

7/18/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1707038

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 7/5/2017 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 #: 1707038

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. #	3ESP171181/128
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	07/05/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	07/18/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172344)	Modified TO-15	7.3 "Hg	5.1 psi
02A	U1 (172345)	Modified TO-15	7.6 "Hg	5.3 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: 07/18/17

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# 1707038

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on July 05, 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	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	$\leq 30\%$ 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

The Chain of Custody (COC) information for sample D1 (172344) did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

There were no analytical discrepancies.

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 (172344)

Lab ID#: 1707038-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.47	0.88	2.3
Freon 11	0.18	0.22	1.0	1.2
Ethanol	0.89	8.8	1.7	16
Acetone	0.89	8.0	2.1	19
2-Propanol	0.89	21	2.2	51
2-Butanone (Methyl Ethyl Ketone)	0.89	1.3	2.6	3.9
Heptane	0.18	0.27	0.73	1.1
Toluene	0.18	0.28	0.67	1.1

Client Sample ID: U1 (172345)

Lab ID#: 1707038-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.91	3.0	1.7	5.7
Acetone	0.91	8.2	2.2	19
2-Propanol	0.91	2.0	2.2	5.0
2-Butanone (Methyl Ethyl Ketone)	0.91	1.6	2.7	4.7



Air Toxics

Client Sample ID: D1 (172344)

Lab ID#: 1707038-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070620	Date of Collection:	6/28/17 3:40:00 PM
Dil. Factor:	1.78	Date of Analysis:	7/7/17 03:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.47	0.88	2.3
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.89	Not Detected	1.8	Not Detected
Vinyl Chloride	0.18	Not Detected	0.46	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.89	Not Detected	3.4	Not Detected
Chloroethane	0.89	Not Detected	2.3	Not Detected
Freon 11	0.18	0.22	1.0	1.2
Ethanol	0.89	8.8	1.7	16
Freon 113	0.18	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Acetone	0.89	8.0	2.1	19
2-Propanol	0.89	21	2.2	51
Carbon Disulfide	0.89	Not Detected	2.8	Not Detected
3-Chloropropene	0.89	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Hexane	0.18	Not Detected	0.63	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.72	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.89	1.3	2.6	3.9
cis-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Tetrahydrofuran	0.89	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.87	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.97	Not Detected
Cyclohexane	0.18	Not Detected	0.61	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.89	Not Detected	4.2	Not Detected
Benzene	0.18	Not Detected	0.57	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.72	Not Detected
Heptane	0.18	0.27	0.73	1.1
Trichloroethene	0.18	Not Detected	0.96	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.82	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
Toluene	0.18	0.28	0.67	1.1
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.97	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.89	Not Detected	3.6	Not Detected

Client Sample ID: D1 (172344)

Lab ID#: 1707038-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070620	Date of Collection: 6/28/17 3:40:00 PM
Dil. Factor:	1.78	Date of Analysis: 7/7/17 03:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Ethyl Benzene	0.18	Not Detected	0.77	Not Detected
m,p-Xylene	0.18	Not Detected	0.77	Not Detected
o-Xylene	0.18	Not Detected	0.77	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.92	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.89	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.89	Not Detected	9.5	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: U1 (172345)

Lab ID#: 1707038-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070621	Date of Collection:	6/28/17 1:30:00 PM
Dil. Factor:	1.82	Date of Analysis:	7/7/17 04:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Freon 114	0.18	Not Detected	1.3	Not Detected
Chloromethane	0.91	Not Detected	1.9	Not Detected
Vinyl Chloride	0.18	Not Detected	0.46	Not Detected
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.91	Not Detected	3.5	Not Detected
Chloroethane	0.91	Not Detected	2.4	Not Detected
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.91	3.0	1.7	5.7
Freon 113	0.18	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Acetone	0.91	8.2	2.2	19
2-Propanol	0.91	2.0	2.2	5.0
Carbon Disulfide	0.91	Not Detected	2.8	Not Detected
3-Chloropropene	0.91	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.3	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.66	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Hexane	0.18	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.18	Not Detected	0.74	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.91	1.6	2.7	4.7
cis-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Tetrahydrofuran	0.91	Not Detected	2.7	Not Detected
Chloroform	0.18	Not Detected	0.89	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.99	Not Detected
Cyclohexane	0.18	Not Detected	0.63	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.91	Not Detected	4.2	Not Detected
Benzene	0.18	Not Detected	0.58	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.74	Not Detected
Heptane	0.18	Not Detected	0.74	Not Detected
Trichloroethene	0.18	Not Detected	0.98	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.84	Not Detected
1,4-Dioxane	0.18	Not Detected	0.66	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.74	Not Detected
Toluene	0.18	Not Detected	0.68	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.99	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.91	Not Detected	3.7	Not Detected



Client Sample ID: U1 (172345)

Lab ID#: 1707038-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070621	Date of Collection: 6/28/17 1:30:00 PM
Dil. Factor:	1.82	Date of Analysis: 7/7/17 04:09 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.18	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.84	Not Detected
Ethyl Benzene	0.18	Not Detected	0.79	Not Detected
m,p-Xylene	0.18	Not Detected	0.79	Not Detected
o-Xylene	0.18	Not Detected	0.79	Not Detected
Styrene	0.18	Not Detected	0.78	Not Detected
Bromoform	0.18	Not Detected	1.9	Not Detected
Cumene	0.18	Not Detected	0.89	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.89	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.89	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.89	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.89	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.94	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.91	Not Detected	6.8	Not Detected
Hexachlorobutadiene	0.91	Not Detected	9.7	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1707038-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070619	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/7/17 02:41 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#: 1707038-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070619	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/7/17 02:41 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	92	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1707038-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070610a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 08:42 AM

Compound	%Recovery
Freon 12	98
Freon 114	95
Chloromethane	97
Vinyl Chloride	95
1,3-Butadiene	95
Bromomethane	110
Chloroethane	104
Freon 11	98
Ethanol	115
Freon 113	94
1,1-Dichloroethene	96
Acetone	96
2-Propanol	110
Carbon Disulfide	101
3-Chloropropene	109
Methylene Chloride	92
Methyl tert-butyl ether	99
trans-1,2-Dichloroethene	97
Hexane	98
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	108
cis-1,2-Dichloroethene	100
Tetrahydrofuran	88
Chloroform	100
1,1,1-Trichloroethane	96
Cyclohexane	99
Carbon Tetrachloride	104
2,2,4-Trimethylpentane	99
Benzene	99
1,2-Dichloroethane	99
Heptane	98
Trichloroethene	102
1,2-Dichloropropane	102
1,4-Dioxane	103
Bromodichloromethane	100
cis-1,3-Dichloropropene	106
4-Methyl-2-pentanone	106
Toluene	98
trans-1,3-Dichloropropene	106
1,1,2-Trichloroethane	104
Tetrachloroethene	98
2-Hexanone	108



Air Toxics

Client Sample ID: CCV

Lab ID#: 1707038-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070610a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 08:42 AM

Compound	%Recovery
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	100
Chlorobenzene	99
Ethyl Benzene	98
m,p-Xylene	93
o-Xylene	94
Styrene	92
Bromoform	102
Cumene	91
1,1,2,2-Tetrachloroethane	94
Propylbenzene	91
4-Ethyltoluene	92
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	95
1,3-Dichlorobenzene	86
1,4-Dichlorobenzene	92
alpha-Chlorotoluene	94
1,2-Dichlorobenzene	91
1,2,4-Trichlorobenzene	89
Hexachlorobutadiene	86

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: LCS

Lab ID#: 1707038-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070616d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 12:39 PM

Compound	%Recovery	Method Limits
Freon 12	106	59-128
Freon 114	103	63-121
Chloromethane	103	59-132
Vinyl Chloride	103	64-127
1,3-Butadiene	95	66-134
Bromomethane	115	63-134
Chloroethane	108	63-127
Freon 11	104	62-126
Ethanol	121	59-125
Freon 113	96	66-126
1,1-Dichloroethene	98	61-133
Acetone	96	58-128
2-Propanol	117	52-125
Carbon Disulfide	91	57-134
3-Chloropropene	105	71-131
Methylene Chloride	93	62-115
Methyl tert-butyl ether	101	66-126
trans-1,2-Dichloroethene	86	67-124
Hexane	103	63-120
1,1-Dichloroethane	100	68-126
2-Butanone (Methyl Ethyl Ketone)	108	67-130
cis-1,2-Dichloroethene	113	70-121
Tetrahydrofuran	89	64-123
Chloroform	102	68-123
1,1,1-Trichloroethane	98	68-125
Cyclohexane	102	70-117
Carbon Tetrachloride	84	68-132
2,2,4-Trimethylpentane	106	68-121
Benzene	101	69-119
1,2-Dichloroethane	99	65-128
Heptane	102	69-123
Trichloroethene	105	71-123
1,2-Dichloropropane	105	69-123
1,4-Dioxane	100	71-122
Bromodichloromethane	100	72-128
cis-1,3-Dichloropropene	99	70-128
4-Methyl-2-pentanone	107	67-130
Toluene	102	66-119
trans-1,3-Dichloropropene	103	75-133
1,1,2-Trichloroethane	100	73-119
Tetrachloroethene	101	66-124
2-Hexanone	106	62-128

Client Sample ID: LCS

Lab ID#: 1707038-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070616d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 12:39 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	98	74-122
Chlorobenzene	101	70-119
Ethyl Benzene	103	70-124
m,p-Xylene	96	61-134
o-Xylene	99	67-125
Styrene	98	73-127
Bromoform	99	66-139
Cumene	94	68-124
1,1,2,2-Tetrachloroethane	92	65-127
Propylbenzene	92	69-123
4-Ethyltoluene	90	67-129
1,3,5-Trimethylbenzene	92	67-130
1,2,4-Trimethylbenzene	95	66-132
1,3-Dichlorobenzene	90	65-130
1,4-Dichlorobenzene	96	60-131
alpha-Chlorotoluene	106	50-147
1,2-Dichlorobenzene	96	63-129
1,2,4-Trichlorobenzene	97	55-142
Hexachlorobutadiene	94	56-138

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	85-130
Toluene-d8	100	87-110
4-Bromofluorobenzene	97	81-120



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1707038-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070617	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 01:31 PM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	104	70-130
Chloromethane	104	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	96	70-130
Bromomethane	116	70-130
Chloroethane	109	70-130
Freon 11	105	70-130
Ethanol	124	70-130
Freon 113	97	70-130
1,1-Dichloroethene	100	70-130
Acetone	98	70-130
2-Propanol	118	70-130
Carbon Disulfide	93	70-130
3-Chloropropene	105	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	101	70-130
trans-1,2-Dichloroethene	89	70-130
Hexane	103	70-130
1,1-Dichloroethane	102	70-130
2-Butanone (Methyl Ethyl Ketone)	110	70-130
cis-1,2-Dichloroethene	117	70-130
Tetrahydrofuran	90	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	103	70-130
Carbon Tetrachloride	84	70-130
2,2,4-Trimethylpentane	106	70-130
Benzene	102	70-130
1,2-Dichloroethane	103	70-130
Heptane	102	70-130
Trichloroethene	106	70-130
1,2-Dichloropropane	107	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	101	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	102	70-130
2-Hexanone	108	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1707038-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v070617	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/7/17 01:31 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	95	70-130
o-Xylene	98	70-130
Styrene	96	70-130
Bromoform	101	70-130
Cumene	93	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	92	70-130
4-Ethyltoluene	91	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	95	70-130
1,3-Dichlorobenzene	89	70-130
1,4-Dichlorobenzene	94	70-130
alpha-Chlorotoluene	103	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	95	70-130
Hexachlorobutadiene	90	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130