

12/29/2016

Mr. Curt Lueckenhoff
Missouri Dept. of Natural Resources
2710 West Main

Jefferson City MO 65109

Project Name:
Project #:
Workorder #: 1612272

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 12/19/2016 at Air Toxics Ltd.

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

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

Regards,



Brian Whittaker
Project Manager

WORK ORDER #: 1612272

Work Order Summary

CLIENT:	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	BILL TO:	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
PHONE:	573-526-3363	P.O. #	3ESP170425
FAX:	573-526-3350	PROJECT #	
DATE RECEIVED:	12/19/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	12/29/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163936)	Modified TO-15	4.1 "Hg	5 psi
02A	D2 (163937)	Modified TO-15	3.9 "Hg	5.1 psi
03A	U1 (163938)	Modified TO-15	4.3 "Hg	5 psi
04A	U2 (163939)	Modified TO-15	4.7 "Hg	5.1 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 12/29/16

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

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

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LABORATORY NARRATIVE
Modified TO-15 Low Level
Missouri Dept. of Natural Resources
Workorder# 1612272

Four 6 Liter Summa Canister (100% Certified) samples were received on December 19, 2016. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

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

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

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

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.

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

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

Client Sample ID: D1 (163936)

Lab ID#: 1612272-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.77	2.5
Freon 11	0.16	0.23	0.87	1.3
Ethanol	0.78	1.9	1.5	3.6
Acetone	0.78	2.6	1.8	6.1
Methylene Chloride	0.31	0.37	1.1	1.3
Benzene	0.16	0.18	0.50	0.58
Toluene	0.16	0.18	0.58	0.67

Client Sample ID: D2 (163937)

Lab ID#: 1612272-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.51	0.77	2.5
Freon 11	0.16	0.20	0.87	1.1
Ethanol	0.78	3.3	1.5	6.2
Acetone	0.78	3.4	1.8	8.2
Methylene Chloride	0.31	0.76	1.1	2.6
Benzene	0.16	0.62	0.50	2.0
Toluene	0.16	0.50	0.58	1.9

Client Sample ID: U1 (163938)

Lab ID#: 1612272-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.40	0.77	2.0
Freon 11	0.16	0.21	0.88	1.2
Ethanol	0.78	1.9	1.5	3.6
Acetone	0.78	3.6	1.8	8.5
Methylene Chloride	0.31	3.3	1.1	12
Hexane	0.16	0.23	0.55	0.81
Cyclohexane	0.16	0.16	0.54	0.57
Benzene	0.16	0.19	0.50	0.62
Heptane	0.16	0.33	0.64	1.3

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

Client Sample ID: U1 (163938)

Lab ID#: 1612272-03A

Toluene	0.16	0.70	0.59	2.6
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Client Sample ID: U2 (163939)

Lab ID#: 1612272-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.79	2.4
Freon 11	0.16	0.29	0.90	1.6
Ethanol	0.80	2.2	1.5	4.2
Acetone	0.80	3.4	1.9	8.0
Benzene	0.16	0.23	0.51	0.75
Toluene	0.16	0.17	0.60	0.63



Air Toxics

Client Sample ID: D1 (163936)

Lab ID#: 1612272-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122013	Date of Collection:	12/13/16 1:00:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/20/16 04:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.77	2.5
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.34	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.0	Not Detected
Freon 11	0.16	0.23	0.87	1.3
Ethanol	0.78	1.9	1.5	3.6
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Acetone	0.78	2.6	1.8	6.1
2-Propanol	0.78	Not Detected	1.9	Not Detected
Carbon Disulfide	0.78	Not Detected	2.4	Not Detected
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	0.37	1.1	1.3
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Hexane	0.16	Not Detected	0.55	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	Not Detected	2.3	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.76	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.84	Not Detected
Cyclohexane	0.16	Not Detected	0.53	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.98	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.16	0.18	0.50	0.58
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Heptane	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	Not Detected	0.83	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.70	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.63	Not Detected
Toluene	0.16	0.18	0.58	0.67
trans-1,3-Dichloropropene	0.16	Not Detected	0.70	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.84	Not Detected
Tetrachloroethene	0.16	Not Detected	1.0	Not Detected
2-Hexanone	0.78	Not Detected	3.2	Not Detected

Client Sample ID: D1 (163936)

Lab ID#: 1612272-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122013	Date of Collection:	12/13/16 1:00:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/20/16 04:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.71	Not Detected
Ethyl Benzene	0.16	Not Detected	0.67	Not Detected
m,p-Xylene	0.16	Not Detected	0.67	Not Detected
o-Xylene	0.16	Not Detected	0.67	Not Detected
Styrene	0.16	Not Detected	0.66	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.76	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.76	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.76	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.76	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.76	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.80	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
1,2,4-Trichlorobenzene	0.78	Not Detected	5.8	Not Detected
Hexachlorobutadiene	0.78	Not Detected	8.3	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: D2 (163937)

Lab ID#: 1612272-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122010	Date of Collection:	12/13/16 1:30:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/20/16 01:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.51	0.77	2.5
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.34	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.0	Not Detected
Freon 11	0.16	0.20	0.87	1.1
Ethanol	0.78	3.3	1.5	6.2
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Acetone	0.78	3.4	1.8	8.2
2-Propanol	0.78	Not Detected	1.9	Not Detected
Carbon Disulfide	0.78	Not Detected	2.4	Not Detected
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	0.76	1.1	2.6
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Hexane	0.16	Not Detected	0.55	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	Not Detected	2.3	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.61	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.76	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.84	Not Detected
Cyclohexane	0.16	Not Detected	0.53	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.98	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.16	0.62	0.50	2.0
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Heptane	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	Not Detected	0.83	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.70	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.63	Not Detected
Toluene	0.16	0.50	0.58	1.9
trans-1,3-Dichloropropene	0.16	Not Detected	0.70	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.84	Not Detected
Tetrachloroethene	0.16	Not Detected	1.0	Not Detected
2-Hexanone	0.78	Not Detected	3.2	Not Detected



Client Sample ID: D2 (163937)

Lab ID#: 1612272-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122010	Date of Collection:	12/13/16 1:30:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/20/16 01:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.71	Not Detected
Ethyl Benzene	0.16	Not Detected	0.67	Not Detected
m,p-Xylene	0.16	Not Detected	0.67	Not Detected
o-Xylene	0.16	Not Detected	0.67	Not Detected
Styrene	0.16	Not Detected	0.66	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.76	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.76	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.76	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.76	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.76	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.80	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.93	Not Detected
1,2,4-Trichlorobenzene	0.78	Not Detected	5.8	Not Detected
Hexachlorobutadiene	0.78	Not Detected	8.3	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: U1 (163938)

Lab ID#: 1612272-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122011	Date of Collection:	12/13/16 1:20:00 PM
Dil. Factor:	1.56	Date of Analysis:	12/20/16 02:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.40	0.77	2.0
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.34	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.0	Not Detected
Freon 11	0.16	0.21	0.88	1.2
Ethanol	0.78	1.9	1.5	3.6
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Acetone	0.78	3.6	1.8	8.5
2-Propanol	0.78	Not Detected	1.9	Not Detected
Carbon Disulfide	0.78	Not Detected	2.4	Not Detected
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	3.3	1.1	12
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Hexane	0.16	0.23	0.55	0.81
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	Not Detected	2.3	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.76	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Cyclohexane	0.16	0.16	0.54	0.57
Carbon Tetrachloride	0.16	Not Detected	0.98	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.16	0.19	0.50	0.62
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Heptane	0.16	0.33	0.64	1.3
Trichloroethene	0.16	Not Detected	0.84	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.64	Not Detected
Toluene	0.16	0.70	0.59	2.6
trans-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Tetrachloroethene	0.16	Not Detected	1.0	Not Detected
2-Hexanone	0.78	Not Detected	3.2	Not Detected



Client Sample ID: U1 (163938)

Lab ID#: 1612272-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122011	Date of Collection: 12/13/16 1:20:00 PM
Dil. Factor:	1.56	Date of Analysis: 12/20/16 02:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.72	Not Detected
Ethyl Benzene	0.16	Not Detected	0.68	Not Detected
m,p-Xylene	0.16	Not Detected	0.68	Not Detected
o-Xylene	0.16	Not Detected	0.68	Not Detected
Styrene	0.16	Not Detected	0.66	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.77	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.77	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.77	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.77	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.77	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.81	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,2,4-Trichlorobenzene	0.78	Not Detected	5.8	Not Detected
Hexachlorobutadiene	0.78	Not Detected	8.3	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: U2 (163939)

Lab ID#: 1612272-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122012	Date of Collection:	12/13/16 1:15:00 PM
Dil. Factor:	1.60	Date of Analysis:	12/20/16 03:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.79	2.4
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.80	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Chloroethane	0.80	Not Detected	2.1	Not Detected
Freon 11	0.16	0.29	0.90	1.6
Ethanol	0.80	2.2	1.5	4.2
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.80	3.4	1.9	8.0
2-Propanol	0.80	Not Detected	2.0	Not Detected
Carbon Disulfide	0.80	Not Detected	2.5	Not Detected
3-Chloropropene	0.80	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Hexane	0.16	Not Detected	0.56	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.78	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Cyclohexane	0.16	Not Detected	0.55	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.7	Not Detected
Benzene	0.16	0.23	0.51	0.75
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	Not Detected	0.86	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.74	Not Detected
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.66	Not Detected
Toluene	0.16	0.17	0.60	0.63
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.80	Not Detected	3.3	Not Detected



Air Toxics

Client Sample ID: U2 (163939)

Lab ID#: 1612272-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122012	Date of Collection: 12/13/16 1:15:00 PM
Dil. Factor:	1.60	Date of Analysis: 12/20/16 03:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.74	Not Detected
Ethyl Benzene	0.16	Not Detected	0.69	Not Detected
m,p-Xylene	0.16	Not Detected	0.69	Not Detected
o-Xylene	0.16	Not Detected	0.69	Not Detected
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.79	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.79	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.79	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.96	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.96	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.96	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	5.9	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.5	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1612272-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/20/16 10:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	Not Detected	1.0	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1612272-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/20/16 10:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1612272-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 05:38 AM

Compound	%Recovery
Freon 12	89
Freon 114	84
Chloromethane	112
Vinyl Chloride	85
1,3-Butadiene	93
Bromomethane	85
Chloroethane	82
Freon 11	89
Ethanol	81
Freon 113	78
1,1-Dichloroethene	77
Acetone	90
2-Propanol	93
Carbon Disulfide	77
3-Chloropropene	76
Methylene Chloride	86
Methyl tert-butyl ether	75
trans-1,2-Dichloroethene	76
Hexane	86
1,1-Dichloroethane	89
2-Butanone (Methyl Ethyl Ketone)	77
cis-1,2-Dichloroethene	84
Tetrahydrofuran	107
Chloroform	89
1,1,1-Trichloroethane	82
Cyclohexane	79
Carbon Tetrachloride	85
2,2,4-Trimethylpentane	88
Benzene	99
1,2-Dichloroethane	104
Heptane	104
Trichloroethene	87
1,2-Dichloropropane	98
1,4-Dioxane	88
Bromodichloromethane	96
cis-1,3-Dichloropropene	84
4-Methyl-2-pentanone	115
Toluene	94
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	93
Tetrachloroethene	86
2-Hexanone	93



Air Toxics

Client Sample ID: CCV

Lab ID#: 1612272-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 05:38 AM

Compound	%Recovery
Dibromochloromethane	93
1,2-Dibromoethane (EDB)	90
Chlorobenzene	89
Ethyl Benzene	88
m,p-Xylene	91
o-Xylene	89
Styrene	94
Bromoform	92
Cumene	93
1,1,2,2-Tetrachloroethane	104
Propylbenzene	95
4-Ethyltoluene	91
1,3,5-Trimethylbenzene	91
1,2,4-Trimethylbenzene	82
1,3-Dichlorobenzene	86
1,4-Dichlorobenzene	90
alpha-Chlorotoluene	97
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	79
Hexachlorobutadiene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1612272-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 06:23 AM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	87	70-130
Chloromethane	129	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	96	70-130
Bromomethane	88	70-130
Chloroethane	90	70-130
Freon 11	90	70-130
Ethanol	66 Q	70-130
Freon 113	82	70-130
1,1-Dichloroethene	79	70-130
Acetone	97	70-130
2-Propanol	98	70-130
Carbon Disulfide	83	70-130
3-Chloropropene	75	70-130
Methylene Chloride	85	70-130
Methyl tert-butyl ether	81	70-130
trans-1,2-Dichloroethene	85	70-130
Hexane	97	70-130
1,1-Dichloroethane	88	70-130
2-Butanone (Methyl Ethyl Ketone)	80	70-130
cis-1,2-Dichloroethene	82	70-130
Tetrahydrofuran	110	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	84	70-130
Carbon Tetrachloride	66 Q	70-130
2,2,4-Trimethylpentane	95	70-130
Benzene	103	70-130
1,2-Dichloroethane	110	70-130
Heptane	112	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	106	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	122	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	87	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	87	70-130
2-Hexanone	87	70-130

Client Sample ID: LCS

Lab ID#: 1612272-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 06:23 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	95	70-130
1,2-Dibromoethane (EDB)	93	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	95	70-130
o-Xylene	93	70-130
Styrene	93	70-130
Bromoform	92	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	105	70-130
Propylbenzene	98	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	97	70-130
1,2,4-Trimethylbenzene	84	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	94	70-130
alpha-Chlorotoluene	79	70-130
1,2-Dichlorobenzene	95	70-130
1,2,4-Trichlorobenzene	74	70-130
Hexachlorobutadiene	93	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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



Client Sample ID: LCS D

Lab ID#: 1612272-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 07:07 AM

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	90	70-130
Chloromethane	118	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	100	70-130
Bromomethane	92	70-130
Chloroethane	90	70-130
Freon 11	93	70-130
Ethanol	68 Q	70-130
Freon 113	83	70-130
1,1-Dichloroethene	85	70-130
Acetone	97	70-130
2-Propanol	104	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	81	70-130
Methylene Chloride	88	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	92	70-130
Hexane	98	70-130
1,1-Dichloroethane	92	70-130
2-Butanone (Methyl Ethyl Ketone)	87	70-130
cis-1,2-Dichloroethene	86	70-130
Tetrahydrofuran	120	70-130
Chloroform	95	70-130
1,1,1-Trichloroethane	89	70-130
Cyclohexane	89	70-130
Carbon Tetrachloride	69 Q	70-130
2,2,4-Trimethylpentane	97	70-130
Benzene	100	70-130
1,2-Dichloroethane	106	70-130
Heptane	104	70-130
Trichloroethene	91	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	86	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	90	70-130
4-Methyl-2-pentanone	116	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	87	70-130
1,1,2-Trichloroethane	93	70-130
Tetrachloroethene	86	70-130
2-Hexanone	86	70-130

Client Sample ID: LCSD

Lab ID#: 1612272-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e122004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/20/16 07:07 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	92	70-130
1,2-Dibromoethane (EDB)	91	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	94	70-130
o-Xylene	92	70-130
Styrene	90	70-130
Bromoform	92	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	98	70-130
4-Ethyltoluene	94	70-130
1,3,5-Trimethylbenzene	94	70-130
1,2,4-Trimethylbenzene	86	70-130
1,3-Dichlorobenzene	88	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	77	70-130
1,2-Dichlorobenzene	93	70-130
1,2,4-Trichlorobenzene	74	70-130
Hexachlorobutadiene	92	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	106	70-130
4-Bromofluorobenzene	99	70-130