

4/27/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1704302

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 4/19/2017 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 #: 1704302

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. #	3ESP170855
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	04/19/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	04/27/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (170817)	Modified TO-15	5.9 "Hg	4.8 psi
02A	U1 (170818)	Modified TO-15	6.7 "Hg	5.1 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: 04/27/17

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# 1704302

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on April 19, 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.

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 (170817)

Lab ID#: 1704302-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.54	0.82	2.7
Freon 11	0.16	0.49	0.93	2.7
Ethanol	0.82	5.2	1.6	9.7
Acetone	0.82	9.8	2.0	23
2-Propanol	0.82	0.86	2.0	2.1
2-Butanone (Methyl Ethyl Ketone)	0.82	1.9	2.4	5.6
Heptane	0.16	0.16 J	0.68	0.67 J
Toluene	0.16	0.18	0.62	0.66

Client Sample ID: U1 (170818)

Lab ID#: 1704302-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.59	0.86	2.9
Freon 11	0.17	0.29	0.98	1.6
Ethanol	0.87	3.2	1.6	6.0
Acetone	0.87	4.8	2.1	11
2-Propanol	0.87	2.0	2.1	4.9



Air Toxics

Client Sample ID: D1 (170817)

Lab ID#: 1704302-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042015	Date of Collection:	4/13/17 1:25:00 PM
Dil. Factor:	1.65	Date of Analysis:	4/20/17 07:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.54	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	0.49	0.93	2.7
Ethanol	0.82	5.2	1.6	9.7
Freon 113	0.16	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	9.8	2.0	23
2-Propanol	0.82	0.86	2.0	2.1
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	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.67	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.82	1.9	2.4	5.6
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	Not Detected	0.53	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.67	Not Detected
Heptane	0.16	0.16 J	0.68	0.67 J
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	0.18	0.62	0.66
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 (170817)

Lab ID#: 1704302-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042015	Date of Collection:	4/13/17 1:25:00 PM
Dil. Factor:	1.65	Date of Analysis:	4/20/17 07:49 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	Not Detected	0.72	Not Detected
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% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: U1 (170818)

Lab ID#: 1704302-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042016	Date of Collection:	4/13/17 1:15:00 PM
Dil. Factor:	1.74	Date of Analysis:	4/20/17 08:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.59	0.86	2.9
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.87	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	0.87	Not Detected	3.4	Not Detected
Chloroethane	0.87	Not Detected	2.3	Not Detected
Freon 11	0.17	0.29	0.98	1.6
Ethanol	0.87	3.2	1.6	6.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Acetone	0.87	4.8	2.1	11
2-Propanol	0.87	2.0	2.1	4.9
Carbon Disulfide	0.87	Not Detected	2.7	Not Detected
3-Chloropropene	0.87	Not Detected	2.7	Not Detected
Methylene Chloride	0.35	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Hexane	0.17	Not Detected	0.61	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.87	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Tetrahydrofuran	0.87	Not Detected	2.6	Not Detected
Chloroform	0.17	Not Detected	0.85	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.95	Not Detected
Cyclohexane	0.17	Not Detected	0.60	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.87	Not Detected	4.1	Not Detected
Benzene	0.17	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.70	Not Detected
Heptane	0.17	Not Detected	0.71	Not Detected
Trichloroethene	0.17	Not Detected	0.94	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.80	Not Detected
1,4-Dioxane	0.17	Not Detected	0.63	Not Detected
Bromodichloromethane	0.17	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.79	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.71	Not Detected
Toluene	0.17	Not Detected	0.66	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.79	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.95	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.87	Not Detected	3.6	Not Detected

Client Sample ID: U1 (170818)

Lab ID#: 1704302-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042016	Date of Collection: 4/13/17 1:15:00 PM
Dil. Factor:	1.74	Date of Analysis: 4/20/17 08:40 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	0.80	Not Detected
Ethyl Benzene	0.17	Not Detected	0.76	Not Detected
m,p-Xylene	0.17	Not Detected	0.76	Not Detected
o-Xylene	0.17	Not Detected	0.76	Not Detected
Styrene	0.17	Not Detected	0.74	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.86	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.86	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.86	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.86	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.86	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	0.90	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.87	Not Detected	6.4	Not Detected
Hexachlorobutadiene	0.87	Not Detected	9.3	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1704302-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/20/17 12:32 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#: 1704302-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/20/17 12:32 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	101	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1704302-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/20/17 08:23 AM

Compound	%Recovery
Freon 12	110
Freon 114	107
Chloromethane	116
Vinyl Chloride	118
1,3-Butadiene	120
Bromomethane	120
Chloroethane	105
Freon 11	101
Ethanol	120
Freon 113	91
1,1-Dichloroethene	102
Acetone	100
2-Propanol	113
Carbon Disulfide	107
3-Chloropropene	109
Methylene Chloride	98
Methyl tert-butyl ether	119
trans-1,2-Dichloroethene	106
Hexane	115
1,1-Dichloroethane	106
2-Butanone (Methyl Ethyl Ketone)	114
cis-1,2-Dichloroethene	105
Tetrahydrofuran	115
Chloroform	102
1,1,1-Trichloroethane	102
Cyclohexane	116
Carbon Tetrachloride	114
2,2,4-Trimethylpentane	115
Benzene	109
1,2-Dichloroethane	98
Heptane	124
Trichloroethene	102
1,2-Dichloropropane	107
1,4-Dioxane	128
Bromodichloromethane	107
cis-1,3-Dichloropropene	115
4-Methyl-2-pentanone	128
Toluene	111
trans-1,3-Dichloropropene	117
1,1,2-Trichloroethane	99
Tetrachloroethene	101
2-Hexanone	123

Client Sample ID: CCV

Lab ID#: 1704302-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/20/17 08:23 AM

Compound	%Recovery
Dibromochloromethane	106
1,2-Dibromoethane (EDB)	99
Chlorobenzene	106
Ethyl Benzene	116
m,p-Xylene	117
o-Xylene	117
Styrene	122
Bromoform	109
Cumene	121
1,1,2,2-Tetrachloroethane	102
Propylbenzene	108
4-Ethyltoluene	104
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	112
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	95
alpha-Chlorotoluene	121
1,2-Dichlorobenzene	99
1,2,4-Trichlorobenzene	104
Hexachlorobutadiene	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1704302-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042003	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/20/17 09:39 AM

Compound	%Recovery	Method Limits
Freon 12	113	70-130
Freon 114	110	70-130
Chloromethane	122	70-130
Vinyl Chloride	122	70-130
1,3-Butadiene	118	70-130
Bromomethane	120	70-130
Chloroethane	112	70-130
Freon 11	104	70-130
Ethanol	105	70-130
Freon 113	93	70-130
1,1-Dichloroethene	104	70-130
Acetone	106	70-130
2-Propanol	121	70-130
Carbon Disulfide	116	70-130
3-Chloropropene	123	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	113	70-130
trans-1,2-Dichloroethene	120	70-130
Hexane	123	70-130
1,1-Dichloroethane	105	70-130
2-Butanone (Methyl Ethyl Ketone)	117	70-130
cis-1,2-Dichloroethene	97	70-130
Tetrahydrofuran	118	70-130
Chloroform	105	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	122	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	121	70-130
Benzene	112	70-130
1,2-Dichloroethane	99	70-130
Heptane	128	70-130
Trichloroethene	109	70-130
1,2-Dichloropropane	115	70-130
1,4-Dioxane	129	70-130
Bromodichloromethane	113	70-130
cis-1,3-Dichloropropene	128	70-130
4-Methyl-2-pentanone	133 Q	70-130
Toluene	116	70-130
trans-1,3-Dichloropropene	123	70-130
1,1,2-Trichloroethane	103	70-130
Tetrachloroethene	106	70-130
2-Hexanone	131 Q	70-130

Client Sample ID: LCS

Lab ID#: 1704302-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/20/17 09:39 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	110	70-130
1,2-Dibromoethane (EDB)	104	70-130
Chlorobenzene	110	70-130
Ethyl Benzene	120	70-130
m,p-Xylene	120	70-130
o-Xylene	119	70-130
Styrene	126	70-130
Bromoform	117	70-130
Cumene	123	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	111	70-130
4-Ethyltoluene	111	70-130
1,3,5-Trimethylbenzene	115	70-130
1,2,4-Trimethylbenzene	114	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	131 Q	70-130
1,2-Dichlorobenzene	101	70-130
1,2,4-Trichlorobenzene	111	70-130
Hexachlorobutadiene	100	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	106	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1704302-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042004	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/20/17 10:44 AM

Compound	%Recovery	Method Limits
Freon 12	111	70-130
Freon 114	109	70-130
Chloromethane	118	70-130
Vinyl Chloride	121	70-130
1,3-Butadiene	119	70-130
Bromomethane	121	70-130
Chloroethane	110	70-130
Freon 11	104	70-130
Ethanol	110	70-130
Freon 113	95	70-130
1,1-Dichloroethene	106	70-130
Acetone	110	70-130
2-Propanol	121	70-130
Carbon Disulfide	118	70-130
3-Chloropropene	125	70-130
Methylene Chloride	104	70-130
Methyl tert-butyl ether	116	70-130
trans-1,2-Dichloroethene	123	70-130
Hexane	129	70-130
1,1-Dichloroethane	107	70-130
2-Butanone (Methyl Ethyl Ketone)	119	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	120	70-130
Chloroform	105	70-130
1,1,1-Trichloroethane	106	70-130
Cyclohexane	123	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	122	70-130
Benzene	111	70-130
1,2-Dichloroethane	99	70-130
Heptane	126	70-130
Trichloroethene	110	70-130
1,2-Dichloropropane	110	70-130
1,4-Dioxane	128	70-130
Bromodichloromethane	110	70-130
cis-1,3-Dichloropropene	126	70-130
4-Methyl-2-pentanone	132 Q	70-130
Toluene	114	70-130
trans-1,3-Dichloropropene	123	70-130
1,1,2-Trichloroethane	103	70-130
Tetrachloroethene	108	70-130
2-Hexanone	127	70-130

Client Sample ID: LCSD

Lab ID#: 1704302-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20042004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/20/17 10:44 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	112	70-130
1,2-Dibromoethane (EDB)	105	70-130
Chlorobenzene	109	70-130
Ethyl Benzene	119	70-130
m,p-Xylene	118	70-130
o-Xylene	118	70-130
Styrene	125	70-130
Bromoform	116	70-130
Cumene	122	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	112	70-130
1,2,4-Trimethylbenzene	110	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	96	70-130
alpha-Chlorotoluene	131 Q	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	101	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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