

10/28/2016

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1610388

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 10/17/2016 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 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 #: 1610388

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. #	3ESP170206
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	10/17/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	10/28/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163476)	Modified TO-15	5.5 "Hg	5.1 psi
02A	D2 (163477)	Modified TO-15	5.3 "Hg	5 psi
03A	U1 (163478)	Modified TO-15	6.9 "Hg	4.7 psi
04A	U2 (163479)	Modified TO-15	0.2 psi	5.3 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: 10/28/16

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

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**LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1610388**

Four 6 Liter Summa Canister (100% Certified) samples were received on October 17, 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 EATL 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

Despite the use of a flow controller for sample collection, the final canister vacuum for sample U2 (163479) was measured at ambient pressure by the laboratory upon sample receipt.

There was a significant difference (greater than 5.0" Hg) between the measured canister receipt vacuum and that which was reported on the Chain of Custody (COC) for sample U2 (163479). A leak test indicated that the valve was functioning properly.

Analytical Notes

Acetone exceeded the instrument's calibration range for sample U2 (163479) and was flagged accordingly.

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 (163476)

Lab ID#: 1610388-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.55	0.82	2.7
Freon 11	0.16	0.24	0.93	1.4
Ethanol	0.82	5.3	1.6	10
Acetone	0.82	4.4	2.0	10
Hexane	0.16	0.21	0.58	0.74
Benzene	0.16	0.19	0.53	0.62
Toluene	0.16	0.35	0.62	1.3
m,p-Xylene	0.16	0.16 J	0.72	0.70 J

Client Sample ID: D2 (163477)

Lab ID#: 1610388-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.55	0.81	2.7
Freon 11	0.16	0.25	0.92	1.4
Ethanol	0.82	2.7	1.5	5.1
Acetone	0.82	4.0	1.9	9.4
Hexane	0.16	0.22	0.57	0.76
Benzene	0.16	0.16	0.52	0.52
Toluene	0.16	0.28	0.61	1.0

Client Sample ID: U1 (163478)

Lab ID#: 1610388-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.57	0.85	2.8
Freon 11	0.17	0.24	0.97	1.3
Ethanol	0.86	3.8	1.6	7.2
Acetone	0.86	3.7	2.0	8.8
Hexane	0.17	0.28	0.61	1.0
Heptane	0.17	0.19	0.70	0.79
Toluene	0.17	0.30	0.65	1.1

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: U2 (163479)

Lab ID#: 1610388-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.13	0.56	0.66	2.7
Chloromethane	0.67	0.83	1.4	1.7
Freon 11	0.13	0.33	0.75	1.9
Ethanol	0.67	38	1.3	72
Acetone	0.67	99 E	1.6	240 E
2-Propanol	0.67	14	1.6	34
Carbon Disulfide	0.67	1.7	2.1	5.3
Methylene Chloride	0.27	4.5	0.93	16
Methyl tert-butyl ether	0.13	0.75	0.48	2.7
Hexane	0.13	32	0.47	110
2-Butanone (Methyl Ethyl Ketone)	0.67	8.0	2.0	24
Cyclohexane	0.13	2.4	0.46	8.2
2,2,4-Trimethylpentane	0.67	7.2	3.1	34
Benzene	0.13	1.2	0.43	3.9
1,2-Dichloroethane	0.13	0.22	0.54	0.90
Heptane	0.13	4.0	0.55	17
Trichloroethene	0.13	0.29	0.72	1.5
4-Methyl-2-pentanone	0.13	5.5	0.55	22
Toluene	0.13	44	0.50	160
Tetrachloroethene	0.13	0.13 J	0.91	0.90 J
Ethyl Benzene	0.13	3.7	0.58	16
m,p-Xylene	0.13	12	0.58	53
o-Xylene	0.13	4.8	0.58	21
Styrene	0.13	1.1	0.57	4.8
Cumene	0.13	0.28	0.66	1.4
Propylbenzene	0.13	0.74	0.66	3.7
4-Ethyltoluene	0.13	3.2	0.66	16
1,3,5-Trimethylbenzene	0.13	1.1	0.66	5.6
1,2,4-Trimethylbenzene	0.13	2.8	0.66	14



Air Toxics

Client Sample ID: D1 (163476)

Lab ID#: 1610388-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102112	Date of Collection:	10/11/16 1:20:00 PM
Dil. Factor:	1.65	Date of Analysis:	10/21/16 02:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.55	0.82	2.7
Freon 114	0.16	Not Detected	1.2	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	0.24	0.93	1.4
Ethanol	0.82	5.3	1.6	10
Freon 113	0.16	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	4.4	2.0	10
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	0.21	0.58	0.74
1,1-Dichloroethane	0.16	Not Detected	0.67	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	0.90	Not Detected
Cyclohexane	0.16	Not Detected	0.57	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	0.19	0.53	0.62
1,2-Dichloroethane	0.16	Not Detected	0.67	Not Detected
Heptane	0.16	Not Detected	0.68	Not Detected
Trichloroethene	0.16	Not Detected	0.89	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	0.75	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.68	Not Detected
Toluene	0.16	0.35	0.62	1.3
trans-1,3-Dichloropropene	0.16	Not Detected	0.75	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.90	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.82	Not Detected	3.4	Not Detected

Client Sample ID: D1 (163476)

Lab ID#: 1610388-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102112	Date of Collection:	10/11/16 1:20:00 PM
Dil. Factor:	1.65	Date of Analysis:	10/21/16 02:25 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	0.72	Not Detected
m,p-Xylene	0.16	0.16 J	0.72	0.70 J
o-Xylene	0.16	Not Detected	0.72	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	8.8	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: D2 (163477)

Lab ID#: 1610388-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102113	Date of Collection:	10/11/16 1:25:00 PM
Dil. Factor:	1.63	Date of Analysis:	10/21/16 03:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.55	0.81	2.7
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	0.25	0.92	1.4
Ethanol	0.82	2.7	1.5	5.1
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	4.0	1.9	9.4
2-Propanol	0.82	Not Detected	2.0	Not Detected
Carbon Disulfide	0.82	Not Detected	2.5	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	0.57	0.76
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	0.16	0.52	0.52
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Heptane	0.16	Not Detected	0.67	Not Detected
Trichloroethene	0.16	Not Detected	0.88	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.75	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	0.28	0.61	1.0
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	3.3	Not Detected



Client Sample ID: D2 (163477)

Lab ID#: 1610388-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102113	Date of Collection:	10/11/16 1:25:00 PM
Dil. Factor:	1.63	Date of Analysis:	10/21/16 03:04 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	0.75	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	0.69	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.80	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.80	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.80	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.80	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.80	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.84	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
1,2,4-Trichlorobenzene	0.82	Not Detected	6.0	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	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: U1 (163478)

Lab ID#: 1610388-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102114	Date of Collection:	10/11/16 1:15:00 PM
Dil. Factor:	1.72	Date of Analysis:	10/21/16 03:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.57	0.85	2.8
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.86	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.86	Not Detected	3.3	Not Detected
Chloroethane	0.86	Not Detected	2.3	Not Detected
Freon 11	0.17	0.24	0.97	1.3
Ethanol	0.86	3.8	1.6	7.2
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	3.7	2.0	8.8
2-Propanol	0.86	Not Detected	2.1	Not Detected
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Hexane	0.17	0.28	0.61	1.0
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.84	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Cyclohexane	0.17	Not Detected	0.59	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.17	Not Detected	0.55	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.70	Not Detected
Heptane	0.17	0.19	0.70	0.79
Trichloroethene	0.17	Not Detected	0.92	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.79	Not Detected
1,4-Dioxane	0.17	Not Detected	0.62	Not Detected
Bromodichloromethane	0.17	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.70	Not Detected
Toluene	0.17	0.30	0.65	1.1
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



Client Sample ID: U1 (163478)

Lab ID#: 1610388-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102114	Date of Collection:	10/11/16 1:15:00 PM
Dil. Factor:	1.72	Date of Analysis:	10/21/16 03:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.79	Not Detected
Ethyl Benzene	0.17	Not Detected	0.75	Not Detected
m,p-Xylene	0.17	Not Detected	0.75	Not Detected
o-Xylene	0.17	Not Detected	0.75	Not Detected
Styrene	0.17	Not Detected	0.73	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.84	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.84	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.84	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.89	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected	6.4	Not Detected
Hexachlorobutadiene	0.86	Not Detected	9.2	Not Detected

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

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



Air Toxics

Client Sample ID: U2 (163479)

Lab ID#: 1610388-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102115	Date of Collection:	10/11/16 1:00:00 PM
Dil. Factor:	1.34	Date of Analysis:	10/21/16 04:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.13	0.56	0.66	2.7
Freon 114	0.13	Not Detected	0.94	Not Detected
Chloromethane	0.67	0.83	1.4	1.7
Vinyl Chloride	0.13	Not Detected	0.34	Not Detected
1,3-Butadiene	0.13	Not Detected	0.30	Not Detected
Bromomethane	0.67	Not Detected	2.6	Not Detected
Chloroethane	0.67	Not Detected	1.8	Not Detected
Freon 11	0.13	0.33	0.75	1.9
Ethanol	0.67	38	1.3	72
Freon 113	0.13	Not Detected	1.0	Not Detected
1,1-Dichloroethene	0.13	Not Detected	0.53	Not Detected
Acetone	0.67	99 E	1.6	240 E
2-Propanol	0.67	14	1.6	34
Carbon Disulfide	0.67	1.7	2.1	5.3
3-Chloropropene	0.67	Not Detected	2.1	Not Detected
Methylene Chloride	0.27	4.5	0.93	16
Methyl tert-butyl ether	0.13	0.75	0.48	2.7
trans-1,2-Dichloroethene	0.13	Not Detected	0.53	Not Detected
Hexane	0.13	32	0.47	110
1,1-Dichloroethane	0.13	Not Detected	0.54	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.67	8.0	2.0	24
cis-1,2-Dichloroethene	0.13	Not Detected	0.53	Not Detected
Tetrahydrofuran	0.67	Not Detected	2.0	Not Detected
Chloroform	0.13	Not Detected	0.65	Not Detected
1,1,1-Trichloroethane	0.13	Not Detected	0.73	Not Detected
Cyclohexane	0.13	2.4	0.46	8.2
Carbon Tetrachloride	0.13	Not Detected	0.84	Not Detected
2,2,4-Trimethylpentane	0.67	7.2	3.1	34
Benzene	0.13	1.2	0.43	3.9
1,2-Dichloroethane	0.13	0.22	0.54	0.90
Heptane	0.13	4.0	0.55	17
Trichloroethene	0.13	0.29	0.72	1.5
1,2-Dichloropropane	0.13	Not Detected	0.62	Not Detected
1,4-Dioxane	0.13	Not Detected	0.48	Not Detected
Bromodichloromethane	0.13	Not Detected	0.90	Not Detected
cis-1,3-Dichloropropene	0.13	Not Detected	0.61	Not Detected
4-Methyl-2-pentanone	0.13	5.5	0.55	22
Toluene	0.13	44	0.50	160
trans-1,3-Dichloropropene	0.13	Not Detected	0.61	Not Detected
1,1,2-Trichloroethane	0.13	Not Detected	0.73	Not Detected
Tetrachloroethene	0.13	0.13 J	0.91	0.90 J
2-Hexanone	0.67	Not Detected	2.7	Not Detected



Client Sample ID: U2 (163479)

Lab ID#: 1610388-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102115	Date of Collection:	10/11/16 1:00:00 PM
Dil. Factor:	1.34	Date of Analysis:	10/21/16 04:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.13	Not Detected	1.1	Not Detected
1,2-Dibromoethane (EDB)	0.13	Not Detected	1.0	Not Detected
Chlorobenzene	0.13	Not Detected	0.62	Not Detected
Ethyl Benzene	0.13	3.7	0.58	16
m,p-Xylene	0.13	12	0.58	53
o-Xylene	0.13	4.8	0.58	21
Styrene	0.13	1.1	0.57	4.8
Bromoform	0.13	Not Detected	1.4	Not Detected
Cumene	0.13	0.28	0.66	1.4
1,1,2,2-Tetrachloroethane	0.13	Not Detected	0.92	Not Detected
Propylbenzene	0.13	0.74	0.66	3.7
4-Ethyltoluene	0.13	3.2	0.66	16
1,3,5-Trimethylbenzene	0.13	1.1	0.66	5.6
1,2,4-Trimethylbenzene	0.13	2.8	0.66	14
1,3-Dichlorobenzene	0.13	Not Detected	0.80	Not Detected
1,4-Dichlorobenzene	0.13	Not Detected	0.80	Not Detected
alpha-Chlorotoluene	0.13	Not Detected	0.69	Not Detected
1,2-Dichlorobenzene	0.13	Not Detected	0.80	Not Detected
1,2,4-Trichlorobenzene	0.67	Not Detected	5.0	Not Detected
Hexachlorobutadiene	0.67	Not Detected	7.1	Not Detected

E = Exceeds instrument calibration range.

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1610388-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102106	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/16 09:38 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#: 1610388-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102106	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/16 09:38 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	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1610388-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/16 06:25 AM

Compound	%Recovery
Freon 12	108
Freon 114	99
Chloromethane	103
Vinyl Chloride	100
1,3-Butadiene	99
Bromomethane	114
Chloroethane	107
Freon 11	103
Ethanol	107
Freon 113	100
1,1-Dichloroethene	102
Acetone	101
2-Propanol	102
Carbon Disulfide	106
3-Chloropropene	112
Methylene Chloride	100
Methyl tert-butyl ether	102
trans-1,2-Dichloroethene	103
Hexane	102
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	105
cis-1,2-Dichloroethene	103
Tetrahydrofuran	102
Chloroform	107
1,1,1-Trichloroethane	105
Cyclohexane	103
Carbon Tetrachloride	113
2,2,4-Trimethylpentane	100
Benzene	104
1,2-Dichloroethane	103
Heptane	99
Trichloroethene	103
1,2-Dichloropropane	105
1,4-Dioxane	108
Bromodichloromethane	108
cis-1,3-Dichloropropene	109
4-Methyl-2-pentanone	105
Toluene	105
trans-1,3-Dichloropropene	110
1,1,2-Trichloroethane	106
Tetrachloroethene	105
2-Hexanone	108

Client Sample ID: CCV

Lab ID#: 1610388-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/16 06:25 AM

Compound	%Recovery
Dibromochloromethane	113
1,2-Dibromoethane (EDB)	105
Chlorobenzene	107
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	108
Styrene	103
Bromoform	121
Cumene	107
1,1,2,2-Tetrachloroethane	107
Propylbenzene	98
4-Ethyltoluene	93
1,3,5-Trimethylbenzene	102
1,2,4-Trimethylbenzene	99
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	90
alpha-Chlorotoluene	111
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	76
Hexachlorobutadiene	72

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130



Client Sample ID: LCS

Lab ID#: 1610388-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102103	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/16 07:09 AM

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

Client Sample ID: LCS

Lab ID#: 1610388-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/16 07:09 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	95	70-130
o-Xylene	99	70-130
Styrene	94	70-130
Bromoform	114	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	91	70-130
4-Ethyltoluene	84	70-130
1,3,5-Trimethylbenzene	92	70-130
1,2,4-Trimethylbenzene	91	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	82	70-130
alpha-Chlorotoluene	106	70-130
1,2-Dichlorobenzene	88	70-130
1,2,4-Trichlorobenzene	85	70-130
Hexachlorobutadiene	76	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130



Client Sample ID: LCS D

Lab ID#: 1610388-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102104	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/21/16 07:48 AM

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



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1610388-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20102104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/21/16 07:48 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	94	70-130
o-Xylene	99	70-130
Styrene	95	70-130
Bromoform	113	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	99	70-130
Propylbenzene	90	70-130
4-Ethyltoluene	84	70-130
1,3,5-Trimethylbenzene	91	70-130
1,2,4-Trimethylbenzene	91	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	84	70-130
alpha-Chlorotoluene	106	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	85	70-130
Hexachlorobutadiene	75	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130