

9/18/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1709072

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 9/5/2017 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 #: 1709072

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. #	3ESP180084
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	09/05/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	09/18/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172366)	Modified TO-15	6.5 "Hg	4.9 psi
02A	U1 (172367)	Modified TO-15	6.7 "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: 09/18/17

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# 1709072

Two 6 Liter Summa Canister (100% Certified) samples were received on September 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	</=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 (172366)

Lab ID#: 1709072-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.56	0.84	2.8
Freon 11	0.17	0.18	0.96	1.0
Ethanol	0.85	2.1	1.6	4.0
Acetone	0.85	8.1	2.0	19
2-Propanol	0.85	4.4	2.1	11
m,p-Xylene	0.17	0.25	0.74	1.1

Client Sample ID: U1 (172367)

Lab ID#: 1709072-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.57	0.86	2.8
Freon 11	0.18	0.18	0.98	1.0
Ethanol	0.88	2.1	1.6	4.0
Acetone	0.88	7.7	2.1	18
2-Propanol	0.88	2.1	2.2	5.2
Methylene Chloride	0.35	0.73	1.2	2.5
Hexane	0.18	0.18	0.62	0.65
2-Butanone (Methyl Ethyl Ketone)	0.88	0.97	2.6	2.9
Toluene	0.18	1.0	0.66	3.8



Air Toxics

Client Sample ID: D1 (172366)

Lab ID#: 1709072-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090616	Date of Collection:	8/29/17 1:10:00 PM
Dil. Factor:	1.70	Date of Analysis:	9/6/17 08:33 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.56	0.84	2.8
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.85	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.85	Not Detected	3.3	Not Detected
Chloroethane	0.85	Not Detected	2.2	Not Detected
Freon 11	0.17	0.18	0.96	1.0
Ethanol	0.85	2.1	1.6	4.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.85	8.1	2.0	19
2-Propanol	0.85	4.4	2.1	11
Carbon Disulfide	0.85	Not Detected	2.6	Not Detected
3-Chloropropene	0.85	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.61	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.85	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.85	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	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.85	Not Detected	4.0	Not Detected
Benzene	0.17	Not Detected	0.54	Not Detected
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	0.91	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.61	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.70	Not Detected
Toluene	0.17	Not Detected	0.64	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.77	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	0.85	Not Detected	3.5	Not Detected



Client Sample ID: D1 (172366)

Lab ID#: 1709072-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090616	Date of Collection:	8/29/17 1:10:00 PM
Dil. Factor:	1.70	Date of Analysis:	9/6/17 08:33 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	0.78	Not Detected
Ethyl Benzene	0.17	Not Detected	0.74	Not Detected
m,p-Xylene	0.17	0.25	0.74	1.1
o-Xylene	0.17	Not Detected	0.74	Not Detected
Styrene	0.17	Not Detected	0.72	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	0.85	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.85	Not Detected	9.1	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: U1 (172367)

Lab ID#: 1709072-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090617	Date of Collection:	8/29/17 1:20:00 PM
Dil. Factor:	1.75	Date of Analysis:	9/6/17 09:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.57	0.86	2.8
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.88	Not Detected	1.8	Not Detected
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.88	Not Detected	3.4	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
Freon 11	0.18	0.18	0.98	1.0
Ethanol	0.88	2.1	1.6	4.0
Freon 113	0.18	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Acetone	0.88	7.7	2.1	18
2-Propanol	0.88	2.1	2.2	5.2
Carbon Disulfide	0.88	Not Detected	2.7	Not Detected
3-Chloropropene	0.88	Not Detected	2.7	Not Detected
Methylene Chloride	0.35	0.73	1.2	2.5
Methyl tert-butyl ether	0.18	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Hexane	0.18	0.18	0.62	0.65
1,1-Dichloroethane	0.18	Not Detected	0.71	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.88	0.97	2.6	2.9
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.85	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Cyclohexane	0.18	Not Detected	0.60	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
Benzene	0.18	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.71	Not Detected
Heptane	0.18	Not Detected	0.72	Not Detected
Trichloroethene	0.18	Not Detected	0.94	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.81	Not Detected
1,4-Dioxane	0.18	Not Detected	0.63	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.72	Not Detected
Toluene	0.18	1.0	0.66	3.8
trans-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.88	Not Detected	3.6	Not Detected



Client Sample ID: U1 (172367)

Lab ID#: 1709072-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090617	Date of Collection:	8/29/17 1:20:00 PM
Dil. Factor:	1.75	Date of Analysis:	9/6/17 09:07 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	1.3	Not Detected
Chlorobenzene	0.18	Not Detected	0.80	Not Detected
Ethyl Benzene	0.18	Not Detected	0.76	Not Detected
m,p-Xylene	0.18	Not Detected	0.76	Not Detected
o-Xylene	0.18	Not Detected	0.76	Not Detected
Styrene	0.18	Not Detected	0.74	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.86	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.86	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.86	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.90	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.88	Not Detected	6.5	Not Detected
Hexachlorobutadiene	0.88	Not Detected	9.3	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1709072-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090606	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/6/17 10:59 AM

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#: 1709072-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090606	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/6/17 10:59 AM

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	111	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1709072-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/6/17 08:05 AM

Compound	%Recovery
Freon 12	117
Freon 114	93
Chloromethane	92
Vinyl Chloride	93
1,3-Butadiene	100
Bromomethane	113
Chloroethane	97
Freon 11	88
Ethanol	111
Freon 113	90
1,1-Dichloroethene	106
Acetone	106
2-Propanol	108
Carbon Disulfide	104
3-Chloropropene	122
Methylene Chloride	87
Methyl tert-butyl ether	108
trans-1,2-Dichloroethene	99
Hexane	108
1,1-Dichloroethane	97
2-Butanone (Methyl Ethyl Ketone)	111
cis-1,2-Dichloroethene	102
Tetrahydrofuran	111
Chloroform	95
1,1,1-Trichloroethane	91
Cyclohexane	107
Carbon Tetrachloride	74
2,2,4-Trimethylpentane	115
Benzene	98
1,2-Dichloroethane	87
Heptane	105
Trichloroethene	125
1,2-Dichloropropane	99
1,4-Dioxane	108
Bromodichloromethane	102
cis-1,3-Dichloropropene	109
4-Methyl-2-pentanone	115
Toluene	99
trans-1,3-Dichloropropene	108
1,1,2-Trichloroethane	101
Tetrachloroethene	94
2-Hexanone	115



Air Toxics

Client Sample ID: CCV

Lab ID#: 1709072-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/6/17 08:05 AM

Compound	%Recovery
Dibromochloromethane	106
1,2-Dibromoethane (EDB)	108
Chlorobenzene	97
Ethyl Benzene	104
m,p-Xylene	107
o-Xylene	112
Styrene	116
Bromoform	110
Cumene	110
1,1,2,2-Tetrachloroethane	73
Propylbenzene	106
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	111
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	96
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	112
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	117
Hexachlorobutadiene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1709072-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090603	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/6/17 08:47 AM

Compound	%Recovery	Method Limits
Freon 12	120	70-130
Freon 114	97	70-130
Chloromethane	94	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	98	70-130
Bromomethane	115	70-130
Chloroethane	100	70-130
Freon 11	91	70-130
Ethanol	112	70-130
Freon 113	89	70-130
1,1-Dichloroethene	104	70-130
Acetone	100	70-130
2-Propanol	112	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	109	70-130
Methylene Chloride	88	70-130
Methyl tert-butyl ether	107	70-130
trans-1,2-Dichloroethene	85	70-130
Hexane	109	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	108	70-130
cis-1,2-Dichloroethene	111	70-130
Tetrahydrofuran	104	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	58 Q	70-130
2,2,4-Trimethylpentane	116	70-130
Benzene	97	70-130
1,2-Dichloroethane	87	70-130
Heptane	103	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	103	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	116	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	109	70-130
1,1,2-Trichloroethane	101	70-130
Tetrachloroethene	94	70-130
2-Hexanone	119	70-130

Client Sample ID: LCS

Lab ID#: 1709072-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/6/17 08:47 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	106	70-130
1,2-Dibromoethane (EDB)	110	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	101	70-130
o-Xylene	108	70-130
Styrene	114	70-130
Bromoform	116	70-130
Cumene	106	70-130
1,1,2,2-Tetrachloroethane	107	70-130
Propylbenzene	102	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	115	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	143 Q	70-130
Hexachlorobutadiene	104	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1709072-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090604	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/6/17 09:27 AM

Compound	%Recovery	Method Limits
Freon 12	118	70-130
Freon 114	96	70-130
Chloromethane	94	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	97	70-130
Bromomethane	117	70-130
Chloroethane	98	70-130
Freon 11	90	70-130
Ethanol	114	70-130
Freon 113	88	70-130
1,1-Dichloroethene	103	70-130
Acetone	101	70-130
2-Propanol	112	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	110	70-130
Methylene Chloride	86	70-130
Methyl tert-butyl ether	106	70-130
trans-1,2-Dichloroethene	84	70-130
Hexane	109	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	108	70-130
cis-1,2-Dichloroethene	110	70-130
Tetrahydrofuran	105	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	58 Q	70-130
2,2,4-Trimethylpentane	116	70-130
Benzene	95	70-130
1,2-Dichloroethane	88	70-130
Heptane	104	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	107	70-130
Bromodichloromethane	103	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	118	70-130
Toluene	97	70-130
trans-1,3-Dichloropropene	107	70-130
1,1,2-Trichloroethane	101	70-130
Tetrachloroethene	92	70-130
2-Hexanone	123	70-130

Client Sample ID: LCSD

Lab ID#: 1709072-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21090604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/6/17 09:27 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	110	70-130
o-Xylene	116	70-130
Styrene	124	70-130
Bromoform	115	70-130
Cumene	114	70-130
1,1,2,2-Tetrachloroethane	107	70-130
Propylbenzene	117	70-130
4-Ethyltoluene	120	70-130
1,3,5-Trimethylbenzene	123	70-130
1,2,4-Trimethylbenzene	129	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	104	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	102	70-130
1,2,4-Trichlorobenzene	145 Q	70-130
Hexachlorobutadiene	117	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130