

10/19/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1710169

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 10/9/2017 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 #: 1710169

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. #	3ESP180214
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	10/09/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	10/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172977)	Modified TO-15	4.9 "Hg	5.1 psi
02A	U1 (172978)	Modified TO-15	4.3 "Hg	5 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: 10/19/17

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 Low Level
Missouri Dept. of Natural Resources
Workorder# 1710169

Two 6 Liter Summa Canister (100% Certified) samples were received on October 09, 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 (172977)

Lab ID#: 1710169-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.41	0.80	2.0
Freon 11	0.16	0.19	0.90	1.1
Ethanol	0.80	4.4	1.5	8.4
Acetone	0.80	24	1.9	57
2-Propanol	0.80	5.3	2.0	13
2-Butanone (Methyl Ethyl Ketone)	0.80	6.7	2.4	20
4-Methyl-2-pentanone	0.16	0.25	0.66	1.0
Toluene	0.16	0.21	0.61	0.79
2-Hexanone	0.80	0.98	3.3	4.0

Client Sample ID: U1 (172978)

Lab ID#: 1710169-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.77	2.2
Freon 11	0.16	0.20	0.88	1.1
Ethanol	0.78	2.3	1.5	4.3
Acetone	0.78	21	1.8	50
2-Propanol	0.78	4.9	1.9	12
Hexane	0.16	0.80	0.55	2.8
2-Butanone (Methyl Ethyl Ketone)	0.78	1.8	2.3	5.2
Heptane	0.16	0.74	0.64	3.0
4-Methyl-2-pentanone	0.16	0.18	0.64	0.76
Toluene	0.16	0.92	0.59	3.5
Ethyl Benzene	0.16	0.21	0.68	0.92
m,p-Xylene	0.16	0.30	0.68	1.3



Air Toxics

Client Sample ID: D1 (172977)

Lab ID#: 1710169-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101807	Date of Collection:	10/3/17 1:40:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/18/17 01:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.41	0.80	2.0
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.80	Not Detected	1.7	Not Detected
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,3-Butadiene	0.16	Not Detected	0.36	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Chloroethane	0.80	Not Detected	2.1	Not Detected
Freon 11	0.16	0.19	0.90	1.1
Ethanol	0.80	4.4	1.5	8.4
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Acetone	0.80	24	1.9	57
2-Propanol	0.80	5.3	2.0	13
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	0.64	Not Detected
Hexane	0.16	Not Detected	0.57	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	6.7	2.4	20
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.79	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.88	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	3.8	Not Detected
Benzene	0.16	Not Detected	0.51	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	Not Detected	0.66	Not Detected
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	0.25	0.66	1.0
Toluene	0.16	0.21	0.61	0.79
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.80	0.98	3.3	4.0



Air Toxics

Client Sample ID: D1 (172977)

Lab ID#: 1710169-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101807	Date of Collection:	10/3/17 1:40:00 PM
Dil. Factor:	1.61	Date of Analysis:	10/18/17 01:10 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	0.70	Not Detected
m,p-Xylene	0.16	Not Detected	0.70	Not Detected
o-Xylene	0.16	Not Detected	0.70	Not Detected
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.7	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	0.97	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: U1 (172978)

Lab ID#: 1710169-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101808	Date of Collection:	10/3/17 1:35:00 PM
Dil. Factor:	1.56	Date of Analysis:	10/18/17 01:59 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.77	2.2
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.78	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
1,3-Butadiene	0.16	Not Detected	0.34	Not Detected
Bromomethane	0.78	Not Detected	3.0	Not Detected
Chloroethane	0.78	Not Detected	2.0	Not Detected
Freon 11	0.16	0.20	0.88	1.1
Ethanol	0.78	2.3	1.5	4.3
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Acetone	0.78	21	1.8	50
2-Propanol	0.78	4.9	1.9	12
Carbon Disulfide	0.78	Not Detected	2.4	Not Detected
3-Chloropropene	0.78	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Hexane	0.16	0.80	0.55	2.8
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.78	1.8	2.3	5.2
cis-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Tetrahydrofuran	0.78	Not Detected	2.3	Not Detected
Chloroform	0.16	Not Detected	0.76	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Cyclohexane	0.16	Not Detected	0.54	Not Detected
Carbon Tetrachloride	0.16	Not Detected	0.98	Not Detected
2,2,4-Trimethylpentane	0.78	Not Detected	3.6	Not Detected
Benzene	0.16	Not Detected	0.50	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Heptane	0.16	0.74	0.64	3.0
Trichloroethene	0.16	Not Detected	0.84	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.72	Not Detected
1,4-Dioxane	0.16	Not Detected	0.56	Not Detected
Bromodichloromethane	0.16	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
4-Methyl-2-pentanone	0.16	0.18	0.64	0.76
Toluene	0.16	0.92	0.59	3.5
trans-1,3-Dichloropropene	0.16	Not Detected	0.71	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Tetrachloroethene	0.16	Not Detected	1.0	Not Detected
2-Hexanone	0.78	Not Detected	3.2	Not Detected



Client Sample ID: U1 (172978)

Lab ID#: 1710169-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101808	Date of Collection:	10/3/17 1:35:00 PM
Dil. Factor:	1.56	Date of Analysis:	10/18/17 01:59 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.72	Not Detected
Ethyl Benzene	0.16	0.21	0.68	0.92
m,p-Xylene	0.16	0.30	0.68	1.3
o-Xylene	0.16	Not Detected	0.68	Not Detected
Styrene	0.16	Not Detected	0.66	Not Detected
Bromoform	0.16	Not Detected	1.6	Not Detected
Cumene	0.16	Not Detected	0.77	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.77	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.77	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.77	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.77	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.81	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.94	Not Detected
1,2,4-Trichlorobenzene	0.78	Not Detected	5.8	Not Detected
Hexachlorobutadiene	0.78	Not Detected	8.3	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1710169-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/17 12:13 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#: 1710169-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/17 12:13 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	117	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1710169-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/18/17 08:46 AM

Compound	%Recovery
Freon 12	99
Freon 114	93
Chloromethane	88
Vinyl Chloride	97
1,3-Butadiene	98
Bromomethane	110
Chloroethane	101
Freon 11	92
Ethanol	96
Freon 113	93
1,1-Dichloroethene	97
Acetone	88
2-Propanol	92
Carbon Disulfide	98
3-Chloropropene	99
Methylene Chloride	96
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	98
Hexane	108
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	102
cis-1,2-Dichloroethene	100
Tetrahydrofuran	103
Chloroform	96
1,1,1-Trichloroethane	93
Cyclohexane	108
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	112
Benzene	98
1,2-Dichloroethane	95
Heptane	108
Trichloroethene	94
1,2-Dichloropropane	99
1,4-Dioxane	105
Bromodichloromethane	95
cis-1,3-Dichloropropene	103
4-Methyl-2-pentanone	111
Toluene	98
trans-1,3-Dichloropropene	96
1,1,2-Trichloroethane	96
Tetrachloroethene	94
2-Hexanone	107

Client Sample ID: CCV

Lab ID#: 1710169-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/18/17 08:46 AM

Compound	%Recovery
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	99
Chlorobenzene	96
Ethyl Benzene	106
m,p-Xylene	108
o-Xylene	108
Styrene	116
Bromoform	104
Cumene	117
1,1,2,2-Tetrachloroethane	107
Propylbenzene	113
4-Ethyltoluene	117
1,3,5-Trimethylbenzene	118
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	100
alpha-Chlorotoluene	101
1,2-Dichlorobenzene	99
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1710169-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101803	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/17 09:31 AM

Compound	%Recovery	Method Limits
Freon 12	103	70-130
Freon 114	98	70-130
Chloromethane	91	70-130
Vinyl Chloride	102	70-130
1,3-Butadiene	99	70-130
Bromomethane	115	70-130
Chloroethane	110	70-130
Freon 11	98	70-130
Ethanol	109	70-130
Freon 113	95	70-130
1,1-Dichloroethene	100	70-130
Acetone	89	70-130
2-Propanol	105	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	98	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	103	70-130
trans-1,2-Dichloroethene	87	70-130
Hexane	111	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	104	70-130
cis-1,2-Dichloroethene	113	70-130
Tetrahydrofuran	107	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	112	70-130
Carbon Tetrachloride	100	70-130
2,2,4-Trimethylpentane	116	70-130
Benzene	101	70-130
1,2-Dichloroethane	98	70-130
Heptane	111	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	109	70-130
Bromodichloromethane	106	70-130
cis-1,3-Dichloropropene	98	70-130
4-Methyl-2-pentanone	121	70-130
Toluene	101	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	100	70-130
2-Hexanone	124	70-130

Client Sample ID: LCS

Lab ID#: 1710169-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/18/17 09:31 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	109	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	109	70-130
m,p-Xylene	111	70-130
o-Xylene	113	70-130
Styrene	114	70-130
Bromoform	109	70-130
Cumene	115	70-130
1,1,2,2-Tetrachloroethane	112	70-130
Propylbenzene	114	70-130
4-Ethyltoluene	117	70-130
1,3,5-Trimethylbenzene	126	70-130
1,2,4-Trimethylbenzene	118	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	102	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	98	70-130
Hexachlorobutadiene	89	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1710169-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101804	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/18/17 10:12 AM

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	100	70-130
Chloromethane	92	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	101	70-130
Bromomethane	119	70-130
Chloroethane	109	70-130
Freon 11	101	70-130
Ethanol	117	70-130
Freon 113	96	70-130
1,1-Dichloroethene	102	70-130
Acetone	92	70-130
2-Propanol	111	70-130
Carbon Disulfide	91	70-130
3-Chloropropene	103	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	106	70-130
trans-1,2-Dichloroethene	89	70-130
Hexane	116	70-130
1,1-Dichloroethane	102	70-130
2-Butanone (Methyl Ethyl Ketone)	108	70-130
cis-1,2-Dichloroethene	114	70-130
Tetrahydrofuran	111	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	101	70-130
Cyclohexane	114	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	121	70-130
Benzene	101	70-130
1,2-Dichloroethane	98	70-130
Heptane	113	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	109	70-130
Bromodichloromethane	105	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	123	70-130
Toluene	104	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	96	70-130
2-Hexanone	126	70-130

Client Sample ID: LCSD

Lab ID#: 1710169-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21101804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/18/17 10:12 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	111	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	112	70-130
m,p-Xylene	117	70-130
o-Xylene	117	70-130
Styrene	121	70-130
Bromoform	112	70-130
Cumene	120	70-130
1,1,2,2-Tetrachloroethane	113	70-130
Propylbenzene	122	70-130
4-Ethyltoluene	126	70-130
1,3,5-Trimethylbenzene	134 Q	70-130
1,2,4-Trimethylbenzene	127	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	117	70-130
1,2-Dichlorobenzene	103	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	96	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	100	70-130