

2/9/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1701484

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 1/30/2017 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 #: 1701484

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. #	3ESP170587
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	01/30/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	02/09/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (170789)	Modified TO-15	6.5 "Hg	5psi
02A	U1 (170790)	Modified TO-15	6.0 "Hg	5psi
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: 02/09/17

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# 1701484

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on January 30, 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

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 (170789)

Lab ID#: 1701484-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.17	0.18	0.96	1.0
Ethanol	0.86	3.4	1.6	6.4
Acetone	0.86	3.4	2.0	8.0
Hexane	0.17	0.25	0.60	0.87
Benzene	0.17	0.19	0.55	0.60
Toluene	0.17	0.28	0.64	1.1

Client Sample ID: U1 (170790)

Lab ID#: 1701484-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.48	0.83	2.4
Freon 11	0.17	0.20	0.94	1.1
Ethanol	0.84	2.7	1.6	5.1
Acetone	0.84	2.5	2.0	6.0
Hexane	0.17	0.49	0.59	1.7
Benzene	0.17	0.25	0.54	0.80
Heptane	0.17	0.29	0.69	1.2
Toluene	0.17	0.25	0.63	0.93



Air Toxics

Client Sample ID: D1 (170789)

Lab ID#: 1701484-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020911	Date of Collection:	1/24/17 12:45:00 PM
Dil. Factor:	1.71	Date of Analysis:	2/9/17 05:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	Not Detected	0.84	Not Detected
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	2.2	Not Detected
Freon 11	0.17	0.18	0.96	1.0
Ethanol	0.86	3.4	1.6	6.4
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	3.4	2.0	8.0
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	0.25	0.60	0.87
1,1-Dichloroethane	0.17	Not Detected	0.69	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	0.83	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.93	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	0.19	0.55	0.60
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Heptane	0.17	Not Detected	0.70	Not Detected
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	1.1	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	0.28	0.64	1.1
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



Client Sample ID: D1 (170789)

Lab ID#: 1701484-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020911	Date of Collection:	1/24/17 12:45:00 PM
Dil. Factor:	1.71	Date of Analysis:	2/9/17 05:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	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	0.74	Not Detected
m,p-Xylene	0.17	Not Detected	0.74	Not Detected
o-Xylene	0.17	Not Detected	0.74	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	0.88	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.86	Not Detected	9.1	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: U1 (170790)

Lab ID#: 1701484-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020912	Date of Collection:	1/24/17 1:25:00 PM
Dil. Factor:	1.68	Date of Analysis:	2/9/17 06:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.48	0.83	2.4
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	Not Detected	1.7	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.20	0.94	1.1
Ethanol	0.84	2.7	1.6	5.1
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	2.5	2.0	6.0
2-Propanol	0.84	Not Detected	2.1	Not Detected
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	0.49	0.59	1.7
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	Not Detected	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.17	0.25	0.54	0.80
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	0.29	0.69	1.2
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	0.25	0.63	0.93
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	1.1	Not Detected
2-Hexanone	0.84	Not Detected	3.4	Not Detected

Client Sample ID: U1 (170790)

Lab ID#: 1701484-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020912	Date of Collection: 1/24/17 1:25:00 PM
Dil. Factor:	1.68	Date of Analysis: 2/9/17 06:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Ethyl Benzene	0.17	Not Detected	0.73	Not Detected
m,p-Xylene	0.17	Not Detected	0.73	Not Detected
o-Xylene	0.17	Not Detected	0.73	Not Detected
Styrene	0.17	Not Detected	0.72	Not Detected
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.82	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.82	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	0.87	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.84	Not Detected	9.0	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1701484-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020906	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/9/17 02:06 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#: 1701484-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020906	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/9/17 02:06 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	112	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	101	70-130



Client Sample ID: CCV

Lab ID#: 1701484-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/17 10:55 AM

Compound	%Recovery
Freon 12	97
Freon 114	96
Chloromethane	94
Vinyl Chloride	92
1,3-Butadiene	98
Bromomethane	102
Chloroethane	97
Freon 11	101
Ethanol	88
Freon 113	97
1,1-Dichloroethene	100
Acetone	90
2-Propanol	96
Carbon Disulfide	94
3-Chloropropene	96
Methylene Chloride	84
Methyl tert-butyl ether	103
trans-1,2-Dichloroethene	98
Hexane	101
1,1-Dichloroethane	101
2-Butanone (Methyl Ethyl Ketone)	99
cis-1,2-Dichloroethene	100
Tetrahydrofuran	97
Chloroform	95
1,1,1-Trichloroethane	99
Cyclohexane	102
Carbon Tetrachloride	107
2,2,4-Trimethylpentane	99
Benzene	93
1,2-Dichloroethane	98
Heptane	100
Trichloroethene	95
1,2-Dichloropropane	96
1,4-Dioxane	96
Bromodichloromethane	100
cis-1,3-Dichloropropene	101
4-Methyl-2-pentanone	102
Toluene	100
trans-1,3-Dichloropropene	104
1,1,2-Trichloroethane	99
Tetrachloroethene	96
2-Hexanone	104



Air Toxics

Client Sample ID: CCV

Lab ID#: 1701484-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/17 10:55 AM

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	94
Chlorobenzene	97
Ethyl Benzene	104
m,p-Xylene	105
o-Xylene	106
Styrene	111
Bromoform	105
Cumene	110
1,1,2,2-Tetrachloroethane	92
Propylbenzene	104
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	106
1,2,4-Trimethylbenzene	109
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	101
1,2-Dichlorobenzene	101
1,2,4-Trichlorobenzene	86
Hexachlorobutadiene	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	101	70-130



Client Sample ID: LCS

Lab ID#: 1701484-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020903	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/9/17 11:40 AM

Compound	%Recovery	Method Limits
Freon 12	115	70-130
Freon 114	112	70-130
Chloromethane	110	70-130
Vinyl Chloride	107	70-130
1,3-Butadiene	107	70-130
Bromomethane	119	70-130
Chloroethane	112	70-130
Freon 11	116	70-130
Ethanol	85	70-130
Freon 113	110	70-130
1,1-Dichloroethene	110	70-130
Acetone	105	70-130
2-Propanol	110	70-130
Carbon Disulfide	108	70-130
3-Chloropropene	116	70-130
Methylene Chloride	93	70-130
Methyl tert-butyl ether	114	70-130
trans-1,2-Dichloroethene	125	70-130
Hexane	117	70-130
1,1-Dichloroethane	114	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	111	70-130
Chloroform	109	70-130
1,1,1-Trichloroethane	116	70-130
Cyclohexane	118	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	111	70-130
Benzene	107	70-130
1,2-Dichloroethane	110	70-130
Heptane	116	70-130
Trichloroethene	114	70-130
1,2-Dichloropropane	113	70-130
1,4-Dioxane	109	70-130
Bromodichloromethane	116	70-130
cis-1,3-Dichloropropene	125	70-130
4-Methyl-2-pentanone	116	70-130
Toluene	112	70-130
trans-1,3-Dichloropropene	119	70-130
1,1,2-Trichloroethane	113	70-130
Tetrachloroethene	113	70-130
2-Hexanone	122	70-130

Client Sample ID: LCS

Lab ID#: 1701484-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/17 11:40 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	118	70-130
1,2-Dibromoethane (EDB)	111	70-130
Chlorobenzene	110	70-130
Ethyl Benzene	119	70-130
m,p-Xylene	120	70-130
o-Xylene	123	70-130
Styrene	128	70-130
Bromoform	121	70-130
Cumene	124	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	119	70-130
4-Ethyltoluene	124	70-130
1,3,5-Trimethylbenzene	121	70-130
1,2,4-Trimethylbenzene	121	70-130
1,3-Dichlorobenzene	110	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	117	70-130
1,2-Dichlorobenzene	112	70-130
1,2,4-Trichlorobenzene	96	70-130
Hexachlorobutadiene	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCS D

Lab ID#: 1701484-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/17 12:25 PM

Compound	%Recovery	Method Limits
Freon 12	114	70-130
Freon 114	108	70-130
Chloromethane	106	70-130
Vinyl Chloride	101	70-130
1,3-Butadiene	103	70-130
Bromomethane	114	70-130
Chloroethane	105	70-130
Freon 11	112	70-130
Ethanol	84	70-130
Freon 113	104	70-130
1,1-Dichloroethene	106	70-130
Acetone	96	70-130
2-Propanol	108	70-130
Carbon Disulfide	102	70-130
3-Chloropropene	105	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	110	70-130
trans-1,2-Dichloroethene	120	70-130
Hexane	111	70-130
1,1-Dichloroethane	109	70-130
2-Butanone (Methyl Ethyl Ketone)	110	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	110	70-130
Chloroform	105	70-130
1,1,1-Trichloroethane	108	70-130
Cyclohexane	113	70-130
Carbon Tetrachloride	97	70-130
2,2,4-Trimethylpentane	108	70-130
Benzene	107	70-130
1,2-Dichloroethane	104	70-130
Heptane	115	70-130
Trichloroethene	111	70-130
1,2-Dichloropropane	110	70-130
1,4-Dioxane	110	70-130
Bromodichloromethane	113	70-130
cis-1,3-Dichloropropene	122	70-130
4-Methyl-2-pentanone	118	70-130
Toluene	111	70-130
trans-1,3-Dichloropropene	115	70-130
1,1,2-Trichloroethane	111	70-130
Tetrachloroethene	111	70-130
2-Hexanone	116	70-130

Client Sample ID: LCSD

Lab ID#: 1701484-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e020904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/9/17 12:25 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	116	70-130
1,2-Dibromoethane (EDB)	109	70-130
Chlorobenzene	109	70-130
Ethyl Benzene	117	70-130
m,p-Xylene	120	70-130
o-Xylene	120	70-130
Styrene	125	70-130
Bromoform	120	70-130
Cumene	120	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	116	70-130
4-Ethyltoluene	121	70-130
1,3,5-Trimethylbenzene	116	70-130
1,2,4-Trimethylbenzene	117	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	104	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	107	70-130
1,2,4-Trichlorobenzene	93	70-130
Hexachlorobutadiene	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	104	70-130