

12/27/2016

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1612183

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 12/13/2016 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 #: 1612183

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 #	Bridgeton Landfill
DATE RECEIVED:	12/13/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	12/27/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163931)	Modified TO-15	4.3 "Hg	5 psi
02A	D2 (163932)	Modified TO-15	5.3 "Hg	5.1 psi
03A	U1 (163933)	Modified TO-15	4.5 "Hg	5.1 psi
04A	U2 (163934)	Modified TO-15	4.9 "Hg	5 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: 12/27/16

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

LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1612183

Four 6 Liter Summa Canister (100% Certified) samples were received on December 13, 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 (163931)

Lab ID#: 1612183-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.77	2.4
Freon 11	0.16	0.23	0.88	1.3
Ethanol	0.78	1.3	1.5	2.4
Acetone	0.78	2.8	1.8	6.7
Benzene	0.16	0.24	0.50	0.76
Toluene	0.16	0.16	0.59	0.60

Client Sample ID: D2 (163932)

Lab ID#: 1612183-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.46	0.81	2.3
Freon 11	0.16	0.21	0.92	1.2
Ethanol	0.82	1.1	1.5	2.0
Acetone	0.82	3.0	1.9	7.2
Hexane	0.16	0.22	0.58	0.77
Benzene	0.16	0.25	0.52	0.80
Heptane	0.16	0.21	0.67	0.84
Toluene	0.16	0.26	0.62	0.99

Client Sample ID: U1 (163933)

Lab ID#: 1612183-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.42	0.78	2.1
Freon 11	0.16	0.17	0.89	0.96
Ethanol	0.79	1.1	1.5	2.0
Acetone	0.79	2.2	1.9	5.2
Hexane	0.16	0.16	0.56	0.57
Benzene	0.16	0.20	0.50	0.63
Toluene	0.16	0.16	0.60	0.60

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

Client Sample ID: U2 (163934)

Lab ID#: 1612183-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.79	2.4
Freon 11	0.16	0.20	0.90	1.1
Ethanol	0.80	1.4	1.5	2.6
Acetone	0.80	2.6	1.9	6.2
Hexane	0.16	0.17	0.56	0.60
Benzene	0.16	0.23	0.51	0.73
Heptane	0.16	0.16 J	0.66	0.64 J
Toluene	0.16	0.34	0.60	1.3



Air Toxics

Client Sample ID: D1 (163931)

Lab ID#: 1612183-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121412	Date of Collection:	12/6/16 1:10:00 PM
Dil. Factor:	1.56	Date of Analysis:	12/14/16 05:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.77	2.4
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	0.88	1.3
Ethanol	0.78	1.3	1.5	2.4
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Acetone	0.78	2.8	1.8	6.7
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	Not Detected	1.1	Not Detected
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	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	0.62	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	Not Detected	0.54	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	0.24	0.50	0.76
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	0.84	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	0.16	0.59	0.60
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: D1 (163931)

Lab ID#: 1612183-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121412	Date of Collection:	12/6/16 1:10:00 PM
Dil. Factor:	1.56	Date of Analysis:	12/14/16 05:49 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	112	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: D2 (163932)

Lab ID#: 1612183-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121413	Date of Collection:	12/6/16 12:20:00 PM
Dil. Factor:	1.64	Date of Analysis:	12/14/16 06:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.46	0.81	2.3
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.82	Not Detected	1.7	Not Detected
Vinyl Chloride	0.16	Not Detected	0.42	Not Detected
1,3-Butadiene	0.16	Not Detected	0.36	Not Detected
Bromomethane	0.82	Not Detected	3.2	Not Detected
Chloroethane	0.82	Not Detected	2.2	Not Detected
Freon 11	0.16	0.21	0.92	1.2
Ethanol	0.82	1.1	1.5	2.0
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	3.0	1.9	7.2
2-Propanol	0.82	Not Detected	2.0	Not Detected
Carbon Disulfide	0.82	Not Detected	2.6	Not Detected
3-Chloropropene	0.82	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.59	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Hexane	0.16	0.22	0.58	0.77
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.82	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Tetrahydrofuran	0.82	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.80	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.89	Not Detected
Cyclohexane	0.16	Not Detected	0.56	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.82	Not Detected	3.8	Not Detected
Benzene	0.16	0.25	0.52	0.80
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Heptane	0.16	0.21	0.67	0.84
Trichloroethene	0.16	Not Detected	0.88	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.76	Not Detected
1,4-Dioxane	0.16	Not Detected	0.59	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.74	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.67	Not Detected
Toluene	0.16	0.26	0.62	0.99
trans-1,3-Dichloropropene	0.16	Not Detected	0.74	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.89	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.82	Not Detected	3.4	Not Detected

Client Sample ID: D2 (163932)

Lab ID#: 1612183-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121413	Date of Collection:	12/6/16 12:20:00 PM
Dil. Factor:	1.64	Date of Analysis:	12/14/16 06:37 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	1.3	Not Detected
Chlorobenzene	0.16	Not Detected	0.76	Not Detected
Ethyl Benzene	0.16	Not Detected	0.71	Not Detected
m,p-Xylene	0.16	Not Detected	0.71	Not Detected
o-Xylene	0.16	Not Detected	0.71	Not Detected
Styrene	0.16	Not Detected	0.70	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.81	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.81	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.81	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.81	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.81	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.85	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
1,2,4-Trichlorobenzene	0.82	Not Detected	6.1	Not Detected
Hexachlorobutadiene	0.82	Not Detected	8.7	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: U1 (163933)

Lab ID#: 1612183-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121414	Date of Collection:	12/6/16 1:20:00 PM
Dil. Factor:	1.58	Date of Analysis:	12/14/16 07:20 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.42	0.78	2.1
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.79	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.79	Not Detected	3.1	Not Detected
Chloroethane	0.79	Not Detected	2.1	Not Detected
Freon 11	0.16	0.17	0.89	0.96
Ethanol	0.79	1.1	1.5	2.0
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.79	2.2	1.9	5.2
2-Propanol	0.79	Not Detected	1.9	Not Detected
Carbon Disulfide	0.79	Not Detected	2.5	Not Detected
3-Chloropropene	0.79	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Hexane	0.16	0.16	0.56	0.57
1,1-Dichloroethane	0.16	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.79	Not Detected	2.3	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.79	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.77	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Cyclohexane	0.16	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.99	Not Detected
2,2,4-Trimethylpentane	0.79	Not Detected	3.7	Not Detected
Benzene	0.16	0.20	0.50	0.63
1,2-Dichloroethane	0.16	Not Detected	0.64	Not Detected
Heptane	0.16	Not Detected	0.65	Not Detected
Trichloroethene	0.16	Not Detected	0.85	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.73	Not Detected
1,4-Dioxane	0.16	Not Detected	0.57	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.72	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.65	Not Detected
Toluene	0.16	0.16	0.60	0.60
trans-1,3-Dichloropropene	0.16	Not Detected	0.72	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.86	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.79	Not Detected	3.2	Not Detected



Client Sample ID: U1 (163933)

Lab ID#: 1612183-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121414	Date of Collection:	12/6/16 1:20:00 PM
Dil. Factor:	1.58	Date of Analysis:	12/14/16 07:20 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	0.73	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	0.67	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.78	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.78	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.78	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.82	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.95	Not Detected
1,2,4-Trichlorobenzene	0.79	Not Detected	5.9	Not Detected
Hexachlorobutadiene	0.79	Not Detected	8.4	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: U2 (163934)

Lab ID#: 1612183-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121415	Date of Collection:	12/6/16 1:15:00 PM
Dil. Factor:	1.60	Date of Analysis:	12/14/16 08:03 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	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	0.20	0.90	1.1
Ethanol	0.80	1.4	1.5	2.6
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.80	2.6	1.9	6.2
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	0.17	0.56	0.60
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	0.73
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	0.16 J	0.66	0.64 J
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	0.34	0.60	1.3
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



Client Sample ID: U2 (163934)

Lab ID#: 1612183-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121415	Date of Collection:	12/6/16 1:15:00 PM
Dil. Factor:	1.60	Date of Analysis:	12/14/16 08:03 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

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1612183-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121407	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/14/16 01:56 PM

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#: 1612183-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121407	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 01:56 PM

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	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1612183-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 11:14 AM

Compound	%Recovery
Freon 12	96
Freon 114	91
Chloromethane	118
Vinyl Chloride	94
1,3-Butadiene	100
Bromomethane	92
Chloroethane	92
Freon 11	93
Ethanol	89
Freon 113	86
1,1-Dichloroethene	84
Acetone	97
2-Propanol	102
Carbon Disulfide	88
3-Chloropropene	88
Methylene Chloride	91
Methyl tert-butyl ether	82
trans-1,2-Dichloroethene	82
Hexane	94
1,1-Dichloroethane	94
2-Butanone (Methyl Ethyl Ketone)	83
cis-1,2-Dichloroethene	90
Tetrahydrofuran	114
Chloroform	94
1,1,1-Trichloroethane	88
Cyclohexane	86
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	94
Benzene	108
1,2-Dichloroethane	111
Heptane	112
Trichloroethene	96
1,2-Dichloropropane	108
1,4-Dioxane	99
Bromodichloromethane	104
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	124
Toluene	104
trans-1,3-Dichloropropene	95
1,1,2-Trichloroethane	96
Tetrachloroethene	92
2-Hexanone	97

Client Sample ID: CCV

Lab ID#: 1612183-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 11:14 AM

Compound	%Recovery
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	96
Chlorobenzene	94
Ethyl Benzene	97
m,p-Xylene	95
o-Xylene	94
Styrene	97
Bromoform	98
Cumene	97
1,1,2,2-Tetrachloroethane	112
Propylbenzene	99
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	97
1,2,4-Trimethylbenzene	87
1,3-Dichlorobenzene	91
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1612183-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 11:54 AM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	99	70-130
Chloromethane	147 Q	70-130
Vinyl Chloride	108	70-130
1,3-Butadiene	106	70-130
Bromomethane	100	70-130
Chloroethane	102	70-130
Freon 11	99	70-130
Ethanol	74	70-130
Freon 113	92	70-130
1,1-Dichloroethene	90	70-130
Acetone	109	70-130
2-Propanol	115	70-130
Carbon Disulfide	93	70-130
3-Chloropropene	89	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	92	70-130
trans-1,2-Dichloroethene	95	70-130
Hexane	106	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	127	70-130
Chloroform	101	70-130
1,1,1-Trichloroethane	96	70-130
Cyclohexane	97	70-130
Carbon Tetrachloride	75	70-130
2,2,4-Trimethylpentane	105	70-130
Benzene	114	70-130
1,2-Dichloroethane	119	70-130
Heptane	124	70-130
Trichloroethene	106	70-130
1,2-Dichloropropane	114	70-130
1,4-Dioxane	99	70-130
Bromodichloromethane	114	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	132 Q	70-130
Toluene	110	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	98	70-130
2-Hexanone	98	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1612183-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 11:54 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	102	70-130
o-Xylene	101	70-130
Styrene	101	70-130
Bromoform	100	70-130
Cumene	103	70-130
1,1,2,2-Tetrachloroethane	112	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	101	70-130
1,3,5-Trimethylbenzene	103	70-130
1,2,4-Trimethylbenzene	92	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	87	70-130
1,2-Dichlorobenzene	99	70-130
1,2,4-Trichlorobenzene	73	70-130
Hexachlorobutadiene	98	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	107	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1612183-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 12:33 PM

Compound	%Recovery	Method Limits
Freon 12	103	70-130
Freon 114	96	70-130
Chloromethane	141 Q	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	104	70-130
Bromomethane	97	70-130
Chloroethane	92	70-130
Freon 11	97	70-130
Ethanol	73	70-130
Freon 113	90	70-130
1,1-Dichloroethene	88	70-130
Acetone	106	70-130
2-Propanol	112	70-130
Carbon Disulfide	91	70-130
3-Chloropropene	89	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	94	70-130
Hexane	104	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	92	70-130
cis-1,2-Dichloroethene	87	70-130
Tetrahydrofuran	125	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	93	70-130
Carbon Tetrachloride	73	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	111	70-130
1,2-Dichloroethane	113	70-130
Heptane	123	70-130
Trichloroethene	105	70-130
1,2-Dichloropropane	113	70-130
1,4-Dioxane	100	70-130
Bromodichloromethane	110	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	130	70-130
Toluene	108	70-130
trans-1,3-Dichloropropene	95	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	97	70-130
2-Hexanone	98	70-130

Client Sample ID: LCSD

Lab ID#: 1612183-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e121405	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/16 12:33 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	102	70-130
o-Xylene	102	70-130
Styrene	100	70-130
Bromoform	100	70-130
Cumene	104	70-130
1,1,2,2-Tetrachloroethane	112	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	89	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	74	70-130
Hexachlorobutadiene	97	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	97	70-130