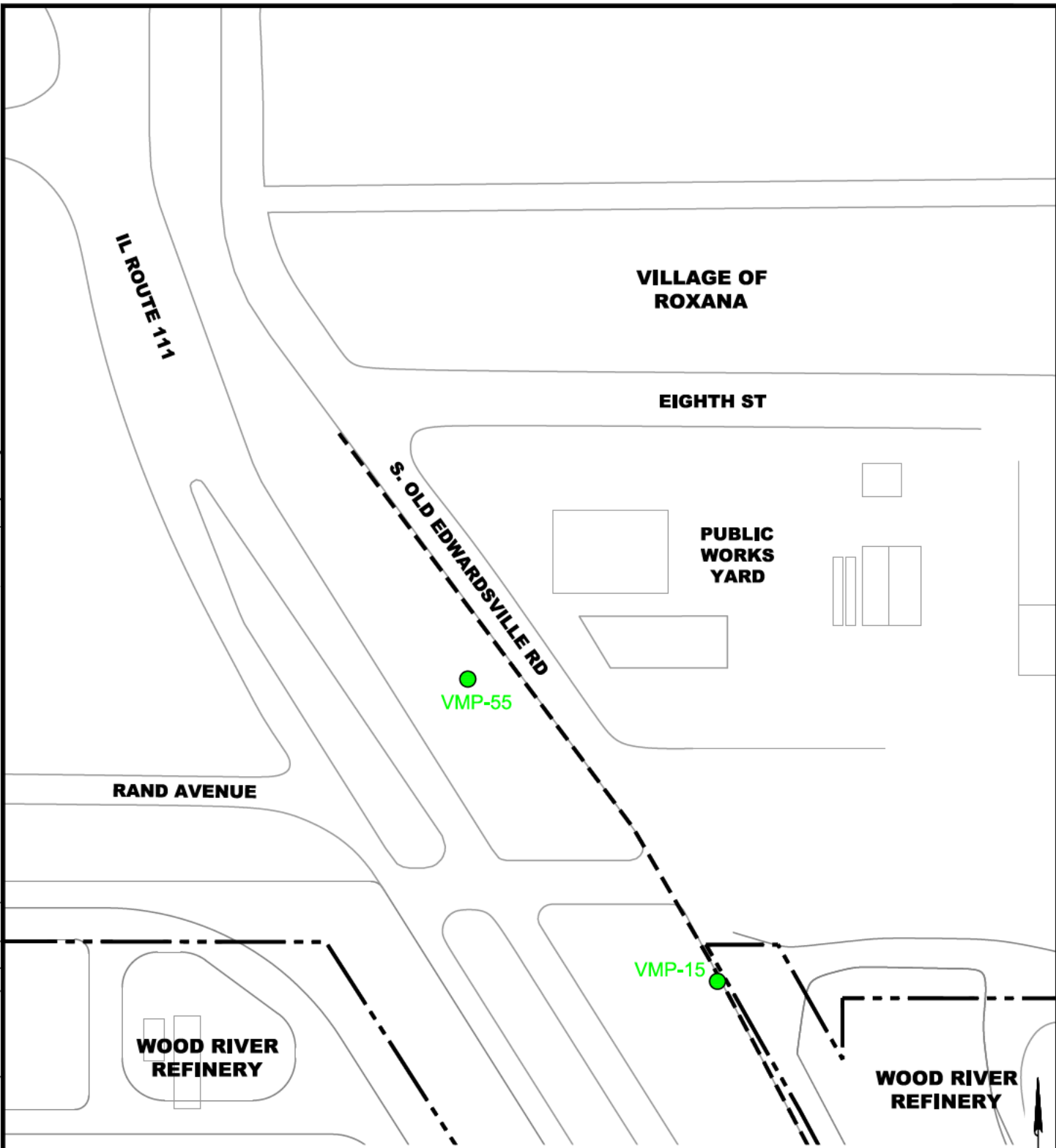


Robert E. Mooshegian, STS
Senior Program Manager




Attachments

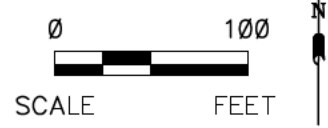
cc: Kevin Dyer, SOPUS
Repositories – Roxana Public Library, Website
Project File

File: P:\PROJECTS\ENVIRONMENTAL\SHLL\60477367_ROXANA2016\6.0_DELIVERABLES\SV_SVE_REPORTING\DOT\4016\FIGURES\FIGURE 1 VMP-15 AND VMP-55 LOCATION MAP.DWG Last edited: FEB. 15, 17 @ 1:51 p.m. by: david.dequire



LEGEND

-  VAPOR MONITORING POINT (VMP) LOCATION
-  APPROXIMATE BOUNDARY OF WOOD RIVER REFINERY
-  APPROXIMATE EAST BOUNDARY OF IL ROUTE 111 RIGHT-OF-WAY



SHELL OIL PRODUCTS US SOIL VAPOR MONITORING PROGRAM ROXANA, ILLINOIS		PROJECT NO. 60527968
AECOM		
DRN. BY:djd Feb 2017 DSGN. BY:djd CHKD. BY:smf	VMP-15 and VMP-55 Location Map	FIG. NO. 1

5/14/2018
Ms. Elizabeth Kunkel
AECOM
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Quarterly Soil Vapor
Project #: 60527968-0104002
Workorder #: 1805043A

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/1/2018 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. 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

WORK ORDER #: 1805043A

Work Order Summary

CLIENT:	Ms. Elizabeth Kunkel AECOM 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	BILL TO:	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-743-4179	P.O. #	60527968-0104002
FAX:		PROJECT #	60527968-0104002 Roxana Quarterly Soil
DATE RECEIVED:	05/01/2018	CONTACT:	Vapor Kelly Buettner
DATE COMPLETED:	05/14/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-043018	TO-15	3.5 "Hg	15 psi
02A	VMP-15-21.5-043018	TO-15	4.9 "Hg	14.9 psi
03A	VMP-15-25.5-043018	TO-15	3.1 "Hg	14.7 psi
04A	VMP-15-29-043018	TO-15	4.3 "Hg	15.2 psi
05A	VMP-55-5-043018	TO-15	6.1 "Hg	15 psi
06A	VMP-55-20-043018	TO-15	4.7 "Hg	14.9 psi
07A	Lab Blank	TO-15	NA	NA
08A	CCV	TO-15	NA	NA
09A	LCS	TO-15	NA	NA
09AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 05/14/18

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 1805043A

Six 1 Liter Summa Canister samples were received on May 01, 2018. The laboratory performed analysis via 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 client project requirements, 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-55-20-043018 due to the presence of high level target species.

High concentrations of VOCs in sample VMP-55-20-043018 required an off-line dilution using a Tedlar bag. Toluene is common contaminant in Tedlar bags, and a CN-flag was applied to Toluene concentrations to indicate a high bias.

Definition of Data Qualifying Flags

Ten 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, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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

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

Client Sample ID: VMP-15-5-043018

Lab ID#: 1805043A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.56 J	5.7	2.8 J
Ethanol	4.6	13	8.6	25
Acetone	11	4.2 J	27	10 J
Carbon Disulfide	4.6	0.54 J	14	1.7 J
Methylene Chloride	11	0.94 J	40	3.3 J
Toluene	1.1	0.38 J	4.3	1.4 J
Isopentane	4.6	1.1 J	14	3.4 J

Client Sample ID: VMP-15-21.5-043018

Lab ID#: 1805043A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.40 J	6.0	2.0 J
Acetone	12	4.9 J	29	12 J
Carbon Disulfide	4.8	0.42 J	15	1.3 J
2,2,4-Trimethylpentane	1.2	0.19 J	5.6	0.89 J

Client Sample ID: VMP-15-25.5-043018

Lab ID#: 1805043A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.41 J	5.5	2.0 J
Acetone	11	40	26	94
2-Propanol	4.5	7.4	11	18
Carbon Disulfide	4.5	0.46 J	14	1.4 J
2-Butanone (Methyl Ethyl Ketone)	4.5	2.3 J	13	6.8 J
2,2,4-Trimethylpentane	1.1	0.27 J	5.2	1.3 J
Benzene	1.1	0.28 J	3.6	0.89 J
Heptane	1.1	0.27 J	4.6	1.1 J

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043A-04A

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

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.52 J	5.9	2.6 J
Acetone	12	8.5 J	28	20 J
Carbon Disulfide	4.7	0.31 J	15	0.98 J
2-Butanone (Methyl Ethyl Ketone)	4.7	0.94 J	14	2.8 J
Chloroform	1.2	0.41 J	5.8	2.0 J
Benzene	1.2	0.36 J	3.8	1.1 J

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.60 J	6.3	3.0 J
Acetone	13	6.9 J	30	16 J
Carbon Disulfide	5.1	0.57 J	16	1.8 J
2-Butanone (Methyl Ethyl Ketone)	5.1	1.4 J	15	4.3 J
2,2,4-Trimethylpentane	1.3	0.64 J	5.9	3.0 J
Toluene	1.3	0.21 J	4.8	0.80 J
1,3,5-Trimethylbenzene	1.3	0.28 J	6.2	1.4 J
1,2,4-Trimethylbenzene	1.3	0.68 J	6.2	3.3 J
1,3-Dichlorobenzene	1.3	0.31 J	7.6	1.9 J
1,4-Dichlorobenzene	1.3	0.39 J	7.6	2.3 J
1,2-Dichlorobenzene	1.3	0.30 J	7.6	1.8 J

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	15000	4000 J	35000	9600 J
Carbon Disulfide	6000	740 J	18000	2300 J
Methylene Chloride	15000	3000 J	52000	11000 J
Hexane	1500	97000	5200	340000
Cyclohexane	1500	78000	5100	270000
2,2,4-Trimethylpentane	1500	68000	7000	320000

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

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043A-06A

Heptane	1500	38000	6100	160000
Toluene	1500	3600 CN	5600	14000 CN
Butane	6000	270000	14000	640000
Isopentane	6000	560000	18000	1700000



Air Toxics

Client Sample ID: VMP-15-5-043018

Lab ID#: 1805043A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050423	Date of Collection:	4/30/18 10:51:00 AM
Dil. Factor:	2.29	Date of Analysis:	5/4/18 11:36 PM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.56 J	5.7	2.8 J
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	13	8.6	25
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	4.2 J	27	10 J
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	0.54 J	14	1.7 J
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	0.94 J	40	3.3 J
Methyl tert-butyl ether	4.6	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
Chloroform	1.1	Not Detected	5.6	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	Not Detected	3.6	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.7	Not Detected
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	0.38 J	4.3	1.4 J
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected



Air Toxics

Client Sample ID: VMP-15-5-043018

Lab ID#: 1805043A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050423	Date of Collection:	4/30/18 10:51:00 AM
Dil. Factor:	2.29	Date of Analysis:	5/4/18 11:36 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	Not Detected	5.0	Not Detected
m,p-Xylene	1.1	Not Detected	5.0	Not Detected
o-Xylene	1.1	Not Detected	5.0	Not Detected
Styrene	1.1	Not Detected	4.9	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.6	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
Butane	4.6	Not Detected	11	Not Detected
Isopentane	4.6	1.1 J	14	3.4 J

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: VMP-15-21.5-043018

Lab ID#: 1805043A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050424	Date of Collection:	4/30/18 11:13:00 AM
Dil. Factor:	2.41	Date of Analysis:	5/5/18 12:02 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.40 J	6.0	2.0 J
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.8	Not Detected
Ethanol	4.8	Not Detected	9.1	Not Detected
Freon 113	1.2	Not Detected	9.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	4.9 J	29	12 J
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	0.42 J	15	1.3 J
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	5.9	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	0.19 J	5.6	0.89 J
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.5	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.1	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected
2-Hexanone	4.8	Not Detected	20	Not Detected



Air Toxics

Client Sample ID: VMP-15-21.5-043018

Lab ID#: 1805043A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050424	Date of Collection:	4/30/18 11:13:00 AM
Dil. Factor:	2.41	Date of Analysis:	5/5/18 12:02 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.2	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.3	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
Butane	4.8	Not Detected	11	Not Detected
Isopentane	4.8	Not Detected	14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: VMP-15-25.5-043018

Lab ID#: 1805043A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050425	Date of Collection:	4/30/18 11:42:00 AM
Dil. Factor:	2.23	Date of Analysis:	5/5/18 12:29 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.41 J	5.5	2.0 J
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	Not Detected	8.4	Not Detected
Freon 113	1.1	Not Detected	8.5	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	40	26	94
2-Propanol	4.5	7.4	11	18
Carbon Disulfide	4.5	0.46 J	14	1.4 J
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	4.5	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	Not Detected	3.9	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	2.3 J	13	6.8 J
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	0.27 J	5.2	1.3 J
Benzene	1.1	0.28 J	3.6	0.89 J
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	0.27 J	4.6	1.1 J
Trichloroethene	1.1	Not Detected	6.0	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	1.1	Not Detected	4.2	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected
2-Hexanone	4.5	Not Detected	18	Not Detected



Air Toxics

Client Sample ID: VMP-15-25.5-043018

Lab ID#: 1805043A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050425	Date of Collection:	4/30/18 11:42:00 AM
Dil. Factor:	2.23	Date of Analysis:	5/5/18 12:29 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.5	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.6	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	1.1	Not Detected	4.8	Not Detected
o-Xylene	1.1	Not Detected	4.8	Not Detected
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.5	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.5	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.5	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	33	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected
Butane	4.5	Not Detected	11	Not Detected
Isopentane	4.5	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050426	Date of Collection:	4/30/18 12:01:00 PM
Dil. Factor:	2.37	Date of Analysis:	5/5/18 12:55 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.52 J	5.9	2.6 J
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.6	Not Detected
Ethanol	4.7	Not Detected	8.9	Not Detected
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	8.5 J	28	20 J
2-Propanol	4.7	Not Detected	12	Not Detected
Carbon Disulfide	4.7	0.31 J	15	0.98 J
3-Chloropropene	4.7	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	0.94 J	14	2.8 J
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	0.41 J	5.8	2.0 J
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.4	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.5	Not Detected
Benzene	1.2	0.36 J	3.8	1.1 J
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.9	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
2-Hexanone	4.7	Not Detected	19	Not Detected



Air Toxics

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050426	Date of Collection:	4/30/18 12:01:00 PM
Dil. Factor:	2.37	Date of Analysis:	5/5/18 12:55 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.1	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.1	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.1	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	35	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected
Butane	4.7	Not Detected	11	Not Detected
Isopentane	4.7	Not Detected	14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050427	Date of Collection:	4/30/18 1:17:00 PM
Dil. Factor:	2.54	Date of Analysis:	5/5/18 01:21 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.60 J	6.3	3.0 J
Freon 114	1.3	Not Detected	8.9	Not Detected
Chloromethane	13	Not Detected	26	Not Detected
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	49	Not Detected
Chloroethane	5.1	Not Detected	13	Not Detected
Freon 11	1.3	Not Detected	7.1	Not Detected
Ethanol	5.1	Not Detected	9.6	Not Detected
Freon 113	1.3	Not Detected	9.7	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Acetone	13	6.9 J	30	16 J
2-Propanol	5.1	Not Detected	12	Not Detected
Carbon Disulfide	5.1	0.57 J	16	1.8 J
3-Chloropropene	5.1	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Methyl tert-butyl ether	5.1	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Hexane	1.3	Not Detected	4.5	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.1	1.4 J	15	4.3 J
cis-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Tetrahydrofuran	1.3	Not Detected	3.7	Not Detected
Chloroform	1.3	Not Detected	6.2	Not Detected
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Cyclohexane	1.3	Not Detected	4.4	Not Detected
Carbon Tetrachloride	1.3	Not Detected	8.0	Not Detected
2,2,4-Trimethylpentane	1.3	0.64 J	5.9	3.0 J
Benzene	1.3	Not Detected	4.0	Not Detected
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Heptane	1.3	Not Detected	5.2	Not Detected
Trichloroethene	1.3	Not Detected	6.8	Not Detected
1,2-Dichloropropane	1.3	Not Detected	5.9	Not Detected
1,4-Dioxane	5.1	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.5	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
4-Methyl-2-pentanone	1.3	Not Detected	5.2	Not Detected
Toluene	1.3	0.21 J	4.8	0.80 J
trans-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	Not Detected	8.6	Not Detected
2-Hexanone	5.1	Not Detected	21	Not Detected



Air Toxics

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050427	Date of Collection:	4/30/18 1:17:00 PM
Dil. Factor:	2.54	Date of Analysis:	5/5/18 01:21 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.8	Not Detected
Chlorobenzene	1.3	Not Detected	5.8	Not Detected
Ethyl Benzene	1.3	Not Detected	5.5	Not Detected
m,p-Xylene	1.3	Not Detected	5.5	Not Detected
o-Xylene	1.3	Not Detected	5.5	Not Detected
Styrene	1.3	Not Detected	5.4	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	Not Detected	6.2	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.7	Not Detected
Propylbenzene	1.3	Not Detected	6.2	Not Detected
4-Ethyltoluene	1.3	Not Detected	6.2	Not Detected
1,3,5-Trimethylbenzene	1.3	0.28 J	6.2	1.4 J
1,2,4-Trimethylbenzene	1.3	0.68 J	6.2	3.3 J
1,3-Dichlorobenzene	1.3	0.31 J	7.6	1.9 J
1,4-Dichlorobenzene	1.3	0.39 J	7.6	2.3 J
alpha-Chlorotoluene	1.3	Not Detected	6.6	Not Detected
1,2-Dichlorobenzene	1.3	0.30 J	7.6	1.8 J
1,2,4-Trichlorobenzene	5.1	Not Detected	38	Not Detected
Hexachlorobutadiene	5.1	Not Detected	54	Not Detected
Butane	5.1	Not Detected	12	Not Detected
Isopentane	5.1	Not Detected	15	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050428	Date of Collection: 4/30/18 1:39:00 PM
Dil. Factor:	2980	Date of Analysis: 5/5/18 01:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1500	Not Detected	7400	Not Detected
Freon 114	1500	Not Detected	10000	Not Detected
Chloromethane	15000	Not Detected	31000	Not Detected
Vinyl Chloride	1500	Not Detected	3800	Not Detected
1,3-Butadiene	1500	Not Detected	3300	Not Detected
Bromomethane	15000	Not Detected	58000	Not Detected
Chloroethane	6000	Not Detected	16000	Not Detected
Freon 11	1500	Not Detected	8400	Not Detected
Ethanol	6000	Not Detected	11000	Not Detected
Freon 113	1500	Not Detected	11000	Not Detected
1,1-Dichloroethene	1500	Not Detected	5900	Not Detected
Acetone	15000	4000 J	35000	9600 J
2-Propanol	6000	Not Detected	15000	Not Detected
Carbon Disulfide	6000	740 J	18000	2300 J
3-Chloropropene	6000	Not Detected	19000	Not Detected
Methylene Chloride	15000	3000 J	52000	11000 J
Methyl tert-butyl ether	6000	Not Detected	21000	Not Detected
trans-1,2-Dichloroethene	1500	Not Detected	5900	Not Detected
Hexane	1500	97000	5200	340000
1,1-Dichloroethane	1500	Not Detected	6000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	6000	Not Detected	18000	Not Detected
cis-1,2-Dichloroethene	1500	Not Detected	5900	Not Detected
Tetrahydrofuran	1500	Not Detected	4400	Not Detected
Chloroform	1500	Not Detected	7300	Not Detected
1,1,1-Trichloroethane	1500	Not Detected	8100	Not Detected
Cyclohexane	1500	78000	5100	270000
Carbon Tetrachloride	1500	Not Detected	9400	Not Detected
2,2,4-Trimethylpentane	1500	68000	7000	320000
Benzene	1500	Not Detected	4800	Not Detected
1,2-Dichloroethane	1500	Not Detected	6000	Not Detected
Heptane	1500	38000	6100	160000
Trichloroethene	1500	Not Detected	8000	Not Detected
1,2-Dichloropropane	1500	Not Detected	6900	Not Detected
1,4-Dioxane	6000	Not Detected	21000	Not Detected
Bromodichloromethane	1500	Not Detected	10000	Not Detected
cis-1,3-Dichloropropene	1500	Not Detected	6800	Not Detected
4-Methyl-2-pentanone	1500	Not Detected	6100	Not Detected
Toluene	1500	3600 CN	5600	14000 CN
trans-1,3-Dichloropropene	1500	Not Detected	6800	Not Detected
1,1,2-Trichloroethane	1500	Not Detected	8100	Not Detected
Tetrachloroethene	1500	Not Detected	10000	Not Detected
2-Hexanone	6000	Not Detected	24000	Not Detected



Air Toxics

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050428	Date of Collection:	4/30/18 1:39:00 PM
Dil. Factor:	2980	Date of Analysis:	5/5/18 01:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1500	Not Detected	13000	Not Detected
1,2-Dibromoethane (EDB)	1500	Not Detected	11000	Not Detected
Chlorobenzene	1500	Not Detected	6800	Not Detected
Ethyl Benzene	1500	Not Detected	6500	Not Detected
m,p-Xylene	1500	Not Detected	6500	Not Detected
o-Xylene	1500	Not Detected	6500	Not Detected
Styrene	1500	Not Detected	6300	Not Detected
Bromoform	1500	Not Detected	15000	Not Detected
Cumene	1500	Not Detected	7300	Not Detected
1,1,2,2-Tetrachloroethane	1500	Not Detected	10000	Not Detected
Propylbenzene	1500	Not Detected	7300	Not Detected
4-Ethyltoluene	1500	Not Detected	7300	Not Detected
1,3,5-Trimethylbenzene	1500	Not Detected	7300	Not Detected
1,2,4-Trimethylbenzene	1500	Not Detected	7300	Not Detected
1,3-Dichlorobenzene	1500	Not Detected	9000	Not Detected
1,4-Dichlorobenzene	1500	Not Detected	9000	Not Detected
alpha-Chlorotoluene	1500	Not Detected	7700	Not Detected
1,2-Dichlorobenzene	1500	Not Detected	9000	Not Detected
1,2,4-Trichlorobenzene	6000	Not Detected	44000	Not Detected
Hexachlorobutadiene	6000	Not Detected	64000	Not Detected
Butane	6000	270000	14000	640000
Isopentane	6000	560000	18000	1700000

J = Estimated value.

CN =See Case Narrative explanation

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1805043A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050405a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/4/18 11:34 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	0.17 J	6.2	0.53 J
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1805043A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050405a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 11:34 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	0.088 J	3.0	0.53 J
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	0.14 J	15	1.1 J
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Butane	2.0	Not Detected	4.8	Not Detected
Isopentane	2.0	Not Detected	5.9	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1805043A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 09:44 AM

Compound	%Recovery
Freon 12	95
Freon 114	97
Chloromethane	87
Vinyl Chloride	88
1,3-Butadiene	84
Bromomethane	98
Chloroethane	88
Freon 11	94
Ethanol	84
Freon 113	97
1,1-Dichloroethene	91
Acetone	84
2-Propanol	87
Carbon Disulfide	91
3-Chloropropene	88
Methylene Chloride	90
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	94
Hexane	84
1,1-Dichloroethane	93
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	93
Tetrahydrofuran	77
Chloroform	91
1,1,1-Trichloroethane	90
Cyclohexane	87
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	88
Benzene	90
1,2-Dichloroethane	94
Heptane	90
Trichloroethene	95
1,2-Dichloropropane	93
1,4-Dioxane	89
Bromodichloromethane	93
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	88
Toluene	89
trans-1,3-Dichloropropene	90
1,1,2-Trichloroethane	96
Tetrachloroethene	102
2-Hexanone	83

Client Sample ID: CCV

Lab ID#: 1805043A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 09:44 AM

Compound	%Recovery
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	96
Chlorobenzene	96
Ethyl Benzene	97
m,p-Xylene	100
o-Xylene	96
Styrene	94
Bromoform	100
Cumene	94
1,1,2,2-Tetrachloroethane	88
Propylbenzene	91
4-Ethyltoluene	98
1,3,5-Trimethylbenzene	93
1,2,4-Trimethylbenzene	94
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	90
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	106
Butane	82
Isopentane	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 1805043A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 10:08 AM

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	109	70-130
Chloromethane	95	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	89	70-130
Bromomethane	106	70-130
Chloroethane	102	70-130
Freon 11	104	70-130
Ethanol	94	70-130
Freon 113	103	70-130
1,1-Dichloroethene	100	70-130
Acetone	91	70-130
2-Propanol	93	70-130
Carbon Disulfide	102	70-130
3-Chloropropene	102	70-130
Methylene Chloride	97	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	92	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	100	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	84	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	96	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	97	70-130
Benzene	97	70-130
1,2-Dichloroethane	101	70-130
Heptane	98	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	98	70-130
1,4-Dioxane	86	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	94	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	101	70-130
Tetrachloroethene	109	70-130
2-Hexanone	87	70-130

Client Sample ID: LCS

Lab ID#: 1805043A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 10:08 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	105	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	105	70-130
o-Xylene	103	70-130
Styrene	96	70-130
Bromoform	109	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	95	70-130
Propylbenzene	97	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	110	70-130
Hexachlorobutadiene	107	70-130
Butane	93	60-140
Isopentane	91	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCSD

Lab ID#: 1805043A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 10:33 AM

Compound	%Recovery	Method Limits
Freon 12	105	70-130
Freon 114	109	70-130
Chloromethane	94	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	89	70-130
Bromomethane	106	70-130
Chloroethane	100	70-130
Freon 11	103	70-130
Ethanol	90	70-130
Freon 113	104	70-130
1,1-Dichloroethene	100	70-130
Acetone	90	70-130
2-Propanol	92	70-130
Carbon Disulfide	100	70-130
3-Chloropropene	101	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	93	70-130
trans-1,2-Dichloroethene	113	70-130
Hexane	92	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	101	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	84	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	96	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	100	70-130
2,2,4-Trimethylpentane	97	70-130
Benzene	97	70-130
1,2-Dichloroethane	99	70-130
Heptane	99	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	86	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	92	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	107	70-130
2-Hexanone	86	70-130

Client Sample ID: LCSD

Lab ID#: 1805043A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a050404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 10:33 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	106	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	100	70-130
m,p-Xylene	102	70-130
o-Xylene	100	70-130
Styrene	94	70-130
Bromoform	110	70-130
Cumene	98	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	95	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	99	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	104	70-130
alpha-Chlorotoluene	99	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	113	70-130
Butane	93	60-140
Isopentane	90	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	104	70-130

5/12/2018
Ms. Elizabeth Kunkel
AECOM
1001 Highlands Plaza Dr. West
Suite 300
St. Louis MO 63110

Project Name: Roxana Quarterly Soil Vapor
Project #: 60527968-0104002
Workorder #: 1805043B

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/1/2018 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. 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

WORK ORDER #: 1805043B

Work Order Summary

CLIENT:	Ms. Elizabeth Kunkel AECOM 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	BILL TO:	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-743-4179	P.O. #	60527968-0104002
FAX:		PROJECT #	60527968-0104002 Roxana Quarterly
DATE RECEIVED:	05/01/2018	CONTACT:	Soil Vapor Kelly Buettner
DATE COMPLETED:	05/12/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-043018	Modified ASTM D-1946	3.5 "Hg	15 psi
02A	VMP-15-21.5-043018	Modified ASTM D-1946	4.9 "Hg	14.9 psi
03A	VMP-15-25.5-043018	Modified ASTM D-1946	3.1 "Hg	14.7 psi
04A	VMP-15-29-043018	Modified ASTM D-1946	4.3 "Hg	15.2 psi
05A	VMP-55-5-043018	Modified ASTM D-1946	6.1 "Hg	15 psi
06A	VMP-55-20-043018	Modified ASTM D-1946	4.7 "Hg	14.9 psi
07A	Lab Blank	Modified ASTM D-1946	NA	NA
07B	Lab Blank	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 05/12/18

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

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
AECOM
Workorder# 1805043B

Six 1 Liter Summa Canister samples were received on May 01, 2018. 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.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
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 $\geq 95\%$ 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

There were no analytical discrepancies.

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

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

Client Sample ID: VMP-15-5-043018

Lab ID#: 1805043B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	17
Nitrogen	0.23	80
Carbon Dioxide	0.023	2.9

Client Sample ID: VMP-15-21.5-043018

Lab ID#: 1805043B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	2.1
Nitrogen	0.24	86
Carbon Dioxide	0.024	12

Client Sample ID: VMP-15-25.5-043018

Lab ID#: 1805043B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	3.4
Nitrogen	0.22	83
Carbon Dioxide	0.022	14

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	3.9
Nitrogen	0.24	83
Carbon Dioxide	0.024	13

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043B-05A

Compound	Rpt. Limit (%)	Amount (%)
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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	5.1
Nitrogen	0.25	82
Carbon Dioxide	0.025	13
Helium	0.13	0.018 J

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.3
Nitrogen	0.24	69
Methane	0.00024	11
Carbon Dioxide	0.024	18
Ethane	0.0024	0.0040



Air Toxics

Client Sample ID: VMP-15-5-043018

Lab ID#: 1805043B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050405	Date of Collection: 4/30/18 10:51:00 AM
Dil. Factor:	2.28	Date of Analysis: 5/4/18 10:18 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	17
Nitrogen	0.23	80
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	2.9
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-21.5-043018

Lab ID#: 1805043B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050406	Date of Collection: 4/30/18 11:13:00 AM
Dil. Factor:	2.41	Date of Analysis: 5/4/18 11:04 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	2.1
Nitrogen	0.24	86
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	Not Detected
Carbon Dioxide	0.024	12
Ethane	0.0024	Not Detected
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-25.5-043018

Lab ID#: 1805043B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050407	Date of Collection:	4/30/18 11:42:00 AM
Dil. Factor:	2.23	Date of Analysis:	5/4/18 11:35 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	3.4
Nitrogen	0.22	83
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	14
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-29-043018

Lab ID#: 1805043B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050408	Date of Collection:	4/30/18 12:01:00 PM
Dil. Factor:	2.37	Date of Analysis:	5/4/18 12:02 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	3.9
Nitrogen	0.24	83
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	Not Detected
Carbon Dioxide	0.024	13
Ethane	0.0024	Not Detected
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-55-5-043018

Lab ID#: 1805043B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050409	Date of Collection:	4/30/18 1:17:00 PM
Dil. Factor:	2.54	Date of Analysis:	5/4/18 12:35 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	5.1
Nitrogen	0.25	82
Carbon Monoxide	0.025	Not Detected
Methane	0.00025	Not Detected
Carbon Dioxide	0.025	13
Ethane	0.0025	Not Detected
Ethene	0.0025	Not Detected
Helium	0.13	0.018 J

J = Estimated value.

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-55-20-043018

Lab ID#: 1805043B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050410	Date of Collection: 4/30/18 1:39:00 PM
Dil. Factor:	2.39	Date of Analysis: 5/4/18 01:00 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	1.3
Nitrogen	0.24	69
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	11
Carbon Dioxide	0.024	18
Ethane	0.0024	0.0040
Ethene	0.0024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1805043B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050404a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 09:51 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
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

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1805043B-07B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050403c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/4/18 09:28 AM

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

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1805043B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 09:01 AM

Compound	%Recovery	Method Limits
Oxygen	105	85-115
Nitrogen	91	85-115
Carbon Monoxide	91	85-115
Methane	103	85-115
Carbon Dioxide	99	85-115
Ethane	100	85-115
Ethene	99	85-115
Helium	102	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1805043B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10050427	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/4/18 09:58 PM

Compound	%Recovery	Method Limits
Oxygen	104	85-115
Nitrogen	91	85-115
Carbon Monoxide	90	85-115
Methane	102	85-115
Carbon Dioxide	98	85-115
Ethane	99	85-115
Ethene	98	85-115
Helium	101	85-115

Container Type: NA - Not Applicable