

4/19/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1704097

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 4/6/2017 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 #: 1704097**

Work Order Summary

<b>CLIENT:</b>	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	<b>BILL TO:</b>	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
<b>PHONE:</b>	573-526-3363	<b>P.O. #</b>	3ESP1707123ESP1707593ESP1
<b>FAX:</b>	573-526-3350	<b>PROJECT #</b>	Bridgeton Landfill
<b>DATE RECEIVED:</b>	04/06/2017	<b>CONTACT:</b>	Brian Whittaker
<b>DATE COMPLETED:</b>	04/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (170811)	Modified TO-15	4.9 "Hg	5 psi
02A	U1 (170812)	Modified TO-15	5.5 "Hg	4.9 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 04/19/17

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**  
**Missouri Dept. of Natural Resources**  
**Workorder# 1704097**

One 6 Liter Summa Canister (100% Cert Ambient) and one 6 Liter Summa Canister (100% Certified) samples were received on April 06, 2017. 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.

The Relative Percent Difference (RPD) of the LCS/LCSD exceeded acceptance limits for Ethanol.

The Relative Percent Difference (RPD) of the LCS/LCSD exceeded acceptance limits for Ethanol.

### **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 (170811)**

**Lab ID#: 1704097-01A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Freon 12	0.16	0.40	0.79	2.0
Freon 11	0.16	0.18	0.90	1.0
Ethanol	0.80	1.7	1.5	3.1
Acetone	0.80	3.5	1.9	8.3
2-Propanol	0.80	0.87	2.0	2.1
Hexane	0.16	0.54	0.56	1.9
2-Butanone (Methyl Ethyl Ketone)	0.80	0.80 J	2.4	2.3 J
Benzene	0.16	0.17	0.51	0.54
Heptane	0.16	0.41	0.66	1.7
Toluene	0.16	0.16	0.60	0.62

**Client Sample ID: U1 (170812)**

**Lab ID#: 1704097-02A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Freon 12	0.16	0.39	0.81	2.0
Freon 11	0.16	0.16	0.92	0.93
Ethanol	0.82	1.3	1.5	2.5
Acetone	0.82	2.7	1.9	6.5
Hexane	0.16	0.19	0.57	0.66
Heptane	0.16	0.22	0.67	0.92
Toluene	0.16	0.18	0.61	0.66



Air Toxics

Client Sample ID: D1 (170811)

Lab ID#: 1704097-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040709	Date of Collection:	3/31/17 1:30:00 PM
Dil. Factor:	1.60	Date of Analysis:	4/7/17 04:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.40	0.79	2.0
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	0.18	0.90	1.0
Ethanol	0.80	1.7	1.5	3.1
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.80	3.5	1.9	8.3
2-Propanol	0.80	0.87	2.0	2.1
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	0.54	0.56	1.9
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	0.80 J	2.4	2.3 J
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	0.17	0.51	0.54
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	0.41	0.66	1.7
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	0.16	0.60	0.62
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: D1 (170811)

Lab ID#: 1704097-01A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	e040709	Date of Collection:	3/31/17 1:30:00 PM
Dil. Factor:	1.60	Date of Analysis:	4/7/17 04:21 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% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: U1 (170812)

Lab ID#: 1704097-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040710	Date of Collection:	3/31/17 1:45:00 PM
Dil. Factor:	1.63	Date of Analysis:	4/7/17 06:03 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.39	0.81	2.0
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	0.16	0.92	0.93
Ethanol	0.82	1.3	1.5	2.5
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	2.7	1.9	6.5
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	0.19	0.57	0.66
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	Not Detected	0.52	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Heptane	0.16	0.22	0.67	0.92
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	0.18	0.61	0.66
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: U1 (170812)

Lab ID#: 1704097-02A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e040710</b>	<b>Date of Collection:</b>	<b>3/31/17 1:45:00 PM</b>
<b>Dil. Factor:</b>	<b>1.63</b>	<b>Date of Analysis:</b>	<b>4/7/17 06:03 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
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)**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1704097-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040708	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/7/17 03:23 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#: 1704097-03A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e040708</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 4/7/17 03:23 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	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1704097-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040704	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/7/17 10:18 AM

Compound	%Recovery
Freon 12	101
Freon 114	104
Chloromethane	99
Vinyl Chloride	93
1,3-Butadiene	94
Bromomethane	92
Chloroethane	88
Freon 11	102
Ethanol	75
Freon 113	106
1,1-Dichloroethene	94
Acetone	91
2-Propanol	90
Carbon Disulfide	93
3-Chloropropene	99
Methylene Chloride	95
Methyl tert-butyl ether	95
trans-1,2-Dichloroethene	101
Hexane	94
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	93
Tetrahydrofuran	90
Chloroform	100
1,1,1-Trichloroethane	102
Cyclohexane	98
Carbon Tetrachloride	108
2,2,4-Trimethylpentane	95
Benzene	93
1,2-Dichloroethane	101
Heptane	95
Trichloroethene	110
1,2-Dichloropropane	93
1,4-Dioxane	99
Bromodichloromethane	102
cis-1,3-Dichloropropene	100
4-Methyl-2-pentanone	92
Toluene	103
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	102
Tetrachloroethene	114
2-Hexanone	101

Client Sample ID: CCV

Lab ID#: 1704097-04A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e040704</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 4/7/17 10:18 AM</b>

<b>Compound</b>	<b>%Recovery</b>
Dibromochloromethane	109
1,2-Dibromoethane (EDB)	108
Chlorobenzene	109
Ethyl Benzene	106
m,p-Xylene	105
o-Xylene	109
Styrene	108
Bromoform	114
Cumene	109
1,1,2,2-Tetrachloroethane	101
Propylbenzene	107
4-Ethyltoluene	108
1,3,5-Trimethylbenzene	108
1,2,4-Trimethylbenzene	106
1,3-Dichlorobenzene	113
1,4-Dichlorobenzene	109
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	105
1,2,4-Trichlorobenzene	102
Hexachlorobutadiene	107

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1704097-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040705	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/7/17 11:01 AM

Compound	%Recovery	Method Limits
Freon 12	87	70-130
Freon 114	90	70-130
Chloromethane	87	70-130
Vinyl Chloride	80	70-130
1,3-Butadiene	76	70-130
Bromomethane	86	70-130
Chloroethane	75	70-130
Freon 11	84	70-130
Ethanol	75	70-130
Freon 113	90	70-130
1,1-Dichloroethene	80	70-130
Acetone	77	70-130
2-Propanol	77	70-130
Carbon Disulfide	83	70-130
3-Chloropropene	82	70-130
Methylene Chloride	83	70-130
Methyl tert-butyl ether	83	70-130
trans-1,2-Dichloroethene	92	70-130
Hexane	84	70-130
1,1-Dichloroethane	80	70-130
2-Butanone (Methyl Ethyl Ketone)	81	70-130
cis-1,2-Dichloroethene	72	70-130
Tetrahydrofuran	77	70-130
Chloroform	84	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	86	70-130
Carbon Tetrachloride	53 Q	70-130
2,2,4-Trimethylpentane	82	70-130
Benzene	81	70-130
1,2-Dichloroethane	84	70-130
Heptane	86	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	84	70-130
1,4-Dioxane	88	70-130
Bromodichloromethane	90	70-130
cis-1,3-Dichloropropene	93	70-130
4-Methyl-2-pentanone	82	70-130
Toluene	90	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	101	70-130
2-Hexanone	89	70-130

Client Sample ID: LCS

Lab ID#: 1704097-05A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	e040705	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/7/17 11:01 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	94	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	90	70-130
o-Xylene	94	70-130
Styrene	93	70-130
Bromoform	96	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	86	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	97	70-130
1,3,5-Trimethylbenzene	97	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	94	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	105	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1704097-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040707	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/7/17 02:42 PM

Compound	%Recovery	Method Limits
Freon 12	84	70-130
Freon 114	87	70-130
Chloromethane	84	70-130
Vinyl Chloride	78	70-130
1,3-Butadiene	77	70-130
Bromomethane	84	70-130
Chloroethane	75	70-130
Freon 11	83	70-130
Ethanol	54 Q	70-130
Freon 113	88	70-130
1,1-Dichloroethene	77	70-130
Acetone	74	70-130
2-Propanol	75	70-130
Carbon Disulfide	79	70-130
3-Chloropropene	80	70-130
Methylene Chloride	79	70-130
Methyl tert-butyl ether	79	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	79	70-130
1,1-Dichloroethane	77	70-130
2-Butanone (Methyl Ethyl Ketone)	79	70-130
cis-1,2-Dichloroethene	70	70-130
Tetrahydrofuran	76	70-130
Chloroform	82	70-130
1,1,1-Trichloroethane	84	70-130
Cyclohexane	81	70-130
Carbon Tetrachloride	49 Q	70-130
2,2,4-Trimethylpentane	79	70-130
Benzene	78	70-130
1,2-Dichloroethane	82	70-130
Heptane	82	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	78	70-130
1,4-Dioxane	84	70-130
Bromodichloromethane	85	70-130
cis-1,3-Dichloropropene	89	70-130
4-Methyl-2-pentanone	79	70-130
Toluene	86	70-130
trans-1,3-Dichloropropene	84	70-130
1,1,2-Trichloroethane	87	70-130
Tetrachloroethene	96	70-130
2-Hexanone	84	70-130





Air Toxics

Client Sample ID: LCSD

Lab ID#: 1704097-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e040707	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/7/17 02:42 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	88	70-130
1,2-Dibromoethane (EDB)	89	70-130
Chlorobenzene	89	70-130
Ethyl Benzene	88	70-130
m,p-Xylene	87	70-130
o-Xylene	90	70-130
Styrene	90	70-130
Bromoform	90	70-130
Cumene	90	70-130
1,1,2,2-Tetrachloroethane	81	70-130
Propylbenzene	89	70-130
4-Ethyltoluene	86	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	95	70-130
1,4-Dichlorobenzene	95	70-130
alpha-Chlorotoluene	92	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	99	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	106	70-130