

March 24, 2025

Illinois Department of Transportation
Keith Roberts, PE
Acting Regional 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. Roberts,

AECOM, on behalf of Shell Oil Products US (Shell), is submitting the attached analytical results for soil vapor samples collected in 2024 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 Wendy Pennington at wendy.pennington@aecom.com (314-452-8929) or Samuel Fisher at samuel.fisher@aecom.com (314-296-1969).

Sincerely,
AECOM, on behalf of Shell Oil Products US



Samuel Fisher, CHMM
Environmental Scientist



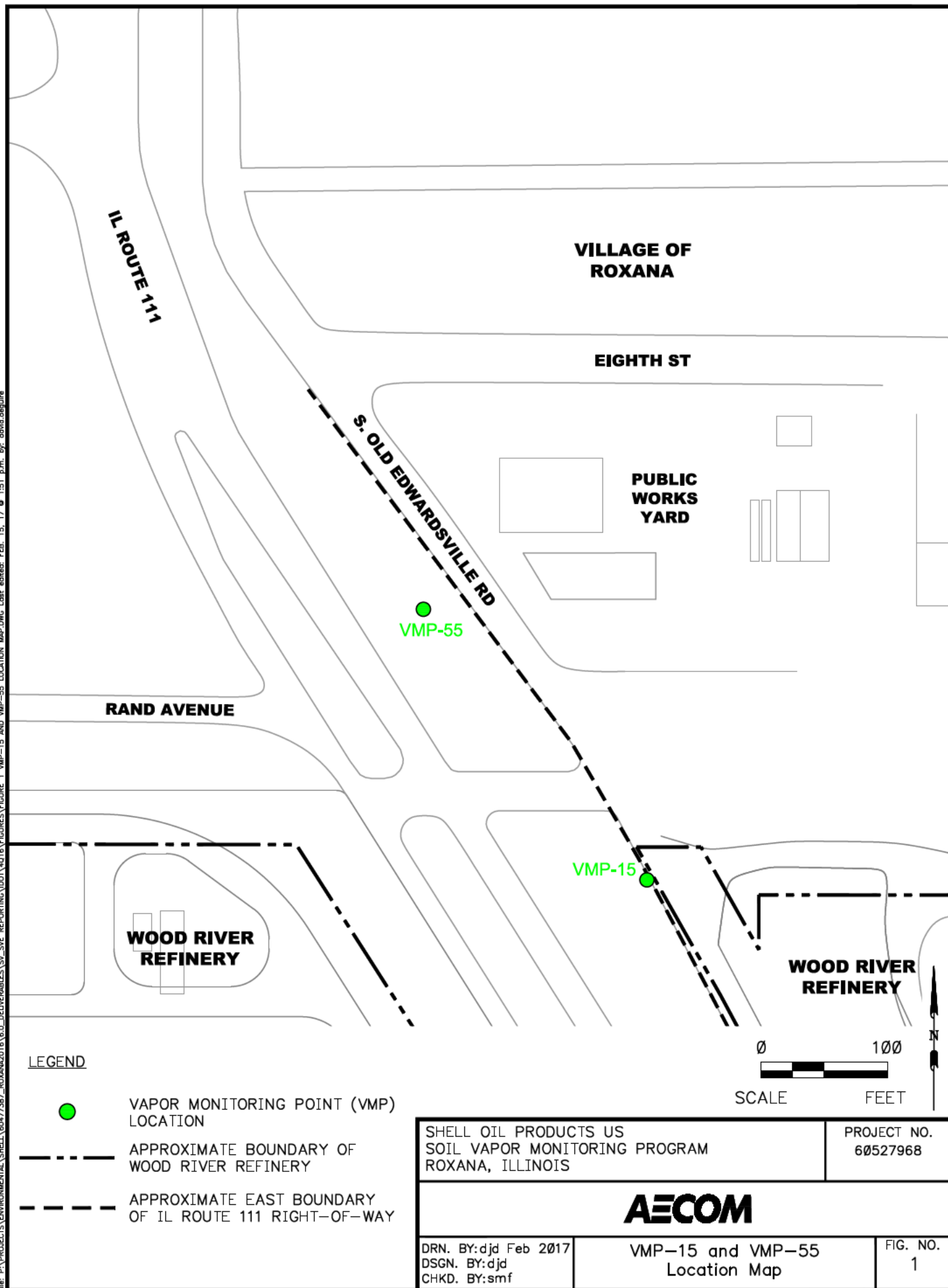
Wendy Pennington, PE
Project Manager

cc:

Leroy Bealer, Shell
Repositories – Roxana Public Library, Website
Project File

This page intentionally left blank

File: P:\PROJECTS\ENVIRONMENTAL\SHLL\60477387_Roxana\2016\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



This page intentionally left blank

2/7/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927 - 4.1.2

Workorder #: 2401522A

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 1/26/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2401522A

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 100 N. Broadway, 20th Floor St. Louis, MO 63102	BILL TO:	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1630860
FAX:		PROJECT #	60721927 - 4.1.2 Roxana Quarterly Soil
DATE RECEIVED:	01/26/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	12/11/2023		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-012524	TO-15	6.1 "Hg	10.1 psi
02A	VMP-15-21.5-012524	TO-15	5.7 "Hg	9.8 psi
03A	VMP-15-25.5-012524	TO-15	6.3 "Hg	10.1 psi
04A	VMP-15-29-012524	TO-15	6.5 "Hg	10 psi
05A	VMP-55-20-012524	TO-15	7.1 "Hg	10 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
06C	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
07C	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA
08C	LCS	TO-15	NA	NA
08CC	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 02/06/24

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 2401522A

Five 1 Liter Summa Canister samples were received on January 26, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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 may be false positives.

Dilution was performed on sample VMP-55-20-012524 due to the presence of high level target species.

All Quality Control Limit exceedances 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

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-15-5-012524

Lab ID#: 2401522A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	4.2	5.8	10	14
Cyclohexane	1.1	1.1	3.6	3.7
Toluene	2.1	1.9 J	8.0	7.0 J
Tetrachloroethene	1.1	0.38 J	7.2	2.5 J
Isopentane	4.2	2.5 J	12	7.4 J

Client Sample ID: VMP-15-21.5-012524

Lab ID#: 2401522A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	4.1	2.3 J	10	5.6 J
Hexane	1.0	0.94 J	3.6	3.3 J
Chloroform	1.0	0.35 J	5.0	1.7 J
2,2,4-Trimethylpentane	1.0	1.9	4.8	8.8
Benzene	1.0	0.36 J	3.3	1.2 J
m,p-Xylene	2.1	0.19 J	8.9	0.82 J
Isopentane	4.1	1.9 J	12	5.7 J

Client Sample ID: VMP-15-25.5-012524

Lab ID#: 2401522A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	1.1	1.7	5.2	8.4

Client Sample ID: VMP-15-29-012524

Lab ID#: 2401522A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	1.1	3.8	5.2	18

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522A-05A

Summary of Detected Compounds

EPA METHOD TO-15 GC/MS

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	220	4900	760	17000
2,2,4-Trimethylpentane	220	41000	1000	190000
Toluene	220	310	830	1200
Butane	880	13000	2100	31000
Isopentane	880	310000	2600	930000

Client Sample ID: VMP-15-5-012524

Lab ID#: 2401522A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020208	Date of Collection:	1/25/24 9:36:00 AM
Dil. Factor:	2.12	Date of Analysis:	2/2/24 04:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.2	Not Detected
Freon 114	1.1	Not Detected	7.4	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,3-Butadiene	1.1	Not Detected	2.3	Not Detected
Bromomethane	11	Not Detected	41	Not Detected
Chloroethane	4.2	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	11	Not Detected	20	Not Detected
Freon 113	1.1	Not Detected	8.1	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	Not Detected	25	Not Detected
2-Propanol	4.2	5.8	10	14
Carbon Disulfide	4.2	Not Detected	13	Not Detected
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.2	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	Not Detected	3.7	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.2	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.1	Not Detected
Chloroform	1.1	Not Detected	5.2	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Cyclohexane	1.1	1.1	3.6	3.7
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.0	Not Detected
Benzene	1.1	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.3	Not Detected
Heptane	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	Not Detected	5.7	Not Detected
1,2-Dichloropropane	1.1	Not Detected	4.9	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.1	Not Detected	7.1	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.3	Not Detected
Toluene	2.1	1.9 J	8.0	7.0 J
trans-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Tetrachloroethene	1.1	0.38 J	7.2	2.5 J
2-Hexanone	4.2	Not Detected	17	Not Detected

Client Sample ID: VMP-15-5-012524

Lab ID#: 2401522A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020208	Date of Collection: 1/25/24 9:36:00 AM
Dil. Factor:	2.12	Date of Analysis: 2/2/24 04:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.0	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.1	Not Detected
Chlorobenzene	1.1	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	2.1	Not Detected	9.2	Not Detected
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	Not Detected	4.5	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.3	Not Detected
Propylbenzene	1.1	Not Detected	5.2	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.2	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	45	Not Detected
Butane	4.2	Not Detected	10	Not Detected
Isopentane	4.2	2.5 J	12	7.4 J

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: VMP-15-21.5-012524

Lab ID#: 2401522A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013014	Date of Collection:	1/25/24 9:56:00 AM
Dil. Factor:	2.06	Date of Analysis:	1/30/24 04:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.1	Not Detected
Freon 114	1.0	Not Detected	7.2	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.8	Not Detected
Ethanol	10	Not Detected	19	Not Detected
Freon 113	1.0	Not Detected	7.9	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.1	2.3 J	10	5.6 J
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	0.94 J	3.6	3.3 J
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	0.35 J	5.0	1.7 J
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.5	Not Detected
2,2,4-Trimethylpentane	1.0	1.9	4.8	8.8
Benzene	1.0	0.36 J	3.3	1.2 J
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	2.1	Not Detected	7.8	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected

Client Sample ID: VMP-15-21.5-012524

Lab ID#: 2401522A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013014	Date of Collection:	1/25/24 9:56:00 AM
Dil. Factor:	2.06	Date of Analysis:	1/30/24 04:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.8	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.5	Not Detected
m,p-Xylene	2.1	0.19 J	8.9	0.82 J
o-Xylene	1.0	Not Detected	4.5	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.1	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.1	Not Detected
Propylbenzene	1.0	Not Detected	5.1	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.1	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected
Butane	4.1	Not Detected	9.8	Not Detected
Isopentane	4.1	1.9 J	12	5.7 J

J = Estimated value.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: VMP-15-25.5-012524

Lab ID#: 2401522A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013015	Date of Collection:	1/25/24 10:20:00 AM
Dil. Factor:	2.14	Date of Analysis:	1/30/24 05:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.3	Not Detected
Freon 114	1.1	Not Detected	7.5	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	42	Not Detected
Chloroethane	4.3	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	11	Not Detected	20	Not Detected
Freon 113	1.1	Not Detected	8.2	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	Not Detected	25	Not Detected
2-Propanol	4.3	Not Detected	10	Not Detected
Carbon Disulfide	4.3	Not Detected	13	Not Detected
3-Chloropropene	4.3	Not Detected	13	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.3	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	Not Detected	3.8	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.3	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	1.7	5.2	8.4
1,1,1-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Cyclohexane	1.1	Not Detected	3.7	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.0	Not Detected
Benzene	1.1	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.3	Not Detected
Heptane	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.8	Not Detected
1,2-Dichloropropane	1.1	Not Detected	4.9	Not Detected
1,4-Dioxane	4.3	Not Detected	15	Not Detected
Bromodichloromethane	1.1	Not Detected	7.2	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.4	Not Detected
Toluene	2.1	Not Detected	8.1	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected
2-Hexanone	4.3	Not Detected	18	Not Detected

Client Sample ID: VMP-15-25.5-012524

Lab ID#: 2401522A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013015	Date of Collection: 1/25/24 10:20:00 AM
Dil. Factor:	2.14	Date of Analysis: 1/30/24 05:14 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.1	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.2	Not Detected
Chlorobenzene	1.1	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	2.1	Not Detected	9.3	Not Detected
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	Not Detected	4.6	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.3	Not Detected
Propylbenzene	1.1	Not Detected	5.3	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.3	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	46	Not Detected
Butane	4.3	Not Detected	10	Not Detected
Isopentane	4.3	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: VMP-15-29-012524

Lab ID#: 2401522A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013016	Date of Collection:	1/25/24 10:40:00 AM
Dil. Factor:	2.14	Date of Analysis:	1/30/24 05:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.3	Not Detected
Freon 114	1.1	Not Detected	7.5	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	42	Not Detected
Chloroethane	4.3	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	11	Not Detected	20	Not Detected
Freon 113	1.1	Not Detected	8.2	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	Not Detected	25	Not Detected
2-Propanol	4.3	Not Detected	10	Not Detected
Carbon Disulfide	4.3	Not Detected	13	Not Detected
3-Chloropropene	4.3	Not Detected	13	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.3	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	Not Detected	3.8	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.3	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	3.8	5.2	18
1,1,1-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Cyclohexane	1.1	Not Detected	3.7	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.0	Not Detected
Benzene	1.1	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.3	Not Detected
Heptane	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.8	Not Detected
1,2-Dichloropropane	1.1	Not Detected	4.9	Not Detected
1,4-Dioxane	4.3	Not Detected	15	Not Detected
Bromodichloromethane	1.1	Not Detected	7.2	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.4	Not Detected
Toluene	2.1	Not Detected	8.1	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected
2-Hexanone	4.3	Not Detected	18	Not Detected

Client Sample ID: VMP-15-29-012524

Lab ID#: 2401522A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013016	Date of Collection: 1/25/24 10:40:00 AM
Dil. Factor:	2.14	Date of Analysis: 1/30/24 05:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.1	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.2	Not Detected
Chlorobenzene	1.1	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	2.1	Not Detected	9.3	Not Detected
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	Not Detected	4.6	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.3	Not Detected
Propylbenzene	1.1	Not Detected	5.3	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.3	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	46	Not Detected
Butane	4.3	Not Detected	10	Not Detected
Isopentane	4.3	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522A-05A

EPA METHOD TO-15 GC/MS

File Name:	2013110	Date of Collection:	1/25/24 11:31:00 AM
Dil. Factor:	44.0	Date of Analysis:	1/31/24 08:11 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	880	Not Detected	3400	Not Detected
Chloroethane	880	Not Detected	2300	Not Detected
Freon 11	220	Not Detected	1200	Not Detected
Ethanol	1100	Not Detected	2100	Not Detected
Freon 113	220	Not Detected	1700	Not Detected
1,1-Dichloroethene	220	Not Detected	870	Not Detected
Acetone	880	Not Detected	2100	Not Detected
2-Propanol	1100	Not Detected	2700	Not Detected
Carbon Disulfide	880	Not Detected	2700	Not Detected
3-Chloropropene	880	Not Detected	2800	Not Detected
Methylene Chloride	880	Not Detected	3000	Not Detected
Methyl tert-butyl ether	220	Not Detected	790	Not Detected
trans-1,2-Dichloroethene	220	Not Detected	870	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	870	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	4900	760	17000
Carbon Tetrachloride	220	Not Detected	1400	Not Detected
2,2,4-Trimethylpentane	220	41000	1000	190000
Benzene	220	Not Detected	700	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	880	Not Detected	3600	Not Detected
Toluene	220	310	830	1200
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

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522A-05A

EPA METHOD TO-15 GC/MS

File Name:	2013110	Date of Collection:	1/25/24 11:31:00 AM
Dil. Factor:	44.0	Date of Analysis:	1/31/24 08:11 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	Not Detected	960	Not Detected
m,p-Xylene	220	Not Detected	960	Not Detected
o-Xylene	220	Not Detected	960	Not Detected
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	6500	Not Detected
Hexachlorobutadiene	880	Not Detected	9400	Not Detected
Butane	880	13000	2100	31000
Isopentane	880	310000	2600	930000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013011c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 02:18 PM

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	5.0	Not Detected	9.4	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	Not Detected	6.2	Not Detected
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	1.0	Not Detected	3.8	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

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013011c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 02:18 PM

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	1.0	Not Detected	4.3	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	0.15 J	2.4	0.73 J
1,2,4-Trimethylbenzene	0.50	0.26 J	2.4	1.3 J
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
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	Not Detected	15	Not Detected
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	100	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020207a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 02:52 PM

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	5.0	Not Detected	9.4	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	Not Detected	6.2	Not Detected
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	1.0	Not Detected	3.8	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

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020207a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 02:52 PM

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	1.0	Not Detected	4.3	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	Not Detected	3.0	Not Detected
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	Not Detected	15	Not Detected
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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06C

EPA METHOD TO-15 GC/MS

File Name:	2013108a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 05:43 PM

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	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	25	9.4 J	47	18 J
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	25	6.0 J	61	15 J
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	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)	20	Not Detected	59	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	20	Not Detected	82	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
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 2401522A-06C

EPA METHOD TO-15 GC/MS

File Name:	2013108a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 05:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
Butane	20	Not Detected	48	Not Detected
Isopentane	20	Not Detected	59	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: CCV

Lab ID#: 2401522A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013008	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 12:47 PM

Compound	%Recovery
Freon 12	94
Freon 114	96
Chloromethane	107
Vinyl Chloride	100
1,3-Butadiene	90
Bromomethane	96
Chloroethane	92
Freon 11	92
Ethanol	102
Freon 113	98
1,1-Dichloroethene	87
Acetone	93
2-Propanol	88
Carbon Disulfide	95
3-Chloropropene	87
Methylene Chloride	99
Methyl tert-butyl ether	82
trans-1,2-Dichloroethene	87
Hexane	89
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	92
cis-1,2-Dichloroethene	88
Tetrahydrofuran	94
Chloroform	86
1,1,1-Trichloroethane	85
Cyclohexane	81
Carbon Tetrachloride	90
2,2,4-Trimethylpentane	94
Benzene	103
1,2-Dichloroethane	101
Heptane	95
Trichloroethene	103
1,2-Dichloropropane	104
1,4-Dioxane	99
Bromodichloromethane	99
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	94
Toluene	102
trans-1,3-Dichloropropene	89
1,1,2-Trichloroethane	93
Tetrachloroethene	103
2-Hexanone	91

Client Sample ID: CCV

Lab ID#: 2401522A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013008	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 12:47 PM

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	95
Chlorobenzene	96
Ethyl Benzene	89
m,p-Xylene	92
o-Xylene	87
Styrene	96
Bromoform	107
Cumene	87
1,1,2,2-Tetrachloroethane	94
Propylbenzene	97
4-Ethyltoluene	97
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	102
1,4-Dichlorobenzene	100
alpha-Chlorotoluene	86
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	99
Hexachlorobutadiene	115
Butane	91
Isopentane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	117	70-130

Client Sample ID: CCV

Lab ID#: 2401522A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 12:11 PM

Compound	%Recovery
Freon 12	96
Freon 114	97
Chloromethane	111
Vinyl Chloride	103
1,3-Butadiene	90
Bromomethane	102
Chloroethane	94
Freon 11	93
Ethanol	103
Freon 113	101
1,1-Dichloroethene	87
Acetone	95
2-Propanol	87
Carbon Disulfide	98
3-Chloropropene	88
Methylene Chloride	101
Methyl tert-butyl ether	83
trans-1,2-Dichloroethene	88
Hexane	90
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	93
cis-1,2-Dichloroethene	90
Tetrahydrofuran	94
Chloroform	86
1,1,1-Trichloroethane	86
Cyclohexane	83
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	95
Benzene	106
1,2-Dichloroethane	102
Heptane	94
Trichloroethene	106
1,2-Dichloropropane	108
1,4-Dioxane	101
Bromodichloromethane	101
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	95
Toluene	103
trans-1,3-Dichloropropene	92
1,1,2-Trichloroethane	97
Tetrachloroethene	107
2-Hexanone	93

Client Sample ID: CCV

Lab ID#: 2401522A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 12:11 PM

Compound	%Recovery
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	98
Chlorobenzene	99
Ethyl Benzene	92
m,p-Xylene	95
o-Xylene	90
Styrene	99
Bromoform	110
Cumene	89
1,1,2,2-Tetrachloroethane	99
Propylbenzene	100
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	100
1,2,4-Trimethylbenzene	93
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	90
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	97
Hexachlorobutadiene	117
Butane	92
Isopentane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	118	70-130

Client Sample ID: CCV

Lab ID#: 2401522A-07C

EPA METHOD TO-15 GC/MS

File Name:	2013105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 04:03 PM

Compound	%Recovery
Freon 12	93
Freon 114	102
Chloromethane	98
Vinyl Chloride	96
1,3-Butadiene	97
Bromomethane	116
Chloroethane	90
Freon 11	104
Ethanol	104
Freon 113	102
1,1-Dichloroethene	100
Acetone	116
2-Propanol	114
Carbon Disulfide	93
3-Chloropropene	90
Methylene Chloride	121
Methyl tert-butyl ether	83
trans-1,2-Dichloroethene	94
Hexane	102
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	101
Tetrahydrofuran	110
Chloroform	99
1,1,1-Trichloroethane	93
Cyclohexane	85
Carbon Tetrachloride	97
2,2,4-Trimethylpentane	95
Benzene	113
1,2-Dichloroethane	116
Heptane	101
Trichloroethene	112
1,2-Dichloropropane	109
1,4-Dioxane	110
Bromodichloromethane	93
cis-1,3-Dichloropropene	103
4-Methyl-2-pentanone	111
Toluene	104
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	92
Tetrachloroethene	102
2-Hexanone	102

Client Sample ID: CCV

Lab ID#: 2401522A-07C

EPA METHOD TO-15 GC/MS

File Name:	2013105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 04:03 PM

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	92
Chlorobenzene	93
Ethyl Benzene	92
m,p-Xylene	91
o-Xylene	88
Styrene	92
Bromoform	100
Cumene	86
1,1,2,2-Tetrachloroethane	85
Propylbenzene	87
4-Ethyltoluene	91
1,3,5-Trimethylbenzene	89
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	91
alpha-Chlorotoluene	87
1,2-Dichlorobenzene	90
1,2,4-Trichlorobenzene	88
Hexachlorobutadiene	88
Butane	102
Isopentane	120

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	110	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013009	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 01:16 PM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	99	70-130
Chloromethane	111	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	94	70-130
Bromomethane	102	70-130
Chloroethane	95	70-130
Freon 11	94	70-130
Ethanol	126	70-130
Freon 113	98	70-130
1,1-Dichloroethene	87	70-130
Acetone	97	70-130
2-Propanol	96	70-130
Carbon Disulfide	101	70-130
3-Chloropropene	88	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	85	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	93	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	105	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	87	70-130
Cyclohexane	86	70-130
Carbon Tetrachloride	91	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	103	70-130
1,2-Dichloroethane	100	70-130
Heptane	94	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	95	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	105	70-130
2-Hexanone	96	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013009	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 01:16 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	96	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	92	70-130
o-Xylene	90	70-130
Styrene	95	70-130
Bromoform	105	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	96	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	91	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	82	70-130
1,2-Dichlorobenzene	99	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	117	70-130
Butane	97	70-130
Isopentane	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	115	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p013010
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 1/30/24 01:46 PM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	98	70-130
Chloromethane	111	70-130
Vinyl Chloride	102	70-130
1,3-Butadiene	94	70-130
Bromomethane	100	70-130
Chloroethane	96	70-130
Freon 11	93	70-130
Ethanol	128	70-130
Freon 113	97	70-130
1,1-Dichloroethene	86	70-130
Acetone	97	70-130
2-Propanol	96	70-130
Carbon Disulfide	100	70-130
3-Chloropropene	90	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	86	70-130
trans-1,2-Dichloroethene	90	70-130
Hexane	94	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	95	70-130
cis-1,2-Dichloroethene	92	70-130
Tetrahydrofuran	106	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	88	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	103	70-130
1,2-Dichloroethane	99	70-130
Heptane	95	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	99	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	95	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	104	70-130
2-Hexanone	94	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p013010	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/30/24 01:46 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	95	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	92	70-130
o-Xylene	90	70-130
Styrene	95	70-130
Bromoform	104	70-130
Cumene	87	70-130
1,1,2,2-Tetrachloroethane	95	70-130
Propylbenzene	95	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	96	70-130
1,2,4-Trimethylbenzene	91	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	81	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	116	70-130
Butane	96	70-130
Isopentane	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p020204
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 2/2/24 12:40 PM

Compound	%Recovery	Method Limits
Freon 12	95	70-130
Freon 114	98	70-130
Chloromethane	112	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	94	70-130
Bromomethane	105	70-130
Chloroethane	96	70-130
Freon 11	94	70-130
Ethanol	130	70-130
Freon 113	97	70-130
1,1-Dichloroethene	86	70-130
Acetone	96	70-130
2-Propanol	95	70-130
Carbon Disulfide	100	70-130
3-Chloropropene	90	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	85	70-130
trans-1,2-Dichloroethene	90	70-130
Hexane	93	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	91	70-130
Tetrahydrofuran	105	70-130
Chloroform	87	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	87	70-130
Carbon Tetrachloride	91	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	103	70-130
1,2-Dichloroethane	100	70-130
Heptane	96	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	99	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	95	70-130
4-Methyl-2-pentanone	92	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	104	70-130
2-Hexanone	94	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 12:40 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	96	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	92	70-130
o-Xylene	89	70-130
Styrene	95	70-130
Bromoform	104	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	96	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	80	70-130
1,2-Dichlorobenzene	99	70-130
1,2,4-Trichlorobenzene	94	70-130
Hexachlorobutadiene	110	70-130
Butane	97	70-130
Isopentane	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	114	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p020205
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 2/2/24 01:10 PM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	100	70-130
Chloromethane	113	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	95	70-130
Bromomethane	105	70-130
Chloroethane	98	70-130
Freon 11	94	70-130
Ethanol	133 Q	70-130
Freon 113	97	70-130
1,1-Dichloroethene	87	70-130
Acetone	98	70-130
2-Propanol	97	70-130
Carbon Disulfide	102	70-130
3-Chloropropene	91	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	86	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	95	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	93	70-130
Tetrahydrofuran	109	70-130
Chloroform	88	70-130
1,1,1-Trichloroethane	87	70-130
Cyclohexane	89	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	104	70-130
1,2-Dichloroethane	99	70-130
Heptane	95	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	97	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	94	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	93	70-130
Tetrachloroethene	103	70-130
2-Hexanone	93	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p020205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/2/24 01:10 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	97	70-130
1,2-Dibromoethane (EDB)	95	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	91	70-130
m,p-Xylene	92	70-130
o-Xylene	88	70-130
Styrene	93	70-130
Bromoform	102	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	94	70-130
4-Ethyltoluene	94	70-130
1,3,5-Trimethylbenzene	95	70-130
1,2,4-Trimethylbenzene	89	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	79	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	99	70-130
Hexachlorobutadiene	113	70-130
Butane	96	70-130
Isopentane	104	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	112	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08C

EPA METHOD TO-15 GC/MS

File Name:	2013106	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 04:36 PM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	103	70-130
Chloromethane	102	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	102	70-130
Bromomethane	114	70-130
Chloroethane	92	70-130
Freon 11	106	70-130
Ethanol	130	70-130
Freon 113	101	70-130
1,1-Dichloroethene	98	70-130
Acetone	118	70-130
2-Propanol	123	70-130
Carbon Disulfide	97	70-130
3-Chloropropene	88	70-130
Methylene Chloride	121	70-130
Methyl tert-butyl ether	85	70-130
trans-1,2-Dichloroethene	96	70-130
Hexane	104	70-130
1,1-Dichloroethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	103	70-130
Tetrahydrofuran	118	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	94	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	98	70-130
2,2,4-Trimethylpentane	95	70-130
Benzene	114	70-130
1,2-Dichloroethane	118	70-130
Heptane	103	70-130
Trichloroethene	113	70-130
1,2-Dichloropropane	107	70-130
1,4-Dioxane	110	70-130
Bromodichloromethane	94	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	111	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	91	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	105	70-130
2-Hexanone	103	70-130

Client Sample ID: LCS

Lab ID#: 2401522A-08C

EPA METHOD TO-15 GC/MS

File Name:	2013106	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 04:36 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	99	70-130
1,2-Dibromoethane (EDB)	95	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	91	70-130
o-Xylene	90	70-130
Styrene	94	70-130
Bromoform	100	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	86	70-130
Propylbenzene	86	70-130
4-Ethyltoluene	90	70-130
1,3,5-Trimethylbenzene	89	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	91	70-130
alpha-Chlorotoluene	86	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	87	70-130
Hexachlorobutadiene	87	70-130
Butane	107	70-130
Isopentane	124	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08CC

EPA METHOD TO-15 GC/MS

File Name: 2013107
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 1/31/24 05:10 PM

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	110	70-130
Chloromethane	109	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	107	70-130
Bromomethane	120	70-130
Chloroethane	100	70-130
Freon 11	113	70-130
Ethanol	141 Q	70-130
Freon 113	107	70-130
1,1-Dichloroethene	105	70-130
Acetone	126	70-130
2-Propanol	131 Q	70-130
Carbon Disulfide	104	70-130
3-Chloropropene	96	70-130
Methylene Chloride	130	70-130
Methyl tert-butyl ether	90	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	110	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	104	70-130
cis-1,2-Dichloroethene	109	70-130
Tetrahydrofuran	126	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	101	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	104	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	117	70-130
1,2-Dichloroethane	120	70-130
Heptane	106	70-130
Trichloroethene	116	70-130
1,2-Dichloropropane	111	70-130
1,4-Dioxane	114	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	106	70-130
4-Methyl-2-pentanone	115	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	107	70-130
2-Hexanone	106	70-130

Client Sample ID: LCSD

Lab ID#: 2401522A-08CC

EPA METHOD TO-15 GC/MS

File Name:	2013107	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/31/24 05:10 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	96	70-130
m,p-Xylene	94	70-130
o-Xylene	93	70-130
Styrene	96	70-130
Bromoform	103	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	88	70-130
Propylbenzene	89	70-130
4-Ethyltoluene	93	70-130
1,3,5-Trimethylbenzene	92	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	94	70-130
alpha-Chlorotoluene	89	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	91	70-130
Hexachlorobutadiene	92	70-130
Butane	111	70-130
Isopentane	130	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	109	70-130

2/8/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927 - 4.1.2

Workorder #: 2401522B

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 1/26/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2401522B

Work Order Summary

CLIENT: Mr. Samuel Fisher
AECOM
100 N. Broadway, 20th Floor
St. Louis, MO 63102

BILL TO: Accounts Payable Austin
AECOM
PO Box 203970
Austin, TX 78720

PHONE: 314-296-1969

P.O. # 1630860

FAX:

PROJECT # 60721927 - 4.1.2 Roxana Quarterly Soil

DATE RECEIVED: 01/26/2024

CONTACT: Vapor
Brian Whittaker

DATE COMPLETED: 02/08/2024

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-012524	Modified ASTM D-1946	6.1 "Hg	10.1 psi
02A	VMP-15-21.5-012524	Modified ASTM D-1946	5.7 "Hg	9.8 psi
03A	VMP-15-25.5-012524	Modified ASTM D-1946	6.3 "Hg	10.1 psi
04A	VMP-15-29-012524	Modified ASTM D-1946	6.5 "Hg	10 psi
05A	VMP-55-20-012524	Modified ASTM D-1946	7.1 "Hg	10 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	CCV	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: 02/08/24

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
Modified ASTM D-1946
AECOM
Workorder# 2401522B

Five 1 Liter Summa Canister samples were received on January 26, 2024. 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 EATL 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 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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-15-5-012524

Lab ID#: 2401522B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	16
Nitrogen	0.21	82
Carbon Dioxide	0.021	2.1
Helium	0.11	0.018 J

Client Sample ID: VMP-15-21.5-012524

Lab ID#: 2401522B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	2.7
Nitrogen	0.21	80
Carbon Dioxide	0.021	17
Helium	0.10	0.045 J

Client Sample ID: VMP-15-25.5-012524

Lab ID#: 2401522B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	1.8
Nitrogen	0.21	78
Carbon Dioxide	0.021	20
Helium	0.11	0.051 J

Client Sample ID: VMP-15-29-012524

Lab ID#: 2401522B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.7
Nitrogen	0.22	78
Carbon Dioxide	0.022	20
Helium	0.11	0.022 J

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

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.4
Nitrogen	0.22	74
Methane	0.00022	6.7
Carbon Dioxide	0.022	17
Ethane	0.0022	0.0033



Air Toxics

Client Sample ID: VMP-15-5-012524

Lab ID#: 2401522B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11020120	Date of Collection: 1/25/24 9:36:00 AM
Dil. Factor:	2.12	Date of Analysis: 2/1/24 06:55 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	16
Nitrogen	0.21	82
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	Not Detected
Carbon Dioxide	0.021	2.1
Ethane	0.0021	Not Detected
Ethene	0.0021	Not Detected
Helium	0.11	0.018 J

J = Estimated value.

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-21.5-012524

Lab ID#: 2401522B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11020121	Date of Collection: 1/25/24 9:56:00 AM
Dil. Factor:	2.06	Date of Analysis: 2/1/24 07:19 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	2.7
Nitrogen	0.21	80
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	Not Detected
Carbon Dioxide	0.021	17
Ethane	0.0021	Not Detected
Ethene	0.0021	Not Detected
Helium	0.10	0.045 J

J = Estimated value.

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-25.5-012524

Lab ID#: 2401522B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11020122	Date of Collection: 1/25/24 10:20:00 AM
Dil. Factor:	2.14	Date of Analysis: 2/1/24 07:43 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	1.8
Nitrogen	0.21	78
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	Not Detected
Carbon Dioxide	0.021	20
Ethane	0.0021	Not Detected
Ethene	0.0021	Not Detected
Helium	0.11	0.051 J

J = Estimated value.

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-15-29-012524

Lab ID#: 2401522B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11020123	Date of Collection: 1/25/24 10:40:00 AM
Dil. Factor:	2.15	Date of Analysis: 2/1/24 08:29 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.7
Nitrogen	0.22	78
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	20
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	0.022 J

J = Estimated value.

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: VMP-55-20-012524

Lab ID#: 2401522B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11020124	Date of Collection: 1/25/24 11:31:00 AM
Dil. Factor:	2.20	Date of Analysis: 2/1/24 08:53 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.4
Nitrogen	0.22	74
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	6.7
Carbon Dioxide	0.022	17
Ethane	0.0022	0.0033
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2401522B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11020104

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 2/1/24 11:08 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#: 2401522B-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11020105c
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 2/1/24 11:35 AM

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

Container Type: NA - Not Applicable

Client Sample ID: CCV

Lab ID#: 2401522B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11020101

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 2/1/24 09:41 AM

Compound	%Recovery
----------	-----------

Oxygen	99
--------	----

Nitrogen	95
----------	----

Carbon Monoxide	94
-----------------	----

Methane	96
---------	----

Carbon Dioxide	102
----------------	-----

Ethane	98
--------	----

Ethene	99
--------	----

Helium	96
--------	----

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2401522B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11020102

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 2/1/24 10:05 AM

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	95	85-115
Carbon Monoxide	93	85-115
Methane	97	85-115
Carbon Dioxide	103	85-115
Ethane	99	85-115
Ethene	100	85-115
Helium	98	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2401522B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11020125

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 2/1/24 09:45 PM

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	95	85-115
Carbon Monoxide	94	85-115
Methane	96	85-115
Carbon Dioxide	104	85-115
Ethane	98	85-115
Ethene	99	85-115
Helium	98	85-115

Container Type: NA - Not Applicable

5/14/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927-4.2.2

Workorder #: 2405051A

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 5/1/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2405051A

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 100 N. Broadway, 20th Floor St. Louis, MO 63102	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1631081
FAX:		PROJECT #	60721927-4.2.2 Roxana Quarterly Soil
DATE RECEIVED:	05/01/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	05/14/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-043024	TO-15	7.3 "Hg	9.7 psi
02A	VMP-15-21.5-043024	TO-15	7.6 "Hg	9.9 psi
03A	VMP-15-25.5-043024	TO-15	8.4 "Hg	9.7 psi
04A	VMP-15-29-043024	TO-15	8.2 "Hg	10 psi
05A	VMP-55-20-043024	TO-15	10.6 "Hg	9.8 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 05/14/24

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 2405051A

Five 1 Liter Summa Canister (100% Certified) samples were received on May 01, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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 may be false positives.

All Quality Control Limit exceedances 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.

Dilution was performed on sample VMP-55-20-043024 due to the presence of high level target species.

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-15-5-043024

Lab ID#: 2405051A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	1.1	0.70 J	7.4	4.7 J

Client Sample ID: VMP-15-21.5-043024

Lab ID#: 2405051A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	1.1	1.3	7.6	9.1

Client Sample ID: VMP-15-25.5-043024

Lab ID#: 2405051A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	12	4.4 J	27	10 J
Carbon Disulfide	4.6	1.4 J	14	4.3 J
Chloroform	1.2	1.5	5.6	7.4

Client Sample ID: VMP-15-29-043024

Lab ID#: 2405051A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	1.2	4.4	5.6	22

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	26000	12000 J	61000	30000 J
Hexane	6400	1400 J	23000	5000 J
Cyclohexane	6400	27000	22000	92000
2,2,4-Trimethylpentane	6400	79000	30000	370000
Toluene	6400	1300 J	24000	5000 J
m,p-Xylene	6400	1100 J	28000	4800 J

Summary of Detected Compounds

EPA METHOD TO-15 GC/MS

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051A-05A

Butane	26000	95000	61000	220000
Isopentane	26000	680000	76000	2000000



Air Toxics

Client Sample ID: VMP-15-5-043024

Lab ID#: 2405051A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050608	Date of Collection:	4/30/24 9:45:00 AM
Dil. Factor:	2.19	Date of Analysis:	5/6/24 03:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.4	Not Detected
Freon 114	1.1	Not Detected	7.6	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	2.4	Not Detected
Bromomethane	11	Not Detected	42	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Acetone	11	Not Detected	26	Not Detected
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Hexane	1.1	Not Detected	3.8	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	Not Detected	5.3	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.3	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	2.2	Not Detected	8.2	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	0.70 J	7.4	4.7 J
2-Hexanone	4.4	Not Detected	18	Not Detected



Air Toxics

Client Sample ID: VMP-15-5-043024

Lab ID#: 2405051A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050608	Date of Collection:	4/30/24 9:45:00 AM
Dil. Factor:	2.19	Date of Analysis:	5/6/24 03:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.3	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.0	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	2.2	Not Detected	9.5	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	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.5	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	32	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected
Butane	4.4	Not Detected	10	Not Detected
Isopentane	4.4	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: VMP-15-21.5-043024

Lab ID#: 2405051A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050609	Date of Collection:	4/30/24 10:02:00 AM
Dil. Factor:	2.24	Date of Analysis:	5/6/24 04:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	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	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	1.1	Not Detected	8.6	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.5	Not Detected	11	Not Detected
Carbon Disulfide	4.5	Not Detected	14	Not Detected
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	Not Detected	13	Not Detected
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	5.5	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	Not Detected	5.2	Not Detected
Benzene	1.1	Not Detected	3.6	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	Not Detected	4.6	Not Detected
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	2.2	Not Detected	8.4	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	1.3	7.6	9.1
2-Hexanone	4.5	Not Detected	18	Not Detected

Client Sample ID: VMP-15-21.5-043024

Lab ID#: 2405051A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050609	Date of Collection: 4/30/24 10:02:00 AM
Dil. Factor:	2.24	Date of Analysis: 5/6/24 04:23 PM

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	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	2.2	Not Detected	9.7	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
Styrene	1.1	Not Detected	4.8	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	7.7	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

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: VMP-15-25.5-043024

Lab ID#: 2405051A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050610	Date of Collection:	4/30/24 10:21:00 AM
Dil. Factor:	2.30	Date of Analysis:	5/6/24 04:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.7	Not Detected
Freon 114	1.2	Not Detected	8.0	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	2.9	Not Detected
1,3-Butadiene	1.2	Not Detected	2.5	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	12	Not Detected	22	Not Detected
Freon 113	1.2	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	4.4 J	27	10 J
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	1.4 J	14	4.3 J
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.6	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.4	Not Detected
Chloroform	1.2	1.5	5.6	7.4
1,1,1-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	Not Detected	3.7	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.6	Not Detected
Heptane	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.2	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.7	Not Detected
Toluene	2.3	Not Detected	8.7	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

Client Sample ID: VMP-15-25.5-043024

Lab ID#: 2405051A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050610	Date of Collection: 4/30/24 10:21:00 AM
Dil. Factor:	2.30	Date of Analysis: 5/6/24 04:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	8.8	Not Detected
Chlorobenzene	1.2	Not Detected	5.3	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	2.3	Not Detected	10	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	4.9	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	7.9	Not Detected
Propylbenzene	1.2	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.6	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.6	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	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	Not Detected	14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: VMP-15-29-043024

Lab ID#: 2405051A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050611	Date of Collection:	4/30/24 10:40:00 AM
Dil. Factor:	2.31	Date of Analysis:	5/6/24 05:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.7	Not Detected
Freon 114	1.2	Not Detected	8.1	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	45	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	12	Not Detected	22	Not Detected
Freon 113	1.2	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	Not Detected	27	Not Detected
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.6	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	Not Detected	4.1	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.4	Not Detected
Chloroform	1.2	4.4	5.6	22
1,1,1-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	Not Detected	3.7	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.7	Not Detected
Toluene	2.3	Not Detected	8.7	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

Client Sample ID: VMP-15-29-043024

Lab ID#: 2405051A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050611	Date of Collection:	4/30/24 10:40:00 AM
Dil. Factor:	2.31	Date of Analysis:	5/6/24 05:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	8.9	Not Detected
Chlorobenzene	1.2	Not Detected	5.3	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	2.3	Not Detected	10	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	4.9	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	7.9	Not Detected
Propylbenzene	1.2	Not Detected	5.7	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.7	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.7	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.7	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	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	Not Detected	14	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051A-05A

EPA METHOD TO-15 GC/MS

File Name:	14050926	Date of Collection: 4/30/24 11:29:00 AM
Dil. Factor:	1290	Date of Analysis: 5/9/24 09:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	6400	Not Detected	32000	Not Detected
Freon 114	6400	Not Detected	45000	Not Detected
Chloromethane	26000	Not Detected	53000	Not Detected
Vinyl Chloride	6400	Not Detected	16000	Not Detected
1,3-Butadiene	6400	Not Detected	14000	Not Detected
Bromomethane	26000	Not Detected	100000	Not Detected
Chloroethane	26000	Not Detected	68000	Not Detected
Freon 11	6400	Not Detected	36000	Not Detected
Ethanol	32000	Not Detected	61000	Not Detected
Freon 113	6400	Not Detected	49000	Not Detected
1,1-Dichloroethene	6400	Not Detected	26000	Not Detected
Acetone	26000	12000 J	61000	30000 J
2-Propanol	32000	Not Detected	79000	Not Detected
Carbon Disulfide	26000	Not Detected	80000	Not Detected
3-Chloropropene	26000	Not Detected	81000	Not Detected
Methylene Chloride	26000	Not Detected	90000	Not Detected
Methyl tert-butyl ether	6400	Not Detected	23000	Not Detected
trans-1,2-Dichloroethene	6400	Not Detected	26000	Not Detected
Hexane	6400	1400 J	23000	5000 J
1,1-Dichloroethane	6400	Not Detected	26000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	26000	Not Detected	76000	Not Detected
cis-1,2-Dichloroethene	6400	Not Detected	26000	Not Detected
Tetrahydrofuran	6400	Not Detected	19000	Not Detected
Chloroform	6400	Not Detected	31000	Not Detected
1,1,1-Trichloroethane	6400	Not Detected	35000	Not Detected
Cyclohexane	6400	27000	22000	92000
Carbon Tetrachloride	6400	Not Detected	40000	Not Detected
2,2,4-Trimethylpentane	6400	79000	30000	370000
Benzene	6400	Not Detected	21000	Not Detected
1,2-Dichloroethane	6400	Not Detected	26000	Not Detected
Heptane	6400	Not Detected	26000	Not Detected
Trichloroethene	6400	Not Detected	35000	Not Detected
1,2-Dichloropropane	6400	Not Detected	30000	Not Detected
1,4-Dioxane	26000	Not Detected	93000	Not Detected
Bromodichloromethane	6400	Not Detected	43000	Not Detected
cis-1,3-Dichloropropene	6400	Not Detected	29000	Not Detected
4-Methyl-2-pentanone	26000	Not Detected	100000	Not Detected
Toluene	6400	1300 J	24000	5000 J
trans-1,3-Dichloropropene	6400	Not Detected	29000	Not Detected
1,1,2-Trichloroethane	6400	Not Detected	35000	Not Detected
Tetrachloroethene	6400	Not Detected	44000	Not Detected
2-Hexanone	26000	Not Detected	100000	Not Detected

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051A-05A

EPA METHOD TO-15 GC/MS

File Name:	14050926	Date of Collection: 4/30/24 11:29:00 AM
Dil. Factor:	1290	Date of Analysis: 5/9/24 09:27 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	6400	Not Detected	55000	Not Detected
1,2-Dibromoethane (EDB)	6400	Not Detected	50000	Not Detected
Chlorobenzene	6400	Not Detected	30000	Not Detected
Ethyl Benzene	6400	Not Detected	28000	Not Detected
m,p-Xylene	6400	1100 J	28000	4800 J
o-Xylene	6400	Not Detected	28000	Not Detected
Styrene	6400	Not Detected	27000	Not Detected
Bromoform	6400	Not Detected	67000	Not Detected
Cumene	6400	Not Detected	32000	Not Detected
1,1,2,2-Tetrachloroethane	6400	Not Detected	44000	Not Detected
Propylbenzene	6400	Not Detected	32000	Not Detected
4-Ethyltoluene	6400	Not Detected	32000	Not Detected
1,3,5-Trimethylbenzene	6400	Not Detected	32000	Not Detected
1,2,4-Trimethylbenzene	6400	Not Detected	32000	Not Detected
1,3-Dichlorobenzene	6400	Not Detected	39000	Not Detected
1,4-Dichlorobenzene	6400	Not Detected	39000	Not Detected
alpha-Chlorotoluene	6400	Not Detected	33000	Not Detected
1,2-Dichlorobenzene	6400	Not Detected	39000	Not Detected
1,2,4-Trichlorobenzene	26000	Not Detected	190000	Not Detected
Hexachlorobutadiene	26000	Not Detected	280000	Not Detected
Butane	26000	95000	61000	220000
Isopentane	26000	680000	76000	2000000

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: Lab Blank

Lab ID#: 2405051A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050607a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 01:37 PM

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	5.0	Not Detected	9.4	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	Not Detected	6.2	Not Detected
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	1.0	Not Detected	3.8	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

Client Sample ID: Lab Blank

Lab ID#: 2405051A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050607a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 01:37 PM

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	1.0	Not Detected	4.3	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	0.16 J	2.4	0.78 J
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
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	Not Detected	15	Not Detected
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	104	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: Lab Blank

Lab ID#: 2405051A-06B

EPA METHOD TO-15 GC/MS

File Name:	14050907e	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/9/24 11:42 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	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	25	Not Detected	47	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	25	Not Detected	61	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	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)	20	Not Detected	59	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	20	Not Detected	82	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
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 2405051A-06B

EPA METHOD TO-15 GC/MS

File Name:	14050907e	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/9/24 11:42 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
Butane	20	Not Detected	48	Not Detected
Isopentane	20	Not Detected	59	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: CCV

Lab ID#: 2405051A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 10:49 AM

Compound	%Recovery
Freon 12	94
Freon 114	98
Chloromethane	107
Vinyl Chloride	104
1,3-Butadiene	92
Bromomethane	126
Chloroethane	100
Freon 11	90
Ethanol	106
Freon 113	94
1,1-Dichloroethene	91
Acetone	100
2-Propanol	91
Carbon Disulfide	100
3-Chloropropene	89
Methylene Chloride	104
Methyl tert-butyl ether	89
trans-1,2-Dichloroethene	92
Hexane	99
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	100
cis-1,2-Dichloroethene	92
Tetrahydrofuran	100
Chloroform	96
1,1,1-Trichloroethane	90
Cyclohexane	93
Carbon Tetrachloride	94
2,2,4-Trimethylpentane	102
Benzene	115
1,2-Dichloroethane	104
Heptane	102
Trichloroethene	110
1,2-Dichloropropane	120
1,4-Dioxane	111
Bromodichloromethane	106
cis-1,3-Dichloropropene	106
4-Methyl-2-pentanone	107
Toluene	116
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	103
Tetrachloroethene	112
2-Hexanone	106

Client Sample ID: CCV

Lab ID#: 2405051A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 10:49 AM

Compound	%Recovery
Dibromochloromethane	106
1,2-Dibromoethane (EDB)	104
Chlorobenzene	107
Ethyl Benzene	104
m,p-Xylene	104
o-Xylene	99
Styrene	104
Bromoform	111
Cumene	100
1,1,2,2-Tetrachloroethane	105
Propylbenzene	103
4-Ethyltoluene	106
1,3,5-Trimethylbenzene	104
1,2,4-Trimethylbenzene	105
1,3-Dichlorobenzene	113
1,4-Dichlorobenzene	110
alpha-Chlorotoluene	105
1,2-Dichlorobenzene	113
1,2,4-Trichlorobenzene	114
Hexachlorobutadiene	122
Butane	96
Isopentane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: CCV

Lab ID#: 2405051A-07B

EPA METHOD TO-15 GC/MS

File Name:	14050903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/9/24 09:40 AM

Compound	%Recovery
Freon 12	96
Freon 114	104
Chloromethane	103
Vinyl Chloride	108
1,3-Butadiene	106
Bromomethane	109
Chloroethane	105
Freon 11	105
Ethanol	104
Freon 113	102
1,1-Dichloroethene	103
Acetone	104
2-Propanol	103
Carbon Disulfide	100
3-Chloropropene	104
Methylene Chloride	101
Methyl tert-butyl ether	95
trans-1,2-Dichloroethene	101
Hexane	101
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	101
cis-1,2-Dichloroethene	102
Tetrahydrofuran	104
Chloroform	102
1,1,1-Trichloroethane	100
Cyclohexane	100
Carbon Tetrachloride	99
2,2,4-Trimethylpentane	100
Benzene	97
1,2-Dichloroethane	96
Heptane	95
Trichloroethene	95
1,2-Dichloropropane	96
1,4-Dioxane	102
Bromodichloromethane	98
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	104
Toluene	96
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	92
Tetrachloroethene	93
2-Hexanone	98

Client Sample ID: CCV

Lab ID#: 2405051A-07B

EPA METHOD TO-15 GC/MS

File Name:	14050903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/9/24 09:40 AM

Compound	%Recovery
Dibromochloromethane	96
1,2-Dibromoethane (EDB)	94
Chlorobenzene	91
Ethyl Benzene	89
m,p-Xylene	90
o-Xylene	89
Styrene	92
Bromoform	92
Cumene	90
1,1,1,2-Tetrachloroethane	90
Propylbenzene	88
4-Ethyltoluene	90
1,3,5-Trimethylbenzene	90
1,2,4-Trimethylbenzene	93
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	88
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	91
1,2,4-Trichlorobenzene	118
Hexachlorobutadiene	123
Butane	104
Isopentane	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: LCS

Lab ID#: 2405051A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p050604
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/6/24 11:18 AM

Compound	%Recovery	Method Limits
Freon 12	90	70-130
Freon 114	93	70-130
Chloromethane	99	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	88	70-130
Bromomethane	103	70-130
Chloroethane	95	70-130
Freon 11	87	70-130
Ethanol	119	70-130
Freon 113	89	70-130
1,1-Dichloroethene	84	70-130
Acetone	96	70-130
2-Propanol	92	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	88	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	89	70-130
Hexane	97	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	100	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	106	70-130
Chloroform	91	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	94	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	108	70-130
1,2-Dichloroethane	96	70-130
Heptane	98	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	110	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	104	70-130
Toluene	107	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	108	70-130
2-Hexanone	106	70-130

Client Sample ID: LCS

Lab ID#: 2405051A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 11:18 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	103	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	101	70-130
o-Xylene	98	70-130
Styrene	101	70-130
Bromoform	105	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	103	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	101	70-130
1,2,4-Trimethylbenzene	103	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	100	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	111	70-130
Butane	94	70-130
Isopentane	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCSD

Lab ID#: 2405051A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p050605
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/6/24 11:47 AM

Compound	%Recovery	Method Limits
Freon 12	90	70-130
Freon 114	93	70-130
Chloromethane	100	70-130
Vinyl Chloride	101	70-130
1,3-Butadiene	90	70-130
Bromomethane	104	70-130
Chloroethane	97	70-130
Freon 11	88	70-130
Ethanol	121	70-130
Freon 113	89	70-130
1,1-Dichloroethene	85	70-130
Acetone	98	70-130
2-Propanol	94	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	88	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	90	70-130
Hexane	100	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	101	70-130
cis-1,2-Dichloroethene	91	70-130
Tetrahydrofuran	108	70-130
Chloroform	91	70-130
1,1,1-Trichloroethane	90	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	108	70-130
1,2-Dichloroethane	98	70-130
Heptane	100	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	110	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	106	70-130
Toluene	107	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	108	70-130
2-Hexanone	104	70-130

Client Sample ID: LCSD

Lab ID#: 2405051A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p050605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/6/24 11:47 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	100	70-130
o-Xylene	97	70-130
Styrene	99	70-130
Bromoform	104	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	98	70-130
4-Ethyltoluene	97	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	100	70-130
1,2-Dichlorobenzene	104	70-130
1,2,4-Trichlorobenzene	110	70-130
Hexachlorobutadiene	117	70-130
Butane	97	70-130
Isopentane	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCS

Lab ID#: 2405051A-08B

EPA METHOD TO-15 GC/MS

File Name: 14050904
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/9/24 10:06 AM

Compound	%Recovery	Method Limits
Freon 12	109	70-130
Freon 114	107	70-130
Chloromethane	114	70-130
Vinyl Chloride	111	70-130
1,3-Butadiene	107	70-130
Bromomethane	125	70-130
Chloroethane	116	70-130
Freon 11	113	70-130
Ethanol	144 Q	70-130
Freon 113	102	70-130
1,1-Dichloroethene	100	70-130
Acetone	106	70-130
2-Propanol	110	70-130
Carbon Disulfide	105	70-130
3-Chloropropene	119	70-130
Methylene Chloride	103	70-130
Methyl tert-butyl ether	115	70-130
trans-1,2-Dichloroethene	104	70-130
Hexane	102	70-130
1,1-Dichloroethane	105	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
cis-1,2-Dichloroethene	103	70-130
Tetrahydrofuran	106	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	100	70-130
1,2-Dichloroethane	104	70-130
Heptane	103	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	113	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	99	70-130
2-Hexanone	98	70-130

Client Sample ID: LCS

Lab ID#: 2405051A-08B

EPA METHOD TO-15 GC/MS

File Name: 14050904
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/9/24 10:06 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	97	70-130
m,p-Xylene	97	70-130
o-Xylene	96	70-130
Styrene	99	70-130
Bromoform	96	70-130
Cumene	95	70-130
1,1,2,2-Tetrachloroethane	97	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	94	70-130
1,2,4-Trimethylbenzene	99	70-130
1,3-Dichlorobenzene	93	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	105	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	112	70-130
Hexachlorobutadiene	113	70-130
Butane	105	70-130
Isopentane	104	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: LCSD

Lab ID#: 2405051A-08BB

EPA METHOD TO-15 GC/MS

File Name: 14050905
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/9/24 10:37 AM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	107	70-130
Chloromethane	111	70-130
Vinyl Chloride	109	70-130
1,3-Butadiene	108	70-130
Bromomethane	120	70-130
Chloroethane	120	70-130
Freon 11	110	70-130
Ethanol	139 Q	70-130
Freon 113	102	70-130
1,1-Dichloroethene	99	70-130
Acetone	104	70-130
2-Propanol	106	70-130
Carbon Disulfide	103	70-130
3-Chloropropene	117	70-130
Methylene Chloride	99	70-130
Methyl tert-butyl ether	116	70-130
trans-1,2-Dichloroethene	104	70-130
Hexane	105	70-130
1,1-Dichloroethane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
cis-1,2-Dichloroethene	102	70-130
Tetrahydrofuran	108	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	103	70-130
1,2-Dichloroethane	103	70-130
Heptane	104	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	96	70-130
Tetrachloroethene	95	70-130
2-Hexanone	95	70-130

Client Sample ID: LCSD

Lab ID#: 2405051A-08BB

EPA METHOD TO-15 GC/MS

File Name:	14050905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/9/24 10:37 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	96	70-130
m,p-Xylene	94	70-130
o-Xylene	92	70-130
Styrene	96	70-130
Bromoform	93	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	92	70-130
4-Ethyltoluene	91	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3-Dichlorobenzene	91	70-130
1,4-Dichlorobenzene	91	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	106	70-130
Hexachlorobutadiene	108	70-130
Butane	102	70-130
Isopentane	104	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

5/14/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927-4.2.2

Workorder #: 2405051B

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 5/1/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2405051B

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 100 N. Broadway, 20th Floor St. Louis, MO 63102	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1631081
FAX:		PROJECT #	60721927-4.2.2 Roxana Quarterly Soil
DATE RECEIVED:	05/01/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	05/14/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-043024	Modified ASTM D-1946	7.3 "Hg	9.7 psi
02A	VMP-15-21.5-043024	Modified ASTM D-1946	7.6 "Hg	9.9 psi
03A	VMP-15-25.5-043024	Modified ASTM D-1946	8.4 "Hg	9.7 psi
04A	VMP-15-29-043024	Modified ASTM D-1946	8.2 "Hg	10 psi
05A	VMP-55-20-043024	Modified ASTM D-1946	10.6 "Hg	9.8 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	CCV	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: 05/14/24

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
Modified ASTM D-1946
AECOM
Workorder# 2405051B

Five 1 Liter Summa Canister (100% Certified) samples were received on May 01, 2024. 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 EATL 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 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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-15-5-043024

Lab ID#: 2405051B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	14
Nitrogen	0.22	82
Carbon Dioxide	0.022	4.0
Helium	0.11	0.014 J

Client Sample ID: VMP-15-21.5-043024

Lab ID#: 2405051B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.6
Nitrogen	0.22	79
Carbon Dioxide	0.022	18
Helium	0.11	0.0035 J

Client Sample ID: VMP-15-25.5-043024

Lab ID#: 2405051B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.9
Nitrogen	0.23	78
Carbon Dioxide	0.023	20
Helium	0.12	0.011 J

Client Sample ID: VMP-15-29-043024

Lab ID#: 2405051B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.9
Nitrogen	0.23	77
Carbon Dioxide	0.023	21
Helium	0.12	0.0037 J

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.3
Nitrogen	0.26	68
Methane	0.00026	14
Carbon Dioxide	0.026	16
Ethane	0.0026	0.0076
Helium	0.13	0.0069 J



Air Toxics

Client Sample ID: VMP-15-5-043024

Lab ID#: 2405051B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051308	Date of Collection: 4/30/24 9:45:00 AM
Dil. Factor:	2.20	Date of Analysis: 5/13/24 11:04 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	14
Nitrogen	0.22	82
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	4.0
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	0.014 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-21.5-043024

Lab ID#: 2405051B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051309	Date of Collection: 4/30/24 10:02:00 AM
Dil. Factor:	2.24	Date of Analysis: 5/13/24 12:03 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.6
Nitrogen	0.22	79
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	18
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	0.0035 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-25.5-043024

Lab ID#: 2405051B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051310	Date of Collection: 4/30/24 10:21:00 AM
Dil. Factor:	2.30	Date of Analysis: 5/13/24 12:41 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.9
Nitrogen	0.23	78
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	20
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.12	0.011 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-29-043024

Lab ID#: 2405051B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051311	Date of Collection: 4/30/24 10:40:00 AM
Dil. Factor:	2.31	Date of Analysis: 5/13/24 01:06 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	1.9
Nitrogen	0.23	77
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	21
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.12	0.0037 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-55-20-043024

Lab ID#: 2405051B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051312	Date of Collection: 4/30/24 11:29:00 AM
Dil. Factor:	2.58	Date of Analysis: 5/13/24 01:34 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.26	1.3
Nitrogen	0.26	68
Carbon Monoxide	0.026	Not Detected
Methane	0.00026	14
Carbon Dioxide	0.026	16
Ethane	0.0026	0.0076
Ethene	0.0026	Not Detected
Helium	0.13	0.0069 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2405051B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11051303

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 5/13/24 08:16 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#: 2405051B-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11051304c
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 5/13/24 08:42 AM

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

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 2405051B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11051301

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 5/13/24 07:19 AM

Compound	%Recovery
----------	-----------

Oxygen	99
--------	----

Nitrogen	95
----------	----

Carbon Monoxide	95
-----------------	----

Methane	98
---------	----

Carbon Dioxide	104
----------------	-----

Ethane	99
--------	----

Ethene	100
--------	-----

Helium	96
--------	----

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2405051B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11051302

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 5/13/24 07:44 AM

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	94	85-115
Carbon Monoxide	94	85-115
Methane	99	85-115
Carbon Dioxide	104	85-115
Ethane	100	85-115
Ethene	101	85-115
Helium	98	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2405051B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11051326	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/13/24 08:37 PM

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	94	85-115
Carbon Monoxide	89	85-115
Methane	98	85-115
Carbon Dioxide	104	85-115
Ethane	100	85-115
Ethene	101	85-115
Helium	97	85-115

Container Type: NA - Not Applicable

8/5/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927-4.3.2

Workorder #: 2407552A

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 7/24/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2407552A

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 100 N. Broadway, 20th Floor St. Louis, MO 63102	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1630860
FAX:		PROJECT #	60721927-4.3.2 Roxana Quarterly Soil
DATE RECEIVED:	07/24/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	08/05/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-072324	TO-15	8 "Hg	9.8 psi
02A	VMP-15-21.5-072324	TO-15	3.9 "Hg	9.9 psi
03A	VMP-15-25.5-072324	TO-15	8 "Hg	10.1 psi
04A	VMP-15-29-072324	TO-15	7.6 "Hg	9.4 psi
05A	VMP-55-20-072324	TO-15	7.1 "Hg	9.9 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 08/05/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 2407552A

Five 1 Liter Summa Canister (100% Certified) samples were received on July 24, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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 may be false positives.

Dilution was performed on sample VMP-55-20-072324 due to the presence of high level target species.

All Quality Control Limit exceedances 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

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-15-5-072324

Lab ID#: 2407552A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	11	9.2 J	27	22 J
2-Propanol	4.5	2.4 J	11	6.0 J

Client Sample ID: VMP-15-21.5-072324

Lab ID#: 2407552A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	9.6	17	18	32
Acetone	9.6	10	23	25
2-Propanol	3.8	17	9.4	42
Carbon Disulfide	3.8	3.9	12	12
2-Butanone (Methyl Ethyl Ketone)	3.8	0.80 J	11	2.4 J
Benzene	0.96	0.42 J	3.1	1.3 J
Toluene	1.9	0.55 J	7.2	2.1 J
m,p-Xylene	1.9	0.34 J	8.3	1.5 J
Styrene	0.96	0.17 J	4.1	0.73 J

Client Sample ID: VMP-15-25.5-072324

Lab ID#: 2407552A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	1.2	3.5	5.6	17
m,p-Xylene	2.3	0.20 J	10	0.87 J
1,2,4-Trichlorobenzene	4.6	1.7 J	34	13 J

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	11	8.3 J	26	20 J
2-Butanone (Methyl Ethyl Ketone)	4.4	1.0 J	13	3.1 J
Chloroform	1.1	6.1	5.4	30

Summary of Detected Compounds

EPA METHOD TO-15 GC/MS

Client Sample ID: VMP-55-20-072324

Lab ID#: 2407552A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	5500	15000	19000	52000
Cyclohexane	5500	42000	19000	140000
2,2,4-Trimethylpentane	5500	71000	26000	330000
Heptane	5500	3400 J	22000	14000 J
Butane	22000	280000	52000	680000
Isopentane	22000	1100000	65000	3100000

Client Sample ID: VMP-15-5-072324

Lab ID#: 2407552A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073119	Date of Collection:	7/23/24 9:51:00 AM
Dil. Factor:	2.27	Date of Analysis:	7/31/24 11:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.6	Not Detected
Freon 114	1.1	Not Detected	7.9	Not Detected
Chloromethane	11	Not Detected	23	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	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	1.1	Not Detected	8.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	9.2 J	27	22 J
2-Propanol	4.5	2.4 J	11	6.0 J
Carbon Disulfide	4.5	Not Detected	14	Not Detected
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	4.5	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)	4.5	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.5	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	7.1	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	4.6	Not Detected
Trichloroethene	1.1	Not Detected	6.1	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	7.6	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	2.3	Not Detected	8.6	Not Detected
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	7.7	Not Detected
2-Hexanone	4.5	Not Detected	18	Not Detected

Client Sample ID: VMP-15-5-072324

Lab ID#: 2407552A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073119	Date of Collection: 7/23/24 9:51:00 AM
Dil. Factor:	2.27	Date of Analysis: 7/31/24 11:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.7	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.7	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	2.3	Not Detected	9.8	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
Styrene	1.1	Not Detected	4.8	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	7.8	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	6.8	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	34	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 (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: VMP-15-21.5-072324

Lab ID#: 2407552A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073120	Date of Collection:	7/23/24 10:08:00 AM
Dil. Factor:	1.92	Date of Analysis:	7/31/24 11:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.96	Not Detected	4.7	Not Detected
Freon 114	0.96	Not Detected	6.7	Not Detected
Chloromethane	9.6	Not Detected	20	Not Detected
Vinyl Chloride	0.96	Not Detected	2.4	Not Detected
1,3-Butadiene	0.96	Not Detected	2.1	Not Detected
Bromomethane	9.6	Not Detected	37	Not Detected
Chloroethane	3.8	Not Detected	10	Not Detected
Freon 11	0.96	Not Detected	5.4	Not Detected
Ethanol	9.6	17	18	32
Freon 113	0.96	Not Detected	7.4	Not Detected
1,1-Dichloroethene	0.96	Not Detected	3.8	Not Detected
Acetone	9.6	10	23	25
2-Propanol	3.8	17	9.4	42
Carbon Disulfide	3.8	3.9	12	12
3-Chloropropene	3.8	Not Detected	12	Not Detected
Methylene Chloride	9.6	Not Detected	33	Not Detected
Methyl tert-butyl ether	3.8	Not Detected	14	Not Detected
trans-1,2-Dichloroethene	0.96	Not Detected	3.8	Not Detected
Hexane	0.96	Not Detected	3.4	Not Detected
1,1-Dichloroethane	0.96	Not Detected	3.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.8	0.80 J	11	2.4 J
cis-1,2-Dichloroethene	0.96	Not Detected	3.8	Not Detected
Tetrahydrofuran	0.96	Not Detected	2.8	Not Detected
Chloroform	0.96	Not Detected	4.7	Not Detected
1,1,1-Trichloroethane	0.96	Not Detected	5.2	Not Detected
Cyclohexane	0.96	Not Detected	3.3	Not Detected
Carbon Tetrachloride	0.96	Not Detected	6.0	Not Detected
2,2,4-Trimethylpentane	0.96	Not Detected	4.5	Not Detected
Benzene	0.96	0.42 J	3.1	1.3 J
1,2-Dichloroethane	0.96	Not Detected	3.9	Not Detected
Heptane	0.96	Not Detected	3.9	Not Detected
Trichloroethene	0.96	Not Detected	5.2	Not Detected
1,2-Dichloropropane	0.96	Not Detected	4.4	Not Detected
1,4-Dioxane	3.8	Not Detected	14	Not Detected
Bromodichloromethane	0.96	Not Detected	6.4	Not Detected
cis-1,3-Dichloropropene	0.96	Not Detected	4.4	Not Detected
4-Methyl-2-pentanone	0.96	Not Detected	3.9	Not Detected
Toluene	1.9	0.55 J	7.2	2.1 J
trans-1,3-Dichloropropene	0.96	Not Detected	4.4	Not Detected
1,1,2-Trichloroethane	0.96	Not Detected	5.2	Not Detected
Tetrachloroethene	0.96	Not Detected	6.5	Not Detected
2-Hexanone	3.8	Not Detected	16	Not Detected

Client Sample ID: VMP-15-21.5-072324

Lab ID#: 2407552A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073120	Date of Collection: 7/23/24 10:08:00 AM
Dil. Factor:	1.92	Date of Analysis: 7/31/24 11:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.96	Not Detected	8.2	Not Detected
1,2-Dibromoethane (EDB)	0.96	Not Detected	7.4	Not Detected
Chlorobenzene	0.96	Not Detected	4.4	Not Detected
Ethyl Benzene	0.96	Not Detected	4.2	Not Detected
m,p-Xylene	1.9	0.34 J	8.3	1.5 J
o-Xylene	0.96	Not Detected	4.2	Not Detected
Styrene	0.96	0.17 J	4.1	0.73 J
Bromoform	0.96	Not Detected	9.9	Not Detected
Cumene	0.96	Not Detected	4.7	Not Detected
1,1,2,2-Tetrachloroethane	0.96	Not Detected	6.6	Not Detected
Propylbenzene	0.96	Not Detected	4.7	Not Detected
4-Ethyltoluene	0.96	Not Detected	4.7	Not Detected
1,3,5-Trimethylbenzene	0.96	Not Detected	4.7	Not Detected
1,2,4-Trimethylbenzene	0.96	Not Detected	4.7	Not Detected
1,3-Dichlorobenzene	0.96	Not Detected	5.8	Not Detected
1,4-Dichlorobenzene	0.96	Not Detected	5.8	Not Detected
alpha-Chlorotoluene	0.96	Not Detected	5.0	Not Detected
1,2-Dichlorobenzene	0.96	Not Detected	5.8	Not Detected
1,2,4-Trichlorobenzene	3.8	Not Detected	28	Not Detected
Hexachlorobutadiene	3.8	Not Detected	41	Not Detected
Butane	3.8	Not Detected	9.1	Not Detected
Isopentane	3.8	Not Detected	11	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: VMP-15-25.5-072324

Lab ID#: 2407552A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073121	Date of Collection: 7/23/24 10:26:00 AM
Dil. Factor:	2.30	Date of Analysis: 8/1/24 12:18 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.7	Not Detected
Freon 114	1.2	Not Detected	8.0	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	2.9	Not Detected
1,3-Butadiene	1.2	Not Detected	2.5	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	12	Not Detected	22	Not Detected
Freon 113	1.2	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	Not Detected	27	Not Detected
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.6	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.4	Not Detected
Chloroform	1.2	3.5	5.6	17
1,1,1-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	Not Detected	3.7	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.6	Not Detected
Heptane	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.2	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.7	Not Detected
Toluene	2.3	Not Detected	8.7	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

Client Sample ID: VMP-15-25.5-072324

Lab ID#: 2407552A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073121	Date of Collection: 7/23/24 10:26:00 AM
Dil. Factor:	2.30	Date of Analysis: 8/1/24 12:18 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	8.8	Not Detected
Chlorobenzene	1.2	Not Detected	5.3	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	2.3	0.20 J	10	0.87 J
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	4.9	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	7.9	Not Detected
Propylbenzene	1.2	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.6	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.6	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	1.7 J	34	13 J
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
Butane	4.6	Not Detected	11	Not Detected
Isopentane	4.6	Not Detected	14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073122	Date of Collection: 7/23/24 10:45:00 AM
Dil. Factor:	2.20	Date of Analysis: 8/1/24 12:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.4	Not Detected
Freon 114	1.1	Not Detected	7.7	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	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	8.3 J	26	20 J
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	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	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	1.0 J	13	3.1 J
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	6.1	5.4	30
1,1,1-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	2.2	Not Detected	8.3	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
2-Hexanone	4.4	Not Detected	18	Not Detected

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073122	Date of Collection: 7/23/24 10:45:00 AM
Dil. Factor:	2.20	Date of Analysis: 8/1/24 12:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	2.2	Not Detected	9.6	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	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected
Butane	4.4	Not Detected	10	Not Detected
Isopentane	4.4	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: VMP-55-20-072324

Lab ID#: 2407552A-05A

EPA METHOD TO-15 GC/MS

File Name:	14080513	Date of Collection: 7/23/24 12:24:00 PM
Dil. Factor:	1100	Date of Analysis: 8/5/24 11:27 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5500	Not Detected	27000	Not Detected
Freon 114	5500	Not Detected	38000	Not Detected
Chloromethane	22000	Not Detected	45000	Not Detected
Vinyl Chloride	5500	Not Detected	14000	Not Detected
1,3-Butadiene	5500	Not Detected	12000	Not Detected
Bromomethane	22000	Not Detected UJ	85000	Not Detected UJ
Chloroethane	22000	Not Detected	58000	Not Detected
Freon 11	5500	Not Detected	31000	Not Detected
Ethanol	27000	Not Detected	52000	Not Detected
Freon 113	5500	Not Detected	42000	Not Detected
1,1-Dichloroethene	5500	Not Detected	22000	Not Detected
Acetone	22000	Not Detected	52000	Not Detected
2-Propanol	27000	Not Detected	67000	Not Detected
Carbon Disulfide	22000	Not Detected	68000	Not Detected
3-Chloropropene	22000	Not Detected	68000	Not Detected
Methylene Chloride	22000	Not Detected	76000	Not Detected
Methyl tert-butyl ether	5500	Not Detected UJ	20000	Not Detected UJ
trans-1,2-Dichloroethene	5500	Not Detected	22000	Not Detected
Hexane	5500	15000	19000	52000
1,1-Dichloroethane	5500	Not Detected	22000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	22000	Not Detected	64000	Not Detected
cis-1,2-Dichloroethene	5500	Not Detected	22000	Not Detected
Tetrahydrofuran	5500	Not Detected	16000	Not Detected
Chloroform	5500	Not Detected	27000	Not Detected
1,1,1-Trichloroethane	5500	Not Detected	30000	Not Detected
Cyclohexane	5500	42000	19000	140000
Carbon Tetrachloride	5500	Not Detected	34000	Not Detected
2,2,4-Trimethylpentane	5500	71000	26000	330000
Benzene	5500	Not Detected	17000	Not Detected
1,2-Dichloroethane	5500	Not Detected	22000	Not Detected
Heptane	5500	3400 J	22000	14000 J
Trichloroethene	5500	Not Detected	29000	Not Detected
1,2-Dichloropropane	5500	Not Detected	25000	Not Detected
1,4-Dioxane	22000	Not Detected	79000	Not Detected
Bromodichloromethane	5500	Not Detected	37000	Not Detected
cis-1,3-Dichloropropene	5500	Not Detected	25000	Not Detected
4-Methyl-2-pentanone	22000	Not Detected	90000	Not Detected
Toluene	5500	Not Detected	21000	Not Detected
trans-1,3-Dichloropropene	5500	Not Detected	25000	Not Detected
1,1,2-Trichloroethane	5500	Not Detected	30000	Not Detected
Tetrachloroethene	5500	Not Detected	37000	Not Detected
2-Hexanone	22000	Not Detected	90000	Not Detected



Air Toxics

Client Sample ID: VMP-55-20-072324

Lab ID#: 2407552A-05A

EPA METHOD TO-15 GC/MS

File Name:	14080513	Date of Collection: 7/23/24 12:24:00 PM
Dil. Factor:	1100	Date of Analysis: 8/5/24 11:27 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5500	Not Detected	47000	Not Detected
1,2-Dibromoethane (EDB)	5500	Not Detected	42000	Not Detected
Chlorobenzene	5500	Not Detected	25000	Not Detected
Ethyl Benzene	5500	Not Detected	24000	Not Detected
m,p-Xylene	5500	Not Detected	24000	Not Detected
o-Xylene	5500	Not Detected	24000	Not Detected
Styrene	5500	Not Detected	23000	Not Detected
Bromoform	5500	Not Detected	57000	Not Detected
Cumene	5500	Not Detected	27000	Not Detected
1,1,2,2-Tetrachloroethane	5500	Not Detected	38000	Not Detected
Propylbenzene	5500	Not Detected	27000	Not Detected
4-Ethyltoluene	5500	Not Detected	27000	Not Detected
1,3,5-Trimethylbenzene	5500	Not Detected	27000	Not Detected
1,2,4-Trimethylbenzene	5500	Not Detected	27000	Not Detected
1,3-Dichlorobenzene	5500	Not Detected	33000	Not Detected
1,4-Dichlorobenzene	5500	Not Detected	33000	Not Detected
alpha-Chlorotoluene	5500	Not Detected	28000	Not Detected
1,2-Dichlorobenzene	5500	Not Detected	33000	Not Detected
1,2,4-Trichlorobenzene	22000	Not Detected	160000	Not Detected
Hexachlorobutadiene	22000	Not Detected	230000	Not Detected
Butane	22000	280000	52000	680000
Isopentane	22000	1100000	65000	3100000

UJ = Analyte associated with low bias in the CCV.

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: Lab Blank

Lab ID#: 2407552A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073107d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 12:40 PM

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	5.0	Not Detected	9.4	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	Not Detected	6.2	Not Detected
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	1.0	Not Detected	3.8	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

Client Sample ID: Lab Blank

Lab ID#: 2407552A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073107d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 12:40 PM

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	1.0	0.075 J	4.3	0.33 J
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	Not Detected	3.0	Not Detected
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	Not Detected	15	Not Detected
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	98	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: Lab Blank

Lab ID#: 2407552A-06B

EPA METHOD TO-15 GC/MS

File Name:	14080506d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 08:28 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	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected UJ	78	Not Detected UJ
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	25	Not Detected	47	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	25	Not Detected	61	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected UJ	18	Not Detected UJ
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)	20	Not Detected	59	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	20	Not Detected	82	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
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 2407552A-06B

EPA METHOD TO-15 GC/MS

File Name:	14080506d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 08:28 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	0.71 J	30	4.3 J
alpha-Chlorotoluene	5.0	1.1 J	26	5.8 J
1,2-Dichlorobenzene	5.0	1.1 J	30	6.5 J
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
Butane	20	Not Detected	48	Not Detected
Isopentane	20	Not Detected	59	Not Detected

UJ = Analyte associated with low bias in the CCV.

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: CCV

Lab ID#: 2407552A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:00 AM

Compound	%Recovery
Freon 12	106
Freon 114	102
Chloromethane	102
Vinyl Chloride	107
1,3-Butadiene	101
Bromomethane	113
Chloroethane	102
Freon 11	103
Ethanol	99
Freon 113	103
1,1-Dichloroethene	103
Acetone	89
2-Propanol	98
Carbon Disulfide	98
3-Chloropropene	106
Methylene Chloride	98
Methyl tert-butyl ether	102
trans-1,2-Dichloroethene	102
Hexane	95
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	99
cis-1,2-Dichloroethene	100
Tetrahydrofuran	94
Chloroform	97
1,1,1-Trichloroethane	102
Cyclohexane	101
Carbon Tetrachloride	103
2,2,4-Trimethylpentane	97
Benzene	100
1,2-Dichloroethane	99
Heptane	108
Trichloroethene	103
1,2-Dichloropropane	102
1,4-Dioxane	110
Bromodichloromethane	103
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	103
Toluene	100
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	103
Tetrachloroethene	102
2-Hexanone	104

Client Sample ID: CCV

Lab ID#: 2407552A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:00 AM

Compound	%Recovery
Dibromochloromethane	105
1,2-Dibromoethane (EDB)	104
Chlorobenzene	103
Ethyl Benzene	103
m,p-Xylene	102
o-Xylene	101
Styrene	102
Bromoform	104
Cumene	102
1,1,2,2-Tetrachloroethane	102
Propylbenzene	103
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	104
1,3-Dichlorobenzene	103
1,4-Dichlorobenzene	102
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	101
1,2,4-Trichlorobenzene	106
Hexachlorobutadiene	110
Butane	104
Isopentane	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 2407552A-07B

EPA METHOD TO-15 GC/MS

File Name:	14080503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 07:16 AM

Compound	%Recovery
----------	-----------

Freon 12	88
Freon 114	100
Chloromethane	79
Vinyl Chloride	97
1,3-Butadiene	105
Bromomethane	62 Q
Chloroethane	102
Freon 11	92
Ethanol	104
Freon 113	96
1,1-Dichloroethene	100
Acetone	111
2-Propanol	102
Carbon Disulfide	95
3-Chloropropene	81
Methylene Chloride	99
Methyl tert-butyl ether	65 Q
trans-1,2-Dichloroethene	89
Hexane	96
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	78
cis-1,2-Dichloroethene	91
Tetrahydrofuran	106
Chloroform	92
1,1,1-Trichloroethane	90
Cyclohexane	89
Carbon Tetrachloride	93
2,2,4-Trimethylpentane	98
Benzene	92
1,2-Dichloroethane	100
Heptane	91
Trichloroethene	95
1,2-Dichloropropane	102
1,4-Dioxane	101
Bromodichloromethane	92
cis-1,3-Dichloropropene	87
4-Methyl-2-pentanone	90
Toluene	90
trans-1,3-Dichloropropene	90
1,1,2-Trichloroethane	102
Tetrachloroethene	98
2-Hexanone	106

Client Sample ID: CCV

Lab ID#: 2407552A-07B

EPA METHOD TO-15 GC/MS

File Name:	14080503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 07:16 AM

Compound	%Recovery
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	102
Chlorobenzene	93
Ethyl Benzene	94
m,p-Xylene	95
o-Xylene	96
Styrene	100
Bromoform	95
Cumene	96
1,1,2,2-Tetrachloroethane	96
Propylbenzene	97
4-Ethyltoluene	93
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	92
1,3-Dichlorobenzene	94
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	90
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	88
Butane	103
Isopentane	101

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 2407552A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073104a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:24 AM

Compound	%Recovery	Method Limits
Freon 12	108	70-130
Freon 114	104	70-130
Chloromethane	105	70-130
Vinyl Chloride	108	70-130
1,3-Butadiene	100	70-130
Bromomethane	114	70-130
Chloroethane	104	70-130
Freon 11	104	70-130
Ethanol	92	70-130
Freon 113	101	70-130
1,1-Dichloroethene	100	70-130
Acetone	87	70-130
2-Propanol	102	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	108	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	101	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	96	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	99	70-130
cis-1,2-Dichloroethene	101	70-130
Tetrahydrofuran	94	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	101	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	99	70-130
Benzene	103	70-130
1,2-Dichloroethane	99	70-130
Heptane	104	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	105	70-130
Tetrachloroethene	104	70-130
2-Hexanone	102	70-130

Client Sample ID: LCS

Lab ID#: 2407552A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073104a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:24 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	104	70-130
Chlorobenzene	104	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	103	70-130
o-Xylene	101	70-130
Styrene	103	70-130
Bromoform	102	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	101	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	104	70-130
1,2,4-Trimethylbenzene	103	70-130
1,3-Dichlorobenzene	104	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	98	70-130
1,2-Dichlorobenzene	101	70-130
1,2,4-Trichlorobenzene	116	70-130
Hexachlorobutadiene	126	70-130
Butane	115	70-130
Isopentane	98	70-130

Container Type: NA - Not Applicable

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

Client Sample ID: LCSD

Lab ID#: 2407552A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:48 AM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	103	70-130
Chloromethane	103	70-130
Vinyl Chloride	107	70-130
1,3-Butadiene	100	70-130
Bromomethane	111	70-130
Chloroethane	103	70-130
Freon 11	103	70-130
Ethanol	93	70-130
Freon 113	101	70-130
1,1-Dichloroethene	100	70-130
Acetone	88	70-130
2-Propanol	102	70-130
Carbon Disulfide	97	70-130
3-Chloropropene	106	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	100	70-130
trans-1,2-Dichloroethene	103	70-130
Hexane	94	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	93	70-130
Chloroform	95	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	99	70-130
Benzene	101	70-130
1,2-Dichloroethane	99	70-130
Heptane	108	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	103	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	103	70-130
2-Hexanone	100	70-130

Client Sample ID: LCSD

Lab ID#: 2407552A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j073105	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/31/24 11:48 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	103	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	102	70-130
o-Xylene	99	70-130
Styrene	100	70-130
Bromoform	100	70-130
Cumene	99	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	97	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	115	70-130
Hexachlorobutadiene	125	70-130
Butane	106	70-130
Isopentane	97	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCS

Lab ID#: 2407552A-08B

EPA METHOD TO-15 GC/MS

File Name:	14080504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 07:39 AM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	101	70-130
Chloromethane	96	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	107	70-130
Bromomethane	84	70-130
Chloroethane	107	70-130
Freon 11	94	70-130
Ethanol	105	70-130
Freon 113	100	70-130
1,1-Dichloroethene	96	70-130
Acetone	111	70-130
2-Propanol	101	70-130
Carbon Disulfide	96	70-130
3-Chloropropene	94	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	99	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	112	70-130
Chloroform	91	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	99	70-130
1,2-Dichloroethane	102	70-130
Heptane	96	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	102	70-130
Bromodichloromethane	93	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	93	70-130
Toluene	94	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	98	70-130
2-Hexanone	109	70-130

Client Sample ID: LCS

Lab ID#: 2407552A-08B

EPA METHOD TO-15 GC/MS

File Name:	14080504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 07:39 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	100	70-130
o-Xylene	98	70-130
Styrene	102	70-130
Bromoform	95	70-130
Cumene	98	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	102	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	100	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	93	70-130
Hexachlorobutadiene	86	70-130
Butane	111	70-130
Isopentane	105	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: LCSD

Lab ID#: 2407552A-08BB

EPA METHOD TO-15 GC/MS

File Name:	14080505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 08:02 AM

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	104	70-130
Chloromethane	98	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	106	70-130
Bromomethane	81	70-130
Chloroethane	106	70-130
Freon 11	95	70-130
Ethanol	105	70-130
Freon 113	99	70-130
1,1-Dichloroethene	98	70-130
Acetone	110	70-130
2-Propanol	104	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	91	70-130
Methylene Chloride	99	70-130
Methyl tert-butyl ether	80	70-130
trans-1,2-Dichloroethene	94	70-130
Hexane	101	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	112	70-130
Chloroform	92	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	97	70-130
1,2-Dichloroethane	101	70-130
Heptane	93	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	91	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	101	70-130
Tetrachloroethene	98	70-130
2-Hexanone	106	70-130

Client Sample ID: LCSD

Lab ID#: 2407552A-08BB

EPA METHOD TO-15 GC/MS

File Name:	14080505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/5/24 08:02 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	99	70-130
o-Xylene	98	70-130
Styrene	103	70-130
Bromoform	97	70-130
Cumene	98	70-130
1,1,2,2-Tetrachloroethane	97	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	104	70-130
1,2-Dichlorobenzene	103	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	100	70-130
Butane	110	70-130
Isopentane	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	100	70-130

Method : TO-15 + Butane & Isopentane

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
74-87-3	Chloromethane	5.0
75-01-4	Vinyl Chloride	0.50
106-99-0	1,3-Butadiene	0.50
74-83-9	Bromomethane	5.0
75-00-3	Chloroethane	2.0
75-69-4	Freon 11	0.50
64-17-5	Ethanol	5.0
76-13-1	Freon 113	0.50
75-35-4	1,1-Dichloroethene	0.50
67-64-1	Acetone	5.0
67-63-0	2-Propanol	2.0
75-15-0	Carbon Disulfide	2.0
107-05-1	3-Chloropropene	2.0
75-09-2	Methylene Chloride	5.0
1634-04-4	Methyl tert-butyl ether	2.0
156-60-5	trans-1,2-Dichloroethene	0.50
110-54-3	Hexane	0.50
75-34-3	1,1-Dichloroethane	0.50
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
156-59-2	cis-1,2-Dichloroethene	0.50
109-99-9	Tetrahydrofuran	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
110-82-7	Cyclohexane	0.50
56-23-5	Carbon Tetrachloride	0.50
540-84-1	2,2,4-Trimethylpentane	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
142-82-5	Heptane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
123-91-1	1,4-Dioxane	2.0
75-27-4	Bromodichloromethane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-10-1	4-Methyl-2-pentanone	0.50
108-88-3	Toluene	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50

Method : TO-15 + Butane & Isopentane

CAS Number	Compound	Rpt. Limit (ppbv)
108-90-7	Chlorobenzene	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
75-25-2	Bromoform	0.50
98-82-8	Cumene	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
103-65-1	Propylbenzene	0.50
622-96-8	4-Ethyltoluene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
106-97-8	Butane	2.0
78-78-4	Isopentane	2.0

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

8/6/2024

Mr. Samuel Fisher

AECOM

100 N. Broadway, 20th Floor

St. Louis MO 63102

Project Name: Roxana Quarterly Soil Vapor

Project #: 60721927-4.3.2

Workorder #: 2407552B

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 7/24/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

WORK ORDER #: 2407552B

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 100 N. Broadway, 20th Floor St. Louis, MO 63102	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1630860
FAX:		PROJECT #	60721927-4.3.2 Roxana Quarterly Soil
DATE RECEIVED:	07/24/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	08/06/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-072324	Modified ASTM D-1946	8 "Hg	9.8 psi
02A	VMP-15-21.5-072324	Modified ASTM D-1946	3.9 "Hg	9.9 psi
03A	VMP-15-25.5-072324	Modified ASTM D-1946	8 "Hg	10.1 psi
04A	VMP-15-29-072324	Modified ASTM D-1946	7.6 "Hg	9.4 psi
05A	VMP-55-20-072324	Modified ASTM D-1946	7.1 "Hg	9.9 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	CCV	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: 08/06/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
Modified ASTM D-1946
AECOM
Workorder# 2407552B

Five 1 Liter Summa Canister (100% Certified) samples were received on July 24, 2024. 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 EATL 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 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

As per 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.

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-15-5-072324

Lab ID#: 2407552B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	19
Nitrogen	0.23	79
Methane	0.00023	0.00014 J
Carbon Dioxide	0.023	1.9
Helium	0.11	0.0035 J

Client Sample ID: VMP-15-21.5-072324

Lab ID#: 2407552B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	15
Nitrogen	0.19	77
Methane	0.00019	0.00015 J
Carbon Dioxide	0.019	7.8
Helium	0.096	0.12

Client Sample ID: VMP-15-25.5-072324

Lab ID#: 2407552B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	12
Nitrogen	0.23	77
Carbon Dioxide	0.023	11
Helium	0.12	0.14

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	13
Nitrogen	0.22	77
Carbon Dioxide	0.022	10

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552B-04A

Helium	0.11	0.0066 J
--------	------	----------

Client Sample ID: VMP-55-20-072324

Lab ID#: 2407552B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.4
Nitrogen	0.22	68
Methane	0.00022	14
Carbon Dioxide	0.022	15
Ethane	0.0022	0.0034
Helium	0.11	0.0088 J



Air Toxics

Client Sample ID: VMP-15-5-072324

Lab ID#: 2407552B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11073021	Date of Collection: 7/23/24 9:51:00 AM
Dil. Factor:	2.27	Date of Analysis: 7/30/24 02:57 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	19
Nitrogen	0.23	79
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	0.00014 J
Carbon Dioxide	0.023	1.9
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.11	0.0035 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-21.5-072324

Lab ID#: 2407552B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11073022	Date of Collection: 7/23/24 10:08:00 AM
Dil. Factor:	1.92	Date of Analysis: 7/30/24 03:22 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	15
Nitrogen	0.19	77
Carbon Monoxide	0.019	Not Detected
Methane	0.00019	0.00015 J
Carbon Dioxide	0.019	7.8
Ethane	0.0019	Not Detected
Ethene	0.0019	Not Detected
Helium	0.096	0.12

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-25.5-072324

Lab ID#: 2407552B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11073023	Date of Collection: 7/23/24 10:26:00 AM
Dil. Factor:	2.30	Date of Analysis: 7/30/24 03:46 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	12
Nitrogen	0.23	77
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	11
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.12	0.14

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-29-072324

Lab ID#: 2407552B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11073024	Date of Collection: 7/23/24 10:45:00 AM
Dil. Factor:	2.19	Date of Analysis: 7/30/24 04:10 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	13
Nitrogen	0.22	77
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	10
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	0.0066 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-55-20-072324

Lab ID#: 2407552B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	11073025	Date of Collection: 7/23/24 12:24:00 PM
Dil. Factor:	2.20	Date of Analysis: 7/30/24 04:34 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	2.4
Nitrogen	0.22	68
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	14
Carbon Dioxide	0.022	15
Ethane	0.0022	0.0034
Ethene	0.0022	Not Detected
Helium	0.11	0.0088 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2407552B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11073004

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 7/29/24 09:23 PM

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#: 2407552B-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11073003c
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/29/24 08:56 PM

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

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 2407552B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11073001
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/29/24 08:04 PM

Compound	%Recovery
Oxygen	99
Nitrogen	93
Carbon Monoxide	98
Methane	98
Carbon Dioxide	101
Ethane	102
Ethene	102
Helium	99

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2407552B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11073002
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/29/24 08:30 PM

Compound	%Recovery	Method Limits
Oxygen	99	85-115
Nitrogen	92	85-115
Carbon Monoxide	95	85-115
Methane	99	85-115
Carbon Dioxide	101	85-115
Ethane	103	85-115
Ethene	104	85-115
Helium	100	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2407552B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 11073026
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/30/24 05:03 PM

Compound	%Recovery	Method Limits
Oxygen	99	85-115
Nitrogen	92	85-115
Carbon Monoxide	95	85-115
Methane	98	85-115
Carbon Dioxide	101	85-115
Ethane	102	85-115
Ethene	102	85-115
Helium	99	85-115

Container Type: NA - Not Applicable

Method : Modified ASTM D-1946 + He

CAS Number	Compound	Rpt. Limit (%)
7782-44-7	Oxygen	0.10
7727-37-9	Nitrogen	0.10
630-08-0	Carbon Monoxide	0.010
74-82-8	Methane	0.00010
124-38-9	Carbon Dioxide	0.010
74-84-0	Ethane	0.0010
74-85-1	Ethene	0.0010
7440-59-7	Helium	0.050

11/12/2024
Mr. Samuel Fisher
AECOM
411 Broadway Ave

South Roxana IL 62087

Project Name: Roxana Quarterly Soil Vapor
Project #: 60721927 - 4.4.2
Workorder #: 2410683A

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 10/30/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker
Project Manager

WORK ORDER #: 2410683A

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 411 Broadway Ave South Roxana, IL 62087	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1630860
FAX:		PROJECT #	60721927 - 4.4.2 Roxana Quarterly Soil
DATE RECEIVED:	10/30/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	11/12/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-102924	TO-15	4.3 "Hg	9.3 psi
02A	VMP-15-21.5-102924	TO-15	7.1 "Hg	9.7 psi
03A	VMP-15-25.5-102924	TO-15	7.3 "Hg	9.8 psi
04A	VMP-15-29-102924	TO-15	8.2 "Hg	9.8 psi
05A	VMP-55-20-102924	TO-15	6.9 "Hg	10 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 11/12/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 2410683A

Five 1 Liter Summa Canister (100% Certified) samples were received on October 30, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances 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.

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 may be false positives.

Dilution was performed on sample VMP-55-20-102924 due to the presence of high level target species.

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-15-5-102924

Lab ID#: 2410683A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.95	0.47 J	4.7	2.3 J
Freon 11	0.95	0.14 J	5.3	0.78 J
Acetone	9.5	16 J0	22	38 J0
2-Propanol	3.8	1.1 J	9.3	2.7 J
2-Butanone (Methyl Ethyl Ketone)	3.8	1.0 J	11	3.0 J
Chloroform	0.95	0.22 J	4.6	1.1 J

Client Sample ID: VMP-15-21.5-102924

Lab ID#: 2410683A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.48 J	5.4	2.4 J
2-Propanol	4.3	0.72 J	11	1.8 J
Chloroform	1.1	1.4	5.3	6.8

Client Sample ID: VMP-15-25.5-102924

Lab ID#: 2410683A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.41 J	5.4	2.0 J
Chloroform	1.1	5.2	5.4	25
1,1,1-Trichloroethane	1.1	0.55 J	6.0	3.0 J
1,2-Dichloroethane	1.1	0.49 J	4.4	2.0 J
Trichloroethene	1.1	4.7	5.9	25
1,2-Dichloropropane	1.1	0.88 J	5.1	4.1 J
Tetrachloroethene	1.1	1.5	7.5	10

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.42 J	5.7	2.1 J

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

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683A-04A

Freon 11	1.1	0.14 J	6.4	0.79 J
2-Propanol	4.6	0.86 J	11	2.1 J
Chloroform	1.1	8.5	5.6	42
Bromodichloromethane	1.1	0.41 J	7.7	2.7 J

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	4400	4000 J	10000	9600 J
Hexane	1100	8200	3800	29000
Cyclohexane	1100	30000	3800	100000
2,2,4-Trimethylpentane	1100	35000	5100	160000
Benzene	1100	230 J	3500	740 J

Heptane	1100	5500	4500	22000
Toluene	1100	360 J	4100	1400 J
Butane	4400	9300	10000	22000
Isopentane	4400	210000	13000	610000



Air Toxics

Client Sample ID: VMP-15-5-102924

Lab ID#: 2410683A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103117	Date of Collection:	10/29/24 10:05:00 A
Dil. Factor:	1.90	Date of Analysis:	10/31/24 07:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.95	0.47 J	4.7	2.3 J
Freon 114	0.95	Not Detected	6.6	Not Detected
Chloromethane	9.5	Not Detected	20	Not Detected
Vinyl Chloride	0.95	Not Detected	2.4	Not Detected
1,3-Butadiene	0.95	Not Detected	2.1	Not Detected
Bromomethane	9.5	Not Detected	37	Not Detected
Chloroethane	3.8	Not Detected UJ	10	Not Detected UJ
Freon 11	0.95	0.14 J	5.3	0.78 J
Ethanol	9.5	Not Detected	18	Not Detected
Freon 113	0.95	Not Detected	7.3	Not Detected
1,1-Dichloroethene	0.95	Not Detected	3.8	Not Detected
Acetone	9.5	16 J0	22	38 J0
2-Propanol	3.8	1.1 J	9.3	2.7 J
Carbon Disulfide	3.8	Not Detected	12	Not Detected
3-Chloropropene	3.8	Not Detected	12	Not Detected
Methylene Chloride	9.5	Not Detected	33	Not Detected
Methyl tert-butyl ether	3.8	Not Detected	14	Not Detected
trans-1,2-Dichloroethene	0.95	Not Detected	3.8	Not Detected
Hexane	0.95	Not Detected	3.3	Not Detected
1,1-Dichloroethane	0.95	Not Detected	3.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.8	1.0 J	11	3.0 J
cis-1,2-Dichloroethene	0.95	Not Detected	3.8	Not Detected
Tetrahydrofuran	0.95	Not Detected	2.8	Not Detected
Chloroform	0.95	0.22 J	4.6	1.1 J
1,1,1-Trichloroethane	0.95	Not Detected	5.2	Not Detected
Cyclohexane	0.95	Not Detected	3.3	Not Detected
Carbon Tetrachloride	0.95	Not Detected	6.0	Not Detected
2,2,4-Trimethylpentane	0.95	Not Detected	4.4	Not Detected
Benzene	0.95	Not Detected	3.0	Not Detected
1,2-Dichloroethane	0.95	Not Detected	3.8	Not Detected
Heptane	0.95	Not Detected	3.9	Not Detected
Trichloroethene	0.95	Not Detected	5.1	Not Detected
1,2-Dichloropropane	0.95	Not Detected	4.4	Not Detected
1,4-Dioxane	3.8	Not Detected	14	Not Detected
Bromodichloromethane	0.95	Not Detected	6.4	Not Detected
cis-1,3-Dichloropropene	0.95	Not Detected	4.3	Not Detected
4-Methyl-2-pentanone	0.95	Not Detected	3.9	Not Detected
Toluene	1.9	Not Detected	7.2	Not Detected
trans-1,3-Dichloropropene	0.95	Not Detected	4.3	Not Detected
1,1,2-Trichloroethane	0.95	Not Detected	5.2	Not Detected
Tetrachloroethene	0.95	Not Detected	6.4	Not Detected
2-Hexanone	3.8	Not Detected	16	Not Detected

Client Sample ID: VMP-15-5-102924

Lab ID#: 2410683A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103117	Date of Collection: 10/29/24 10:05:00 A
Dil. Factor:	1.90	Date of Analysis: 10/31/24 07:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.95	Not Detected	8.1	Not Detected
1,2-Dibromoethane (EDB)	0.95	Not Detected	7.3	Not Detected
Chlorobenzene	0.95	Not Detected	4.4	Not Detected
Ethyl Benzene	0.95	Not Detected	4.1	Not Detected
m,p-Xylene	1.9	Not Detected	8.2	Not Detected
o-Xylene	0.95	Not Detected	4.1	Not Detected
Styrene	0.95	Not Detected	4.0	Not Detected
Bromoform	0.95	Not Detected	9.8	Not Detected
Cumene	0.95	Not Detected	4.7	Not Detected
1,1,2,2-Tetrachloroethane	0.95	Not Detected	6.5	Not Detected
Propylbenzene	0.95	Not Detected	4.7	Not Detected
4-Ethyltoluene	0.95	Not Detected	4.7	Not Detected
1,3,5-Trimethylbenzene	0.95	Not Detected	4.7	Not Detected
1,2,4-Trimethylbenzene	0.95	Not Detected	4.7	Not Detected
1,3-Dichlorobenzene	0.95	Not Detected	5.7	Not Detected
1,4-Dichlorobenzene	0.95	Not Detected	5.7	Not Detected
alpha-Chlorotoluene	0.95	Not Detected	4.9	Not Detected
1,2-Dichlorobenzene	0.95	Not Detected	5.7	Not Detected
1,2,4-Trichlorobenzene	3.8	Not Detected	28	Not Detected
Hexachlorobutadiene	3.8	Not Detected	40	Not Detected
Butane	3.8	Not Detected	9.0	Not Detected
Isopentane	3.8	Not Detected	11	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV.

J0 = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: VMP-15-21.5-102924

Lab ID#: 2410683A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103118	Date of Collection:	10/29/24 10:35:00 A
Dil. Factor:	2.17	Date of Analysis:	10/31/24 09:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.48 J	5.4	2.4 J
Freon 114	1.1	Not Detected	7.6	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	42	Not Detected
Chloroethane	4.3	Not Detected UJ	11	Not Detected UJ
Freon 11	1.1	Not Detected	6.1	Not Detected
Ethanol	11	Not Detected	20	Not Detected
Freon 113	1.1	Not Detected	8.3	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Acetone	11	Not Detected UJ	26	Not Detected UJ
2-Propanol	4.3	0.72 J	11	1.8 J
Carbon Disulfide	4.3	Not Detected	14	Not Detected
3-Chloropropene	4.3	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.3	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Hexane	1.1	Not Detected	3.8	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.3	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	1.4	5.3	6.8
1,1,1-Trichloroethane	1.1	Not Detected	5.9	Not Detected
Cyclohexane	1.1	Not Detected	3.7	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.8	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.8	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.0	Not Detected
1,4-Dioxane	4.3	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.3	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.9	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.4	Not Detected
Toluene	2.2	Not Detected	8.2	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	4.9	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.9	Not Detected
Tetrachloroethene	1.1	Not Detected	7.4	Not Detected
2-Hexanone	4.3	Not Detected	18	Not Detected

Client Sample ID: VMP-15-21.5-102924

Lab ID#: 2410683A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103118	Date of Collection: 10/29/24 10:35:00 A
Dil. Factor:	2.17	Date of Analysis: 10/31/24 09:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.2	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.3	Not Detected
Chlorobenzene	1.1	Not Detected	5.0	Not Detected
Ethyl Benzene	1.1	Not Detected	4.7	Not Detected
m,p-Xylene	2.2	Not Detected	9.4	Not Detected
o-Xylene	1.1	Not Detected	4.7	Not Detected
Styrene	1.1	Not Detected	4.6	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.3	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.4	Not Detected
Propylbenzene	1.1	Not Detected	5.3	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.3	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.3	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.6	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.5	Not Detected
1,2,4-Trichlorobenzene	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	46	Not Detected
Butane	4.3	Not Detected	10	Not Detected
Isopentane	4.3	Not Detected	13	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: VMP-15-25.5-102924

Lab ID#: 2410683A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103119	Date of Collection: 10/29/24 10:58:00 A		
Dil. Factor:	2.20	Date of Analysis: 10/31/24 09:40 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.41 J	5.4	2.0 J
Freon 114	1.1	Not Detected	7.7	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	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected UJ	12	Not Detected UJ
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	11	Not Detected	21	Not Detected
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected UJ	26	Not Detected UJ
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	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	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	5.2	5.4	25
1,1,1-Trichloroethane	1.1	0.55 J	6.0	3.0 J
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.1	Not Detected
Benzene	1.1	Not Detected	3.5	Not Detected
1,2-Dichloroethane	1.1	0.49 J	4.4	2.0 J
Heptane	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	4.7	5.9	25
1,2-Dichloropropane	1.1	0.88 J	5.1	4.1 J
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	2.2	Not Detected	8.3	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	1.5	7.5	10
2-Hexanone	4.4	Not Detected	18	Not Detected

Client Sample ID: VMP-15-25.5-102924

Lab ID#: 2410683A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103119	Date of Collection: 10/29/24 10:58:00 A
Dil. Factor:	2.20	Date of Analysis: 10/31/24 09:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	Not Detected	4.8	Not Detected
m,p-Xylene	2.2	Not Detected	9.6	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	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected
Butane	4.4	Not Detected	10	Not Detected
Isopentane	4.4	Not Detected	13	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103120	Date of Collection:	10/29/24 11:24:00 A
Dil. Factor:	2.29	Date of Analysis:	10/31/24 10:11 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.42 J	5.7	2.1 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 UJ	12	Not Detected UJ
Freon 11	1.1	0.14 J	6.4	0.79 J
Ethanol	11	Not Detected	22	Not Detected
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected UJ	27	Not Detected UJ
2-Propanol	4.6	0.86 J	11	2.1 J
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
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	8.5	5.6	42
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	0.41 J	7.7	2.7 J
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	2.3	Not Detected	8.6	Not Detected
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

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103120	Date of Collection: 10/29/24 11:24:00 A
Dil. Factor:	2.29	Date of Analysis: 10/31/24 10:11 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	2.3	Not Detected	9.9	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	Not Detected	14	Not Detected

J = Estimated value.

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683A-05A

EPA METHOD TO-15 GC/MS

File Name:	14103120	Date of Collection:	10/29/24 12:57:00 P
Dil. Factor:	218	Date of Analysis:	11/1/24 03:48 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1100	Not Detected	5400	Not Detected
Freon 114	1100	Not Detected	7600	Not Detected
Chloromethane	4400	Not Detected	9000	Not Detected
Vinyl Chloride	1100	Not Detected	2800	Not Detected
1,3-Butadiene	1100	Not Detected	2400	Not Detected
Bromomethane	4400	Not Detected	17000	Not Detected
Chloroethane	4400	Not Detected	12000	Not Detected
Freon 11	1100	Not Detected	6100	Not Detected
Ethanol	5400	Not Detected	10000	Not Detected
Freon 113	1100	Not Detected	8400	Not Detected
1,1-Dichloroethene	1100	Not Detected	4300	Not Detected
Acetone	4400	4000 J	10000	9600 J
2-Propanol	5400	Not Detected	13000	Not Detected
Carbon Disulfide	4400	Not Detected	14000	Not Detected
3-Chloropropene	4400	Not Detected	14000	Not Detected
Methylene Chloride	4400	Not Detected	15000	Not Detected
Methyl tert-butyl ether	1100	Not Detected	3900	Not Detected
trans-1,2-Dichloroethene	1100	Not Detected	4300	Not Detected
Hexane	1100	8200	3800	29000
1,1-Dichloroethane	1100	Not Detected	4400	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4400	Not Detected	13000	Not Detected
cis-1,2-Dichloroethene	1100	Not Detected	4300	Not Detected
Tetrahydrofuran	1100	Not Detected	3200	Not Detected
Chloroform	1100	Not Detected	5300	Not Detected
1,1,1-Trichloroethane	1100	Not Detected	5900	Not Detected
Cyclohexane	1100	30000	3800	100000
Carbon Tetrachloride	1100	Not Detected	6800	Not Detected
2,2,4-Trimethylpentane	1100	35000	5100	160000
Benzene	1100	230 J	3500	740 J
1,2-Dichloroethane	1100	Not Detected	4400	Not Detected
Heptane	1100	5500	4500	22000
Trichloroethene	1100	Not Detected	5800	Not Detected
1,2-Dichloropropane	1100	Not Detected	5000	Not Detected
1,4-Dioxane	4400	Not Detected	16000	Not Detected
Bromodichloromethane	1100	Not Detected	7300	Not Detected
cis-1,3-Dichloropropene	1100	Not Detected	4900	Not Detected
4-Methyl-2-pentanone	4400	Not Detected	18000	Not Detected
Toluene	1100	360 J	4100	1400 J
trans-1,3-Dichloropropene	1100	Not Detected	4900	Not Detected
1,1,2-Trichloroethane	1100	Not Detected	5900	Not Detected
Tetrachloroethene	1100	Not Detected	7400	Not Detected
2-Hexanone	4400	Not Detected	18000	Not Detected

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683A-05A

EPA METHOD TO-15 GC/MS

File Name:	14103120	Date of Collection: 10/29/24 12:57:00 P
Dil. Factor:	218	Date of Analysis: 11/1/24 03:48 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1100	Not Detected	9300	Not Detected
1,2-Dibromoethane (EDB)	1100	Not Detected	8400	Not Detected
Chlorobenzene	1100	Not Detected	5000	Not Detected
Ethyl Benzene	1100	Not Detected	4700	Not Detected
m,p-Xylene	1100	Not Detected	4700	Not Detected
o-Xylene	1100	Not Detected	4700	Not Detected
Styrene	1100	Not Detected	4600	Not Detected
Bromoform	1100	Not Detected	11000	Not Detected
Cumene	1100	Not Detected	5400	Not Detected
1,1,2,2-Tetrachloroethane	1100	Not Detected	7500	Not Detected
Propylbenzene	1100	Not Detected	5400	Not Detected
4-Ethyltoluene	1100	Not Detected	5400	Not Detected
1,3,5-Trimethylbenzene	1100	Not Detected	5400	Not Detected
1,2,4-Trimethylbenzene	1100	Not Detected	5400	Not Detected
1,3-Dichlorobenzene	1100	Not Detected	6600	Not Detected
1,4-Dichlorobenzene	1100	Not Detected	6600	Not Detected
alpha-Chlorotoluene	1100	Not Detected	5600	Not Detected
1,2-Dichlorobenzene	1100	Not Detected	6600	Not Detected
1,2,4-Trichlorobenzene	4400	Not Detected	32000	Not Detected
Hexachlorobutadiene	4400	Not Detected	46000	Not Detected
Butane	4400	9300	10000	22000
Isopentane	4400	210000	13000	610000

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: Lab Blank

Lab ID#: 2410683A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103109a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 01:41 PM

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 UJ	5.3	Not Detected UJ
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	5.0	Not Detected	9.4	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 UJ	12	Not Detected UJ
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
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	1.0	Not Detected	3.8	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

Client Sample ID: Lab Blank

Lab ID#: 2410683A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103109a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 01:41 PM

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	1.0	Not Detected	4.3	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	Not Detected	3.0	Not Detected
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	Not Detected	15	Not Detected
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

UJ = Analyte associated with low bias in the CCV.

Container Type: NA - Not Applicable

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

Client Sample ID: Lab Blank

Lab ID#: 2410683A-06B

EPA METHOD TO-15 GC/MS

File Name:	14103106f	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 08:12 PM

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	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	25	Not Detected	47	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	25	Not Detected	61	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	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)	20	Not Detected	59	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	20	Not Detected	82	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
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 2410683A-06B

EPA METHOD TO-15 GC/MS

File Name:	14103106f	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 08:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
Butane	20	Not Detected	48	Not Detected
Isopentane	20	Not Detected	59	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 2410683A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103106	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 11:50 AM

Compound	%Recovery
Freon 12	94
Freon 114	91
Chloromethane	89
Vinyl Chloride	91
1,3-Butadiene	83
Bromomethane	113
Chloroethane	66 Q
Freon 11	92
Ethanol	85
Freon 113	85
1,1-Dichloroethene	77
Acetone	62 Q
2-Propanol	78
Carbon Disulfide	77
3-Chloropropene	74
Methylene Chloride	93
Methyl tert-butyl ether	80
trans-1,2-Dichloroethene	84
Hexane	82
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	89
Tetrahydrofuran	98
Chloroform	95
1,1,1-Trichloroethane	95
Cyclohexane	85
Carbon Tetrachloride	101
2,2,4-Trimethylpentane	93
Benzene	98
1,2-Dichloroethane	109
Heptane	93
Trichloroethene	103
1,2-Dichloropropane	108
1,4-Dioxane	103
Bromodichloromethane	107
cis-1,3-Dichloropropene	101
4-Methyl-2-pentanone	101
Toluene	109
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	101
Tetrachloroethene	110
2-Hexanone	102

Client Sample ID: CCV

Lab ID#: 2410683A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103106	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 11:50 AM

Compound	%Recovery
Dibromochloromethane	114
1,2-Dibromoethane (EDB)	103
Chlorobenzene	103
Ethyl Benzene	102
m,p-Xylene	103
o-Xylene	96
Styrene	101
Bromoform	110
Cumene	100
1,1,2,2-Tetrachloroethane	100
Propylbenzene	108
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	108
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	116
1,4-Dichlorobenzene	114
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	116
1,2,4-Trichlorobenzene	115
Hexachlorobutadiene	112
Butane	73
Isopentane	87

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 2410683A-07B

EPA METHOD TO-15 GC/MS

File Name:	14103102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 06:07 PM

Compound	%Recovery
Freon 12	100
Freon 114	100
Chloromethane	103
Vinyl Chloride	98
1,3-Butadiene	95
Bromomethane	108
Chloroethane	104
Freon 11	104
Ethanol	91
Freon 113	98
1,1-Dichloroethene	102
Acetone	103
2-Propanol	91
Carbon Disulfide	95
3-Chloropropene	96
Methylene Chloride	105
Methyl tert-butyl ether	97
trans-1,2-Dichloroethene	92
Hexane	98
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	100
cis-1,2-Dichloroethene	96
Tetrahydrofuran	91
Chloroform	101
1,1,1-Trichloroethane	93
Cyclohexane	96
Carbon Tetrachloride	99
2,2,4-Trimethylpentane	100
Benzene	101
1,2-Dichloroethane	105
Heptane	91
Trichloroethene	104
1,2-Dichloropropane	98
1,4-Dioxane	101
Bromodichloromethane	99
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	88
Toluene	100
trans-1,3-Dichloropropene	93
1,1,2-Trichloroethane	95
Tetrachloroethene	103
2-Hexanone	97

Client Sample ID: CCV

Lab ID#: 2410683A-07B

EPA METHOD TO-15 GC/MS

File Name:	14103102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 06:07 PM

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	97
Chlorobenzene	101
Ethyl Benzene	96
m,p-Xylene	98
o-Xylene	101
Styrene	98
Bromoform	100
Cumene	100
1,1,2,2-Tetrachloroethane	101
Propylbenzene	99
4-Ethyltoluene	104
1,3,5-Trimethylbenzene	97
1,2,4-Trimethylbenzene	100
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	103
alpha-Chlorotoluene	84
1,2-Dichlorobenzene	103
1,2,4-Trichlorobenzene	80
Hexachlorobutadiene	76
Butane	96
Isopentane	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 2410683A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: p103107
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/31/24 12:42 PM

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	95	70-130
Chloromethane	99	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	87	70-130
Bromomethane	113	70-130
Chloroethane	71	70-130
Freon 11	96	70-130
Ethanol	86	70-130
Freon 113	88	70-130
1,1-Dichloroethene	78	70-130
Acetone	67 Q	70-130
2-Propanol	93	70-130
Carbon Disulfide	85	70-130
3-Chloropropene	81	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	82	70-130
trans-1,2-Dichloroethene	85	70-130
Hexane	84	70-130
1,1-Dichloroethane	88	70-130
2-Butanone (Methyl Ethyl Ketone)	86	70-130
cis-1,2-Dichloroethene	85	70-130
Tetrahydrofuran	91	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	82	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	99	70-130
Benzene	99	70-130
1,2-Dichloroethane	106	70-130
Heptane	94	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	105	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	98	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	107	70-130
2-Hexanone	100	70-130

Client Sample ID: LCS

Lab ID#: 2410683A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103107	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 12:42 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	109	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	101	70-130
o-Xylene	96	70-130
Styrene	98	70-130
Bromoform	104	70-130
Cumene	95	70-130
1,1,2,2-Tetrachloroethane	95	70-130
Propylbenzene	101	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	107	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	98	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	105	70-130
Hexachlorobutadiene	109	70-130
Butane	77	70-130
Isopentane	92	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCSD

Lab ID#: 2410683A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103108	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 01:10 PM

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	96	70-130
Chloromethane	94	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	88	70-130
Bromomethane	116	70-130
Chloroethane	73	70-130
Freon 11	97	70-130
Ethanol	89	70-130
Freon 113	90	70-130
1,1-Dichloroethene	80	70-130
Acetone	68 Q	70-130
2-Propanol	95	70-130
Carbon Disulfide	80	70-130
3-Chloropropene	84	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	88	70-130
Hexane	89	70-130
1,1-Dichloroethane	94	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	87	70-130
Tetrahydrofuran	97	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	96	70-130
Cyclohexane	87	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	105	70-130
Benzene	99	70-130
1,2-Dichloroethane	105	70-130
Heptane	92	70-130
Trichloroethene	100	70-130
1,2-Dichloropropane	105	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	99	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	107	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	105	70-130
2-Hexanone	97	70-130

Client Sample ID: LCSD

Lab ID#: 2410683A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p103108	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 01:10 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	107	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	100	70-130
m,p-Xylene	103	70-130
o-Xylene	95	70-130
Styrene	98	70-130
Bromoform	105	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	100	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	100	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	98	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	116	70-130
Hexachlorobutadiene	120	70-130
Butane	79	70-130
Isopentane	94	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: LCS

Lab ID#: 2410683A-08B

EPA METHOD TO-15 GC/MS

File Name: 14103103
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/31/24 06:33 PM

Compound	%Recovery	Method Limits
Freon 12	91	70-130
Freon 114	89	70-130
Chloromethane	87	70-130
Vinyl Chloride	88	70-130
1,3-Butadiene	87	70-130
Bromomethane	96	70-130
Chloroethane	89	70-130
Freon 11	96	70-130
Ethanol	83	70-130
Freon 113	91	70-130
1,1-Dichloroethene	89	70-130
Acetone	95	70-130
2-Propanol	85	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	88	70-130
Methylene Chloride	94	70-130
Methyl tert-butyl ether	85	70-130
trans-1,2-Dichloroethene	83	70-130
Hexane	87	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	82	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	87	70-130
Carbon Tetrachloride	88	70-130
2,2,4-Trimethylpentane	90	70-130
Benzene	94	70-130
1,2-Dichloroethane	98	70-130
Heptane	85	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	94	70-130
Bromodichloromethane	90	70-130
cis-1,3-Dichloropropene	89	70-130
4-Methyl-2-pentanone	80	70-130
Toluene	90	70-130
trans-1,3-Dichloropropene	89	70-130
1,1,2-Trichloroethane	88	70-130
Tetrachloroethene	94	70-130
2-Hexanone	89	70-130

Client Sample ID: LCS

Lab ID#: 2410683A-08B

EPA METHOD TO-15 GC/MS

File Name:	14103103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 06:33 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	92	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	91	70-130
o-Xylene	93	70-130
Styrene	92	70-130
Bromoform	92	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	93	70-130
Propylbenzene	91	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	95	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	81	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	101	70-130
Hexachlorobutadiene	104	70-130
Butane	88	70-130
Isopentane	83	70-130

Container Type: NA - Not Applicable

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

Client Sample ID: LCSD

Lab ID#: 2410683A-08BB

EPA METHOD TO-15 GC/MS

File Name: 14103104
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/31/24 06:55 PM

Compound	%Recovery	Method Limits
Freon 12	89	70-130
Freon 114	88	70-130
Chloromethane	86	70-130
Vinyl Chloride	87	70-130
1,3-Butadiene	88	70-130
Bromomethane	90	70-130
Chloroethane	89	70-130
Freon 11	98	70-130
Ethanol	75	70-130
Freon 113	92	70-130
1,1-Dichloroethene	89	70-130
Acetone	93	70-130
2-Propanol	87	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	85	70-130
Methylene Chloride	93	70-130
Methyl tert-butyl ether	85	70-130
trans-1,2-Dichloroethene	86	70-130
Hexane	85	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	86	70-130
cis-1,2-Dichloroethene	86	70-130
Tetrahydrofuran	82	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	85	70-130
Carbon Tetrachloride	88	70-130
2,2,4-Trimethylpentane	90	70-130
Benzene	92	70-130
1,2-Dichloroethane	94	70-130
Heptane	83	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	88	70-130
cis-1,3-Dichloropropene	87	70-130
4-Methyl-2-pentanone	80	70-130
Toluene	89	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	95	70-130
2-Hexanone	88	70-130

Client Sample ID: LCSD

Lab ID#: 2410683A-08BB

EPA METHOD TO-15 GC/MS

File Name:	14103104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/31/24 06:55 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	90	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	92	70-130
Ethyl Benzene	89	70-130
m,p-Xylene	92	70-130
o-Xylene	91	70-130
Styrene	91	70-130
Bromoform	96	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	97	70-130
1,3,5-Trimethylbenzene	97	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	82	70-130
1,2-Dichlorobenzene	95	70-130
1,2,4-Trichlorobenzene	93	70-130
Hexachlorobutadiene	89	70-130
Butane	88	70-130
Isopentane	86	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Method : TO-15 + Butane & Isopentane

CAS Number	Compound	Rpt. Limit (ppbv)
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
74-87-3	Chloromethane	5.0
75-01-4	Vinyl Chloride	0.50
106-99-0	1,3-Butadiene	0.50
74-83-9	Bromomethane	5.0
75-00-3	Chloroethane	2.0
75-69-4	Freon 11	0.50
64-17-5	Ethanol	5.0
76-13-1	Freon 113	0.50
75-35-4	1,1-Dichloroethene	0.50
67-64-1	Acetone	5.0
67-63-0	2-Propanol	2.0
75-15-0	Carbon Disulfide	2.0
107-05-1	3-Chloropropene	2.0
75-09-2	Methylene Chloride	5.0
1634-04-4	Methyl tert-butyl ether	2.0
156-60-5	trans-1,2-Dichloroethene	0.50
110-54-3	Hexane	0.50
75-34-3	1,1-Dichloroethane	0.50
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
156-59-2	cis-1,2-Dichloroethene	0.50
109-99-9	Tetrahydrofuran	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
110-82-7	Cyclohexane	0.50
56-23-5	Carbon Tetrachloride	0.50
540-84-1	2,2,4-Trimethylpentane	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
142-82-5	Heptane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
123-91-1	1,4-Dioxane	2.0
75-27-4	Bromodichloromethane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-10-1	4-Methyl-2-pentanone	0.50
108-88-3	Toluene	1.0
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50

Method : TO-15 + Butane & Isopentane

CAS Number	Compound	Rpt. Limit (ppbv)
108-90-7	Chlorobenzene	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
75-25-2	Bromoform	0.50
98-82-8	Cumene	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
103-65-1	Propylbenzene	0.50
622-96-8	4-Ethyltoluene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
106-97-8	Butane	2.0
78-78-4	Isopentane	2.0

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

11/12/2024
Mr. Samuel Fisher
AECOM
411 Broadway Ave

South Roxana IL 62087

Project Name: Roxana Quarterly Soil Vapor
Project #: 60721927 - 4.4.2
Workorder #: 2410683B

Dear Mr. Samuel Fisher

The following report includes the data for the above referenced project for sample(s) received on 10/30/2024 at Eurofins Air Toxics LLC.

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 LLC. 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker
Project Manager

WORK ORDER #: 2410683B

Work Order Summary

CLIENT:	Mr. Samuel Fisher AECOM 411 Broadway Ave South Roxana, IL 62087	BILL TO:	Accounts Payable Austin (non-Federal) AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-296-1969	P.O. #	1630860
FAX:		PROJECT #	60721927 - 4.4.2 Roxana Quarterly Soil
DATE RECEIVED:	10/30/2024	CONTACT:	Vapor Brian Whittaker
DATE COMPLETED:	11/12/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMP-15-5-102924	Modified ASTM D-1946	4.3 "Hg	9.3 psi
02A	VMP-15-21.5-102924	Modified ASTM D-1946	7.1 "Hg	9.7 psi
03A	VMP-15-25.5-102924	Modified ASTM D-1946	7.3 "Hg	9.8 psi
04A	VMP-15-29-102924	Modified ASTM D-1946	8.2 "Hg	9.8 psi
05A	VMP-55-20-102924	Modified ASTM D-1946	6.9 "Hg	10 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	CCV	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: 11/12/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000

LABORATORY NARRATIVE
Modified ASTM D-1946
AECOM
Workorder# 2410683B

Five 1 Liter Summa Canister (100% Certified) samples were received on October 30, 2024. 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 EATL 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 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

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

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VMP-15-5-102924

Lab ID#: 2410683B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	19
Nitrogen	0.19	78
Carbon Dioxide	0.019	3.2

Client Sample ID: VMP-15-21.5-102924

Lab ID#: 2410683B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	14
Nitrogen	0.22	77
Carbon Dioxide	0.022	9.0
Helium	0.11	0.0088 J

Client Sample ID: VMP-15-25.5-102924

Lab ID#: 2410683B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	15
Nitrogen	0.22	77
Carbon Dioxide	0.022	7.6

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	15
Nitrogen	0.23	78
Carbon Dioxide	0.023	7.5

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683B-05A

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

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.4
Nitrogen	0.22	80
Methane	0.00022	1.2
Carbon Dioxide	0.022	17
Ethane	0.0022	0.00026 J



Air Toxics

Client Sample ID: VMP-15-5-102924

Lab ID#: 2410683B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110809	Date of Collection: 10/29/24 10:05:00 A
Dil. Factor:	1.90	Date of Analysis: 11/8/24 03:02 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	19
Nitrogen	0.19	78
Carbon Monoxide	0.019	Not Detected
Methane	0.00019	Not Detected
Carbon Dioxide	0.019	3.2
Ethane	0.0019	Not Detected
Ethene	0.0019	Not Detected
Helium	0.095	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-21.5-102924

Lab ID#: 2410683B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110810	Date of Collection: 10/29/24 10:35:00 A
Dil. Factor:	2.18	Date of Analysis: 11/8/24 03:26 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	14
Nitrogen	0.22	77
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	9.0
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	0.0088 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-25.5-102924

Lab ID#: 2410683B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110811	Date of Collection: 10/29/24 10:58:00 A
Dil. Factor:	2.21	Date of Analysis: 11/8/24 03:52 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	15
Nitrogen	0.22	77
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	7.6
Ethane	0.0022	Not Detected
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-15-29-102924

Lab ID#: 2410683B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110812	Date of Collection: 10/29/24 11:24:00 A
Dil. Factor:	2.29	Date of Analysis: 11/8/24 04:18 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	15
Nitrogen	0.23	78
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	7.5
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: VMP-55-20-102924

Lab ID#: 2410683B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110813	Date of Collection: 10/29/24 12:57:00 P
Dil. Factor:	2.18	Date of Analysis: 11/8/24 04:45 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.4
Nitrogen	0.22	80
Carbon Monoxide	0.022	Not Detected
Methane	0.00022	1.2
Carbon Dioxide	0.022	17
Ethane	0.0022	0.00026 J
Ethene	0.0022	Not Detected
Helium	0.11	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2410683B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10110803a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/24 12:22 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	0.019 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

Client Sample ID: Lab Blank

Lab ID#: 2410683B-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 10110804c
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 11/8/24 12:44 PM

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

Container Type: NA - Not Applicable

Client Sample ID: CCV

Lab ID#: 2410683B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 10110801

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 11/8/24 11:04 AM

Compound	%Recovery
----------	-----------

Oxygen	100
--------	-----

Nitrogen	95
----------	----

Carbon Monoxide	101
-----------------	-----

Methane	96
---------	----

Carbon Dioxide	102
----------------	-----

Ethane	96
--------	----

Ethene	96
--------	----

Helium	99
--------	----

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2410683B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 10110802

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 11/8/24 11:55 AM

Compound	%Recovery	Method Limits
Oxygen	105	85-115
Nitrogen	94	85-115
Carbon Monoxide	100	85-115
Methane	97	85-115
Carbon Dioxide	106	85-115
Ethane	98	85-115
Ethene	96	85-115
Helium	104	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2410683B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name: 10110827

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 11/9/24 09:29 AM

Compound	%Recovery	Method Limits
Oxygen	105	85-115
Nitrogen	93	85-115
Carbon Monoxide	99	85-115
Methane	98	85-115
Carbon Dioxide	106	85-115
Ethane	99	85-115
Ethene	97	85-115
Helium	102	85-115

Container Type: NA - Not Applicable

Method : Modified ASTM D-1946 + He

CAS Number	Compound	Rpt. Limit (%)
7782-44-7	Oxygen	0.10
7727-37-9	Nitrogen	0.10
630-08-0	Carbon Monoxide	0.010
74-82-8	Methane	0.00010
124-38-9	Carbon Dioxide	0.010
74-84-0	Ethane	0.0010
74-85-1	Ethene	0.0010
7440-59-7	Helium	0.050