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August 4, 2016,

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

Subject: **Analytical Data for Soil Vapor Sampling According to Illinois Department of Transportation (IDOT) Permits No. 8-28548 and No. 8-28875**

Dear Mr. Brown,

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

- VMP-15
- VMP-55

If you have any questions or require further information, please contact Robert Mooshegian at robert.mooshegian@aecom.com (314/743-4106) or Michael Currier at michael.currier@aecom.com (314-346-9071).

Sincerely,
AECOM, on behalf of Shell Oil Products US

Michael Currier
Environmental Scientist

Robert E. Mooshegian, CHMM
Senior Program Manager

Attachments

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

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5/19/2016

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

Project Name: Roxana Quarterly Soil Vapor
Project #: 60477387 - 1.04.002
Workorder #: 1605133A

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/6/2016 at Air Toxics Ltd.

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

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

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1605133A

Work Order Summary

CLIENT:	Ms. Elizabeth Kunkel AECOM 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-743-4179	**P.O. #**	60477387 - 1.04.002
FAX:		**PROJECT #**	60477387 - 1.04.002 Roxana Quarterly Soil Vapor
DATE RECEIVED:	05/06/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/19/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VMP-15-5-050316	TO-15	7.1 "Hg	15.5 psi
02A	VMP-15-21.5-050316	TO-15	1.4 "Hg	15.1 psi
03A	VMP-15-25.5-050316	TO-15	7.1 "Hg	15.5 psi
04A	VMP-15-29-050316	TO-15	7.6 "Hg	15.4 psi
05A	VMP-55-20-050416	TO-15	8.6 "Hg	15.8 psi
05B	VMP-55-20-050416	TO-15	8.6 "Hg	15.8 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
06C	Lab Blank	TO-15	NA	NA
06D	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
07C	CCV	TO-15	NA	NA
07D	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
08D	LCS	TO-15	NA	NA
08DD	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/19/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
EPA Method TO-15
AECOM
Workorder# 1605133A

Five 1 Liter Summa Canister samples were received on May 06, 2016. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

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

Dilution was performed on sample VMP-15-25.5-050316 due to the presence of high level target species.

Due to high-level target compounds, sample VMP-55-20-050416 was analyzed twice. In the "A" fraction, the sample was diluted to bring the highest-level compounds within the calibration range. The "B" fraction is also reported by client request and may be reported with "E" flags indicating the compound exceeds the calibration range. Both runs and associated QC are reported.

The recovery of surrogate 1,2-Dichloroethane-d4 in sample VMP-55-20-050416 "B" fraction was outside laboratory control limits due to high level hydrocarbon matrix interference. The surrogate recovery is flagged.

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.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, 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.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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

Client Sample ID: VMP-15-5-050316

Lab ID#: 1605133A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.52 J	6.6	2.6 J
Ethanol	5.4	3.5 J	10	6.6 J
Acetone	13	5.7 J	32	14 J
Methylene Chloride	13	0.62 J	47	2.1 J
Chloroform	1.3	0.35 J	6.6	1.7 J

Client Sample ID: VMP-15-21.5-050316

Lab ID#: 1605133A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.43 J	5.3	2.1 J
Ethanol	4.3	14	8.0	26
Acetone	11	21	25	51
2-Propanol	4.3	4.8	10	12
Carbon Disulfide	4.3	14	13	44
Methylene Chloride	11	5.4 J	37	19 J
Hexane	1.1	0.52 J	3.8	1.8 J
2-Butanone (Methyl Ethyl Ketone)	4.3	2.0 J	12	5.8 J
Cyclohexane	1.1	1.5	3.7	5.2
2,2,4-Trimethylpentane	1.1	0.37 J	5.0	1.7 J
Benzene	1.1	0.48 J	3.4	1.5 J
1,2-Dichloroethane	1.1	0.20 J	4.3	0.81 J
Heptane	1.1	2.2	4.4	9.1
Toluene	1.1	7.4	4.0	28
m,p-Xylene	1.1	0.60 J	4.6	2.6 J
Styrene	1.1	0.20 J	4.5	0.86 J
Butane	4.3	6.1	10	15
Isopentane	4.3	4.8	12	14

Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

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

Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	34	4.8 J	80	11 J
Methylene Chloride	34	0.93 J	120	3.2 J
Hexane	3.4	3.8	12	13
Cyclohexane	3.4	140	12	500
2,2,4-Trimethylpentane	3.4	960	16	4500
Benzene	3.4	9.6	11	30
Toluene	3.4	2.5 J	13	9.5 J
Ethyl Benzene	3.4	0.74 J	15	3.2 J
m,p-Xylene	3.4	1.8 J	15	7.9 J
Butane	13	59	32	140
Isopentane	13	290	40	860

Client Sample ID: VMP-15-29-050316

Lab ID#: 1605133A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.4	0.32 J	6.8	1.6 J
Bromomethane	14	0.83 J	53	3.2 J
Acetone	14	4.9 J	32	12 J
Methylene Chloride	14	0.44 J	48	1.5 J
Methyl tert-butyl ether	1.4	0.43 J	4.9	1.6 J
Hexane	1.4	0.55 J	4.8	1.9 J
2-Butanone (Methyl Ethyl Ketone)	5.5	0.95 J	16	2.8 J
Cyclohexane	1.4	7.2	4.7	25
2,2,4-Trimethylpentane	1.4	140	6.4	660
Benzene	1.4	2.0	4.4	6.2
Butane	5.5	18	13	44
Isopentane	5.5	100	16	310

Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

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

Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	360	120000	1300	420000
Cyclohexane	360	74000	1200	250000
2,2,4-Trimethylpentane	360	58000	1700	270000
Heptane	360	48000	1500	190000
Butane	1400	130000	3400	320000
Isopentane	1400	270000	4300	800000

Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	180	120000	640	420000
Cyclohexane	180	76000	630	260000
2,2,4-Trimethylpentane	180	59000	850	280000
Heptane	180	47000 E	740	190000 E
Butane	730	130000	1700	320000
Isopentane	730	280000	2100	830000

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Client Sample ID: VMP-15-5-050316

Lab ID#: 1605133A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051118**	**Date of Collection:**	**5/3/16 2:36:00 PM**
Dil. Factor:	**2.69**	**Date of Analysis:**	**5/11/16 09:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.52 J	6.6	2.6 J
Freon 114	1.3	Not Detected	9.4	Not Detected
Chloromethane	13	Not Detected	28	Not Detected
Vinyl Chloride	1.3	Not Detected	3.4	Not Detected
1,3-Butadiene	1.3	Not Detected	3.0	Not Detected
Bromomethane	13	Not Detected	52	Not Detected
Chloroethane	5.4	Not Detected	14	Not Detected
Freon 11	1.3	Not Detected	7.6	Not Detected
Ethanol	5.4	3.5 J	10	6.6 J
Freon 113	1.3	Not Detected	10	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.3	Not Detected
Acetone	13	5.7 J	32	14 J
2-Propanol	5.4	Not Detected	13	Not Detected
Carbon Disulfide	5.4	Not Detected	17	Not Detected
3-Chloropropene	5.4	Not Detected	17	Not Detected
Methylene Chloride	13	0.62 J	47	2.1 J
Methyl tert-butyl ether	1.3	Not Detected	4.8	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.3	Not Detected
Hexane	1.3	Not Detected	4.7	Not Detected
1,1-Dichloroethane	1.3	Not Detected	5.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.4	Not Detected	16	Not Detected
cis-1,2-Dichloroethene	1.3	Not Detected	5.3	Not Detected
Tetrahydrofuran	1.3	Not Detected	4.0	Not Detected
Chloroform	1.3	0.35 J	6.6	1.7 J
1,1,1-Trichloroethane	1.3	Not Detected	7.3	Not Detected
Cyclohexane	1.3	Not Detected	4.6	Not Detected
Carbon Tetrachloride	1.3	Not Detected	8.5	Not Detected
2,2,4-Trimethylpentane	1.3	Not Detected	6.3	Not Detected
Benzene	1.3	Not Detected	4.3	Not Detected
1,2-Dichloroethane	1.3	Not Detected	5.4	Not Detected
Heptane	1.3	Not Detected	5.5	Not Detected
Trichloroethene	1.3	Not Detected	7.2	Not Detected
1,2-Dichloropropane	1.3	Not Detected	6.2	Not Detected
1,4-Dioxane	5.4	Not Detected	19	Not Detected
Bromodichloromethane	1.3	Not Detected	9.0	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	6.1	Not Detected
4-Methyl-2-pentanone	1.3	Not Detected	5.5	Not Detected
Toluene	1.3	Not Detected	5.1	Not Detected
trans-1,3-Dichloropropene	1.3	Not Detected	6.1	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	7.3	Not Detected
Tetrachloroethene	1.3	Not Detected	9.1	Not Detected
2-Hexanone	5.4	Not Detected	22	Not Detected

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Client Sample ID: VMP-15-5-050316

Lab ID#: 1605133A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051118**	**Date of Collection:**	**5/3/16 2:36:00 PM**
Dil. Factor:	**2.69**	**Date of Analysis:**	**5/11/16 09:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	10	Not Detected
Chlorobenzene	1.3	Not Detected	6.2	Not Detected
Ethyl Benzene	1.3	Not Detected	5.8	Not Detected
m,p-Xylene	1.3	Not Detected	5.8	Not Detected
o-Xylene	1.3	Not Detected	5.8	Not Detected
Styrene	1.3	Not Detected	5.7	Not Detected
Bromoform	1.3	Not Detected	14	Not Detected
Cumene	1.3	Not Detected	6.6	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	9.2	Not Detected
Propylbenzene	1.3	Not Detected	6.6	Not Detected
4-Ethyltoluene	1.3	Not Detected	6.6	Not Detected
1,3,5-Trimethylbenzene	1.3	Not Detected	6.6	Not Detected
1,2,4-Trimethylbenzene	1.3	Not Detected	6.6	Not Detected
1,3-Dichlorobenzene	1.3	Not Detected	8.1	Not Detected
1,4-Dichlorobenzene	1.3	Not Detected	8.1	Not Detected
alpha-Chlorotoluene	1.3	Not Detected UJ	7.0	Not Detected UJ
1,2-Dichlorobenzene	1.3	Not Detected	8.1	Not Detected
1,2,4-Trichlorobenzene	5.4	Not Detected	40	Not Detected
Hexachlorobutadiene	5.4	Not Detected	57	Not Detected
Butane	5.4	Not Detected	13	Not Detected
Isopentane	5.4	Not Detected	16	Not Detected

J = Estimated value.
UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VMP-15-21.5-050316

Lab ID#: 1605133A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051312**	**Date of Collection:**	**5/3/16 3:59:00 PM**
Dil. Factor:	**2.13**	**Date of Analysis:**	**5/13/16 05:17 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	0.43 J	5.3	2.1 J
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	2.4	Not Detected
Bromomethane	11	Not Detected	41	Not Detected
Chloroethane	4.3	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	4.3	14	8.0	26
Freon 113	1.1	Not Detected	8.2	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	21	25	51
2-Propanol	4.3	4.8	10	12
Carbon Disulfide	4.3	14	13	44
3-Chloropropene	4.3	Not Detected	13	Not Detected
Methylene Chloride	11	5.4 J	37	19 J
Methyl tert-butyl ether	1.1	Not Detected	3.8	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	0.52 J	3.8	1.8 J
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.3	2.0 J	12	5.8 J
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	1.5	3.7	5.2
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	0.37 J	5.0	1.7 J
Benzene	1.1	0.48 J	3.4	1.5 J
1,2-Dichloroethane	1.1	0.20 J	4.3	0.81 J
Heptane	1.1	2.2	4.4	9.1
Trichloroethene	1.1	Not Detected	5.7	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	7.1	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	1.1	7.4	4.0	28
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	17	Not Detected

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Client Sample ID: VMP-15-21.5-050316

Lab ID#: 1605133A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051312**	**Date of Collection: 5/3/16 3:59:00 PM**	
Dil. Factor:	**2.13**	**Date of Analysis: 5/13/16 05:17 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	1.1	0.60 J	4.6	2.6 J
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	0.20 J	4.5	0.86 J
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	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	45	Not Detected
Butane	4.3	6.1	10	15
Isopentane	4.3	4.8	12	14

J = Estimated value.

Container Type: 1 Liter Summa Canister

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

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Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051119**	**Date of Collection:**	**5/3/16 3:25:00 PM**
Dil. Factor:	**6.73**	**Date of Analysis:**	**5/11/16 09:57 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.4	Not Detected	17	Not Detected
Freon 114	3.4	Not Detected	24	Not Detected
Chloromethane	34	Not Detected	69	Not Detected
Vinyl Chloride	3.4	Not Detected	8.6	Not Detected
1,3-Butadiene	3.4	Not Detected	7.4	Not Detected
Bromomethane	34	Not Detected	130	Not Detected
Chloroethane	13	Not Detected	36	Not Detected
Freon 11	3.4	Not Detected	19	Not Detected
Ethanol	13	Not Detected	25	Not Detected
Freon 113	3.4	Not Detected	26	Not Detected
1,1-Dichloroethene	3.4	Not Detected	13	Not Detected
Acetone	34	4.8 J	80	11 J
2-Propanol	13	Not Detected	33	Not Detected
Carbon Disulfide	13	Not Detected	42	Not Detected
3-Chloropropene	13	Not Detected	42	Not Detected
Methylene Chloride	34	0.93 J	120	3.2 J
Methyl tert-butyl ether	3.4	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
Hexane	3.4	3.8	12	13
1,1-Dichloroethane	3.4	Not Detected	14	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	40	Not Detected
cis-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
Tetrahydrofuran	3.4	Not Detected	9.9	Not Detected
Chloroform	3.4	Not Detected	16	Not Detected
1,1,1-Trichloroethane	3.4	Not Detected	18	Not Detected
Cyclohexane	3.4	140	12	500
Carbon Tetrachloride	3.4	Not Detected	21	Not Detected
2,2,4-Trimethylpentane	3.4	960	16	4500
Benzene	3.4	9.6	11	30
1,2-Dichloroethane	3.4	Not Detected	14	Not Detected
Heptane	3.4	Not Detected	14	Not Detected
Trichloroethene	3.4	Not Detected	18	Not Detected
1,2-Dichloropropane	3.4	Not Detected	16	Not Detected
1,4-Dioxane	13	Not Detected	48	Not Detected
Bromodichloromethane	3.4	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.4	Not Detected	14	Not Detected
Toluene	3.4	2.5 J	13	9.5 J
trans-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.4	Not Detected	18	Not Detected
Tetrachloroethene	3.4	Not Detected	23	Not Detected
2-Hexanone	13	Not Detected	55	Not Detected

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Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051119**	**Date of Collection:**	**5/3/16 3:25:00 PM**
Dil. Factor:	**6.73**	**Date of Analysis:**	**5/11/16 09:57 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.4	Not Detected	29	Not Detected
1,2-Dibromoethane (EDB)	3.4	Not Detected	26	Not Detected
Chlorobenzene	3.4	Not Detected	15	Not Detected
Ethyl Benzene	3.4	0.74 J	15	3.2 J
m,p-Xylene	3.4	1.8 J	15	7.9 J
o-Xylene	3.4	Not Detected	15	Not Detected
Styrene	3.4	Not Detected	14	Not Detected
Bromoform	3.4	Not Detected	35	Not Detected
Cumene	3.4	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.4	Not Detected	23	Not Detected
Propylbenzene	3.4	Not Detected	16	Not Detected
4-Ethyltoluene	3.4	Not Detected	16	Not Detected
1,3,5-Trimethylbenzene	3.4	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.4	Not Detected	16	Not Detected
1,3-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.4	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.4	Not Detected UJ	17	Not Detected UJ
1,2-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	100	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected
Butane	13	59	32	140
Isopentane	13	290	40	860

J = Estimated value.
UJ = Analyte associated with low bias in the CCV.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: VMP-15-29-050316

Lab ID#: 1605133A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051120**	**Date of Collection:**	**5/3/16 3:41:00 PM**
Dil. Factor:	**2.74**	**Date of Analysis:**	**5/11/16 10:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.4	0.32 J	6.8	1.6 J
Freon 114	1.4	Not Detected	9.6	Not Detected
Chloromethane	14	Not Detected	28	Not Detected
Vinyl Chloride	1.4	Not Detected	3.5	Not Detected
1,3-Butadiene	1.4	Not Detected	3.0	Not Detected
Bromomethane	14	0.83 J	53	3.2 J
Chloroethane	5.5	Not Detected	14	Not Detected
Freon 11	1.4	Not Detected	7.7	Not Detected
Ethanol	5.5	Not Detected	10	Not Detected
Freon 113	1.4	Not Detected	10	Not Detected
1,1-Dichloroethene	1.4	Not Detected	5.4	Not Detected
Acetone	14	4.9 J	32	12 J
2-Propanol	5.5	Not Detected	13	Not Detected
Carbon Disulfide	5.5	Not Detected	17	Not Detected
3-Chloropropene	5.5	Not Detected	17	Not Detected
Methylene Chloride	14	0.44 J	48	1.5 J
Methyl tert-butyl ether	1.4	0.43 J	4.9	1.6 J
trans-1,2-Dichloroethene	1.4	Not Detected	5.4	Not Detected
Hexane	1.4	0.55 J	4.8	1.9 J
1,1-Dichloroethane	1.4	Not Detected	5.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.5	0.95 J	16	2.8 J
cis-1,2-Dichloroethene	1.4	Not Detected	5.4	Not Detected
Tetrahydrofuran	1.4	Not Detected	4.0	Not Detected
Chloroform	1.4	Not Detected	6.7	Not Detected
1,1,1-Trichloroethane	1.4	Not Detected	7.5	Not Detected
Cyclohexane	1.4	7.2	4.7	25
Carbon Tetrachloride	1.4	Not Detected	8.6	Not Detected
2,2,4-Trimethylpentane	1.4	140	6.4	660
Benzene	1.4	2.0	4.4	6.2
1,2-Dichloroethane	1.4	Not Detected	5.5	Not Detected
Heptane	1.4	Not Detected	5.6	Not Detected
Trichloroethene	1.4	Not Detected	7.4	Not Detected
1,2-Dichloropropane	1.4	Not Detected	6.3	Not Detected
1,4-Dioxane	5.5	Not Detected	20	Not Detected
Bromodichloromethane	1.4	Not Detected	9.2	Not Detected
cis-1,3-Dichloropropene	1.4	Not Detected	6.2	Not Detected
4-Methyl-2-pentanone	1.4	Not Detected	5.6	Not Detected
Toluene	1.4	Not Detected	5.2	Not Detected
trans-1,3-Dichloropropene	1.4	Not Detected	6.2	Not Detected
1,1,2-Trichloroethane	1.4	Not Detected	7.5	Not Detected
Tetrachloroethene	1.4	Not Detected	9.3	Not Detected
2-Hexanone	5.5	Not Detected	22	Not Detected

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Client Sample ID: VMP-15-29-050316

Lab ID#: 1605133A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051120**	**Date of Collection:**	**5/3/16 3:41:00 PM**
Dil. Factor:	**2.74**	**Date of Analysis:**	**5/11/16 10:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.4	Not Detected	12	Not Detected
1,2-Dibromoethane (EDB)	1.4	Not Detected	10	Not Detected
Chlorobenzene	1.4	Not Detected	6.3	Not Detected
Ethyl Benzene	1.4	Not Detected	5.9	Not Detected
m,p-Xylene	1.4	Not Detected	5.9	Not Detected
o-Xylene	1.4	Not Detected	5.9	Not Detected
Styrene	1.4	Not Detected	5.8	Not Detected
Bromoform	1.4	Not Detected	14	Not Detected
Cumene	1.4	Not Detected	6.7	Not Detected
1,1,2,2-Tetrachloroethane	1.4	Not Detected	9.4	Not Detected
Propylbenzene	1.4	Not Detected	6.7	Not Detected
4-Ethyltoluene	1.4	Not Detected	6.7	Not Detected
1,3,5-Trimethylbenzene	1.4	Not Detected	6.7	Not Detected
1,2,4-Trimethylbenzene	1.4	Not Detected	6.7	Not Detected
1,3-Dichlorobenzene	1.4	Not Detected	8.2	Not Detected
1,4-Dichlorobenzene	1.4	Not Detected	8.2	Not Detected
alpha-Chlorotoluene	1.4	Not Detected UJ	7.1	Not Detected UJ
1,2-Dichlorobenzene	1.4	Not Detected	8.2	Not Detected
1,2,4-Trichlorobenzene	5.5	Not Detected	41	Not Detected
Hexachlorobutadiene	5.5	Not Detected	58	Not Detected
Butane	5.5	18	13	44
Isopentane	5.5	100	16	310

J = Estimated value.
UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05A

EPA METHOD TO-15 GC/MS

File Name:	**j051709**	**Date of Collection:**	**5/4/16 2:55:00 PM**
Dil. Factor:	**72.7**	**Date of Analysis:**	**5/17/16 03:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	360	Not Detected	1800	Not Detected
Freon 114	360	Not Detected	2500	Not Detected
Chloromethane	1400	Not Detected	3000	Not Detected
Vinyl Chloride	360	Not Detected	930	Not Detected
1,3-Butadiene	360	Not Detected	800	Not Detected
Bromomethane	360	Not Detected	1400	Not Detected
Chloroethane	1400	Not Detected	3800	Not Detected
Freon 11	360	Not Detected	2000	Not Detected
Ethanol	1400	Not Detected	2700	Not Detected
Freon 113	360	Not Detected	2800	Not Detected
1,1-Dichloroethene	360	Not Detected	1400	Not Detected
Acetone	1400	Not Detected	3400	Not Detected
2-Propanol	1400	Not Detected	3600	Not Detected
Carbon Disulfide	360	Not Detected	1100	Not Detected
3-Chloropropene	1400	Not Detected	4600	Not Detected
Methylene Chloride	360	Not Detected	1300	Not Detected
Methyl tert-butyl ether	360	Not Detected	1300	Not Detected
trans-1,2-Dichloroethene	360	Not Detected	1400	Not Detected
Hexane	360	120000	1300	420000
1,1-Dichloroethane	360	Not Detected	1500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1400	Not Detected	4300	Not Detected
cis-1,2-Dichloroethene	360	Not Detected	1400	Not Detected
Tetrahydrofuran	360	Not Detected	1100	Not Detected
Chloroform	360	Not Detected	1800	Not Detected
1,1,1-Trichloroethane	360	Not Detected	2000	Not Detected
Cyclohexane	360	74000	1200	250000
Carbon Tetrachloride	360	Not Detected	2300	Not Detected
2,2,4-Trimethylpentane	360	58000	1700	270000
Benzene	360	Not Detected	1200	Not Detected
1,2-Dichloroethane	360	Not Detected	1500	Not Detected
Heptane	360	48000	1500	190000
Trichloroethene	360	Not Detected	2000	Not Detected
1,2-Dichloropropane	360	Not Detected	1700	Not Detected
1,4-Dioxane	1400	Not Detected	5200	Not Detected
Bromodichloromethane	360	Not Detected	2400	Not Detected
cis-1,3-Dichloropropene	360	Not Detected	1600	Not Detected
4-Methyl-2-pentanone	360	Not Detected	1500	Not Detected
Toluene	360	Not Detected	1400	Not Detected
trans-1,3-Dichloropropene	360	Not Detected	1600	Not Detected
1,1,2-Trichloroethane	360	Not Detected	2000	Not Detected
Tetrachloroethene	360	Not Detected	2500	Not Detected
2-Hexanone	1400	Not Detected	6000	Not Detected

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Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05A

EPA METHOD TO-15 GC/MS

File Name:	**j051709**	**Date of Collection: 5/4/16 2:55:00 PM**	
Dil. Factor:	**72.7**	**Date of Analysis: 5/17/16 03:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	360	Not Detected	3100	Not Detected
1,2-Dibromoethane (EDB)	360	Not Detected	2800	Not Detected
Chlorobenzene	360	Not Detected	1700	Not Detected
Ethyl Benzene	360	Not Detected	1600	Not Detected
m,p-Xylene	360	Not Detected	1600	Not Detected
o-Xylene	360	Not Detected	1600	Not Detected
Styrene	360	Not Detected	1500	Not Detected
Bromoform	360	Not Detected	3800	Not Detected
Cumene	360	Not Detected	1800	Not Detected
1,1,2,2-Tetrachloroethane	360	Not Detected	2500	Not Detected
Propylbenzene	360	Not Detected	1800	Not Detected
4-Ethyltoluene	360	Not Detected	1800	Not Detected
1,3,5-Trimethylbenzene	360	Not Detected	1800	Not Detected
1,2,4-Trimethylbenzene	360	Not Detected	1800	Not Detected
1,3-Dichlorobenzene	360	Not Detected	2200	Not Detected
1,4-Dichlorobenzene	360	Not Detected	2200	Not Detected
alpha-Chlorotoluene	360	Not Detected	1900	Not Detected
1,2-Dichlorobenzene	360	Not Detected	2200	Not Detected
1,2,4-Trichlorobenzene	1400	Not Detected	11000	Not Detected
Hexachlorobutadiene	1400	Not Detected	16000	Not Detected
Butane	1400	130000	3400	320000
Isopentane	1400	270000	4300	800000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05B

EPA METHOD TO-15 GC/MS

File Name:	**j051618**	**Date of Collection:**	**5/4/16 2:55:00 PM**
Dil. Factor:	**36.4**	**Date of Analysis:**	**5/16/16 10:49 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	180	Not Detected	900	Not Detected
Freon 114	180	Not Detected	1300	Not Detected
Chloromethane	730	Not Detected	1500	Not Detected
Vinyl Chloride	180	Not Detected	460	Not Detected
1,3-Butadiene	180	Not Detected	400	Not Detected
Bromomethane	180	Not Detected	710	Not Detected
Chloroethane	730	Not Detected	1900	Not Detected
Freon 11	180	Not Detected	1000	Not Detected
Ethanol	730	Not Detected	1400	Not Detected
Freon 113	180	Not Detected	1400	Not Detected
1,1-Dichloroethene	180	Not Detected	720	Not Detected
Acetone	730	Not Detected	1700	Not Detected
2-Propanol	730	Not Detected	1800	Not Detected
Carbon Disulfide	180	Not Detected	570	Not Detected
3-Chloropropene	730	Not Detected	2300	Not Detected
Methylene Chloride	180	Not Detected	630	Not Detected
Methyl tert-butyl ether	180	Not Detected	660	Not Detected
trans-1,2-Dichloroethene	180	Not Detected	720	Not Detected
Hexane	180	120000	640	420000
1,1-Dichloroethane	180	Not Detected	740	Not Detected
2-Butanone (Methyl Ethyl Ketone)	730	Not Detected	2100	Not Detected
cis-1,2-Dichloroethene	180	Not Detected	720	Not Detected
Tetrahydrofuran	180	Not Detected	540	Not Detected
Chloroform	180	Not Detected	890	Not Detected
1,1,1-Trichloroethane	180	Not Detected	990	Not Detected
Cyclohexane	180	76000	630	260000
Carbon Tetrachloride	180	Not Detected	1100	Not Detected
2,2,4-Trimethylpentane	180	59000	850	280000
Benzene	180	Not Detected	580	Not Detected
1,2-Dichloroethane	180	Not Detected	740	Not Detected
Heptane	180	47000 E	740	190000 E
Trichloroethene	180	Not Detected	980	Not Detected
1,2-Dichloropropane	180	Not Detected	840	Not Detected
1,4-Dioxane	730	Not Detected	2600	Not Detected
Bromodichloromethane	180	Not Detected	1200	Not Detected
cis-1,3-Dichloropropene	180	Not Detected	830	Not Detected
4-Methyl-2-pentanone	180	Not Detected	740	Not Detected
Toluene	180	Not Detected	680	Not Detected
trans-1,3-Dichloropropene	180	Not Detected	830	Not Detected
1,1,2-Trichloroethane	180	Not Detected	990	Not Detected
Tetrachloroethene	180	Not Detected	1200	Not Detected
2-Hexanone	730	Not Detected	3000	Not Detected

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Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133A-05B

EPA METHOD TO-15 GC/MS

File Name:	**j051618**	**Date of Collection: 5/4/16 2:55:00 PM**	
Dil. Factor:	**36.4**	**Date of Analysis: 5/16/16 10:49 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	180	Not Detected	1600	Not Detected
1,2-Dibromoethane (EDB)	180	Not Detected	1400	Not Detected
Chlorobenzene	180	Not Detected	840	Not Detected
Ethyl Benzene	180	Not Detected	790	Not Detected
m,p-Xylene	180	Not Detected	790	Not Detected
o-Xylene	180	Not Detected	790	Not Detected
Styrene	180	Not Detected	780	Not Detected
Bromoform	180	Not Detected	1900	Not Detected
Cumene	180	Not Detected	890	Not Detected
1,1,2,2-Tetrachloroethane	180	Not Detected	1200	Not Detected
Propylbenzene	180	Not Detected	890	Not Detected
4-Ethyltoluene	180	Not Detected	890	Not Detected
1,3,5-Trimethylbenzene	180	Not Detected	890	Not Detected
1,2,4-Trimethylbenzene	180	Not Detected	890	Not Detected
1,3-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,4-Dichlorobenzene	180	Not Detected	1100	Not Detected
alpha-Chlorotoluene	180	Not Detected	940	Not Detected
1,2-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,2,4-Trichlorobenzene	730	Not Detected	5400	Not Detected
Hexachlorobutadiene	730	Not Detected	7800	Not Detected
Butane	730	130000	1700	320000
Isopentane	730	280000	2100	830000

E = Exceeds instrument calibration range.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	154 Q	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051106a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 11:46 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	0.68 J	12	1.6 J
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	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051106a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 11:46 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected UJ	2.6	Not Detected UJ
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.
UJ = Analyte associated with low bias in the CCV.
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051307a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 01:25 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	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	0.96 J	12	2.3 J
2-Propanol	2.0	0.66 J	4.9	1.6 J
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	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	0.057 J	1.8	0.20 J
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051307a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 01:25 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	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	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	100	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06C

EPA METHOD TO-15 GC/MS

File Name:	**j051607c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 12:52 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	5.0	Not Detected	19	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	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	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06C

EPA METHOD TO-15 GC/MS

File Name:	**j051607c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 12:52 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	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06D

EPA METHOD TO-15 GC/MS

File Name:	**j051707a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 01:32 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	5.0	Not Detected	19	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	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	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1605133A-06D

EPA METHOD TO-15 GC/MS

File Name:	**j051707a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 01:32 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	81	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: CCV

Lab ID#: 1605133A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 09:45 AM**	

Compound	%Recovery
Freon 12	99
Freon 114	101
Chloromethane	95
Vinyl Chloride	97
1,3-Butadiene	87
Bromomethane	102
Chloroethane	94
Freon 11	99
Ethanol	85
Freon 113	98
1,1-Dichloroethene	93
Acetone	82
2-Propanol	83
Carbon Disulfide	94
3-Chloropropene	91
Methylene Chloride	92
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	93
Hexane	90
1,1-Dichloroethane	94
2-Butanone (Methyl Ethyl Ketone)	87
cis-1,2-Dichloroethene	87
Tetrahydrofuran	81
Chloroform	93
1,1,1-Trichloroethane	89
Cyclohexane	86
Carbon Tetrachloride	90
2,2,4-Trimethylpentane	88
Benzene	97
1,2-Dichloroethane	93
Heptane	88
Trichloroethene	110
1,2-Dichloropropane	91
1,4-Dioxane	90
Bromodichloromethane	98
cis-1,3-Dichloropropene	88
4-Methyl-2-pentanone	75
Toluene	95
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	95
Tetrachloroethene	103
2-Hexanone	76

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Client Sample ID: CCV

Lab ID#: 1605133A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 09:45 AM**	

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	98
Chlorobenzene	100
Ethyl Benzene	94
m,p-Xylene	93
o-Xylene	92
Styrene	94
Bromoform	102
Cumene	95
1,1,2,2-Tetrachloroethane	75
Propylbenzene	90
4-Ethyltoluene	95
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	95
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	60 Q
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	102
Hexachlorobutadiene	103
Butane	92
Isopentane	87

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: CCV

Lab ID#: 1605133A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 10:46 AM**	

Compound	%Recovery
Freon 12	99
Freon 114	97
Chloromethane	121
Vinyl Chloride	120
1,3-Butadiene	109
Bromomethane	97
Chloroethane	107
Freon 11	98
Ethanol	110
Freon 113	97
1,1-Dichloroethene	97
Acetone	102
2-Propanol	100
Carbon Disulfide	97
3-Chloropropene	103
Methylene Chloride	103
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	100
Hexane	100
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	99
cis-1,2-Dichloroethene	106
Tetrahydrofuran	103
Chloroform	103
1,1,1-Trichloroethane	96
Cyclohexane	98
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	101
Benzene	97
1,2-Dichloroethane	104
Heptane	96
Trichloroethene	97
1,2-Dichloropropane	99
1,4-Dioxane	97
Bromodichloromethane	99
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	97
Toluene	98
trans-1,3-Dichloropropene	98
1,1,2-Trichloroethane	99
Tetrachloroethene	98
2-Hexanone	98

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Client Sample ID: CCV

Lab ID#: 1605133A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 10:46 AM**	

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	102
Chlorobenzene	98
Ethyl Benzene	98
m,p-Xylene	97
o-Xylene	102
Styrene	98
Bromoform	100
Cumene	100
1,1,2,2-Tetrachloroethane	100
Propylbenzene	96
4-Ethyltoluene	97
1,3,5-Trimethylbenzene	97
1,2,4-Trimethylbenzene	95
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	95
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	86
Hexachlorobutadiene	85
Butane	95
Isopentane	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: CCV
Lab ID#: 1605133A-07C
EPA METHOD TO-15 GC/MS

File Name:	**j051603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 09:57 AM**	

Compound	%Recovery
Freon 12	104
Freon 114	97
Chloromethane	93
Vinyl Chloride	104
1,3-Butadiene	105
Bromomethane	91
Chloroethane	89
Freon 11	118
Ethanol	100
Freon 113	112
1,1-Dichloroethene	112
Acetone	107
2-Propanol	104
Carbon Disulfide	93
3-Chloropropene	95
Methylene Chloride	109
Methyl tert-butyl ether	103
trans-1,2-Dichloroethene	91
Hexane	95
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	101
cis-1,2-Dichloroethene	104
Tetrahydrofuran	84
Chloroform	104
1,1,1-Trichloroethane	104
Cyclohexane	100
Carbon Tetrachloride	107
2,2,4-Trimethylpentane	96
Benzene	92
1,2-Dichloroethane	106
Heptane	84
Trichloroethene	104
1,2-Dichloropropane	80
1,4-Dioxane	92
Bromodichloromethane	96
cis-1,3-Dichloropropene	91
4-Methyl-2-pentanone	80
Toluene	92
trans-1,3-Dichloropropene	91
1,1,2-Trichloroethane	96
Tetrachloroethene	102
2-Hexanone	90

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Client Sample ID: CCV
Lab ID#: 1605133A-07C
EPA METHOD TO-15 GC/MS

File Name:	**j051603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 09:57 AM**	

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	94
Chlorobenzene	89
Ethyl Benzene	90
m,p-Xylene	98
o-Xylene	94
Styrene	89
Bromoform	96
Cumene	92
1,1,2,2-Tetrachloroethane	87
Propylbenzene	92
4-Ethyltoluene	95
1,3,5-Trimethylbenzene	102
1,2,4-Trimethylbenzene	97
1,3-Dichlorobenzene	96
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	92
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	91
Hexachlorobutadiene	93
Butane	96
Isopentane	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: CCV
Lab ID#: 1605133A-07D
EPA METHOD TO-15 GC/MS

File Name:	**j051704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:07 PM**	

Compound	%Recovery
Freon 12	82
Freon 114	90
Chloromethane	87
Vinyl Chloride	101
1,3-Butadiene	96
Bromomethane	97
Chloroethane	102
Freon 11	93
Ethanol	102
Freon 113	102
1,1-Dichloroethene	99
Acetone	104
2-Propanol	88
Carbon Disulfide	95
3-Chloropropene	97
Methylene Chloride	99
Methyl tert-butyl ether	93
trans-1,2-Dichloroethene	91
Hexane	99
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	94
Tetrahydrofuran	82
Chloroform	94
1,1,1-Trichloroethane	88
Cyclohexane	105
Carbon Tetrachloride	85
2,2,4-Trimethylpentane	100
Benzene	104
1,2-Dichloroethane	85
Heptane	104
Trichloroethene	106
1,2-Dichloropropane	95
1,4-Dioxane	106
Bromodichloromethane	89
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	87
Toluene	102
trans-1,3-Dichloropropene	84
1,1,2-Trichloroethane	101
Tetrachloroethene	94
2-Hexanone	95

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Client Sample ID: CCV
Lab ID#: 1605133A-07D
EPA METHOD TO-15 GC/MS

File Name:	**j051704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:07 PM**	

Compound	%Recovery
Dibromochloromethane	89
1,2-Dibromoethane (EDB)	96
Chlorobenzene	91
Ethyl Benzene	91
m,p-Xylene	95
o-Xylene	94
Styrene	89
Bromoform	88
Cumene	90
1,1,2,2-Tetrachloroethane	100
Propylbenzene	91
4-Ethyltoluene	91
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	92
1,3-Dichlorobenzene	89
1,4-Dichlorobenzene	90
alpha-Chlorotoluene	86
1,2-Dichlorobenzene	89
1,2,4-Trichlorobenzene	90
Hexachlorobutadiene	85
Butane	98
Isopentane	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 10:10 AM**	

Compound	%Recovery	Method Limits
Freon 12	92	70-130
Freon 114	95	70-130
Chloromethane	86	70-130
Vinyl Chloride	91	70-130
1,3-Butadiene	79	70-130
Bromomethane	97	70-130
Chloroethane	90	70-130
Freon 11	92	70-130
Ethanol	86	70-130
Freon 113	91	70-130
1,1-Dichloroethene	84	70-130
Acetone	76	70-130
2-Propanol	81	70-130
Carbon Disulfide	77	70-130
3-Chloropropene	81	70-130
Methylene Chloride	82	70-130
Methyl tert-butyl ether	81	70-130
trans-1,2-Dichloroethene	88	70-130
Hexane	84	70-130
1,1-Dichloroethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	81	70-130
cis-1,2-Dichloroethene	79	70-130
Tetrahydrofuran	74	70-130
Chloroform	85	70-130
1,1,1-Trichloroethane	85	70-130
Cyclohexane	82	70-130
Carbon Tetrachloride	86	70-130
2,2,4-Trimethylpentane	81	70-130
Benzene	91	70-130
1,2-Dichloroethane	88	70-130
Heptane	83	70-130
Trichloroethene	89	70-130
1,2-Dichloropropane	85	70-130
1,4-Dioxane	87	70-130
Bromodichloromethane	94	70-130
cis-1,3-Dichloropropene	79	70-130
4-Methyl-2-pentanone	73	70-130
Toluene	87	70-130
trans-1,3-Dichloropropene	84	70-130
1,1,2-Trichloroethane	88	70-130
Tetrachloroethene	98	70-130
2-Hexanone	76	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 10:10 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	96	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	88	70-130
o-Xylene	88	70-130
Styrene	88	70-130
Bromoform	101	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	86	70-130
Propylbenzene	87	70-130
4-Ethyltoluene	91	70-130
1,3,5-Trimethylbenzene	89	70-130
1,2,4-Trimethylbenzene	85	70-130
1,3-Dichlorobenzene	91	70-130
1,4-Dichlorobenzene	89	70-130
alpha-Chlorotoluene	84	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	93	70-130
Hexachlorobutadiene	93	70-130
Butane	86	70-130
Isopentane	81	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 10:35 AM**	

Compound	%Recovery	Method Limits
Freon 12	91	70-130
Freon 114	94	70-130
Chloromethane	85	70-130
Vinyl Chloride	89	70-130
1,3-Butadiene	79	70-130
Bromomethane	94	70-130
Chloroethane	90	70-130
Freon 11	92	70-130
Ethanol	84	70-130
Freon 113	90	70-130
1,1-Dichloroethene	83	70-130
Acetone	76	70-130
2-Propanol	81	70-130
Carbon Disulfide	76	70-130
3-Chloropropene	80	70-130
Methylene Chloride	81	70-130
Methyl tert-butyl ether	80	70-130
trans-1,2-Dichloroethene	87	70-130
Hexane	83	70-130
1,1-Dichloroethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	76	70-130
cis-1,2-Dichloroethene	78	70-130
Tetrahydrofuran	74	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	81	70-130
Carbon Tetrachloride	86	70-130
2,2,4-Trimethylpentane	81	70-130
Benzene	89	70-130
1,2-Dichloroethane	86	70-130
Heptane	81	70-130
Trichloroethene	87	70-130
1,2-Dichloropropane	84	70-130
1,4-Dioxane	85	70-130
Bromodichloromethane	92	70-130
cis-1,3-Dichloropropene	77	70-130
4-Methyl-2-pentanone	73	70-130
Toluene	87	70-130
trans-1,3-Dichloropropene	84	70-130
1,1,2-Trichloroethane	88	70-130
Tetrachloroethene	98	70-130
2-Hexanone	77	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3051104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/11/16 10:35 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	96	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	90	70-130
o-Xylene	89	70-130
Styrene	89	70-130
Bromoform	102	70-130
Cumene	89	70-130
1,1,2,2-Tetrachloroethane	88	70-130
Propylbenzene	88	70-130
4-Ethyltoluene	93	70-130
1,3,5-Trimethylbenzene	90	70-130
1,2,4-Trimethylbenzene	87	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	86	70-130
1,2-Dichlorobenzene	91	70-130
1,2,4-Trichlorobenzene	98	70-130
Hexachlorobutadiene	98	70-130
Butane	86	70-130
Isopentane	81	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 11:11 AM**	

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	97	70-130
Chloromethane	121	70-130
Vinyl Chloride	112	70-130
1,3-Butadiene	104	70-130
Bromomethane	94	70-130
Chloroethane	101	70-130
Freon 11	96	70-130
Ethanol	107	70-130
Freon 113	95	70-130
1,1-Dichloroethene	95	70-130
Acetone	96	70-130
2-Propanol	101	70-130
Carbon Disulfide	83	70-130
3-Chloropropene	92	70-130
Methylene Chloride	97	70-130
Methyl tert-butyl ether	93	70-130
trans-1,2-Dichloroethene	98	70-130
Hexane	99	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	92	70-130
cis-1,2-Dichloroethene	99	70-130
Tetrahydrofuran	98	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	90	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	93	70-130
1,2-Dichloroethane	99	70-130
Heptane	96	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	89	70-130
4-Methyl-2-pentanone	99	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	95	70-130
2-Hexanone	97	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 11:11 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	95	70-130
1,2-Dibromoethane (EDB)	96	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	95	70-130
o-Xylene	98	70-130
Styrene	99	70-130
Bromoform	99	70-130
Cumene	97	70-130
1,1,2,2-Tetrachloroethane	97	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	94	70-130
1,3,5-Trimethylbenzene	96	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	96	70-130
1,2-Dichlorobenzene	95	70-130
1,2,4-Trichlorobenzene	90	70-130
Hexachlorobutadiene	87	70-130
Butane	94	60-140
Isopentane	95	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 11:36 AM**	

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	98	70-130
Chloromethane	123	70-130
Vinyl Chloride	112	70-130
1,3-Butadiene	101	70-130
Bromomethane	96	70-130
Chloroethane	104	70-130
Freon 11	97	70-130
Ethanol	109	70-130
Freon 113	95	70-130
1,1-Dichloroethene	95	70-130
Acetone	96	70-130
2-Propanol	102	70-130
Carbon Disulfide	82	70-130
3-Chloropropene	94	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	100	70-130
Hexane	98	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	98	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	97	70-130
Carbon Tetrachloride	91	70-130
2,2,4-Trimethylpentane	100	70-130
Benzene	94	70-130
1,2-Dichloroethane	100	70-130
Heptane	95	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	98	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	91	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	93	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	95	70-130
2-Hexanone	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p051304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 11:36 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	95	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	95	70-130
o-Xylene	99	70-130
Styrene	100	70-130
Bromoform	100	70-130
Cumene	97	70-130
1,1,2,2-Tetrachloroethane	97	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3-Dichlorobenzene	95	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	97	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	99	70-130
Hexachlorobutadiene	96	70-130
Butane	90	60-140
Isopentane	97	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08C

EPA METHOD TO-15 GC/MS

File Name:	**j051604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 10:22 AM**	

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	96	70-130
Chloromethane	88	70-130
Vinyl Chloride	102	70-130
1,3-Butadiene	89	70-130
Bromomethane	93	70-130
Chloroethane	100	70-130
Freon 11	114	70-130
Ethanol	114	70-130
Freon 113	106	70-130
1,1-Dichloroethene	101	70-130
Acetone	99	70-130
2-Propanol	103	70-130
Carbon Disulfide	76	70-130
3-Chloropropene	86	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	86	70-130
Hexane	89	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	85	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	83	70-130
Chloroform	97	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	81	70-130
Benzene	96	70-130
1,2-Dichloroethane	106	70-130
Heptane	85	70-130
Trichloroethene	107	70-130
1,2-Dichloropropane	81	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	84	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	89	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	96	70-130
2-Hexanone	94	70-130

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Client Sample ID: LCS
Lab ID#: 1605133A-08C
EPA METHOD TO-15 GC/MS

File Name:	**j051604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 10:22 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	89	70-130
Chlorobenzene	88	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	88	70-130
o-Xylene	97	70-130
Styrene	92	70-130
Bromoform	97	70-130
Cumene	89	70-130
1,1,2,2-Tetrachloroethane	89	70-130
Propylbenzene	92	70-130
4-Ethyltoluene	92	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	99	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	91	70-130
Hexachlorobutadiene	96	70-130
Butane	91	60-140
Isopentane	102	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08CC

EPA METHOD TO-15 GC/MS

File Name:	**j051605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 10:46 AM**	

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	96	70-130
Chloromethane	89	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	94	70-130
Bromomethane	91	70-130
Chloroethane	98	70-130
Freon 11	117	70-130
Ethanol	109	70-130
Freon 113	107	70-130
1,1-Dichloroethene	104	70-130
Acetone	91	70-130
2-Propanol	101	70-130
Carbon Disulfide	77	70-130
3-Chloropropene	98	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	97	70-130
trans-1,2-Dichloroethene	88	70-130
Hexane	92	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	95	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	84	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	101	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	84	70-130
Benzene	93	70-130
1,2-Dichloroethane	104	70-130
Heptane	93	70-130
Trichloroethene	107	70-130
1,2-Dichloropropane	88	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	103	70-130
cis-1,3-Dichloropropene	85	70-130
4-Methyl-2-pentanone	83	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	103	70-130
2-Hexanone	96	70-130

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Client Sample ID: LCSD
Lab ID#: 1605133A-08CC
EPA METHOD TO-15 GC/MS

File Name:	**j051605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/16/16 10:46 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	89	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	97	70-130
o-Xylene	100	70-130
Styrene	99	70-130
Bromoform	100	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	97	70-130
1,3,5-Trimethylbenzene	105	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	109	70-130
Butane	94	60-140
Isopentane	103	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08D

EPA METHOD TO-15 GC/MS

File Name:	**j051705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:32 PM**	

Compound	%Recovery	Method Limits
Freon 12	81	70-130
Freon 114	92	70-130
Chloromethane	85	70-130
Vinyl Chloride	102	70-130
1,3-Butadiene	92	70-130
Bromomethane	98	70-130
Chloroethane	108	70-130
Freon 11	91	70-130
Ethanol	108	70-130
Freon 113	102	70-130
1,1-Dichloroethene	95	70-130
Acetone	101	70-130
2-Propanol	94	70-130
Carbon Disulfide	81	70-130
3-Chloropropene	93	70-130
Methylene Chloride	97	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	97	70-130
Hexane	97	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	92	70-130
Tetrahydrofuran	80	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	85	70-130
Cyclohexane	101	70-130
Carbon Tetrachloride	82	70-130
2,2,4-Trimethylpentane	91	70-130
Benzene	98	70-130
1,2-Dichloroethane	83	70-130
Heptane	103	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	88	70-130
cis-1,3-Dichloropropene	88	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	87	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	96	70-130
2-Hexanone	104	70-130

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Client Sample ID: LCS

Lab ID#: 1605133A-08D

EPA METHOD TO-15 GC/MS

File Name:	**j051705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:32 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	94	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	91	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	97	70-130
o-Xylene	99	70-130
Styrene	97	70-130
Bromoform	95	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	95	70-130
1,3-Dichlorobenzene	95	70-130
1,4-Dichlorobenzene	94	70-130
alpha-Chlorotoluene	97	70-130
1,2-Dichlorobenzene	95	70-130
1,2,4-Trichlorobenzene	96	70-130
Hexachlorobutadiene	94	70-130
Butane	97	60-140
Isopentane	106	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCSD

Lab ID#: 1605133A-08DD

EPA METHOD TO-15 GC/MS

File Name:	**j051706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:57 PM**	

Compound	%Recovery	Method Limits
Freon 12	79	70-130
Freon 114	86	70-130
Chloromethane	81	70-130
Vinyl Chloride	98	70-130
1,3-Butadiene	85	70-130
Bromomethane	93	70-130
Chloroethane	105	70-130
Freon 11	88	70-130
Ethanol	106	70-130
Freon 113	98	70-130
1,1-Dichloroethene	90	70-130
Acetone	98	70-130
2-Propanol	92	70-130
Carbon Disulfide	82	70-130
3-Chloropropene	86	70-130
Methylene Chloride	92	70-130
Methyl tert-butyl ether	86	70-130
trans-1,2-Dichloroethene	90	70-130
Hexane	93	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	95	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	78	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	80	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	78	70-130
2,2,4-Trimethylpentane	88	70-130
Benzene	99	70-130
1,2-Dichloroethane	81	70-130
Heptane	103	70-130
Trichloroethene	104	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	98	70-130
Bromodichloromethane	88	70-130
cis-1,3-Dichloropropene	86	70-130
4-Methyl-2-pentanone	84	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	96	70-130
2-Hexanone	108	70-130

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Client Sample ID: LCSD
Lab ID#: 1605133A-08DD
EPA METHOD TO-15 GC/MS

File Name:	**j051706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/17/16 12:57 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	94	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	96	70-130
m,p-Xylene	100	70-130
o-Xylene	99	70-130
Styrene	100	70-130
Bromoform	94	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	98	70-130
1,2-Dichlorobenzene	94	70-130
1,2,4-Trichlorobenzene	99	70-130
Hexachlorobutadiene	97	70-130
Butane	90	60-140
Isopentane	102	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

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5/19/2016

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

Project Name: Roxana Quarterly Soil Vapor
Project #: 60477387 - 1.04.002
Workorder #: 1605133B

Dear Ms. Elizabeth Kunkel

The following report includes the data for the above referenced project for sample(s) received on 5/6/2016 at Air Toxics Ltd.

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

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

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1605133B

Work Order Summary

CLIENT:	Ms. Elizabeth Kunkel AECOM 1001 Highlands Plaza Dr. West Suite 300 St. Louis, MO 63110	**BILL TO:**	Accounts Payable Austin AECOM PO Box 203970 Austin, TX 78720
PHONE:	314-743-4179	**P.O. #**	60477387 - 1.04.002
FAX:		**PROJECT #**	60477387 - 1.04.002 Roxana Quarterly Soil Vapor
DATE RECEIVED:	05/06/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/19/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VMP-15-5-050316	Modified ASTM D-1946	7.1 "Hg	15.5 psi
02A	VMP-15-21.5-050316	Modified ASTM D-1946	1.4 "Hg	15.1 psi
03A	VMP-15-25.5-050316	Modified ASTM D-1946	7.1 "Hg	15.5 psi
04A	VMP-15-29-050316	Modified ASTM D-1946	7.6 "Hg	15.4 psi
05A	VMP-55-20-050416	Modified ASTM D-1946	8.6 "Hg	15.8 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	LCS	Modified ASTM D-1946	NA	NA
07AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/19/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified ASTM D-1946
URS Corporation
Workorder# 1605133B

Five 1 Liter Summa Canister samples were received on May 06, 2016. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

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

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

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 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 >/= 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

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

Client Sample ID: VMP-15-5-050316

Lab ID#: 1605133B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	12
Nitrogen	0.27	85
Carbon Dioxide	0.027	2.8

Client Sample ID: VMP-15-21.5-050316

Lab ID#: 1605133B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	6.4
Nitrogen	0.21	84
Methane	0.00021	0.00017 J
Carbon Dioxide	0.021	10
Helium	0.11	0.024 J

Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	1.5
Nitrogen	0.27	83
Methane	0.00027	0.68
Carbon Dioxide	0.027	15
Ethane	0.0027	0.00025 J

Client Sample ID: VMP-15-29-050316

Lab ID#: 1605133B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	1.5
Nitrogen	0.27	83
Methane	0.00027	0.17
Carbon Dioxide	0.027	15

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

Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.29	1.4
Nitrogen	0.29	79
Methane	0.00029	2.2
Carbon Dioxide	0.029	17
Ethane	0.0029	0.00073 J

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Client Sample ID: VMP-15-5-050316

Lab ID#: 1605133B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051306**	**Date of Collection: 5/3/16 2:36:00 PM**	
Dil. Factor:	**2.70**	**Date of Analysis: 5/13/16 10:30 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	12
Nitrogen	0.27	85
Carbon Monoxide	0.027	Not Detected
Methane	0.00027	Not Detected
Carbon Dioxide	0.027	2.8
Ethane	0.0027	Not Detected
Ethene	0.0027	Not Detected
Helium	0.14	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: VMP-15-21.5-050316

Lab ID#: 1605133B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051307**	**Date of Collection: 5/3/16 3:59:00 PM**	
Dil. Factor:	**2.13**	**Date of Analysis: 5/13/16 11:04 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	6.4
Nitrogen	0.21	84
Carbon Monoxide	0.021	Not Detected
Methane	0.00021	0.00017 J
Carbon Dioxide	0.021	10
Ethane	0.0021	Not Detected
Ethene	0.0021	Not Detected
Helium	0.11	0.024 J

J = Estimated value.

Container Type: 1 Liter Summa Canister

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Client Sample ID: VMP-15-25.5-050316

Lab ID#: 1605133B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051308**	**Date of Collection: 5/3/16 3:25:00 PM**	
Dil. Factor:	**2.70**	**Date of Analysis: 5/13/16 11:41 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	1.5
Nitrogen	0.27	83
Carbon Monoxide	0.027	Not Detected
Methane	0.00027	0.68
Carbon Dioxide	0.027	15
Ethane	0.0027	0.00025 J
Ethene	0.0027	Not Detected
Helium	0.14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

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Client Sample ID: VMP-15-29-050316

Lab ID#: 1605133B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051309**	**Date of Collection: 5/3/16 3:41:00 PM**	
Dil. Factor:	**2.74**	**Date of Analysis: 5/13/16 12:05 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.27	1.5
Nitrogen	0.27	83
Carbon Monoxide	0.027	Not Detected
Methane	0.00027	0.17
Carbon Dioxide	0.027	15
Ethane	0.0027	Not Detected
Ethene	0.0027	Not Detected
Helium	0.14	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: VMP-55-20-050416

Lab ID#: 1605133B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051310**	**Date of Collection: 5/4/16 2:55:00 PM**	
Dil. Factor:	**2.90**	**Date of Analysis: 5/13/16 12:31 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.29	1.4
Nitrogen	0.29	79
Carbon Monoxide	0.029	Not Detected
Methane	0.00029	2.2
Carbon Dioxide	0.029	17
Ethane	0.0029	0.00073 J
Ethene	0.0029	Not Detected
Helium	0.14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1605133B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051304a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 09:37 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.10	0.014 J
Nitrogen	0.10	0.048 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

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Client Sample ID: Lab Blank

Lab ID#: 1605133B-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051305c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 10:02 AM**	

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

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1605133B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 08:38 AM**	

Compound	%Recovery	Method Limits
Oxygen	98	85-115
Nitrogen	94	85-115
Carbon Monoxide	94	85-115
Methane	101	85-115
Carbon Dioxide	98	85-115
Ethane	100	85-115
Ethene	102	85-115
Helium	103	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1605133B-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10051317**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/13/16 04:57 PM**	

Compound	%Recovery	Method Limits
Oxygen	98	85-115
Nitrogen	94	85-115
Carbon Monoxide	94	85-115
Methane	101	85-115
Carbon Dioxide	99	85-115
Ethane	101	85-115
Ethene	102	85-115
Helium	102	85-115

Container Type: NA - Not Applicable