

TRC ENVIRONMENTAL

PROJECT: 269706.0000.0000

MoCo RRF

CLIENT # T004

REPORT # 16-858

SUBMITTED BY:

CHESTER LabNet

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CHESTER LabNet

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Case Narrative


Date: December 23, 2016

General Information

Client: TRC Environmental
Client Number: T004
Report Number: 16-858
Sample Description: 8x10 Quartz Filters
Sample Numbers: 16-Q1018 – 16-Q1022

Analysis

Analytes: Particulate Mass, As, Be, Cd, Cr, Ni, Pb, Hg
Analytical Protocols: Gravimetry, ICP, CVAA
Analytical Notes: No problems were encountered during the analyses. The results have **not** been blank corrected.
QA/QC Review: All of the data have been reviewed by the analysts performing the analyses and the project manager. All of the quality control and sample-specific information in this package is complete and meets or exceeds the minimum requirements for acceptability.
Comments: If you have any questions or concerns regarding this analysis, please feel free to contact the project manager.
Disclaimer: This report shall not be reproduced, except in full, without the written approval of the laboratory. The results only represent that of the samples as received into the laboratory.


Project Manager 12/23/16
Paul Duda Date

Client: T004 - TRC-Lowell
Report Number: 16-858

Lab ID: 16-Q1017
Client ID: Goth-1-TSP
Site: MoCo RRF
Volume: 1657. m³
Deposit Area: 406. cm²
Size Fraction: TSP
Comments: Loose GPM.

Analyte	µg/filter		µg/m ³	
	Conc.	MDL	Conc.	MDL
Gravimetry				
Net Mass	83,200.		50.21	
ICP				
As	< MDL	1.71	< MDL	0.00103
Be	0.102	0.049	0.00006	0.00003
Cd	0.977	0.122	0.00059	0.00007
Cr	3.62	0.122	0.00219	0.00007
Ni	1.88	0.245	0.00113	0.00015
Pb	12.7	1.22	0.00769	0.00074
CVAA				
Hg	0.2507	0.04280	0.00015	0.00003

Lab ID: 16-Q1018
Client ID: Blank
Site: MoCo RRF
Deposit Area: 406. cm²

Analyte	µg/filter			
	Conc.	MDL		
Gravimetry				
Net Mass	200.			
ICP				
As	< MDL	1.71		
Be	< MDL	0.049		
Cd	< MDL	0.122		
Cr	1.82	0.122		
Ni	0.517	0.245		
Pb	< MDL	1.22		
CVAA				
Hg	< MDL	0.04280		

Lab ID: 16-Q1019
Client ID: Chiswell-1-TSP
Site: MoCO RRF
Volume: 1641. m³
Deposit Area: 406. cm²
Size Fraction: TSP

Analyte	µg/filter		µg/m ³	
	Conc.	MDL	Conc.	MDL
Gravimetry				
Net Mass	22,400.		13.65	
ICP				
As	< MDL	1.71	< MDL	0.00104
Be	0.056	0.049	0.00003	0.00003
Cd	3.30	0.122	0.00201	0.00007
Cr	2.68	0.122	0.00163	0.00007
Ni	1.43	0.245	0.00087	0.00015
Pb	3.46	1.22	0.00211	0.00075
CVAA				
Hg	0.06114	0.04280	0.00004	0.00003

Analysis performed by: **CHESTER LabNet**
12242 SW Garden Place ♦ Tigard, OR 97223 ♦ (503) 624-2183 ♦ www.chesterlab.net

Client: T004 - TRC-Lowell
Report Number: 16-858

Lab ID: 16-Q1020
Client ID: Poolesville-1-TSP
Site: MoCo RRF
Volume: 1673. m³
Deposit Area: 406. cm²
Size Fraction: TSP

Analyte	µg/filter		µg/m ³	
	Conc.	MDL	Conc.	MDL
Gravimetry				
Net Mass	20,900.		12.49	
ICP				
As	< MDL	1.71	< MDL	0.00102
Be	< MDL	0.049	< MDL	0.00003
Cd	0.136	0.122	0.00008	0.00007
Cr	2.40	0.122	0.00143	0.00007
Ni	1.15	0.245	0.00069	0.00015
Pb	2.44	1.22	0.00146	0.00073
CVAA				
Hg	0.04892	0.04280	0.00003	0.00003

Lab ID: 16-Q1021
Client ID: Goth-2-TSP
Site: MoCo RRF
Volume: 1643. m³
Deposit Area: 406. cm²
Size Fraction: TSP

Analyte	µg/filter		µg/m ³	
	Conc.	MDL	Conc.	MDL
Gravimetry				
Net Mass	28,000.		17.04	
ICP				
As	< MDL	1.71	< MDL	0.00104
Be	0.050	0.049	0.00003	0.00003
Cd	0.175	0.122	0.00011	0.00007
Cr	2.43	0.122	0.00148	0.00007
Ni	1.03	0.245	0.00063	0.00015
Pb	2.49	1.22	0.00152	0.00074
CVAA				
Hg	< MDL	0.04280	< MDL	0.00003

Client: T004 - TRC-Lowell
Report Number: 16-858

Lab ID: 16-Q1022
Client ID: Chiswell-2-TSP
Site: MoCo RRF
Volume: 1643. m³
Deposit Area: 406. cm²
Size Fraction: TSP

Analyte	µg/filter		µg/m ³	
	Conc.	MDL	Conc.	MDL
Gravimetry				
Net Mass	26,900.		16.37	
ICP				
As	< MDL	1.71	< MDL	0.00104
Be	< MDL	0.049	< MDL	0.00003
Cd	0.689	0.122	0.00042	0.00007
Cr	2.22	0.122	0.00135	0.00007
Ni	2.28	0.245	0.00139	0.00015
Pb	2.67	1.22	0.00163	0.00074
CVAA				
Hg	< MDL	0.04280	< MDL	0.00003

QA/QC Report

Client Name: TRC-Lowell
 Project Number: T004
 Analytical Technique: ICP - Optima 8300
 Sample Description: 8x10 QMA
 Report Number: 16-858

=====

Blank Data

Analyte	Sample ID	Measured Conc. µg/L	MDL Conc. µg/L
As	ICB	< MDL	7.00
As	Prep_Blk	< MDL	7.00
As	Meth_Blk*	< MDL	1.71
As	CCB	< MDL	7.00
As	CCB	< MDL	7.00
Be	ICB	< MDL	0.200
Be	Prep_Blk	< MDL	0.200
Be	Meth_Blk*	< MDL	0.049
Be	CCB	< MDL	0.200
Be	CCB	< MDL	0.200
Cd	ICB	< MDL	0.500
Cd	Prep_Blk	< MDL	0.500
Cd	Meth_Blk*	< MDL	0.122
Cd	CCB	< MDL	0.500
Cd	CCB	< MDL	0.500
Cr	ICB	< MDL	0.500
Cr	Prep_Blk	< MDL	0.500
Cr	Meth_Blk*	2.09	0.122
Cr	CCB	< MDL	0.500
Cr	CCB	< MDL	0.500
Ni	ICB	< MDL	1.00
Ni	Prep_Blk	< MDL	1.00
Ni	Meth_Blk*	0.552	0.245
Ni	CCB	< MDL	1.00
Ni	CCB	< MDL	1.00
Pb	ICB	< MDL	5.00
Pb	Prep_Blk	< MDL	5.00
Pb	Meth_Blk*	< MDL	1.22
Pb	CCB	< MDL	5.00
Pb	CCB	< MDL	5.00

*: Method Blank concentration in µg/filter

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
As	ICV	2500	2510	100.3
As	CRI	35.0	39.5	112.7
As	CCV	2500	2400	95.9
As	CCV	2500	2340	93.7
Be	ICV	2500	2500	100.1
Be	CRI	1.00	1.12	112.1
Be	CCV	2500	2450	98.1
Be	CCV	2500	2400	96.0
Cd	ICV	2500	2550	101.8
Cd	CRI	2.50	2.66	106.4
Cd	CCV	2500	2470	98.8
Cd	CCV	2500	2420	96.9
Cr	ICV	2500	2540	101.6
Cr	CRI	2.50	2.68	107.2
Cr	CCV	2500	2460	98.4
Cr	CCV	2500	2420	96.8
Ni	ICV	2500	2520	100.7
Ni	CRI	5.00	5.17	103.4

CRI Limits: 70% - 130% Recovery

QA/QC Limits

Continuing Calibration: ± 10%

Duplicates: 20% RPD

LCS: ± 20%

Spikes: ± 25%

QA/QC Report

Client Name: TRC-Lowell
 Project Number: T004
 Analytical Technique: ICP - Optima 8300
 Sample Description: 8x10 QMA
 Report Number: 16-858
 =====

Calibration QC

Analyte	Sample ID	Standard Conc. µg/L	Measured Conc. µg/L	Percent Recovery
Ni	CCV	2500	2430	97.1
Ni	CCV	2500	2390	95.6
Pb	ICV	2500	2520	100.9
Pb	CRI	25.0	25.1	100.3
Pb	CCV	2500	2430	97.4
Pb	CCV	2500	2410	96.6

CRI Limits: 70% - 130% Recovery

Duplicate Data

Analyte	Sample ID	Sample Conc. µg/L	Duplicate Conc. µg/L	RPD
As	16-Q1019	< 7	< 7	N/C #
Be	16-Q1019	0.228	0.217	4.94 #
Cd	16-Q1019	13.50	15.85	16.0
Cr	16-Q1019	10.94	10.57	3.44
Ni	16-Q1019	5.867	5.554	5.48
Pb	16-Q1019	14.14	11.55	20.2 #

$$RPD = \frac{(\text{sample} - \text{duplicate})}{[(\text{sample} + \text{duplicate}) / 2]} \times 100$$

N/C: RPD is not calculated when sample or duplicate is below detection limit

#: per EPA CLP protocol, control limits do not apply if sample and/or duplicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. µg/L	Spike Conc. µg/L	Spike Amount µg/L	Percent Recovery
As	LCS	< 7	2403.	2500.	96.1
As	16-Q1020	< 7	2244.	2500.	89.8
Be	LCS	< 0.2	2441.	2500.	97.6
Be	16-Q1020	< 0.2	2286.	2500.	91.4
Cd	LCS	< 0.5	2450.	2500.	98.0
Cd	16-Q1020	0.555	2304.	2500.	92.1
Cr	LCS	8.532	2429.	2500.	96.8
Cr	16-Q1020	9.812	2279.	2500.	90.8
Ni	LCS	2.256	2403.	2500.	96.0
Ni	16-Q1020	4.702	2254.	2500.	90.0
Pb	LCS	< 5	2390.	2500.	95.6
Pb	16-Q1020	9.973	2253.	2500.	89.7

*: per EPA CLP protocol, control limits do not apply if spike concentration is less than 25% of the sample concentration

QA/QC Limits

Continuing Calibration: ± 10%

Duplicates: 20% RPD

LCS: ± 20%

Spikes: ± 25%

QA/QC Report

Client Name: TRC-Lowell
 Project Number: T004
 Analytical Technique: CVAA
 Sample Description: 8x10 QMA
 Report Number: 16-858
 =====

Blank Data

Analyte	Sample ID	Measured Conc. μg	MDL Conc. μg
Hg	ICB	< MDL	0.007
Hg	Prep_Blk	< MDL	0.007
Hg	Meth_Blk	< MDL	0.007
Hg	CCB	< MDL	0.007
Hg	CCB	< MDL	0.007

Calibration QC

Analyte	Sample ID	Standard Conc. μg	Measured Conc. μg	Percent Recovery
Hg	ICV	5.00	4.98	99.6
Hg	CCV	5.00	4.99	99.7
Hg	CCV	5.00	4.96	99.1

Duplicate Data

Analyte	Sample ID	Sample Conc. $\mu\text{g/L}$	Duplicate Conc. $\mu\text{g/L}$	RPD
Hg	16-Q1021	< 0.007	< 0.007	N/C #

$$\text{RPD} = \frac{(\text{sample} - \text{duplicate})}{[(\text{sample} + \text{duplicate})/2]} \times 100$$

N/C: RPD is not calculated when sample or duplicate is below detection limit

#: per EPA CLP protocol, control limits do not apply if sample and/or duplicate concentration is less than 5x the detection limit

Laboratory Control Sample/Matrix Spike Analysis

Analyte	Sample ID	Sample Conc. $\mu\text{g/L}$	Spike Conc. $\mu\text{g/L}$	Spike Amount $\mu\text{g/L}$	Percent Recovery
Hg	LCS	< 0.007	5.05	5.00	101.
Hg	16-Q1022	< 0.007	4.86	5.00	97.2

*: per EPA CLP protocol, control limits do not apply if spike concentration is less than 25% of the sample concentration

QA/QC Limits

Continuing Calibration: $\pm 15\%$

LCS: $\pm 20\%$

Replicates: $\pm 20\%$ RPD

Spikes: $\pm 25\%$

RAW DATA

Available upon request

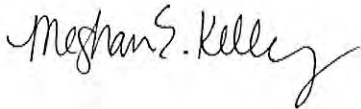
January 4, 2017

Gary Hunt
TRC Environmental Corporation - Lowell
650 Suffolk Street
Lowell, MA 01852

Project Location: MOCO RRF - Montgomery County MD
Client Job Number:
Project Number: 269706
Laboratory Work Order Number: 16L0987

Enclosed are results of analyses for samples received by the laboratory on December 20, 2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

TRC Environmental Corporation - Lowell
 650 Suffolk Street
 Lowell, MA 01852
 ATTN: Gary Hunt

REPORT DATE: 1/4/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 269706

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 16L0987

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: MOCO RRF - Montgomery County MD

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Goth-1	16L0987-01	Ambient Air		EPA TO-15	
Goth-2	16L0987-02	Ambient Air		EPA TO-15	
Chiswell-1	16L0987-03	Ambient Air		EPA TO-15	
Chiswell-2	16L0987-04	Ambient Air		EPA TO-15	
Poolesville-1	16L0987-05	Ambient Air		EPA TO-15	
Poolesville-2	16L0987-06	Ambient Air		EPA TO-15	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington". The signature is fluid and cursive, written over a white background.

Lisa A. Worthington
Project Manager

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Goth-1
 Sample ID: 16L0987-01
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 12:56

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1160
 Canister Size: 6 liter
 Flow Controller ID: 3083
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.9
 Final Vacuum(in Hg): -7.2
 Receipt Vacuum(in Hg): -5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Acetone	3.1	1.4		7.4	3.3	0.702	1/2/17 21:35	CMR
Benzene	0.16	0.035		0.52	0.11	0.702	1/2/17 21:35	CMR
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/2/17 21:35	CMR
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/2/17 21:35	CMR
Bromoform	ND	0.035		ND	0.36	0.702	1/2/17 21:35	CMR
Bromomethane	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/2/17 21:35	CMR
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/2/17 21:35	CMR
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/2/17 21:35	CMR
Carbon Tetrachloride	0.071	0.035		0.45	0.22	0.702	1/2/17 21:35	CMR
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/2/17 21:35	CMR
Chloroethane	ND	0.035		ND	0.093	0.702	1/2/17 21:35	CMR
Chloroform	ND	0.035		ND	0.17	0.702	1/2/17 21:35	CMR
Chloromethane	0.51	0.070		1.0	0.14	0.702	1/2/17 21:35	CMR
Cyclohexane	ND	0.035		ND	0.12	0.702	1/2/17 21:35	CMR
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/2/17 21:35	CMR
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/2/17 21:35	CMR
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 21:35	CMR
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 21:35	CMR
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 21:35	CMR
Dichlorodifluoromethane (Freon 12)	0.37	0.035		1.8	0.17	0.702	1/2/17 21:35	CMR
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/2/17 21:35	CMR
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 21:35	CMR
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 21:35	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/2/17 21:35	CMR
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/2/17 21:35	CMR
Ethanol	2.1	1.4		4.0	2.6	0.702	1/2/17 21:35	CMR
Ethyl Acetate	ND	0.035		ND	0.13	0.702	1/2/17 21:35	CMR
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/2/17 21:35	CMR
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/2/17 21:35	CMR
Heptane	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/2/17 21:35	CMR

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
Field Sample #: Goth-1
Sample ID: 16L0987-01
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 12:56

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1160
 Canister Size: 6 liter
 Flow Controller ID: 3083
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.9
 Final Vacuum(in Hg): -7.2
 Receipt Vacuum(in Hg): -5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Hexane	ND	1.4		ND	4.9	0.702	1/2/17 21:35	CMR	
2-Hexanone (MBK)	0.053	0.035		0.22	0.14	0.702	1/2/17 21:35	CMR	
Isopropanol	ND	1.4		ND	3.4	0.702	1/2/17 21:35	CMR	
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/2/17 21:35	CMR	
Methylene Chloride	2.3	0.35		7.9	1.2	0.702	1/2/17 21:35	CMR	
4-Methyl-2-pentanone (MIBK)	ND	0.035		ND	0.14	0.702	1/2/17 21:35	CMR	
Naphthalene	0.052	0.035		0.27	0.18	0.702	1/2/17 21:35	CMR	
Propene	ND	1.4		ND	2.4	0.702	1/2/17 21:35	CMR	
Styrene	ND	0.035		ND	0.15	0.702	1/2/17 21:35	CMR	
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/2/17 21:35	CMR	
Tetrachloroethylene	0.13	0.035		0.89	0.24	0.702	1/2/17 21:35	CMR	
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/2/17 21:35	CMR	
Toluene	0.10	0.035		0.38	0.13	0.702	1/2/17 21:35	CMR	
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/2/17 21:35	CMR	
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 21:35	CMR	
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 21:35	CMR	
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/2/17 21:35	CMR	
Trichlorofluoromethane (Freon 11)	0.23	0.14		1.3	0.79	0.702	1/2/17 21:35	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14		ND	1.1	0.702	1/2/17 21:35	CMR	
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 21:35	CMR	
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 21:35	CMR	
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/2/17 21:35	CMR	
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/2/17 21:35	CMR	
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/2/17 21:35	CMR	
o-Xylene	ND	0.035		ND	0.15	0.702	1/2/17 21:35	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.6	70-130	1/2/17 21:35

Tentatively Identified Compounds - Estimated Values Reported

	ppbv Results	Response	Retention Time	CAS #	Q#
Bicyclo[3.1.1]hept-2-ene, 2,6,6-tr (1)	0.13	36174	18.307	002437-95-8	
Butanal (1)	0.46	70945	8.213	000123-72-8	
Hexanal (1)	0.15	42684	14.101	000066-25-1	
Pentane (1)	0.14	20951	6.546	000109-66-0	

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Goth-2
 Sample ID: 16L0987-02
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 12:58

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1983
 Canister Size: 6 liter
 Flow Controller ID: 3083
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.5
 Final Vacuum(in Hg): -7
 Receipt Vacuum(in Hg): -6
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Acetone	6.7	1.4		16	3.3	0.702	1/2/17 22:20	CMR
Benzene	0.21	0.035		0.68	0.11	0.702	1/2/17 22:20	CMR
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/2/17 22:20	CMR
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/2/17 22:20	CMR
Bromoform	ND	0.035		ND	0.36	0.702	1/2/17 22:20	CMR
Bromomethane	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/2/17 22:20	CMR
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/2/17 22:20	CMR
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/2/17 22:20	CMR
Carbon Tetrachloride	0.071	0.035		0.45	0.22	0.702	1/2/17 22:20	CMR
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/2/17 22:20	CMR
Chloroethane	ND	0.035		ND	0.093	0.702	1/2/17 22:20	CMR
Chloroform	ND	0.035		ND	0.17	0.702	1/2/17 22:20	CMR
Chloromethane	0.52	0.070		1.1	0.14	0.702	1/2/17 22:20	CMR
Cyclohexane	ND	0.035		ND	0.12	0.702	1/2/17 22:20	CMR
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/2/17 22:20	CMR
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/2/17 22:20	CMR
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 22:20	CMR
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 22:20	CMR
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 22:20	CMR
Dichlorodifluoromethane (Freon 12)	0.37	0.035		1.8	0.17	0.702	1/2/17 22:20	CMR
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/2/17 22:20	CMR
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 22:20	CMR
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 22:20	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/2/17 22:20	CMR
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/2/17 22:20	CMR
Ethanol	4.9	1.4		9.3	2.6	0.702	1/2/17 22:20	CMR
Ethyl Acetate	0.61	0.035		2.2	0.13	0.702	1/2/17 22:20	CMR
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/2/17 22:20	CMR
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/2/17 22:20	CMR
Heptane	0.044	0.035		0.18	0.14	0.702	1/2/17 22:20	CMR
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/2/17 22:20	CMR



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Goth-2
 Sample ID: 16L0987-02
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 12:58

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1983
 Canister Size: 6 liter
 Flow Controller ID: 3083
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.5
 Final Vacuum(in Hg): -7
 Receipt Vacuum(in Hg): -6
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Hexane	ND	1.4		ND	4.9	0.702	1/2/17 22:20	CMR
2-Hexanone (MBK)	0.089	0.035		0.37	0.14	0.702	1/2/17 22:20	CMR
Isopropanol	ND	1.4		ND	3.4	0.702	1/2/17 22:20	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/2/17 22:20	CMR
Methylene Chloride	1.4	0.35		4.8	1.2	0.702	1/2/17 22:20	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.035		ND	0.14	0.702	1/2/17 22:20	CMR
Naphthalene	0.053	0.035		0.28	0.18	0.702	1/2/17 22:20	CMR
Propene	ND	1.4		ND	2.4	0.702	1/2/17 22:20	CMR
Styrene	ND	0.035		ND	0.15	0.702	1/2/17 22:20	CMR
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/2/17 22:20	CMR
Tetrachloroethylene	ND	0.035		ND	0.24	0.702	1/2/17 22:20	CMR
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/2/17 22:20	CMR
Toluene	0.17	0.035		0.66	0.13	0.702	1/2/17 22:20	CMR
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/2/17 22:20	CMR
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 22:20	CMR
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 22:20	CMR
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/2/17 22:20	CMR
Trichlorofluoromethane (Freon 11)	0.32	0.14		1.8	0.79	0.702	1/2/17 22:20	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.19	0.14		1.4	1.1	0.702	1/2/17 22:20	CMR
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 22:20	CMR
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 22:20	CMR
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/2/17 22:20	CMR
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/2/17 22:20	CMR
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/2/17 22:20	CMR
o-Xylene	ND	0.035		ND	0.15	0.702	1/2/17 22:20	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	97.4	70-130	1/2/17 22:20

Tentatively Identified Compounds - Estimated Values Reported

	ppbv Results	Response	Retention Time	CAS #	Q#
Butanal (1)	0.68	103597	8.213	000123-72-8	
Ethene, chlorotrifluoro- (1)	1.6	245452	4.469	000079-38-9	
Octane (1)	0.11	29718	14.692	000111-65-9	
Pentanal (1)	0.36	93230	11.162	000110-62-3	
Pentane (1)	0.13	20447	6.545	000109-66-0	
Propanal, 2-methyl- (1)	0.13	18710	7.44	000078-84-2	



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
Date Received: 12/20/2016
Field Sample #: **Goth-2**
Sample ID: **16L0987-02**
Sample Matrix: Ambient Air
Sampled: 12/17/2016 12:58

Sample Description/Location:
Sub Description/Location:
Canister ID: 1983
Canister Size: 6 liter
Flow Controller ID: 3083
Sample Type: 24 hr

Work Order: 16L0987
Initial Vacuum(in Hg): -29.5
Final Vacuum(in Hg): -7
Receipt Vacuum(in Hg): -6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Chiswell-1
 Sample ID: 16L0987-03
 Sample Matrix: Ambient Air
 Sampled: 12/16/2016 16:06

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1720
 Canister Size: 6 liter
 Flow Controller ID: 3082
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -3.5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv			ug/m3		Dilution	Date/Time		Analyst
	Results	RL	Flag/Qual	Results	RL		Analized		
Acetone	3.1	1.4		7.3	3.3	0.702	1/2/17 23:04	CMR	
Benzene	0.13	0.035		0.41	0.11	0.702	1/2/17 23:04	CMR	
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/2/17 23:04	CMR	
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/2/17 23:04	CMR	
Bromoform	ND	0.035		ND	0.36	0.702	1/2/17 23:04	CMR	
Bromomethane	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/2/17 23:04	CMR	
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/2/17 23:04	CMR	
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/2/17 23:04	CMR	
Carbon Tetrachloride	0.064	0.035		0.40	0.22	0.702	1/2/17 23:04	CMR	
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/2/17 23:04	CMR	
Chloroethane	ND	0.035		ND	0.093	0.702	1/2/17 23:04	CMR	
Chloroform	ND	0.035		ND	0.17	0.702	1/2/17 23:04	CMR	
Chloromethane	0.47	0.070		0.98	0.14	0.702	1/2/17 23:04	CMR	
Cyclohexane	ND	0.035		ND	0.12	0.702	1/2/17 23:04	CMR	
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/2/17 23:04	CMR	
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/2/17 23:04	CMR	
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:04	CMR	
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:04	CMR	
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:04	CMR	
Dichlorodifluoromethane (Freon 12)	0.38	0.035		1.9	0.17	0.702	1/2/17 23:04	CMR	
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/2/17 23:04	CMR	
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 23:04	CMR	
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 23:04	CMR	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/2/17 23:04	CMR	
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/2/17 23:04	CMR	
Ethanol	ND	1.4		ND	2.6	0.702	1/2/17 23:04	CMR	
Ethyl Acetate	ND	0.035		ND	0.13	0.702	1/2/17 23:04	CMR	
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/2/17 23:04	CMR	
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/2/17 23:04	CMR	
Heptane	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR	
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/2/17 23:04	CMR	

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Chiswell-1
 Sample ID: 16L0987-03
 Sample Matrix: Ambient Air
 Sampled: 12/16/2016 16:06

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 1720
 Canister Size: 6 liter
 Flow Controller ID: 3082
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -30
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -3.5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Hexane	ND	1.4		ND	4.9	0.702	1/2/17 23:04	CMR
2-Hexanone (MBK)	0.056	0.035		0.23	0.14	0.702	1/2/17 23:04	CMR
Isopropanol	ND	1.4		ND	3.4	0.702	1/2/17 23:04	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/2/17 23:04	CMR
Methylene Chloride	2.0	0.35		6.9	1.2	0.702	1/2/17 23:04	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.035		ND	0.14	0.702	1/2/17 23:04	CMR
Naphthalene	ND	0.035		ND	0.18	0.702	1/2/17 23:04	CMR
Propene	ND	1.4		ND	2.4	0.702	1/2/17 23:04	CMR
Styrene	ND	0.035		ND	0.15	0.702	1/2/17 23:04	CMR
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/2/17 23:04	CMR
Tetrachloroethylene	ND	0.035		ND	0.24	0.702	1/2/17 23:04	CMR
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/2/17 23:04	CMR
Toluene	0.062	0.035		0.24	0.13	0.702	1/2/17 23:04	CMR
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/2/17 23:04	CMR
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 23:04	CMR
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 23:04	CMR
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/2/17 23:04	CMR
Trichlorofluoromethane (Freon 11)	0.24	0.14		1.3	0.79	0.702	1/2/17 23:04	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14		ND	1.1	0.702	1/2/17 23:04	CMR
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 23:04	CMR
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 23:04	CMR
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/2/17 23:04	CMR
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/2/17 23:04	CMR
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/2/17 23:04	CMR
o-Xylene	ND	0.035		ND	0.15	0.702	1/2/17 23:04	CMR

Surrogates	% Recovery	% REC Limits	Date/Time
4-Bromofluorobenzene (1)	98.4	70-130	1/2/17 23:04

Tentatively Identified Compounds - Estimated Values Reported

	ppbv Results	Response	Retention Time	CAS #	Q#
2-Butenal, (E)- (1)	0.070	10264	9.707	000123-73-9	
3-Heptanone (1)	0.063	18984	16.464	000106-35-4	
Butanal (1)	0.53	77157	8.221	000123-72-8	
Heptanal (1)	0.063	18174	16.803	000111-71-7	
Hexanal (1)	0.15	42376	14.11	000066-25-1	
Pentane (1)	0.13	18848	6.537	000109-66-0	



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
Date Received: 12/20/2016
Field Sample #: Chiswell-1
Sample ID: 16L0987-03
Sample Matrix: Ambient Air
Sampled: 12/16/2016 16:06

Sample Description/Location:
Sub Description/Location:
Canister ID: 1720
Canister Size: 6 liter
Flow Controller ID: 3082
Sample Type: 24 hr

Work Order: 16L0987
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -4
Receipt Vacuum(in Hg): -3.5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Chiswell-2
 Sample ID: 16L0987-04
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 16:18

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2159
 Canister Size: 6 liter
 Flow Controller ID: 3082
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.9
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -4.3
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	8.8	1.4		21	3.3	0.702	1/2/17 23:48	CMR	
Benzene	0.15	0.035		0.47	0.11	0.702	1/2/17 23:48	CMR	
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/2/17 23:48	CMR	
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/2/17 23:48	CMR	
Bromoform	ND	0.035		ND	0.36	0.702	1/2/17 23:48	CMR	
Bromomethane	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/2/17 23:48	CMR	
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/2/17 23:48	CMR	
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/2/17 23:48	CMR	
Carbon Tetrachloride	0.076	0.035		0.48	0.22	0.702	1/2/17 23:48	CMR	
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/2/17 23:48	CMR	
Chloroethane	ND	0.035		ND	0.093	0.702	1/2/17 23:48	CMR	
Chloroform	ND	0.035		ND	0.17	0.702	1/2/17 23:48	CMR	
Chloromethane	0.56	0.070		1.2	0.14	0.702	1/2/17 23:48	CMR	
Cyclohexane	ND	0.035		ND	0.12	0.702	1/2/17 23:48	CMR	
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/2/17 23:48	CMR	
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/2/17 23:48	CMR	
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:48	CMR	
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:48	CMR	
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/2/17 23:48	CMR	
Dichlorodifluoromethane (Freon 12)	0.38	0.035		1.9	0.17	0.702	1/2/17 23:48	CMR	
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/2/17 23:48	CMR	
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 23:48	CMR	
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/2/17 23:48	CMR	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/2/17 23:48	CMR	
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/2/17 23:48	CMR	
Ethanol	3.5	1.4		6.7	2.6	0.702	1/2/17 23:48	CMR	
Ethyl Acetate	0.12	0.035		0.43	0.13	0.702	1/2/17 23:48	CMR	
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/2/17 23:48	CMR	
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/2/17 23:48	CMR	
Heptane	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR	
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/2/17 23:48	CMR	

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Chiswell-2
 Sample ID: 16L0987-04
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 16:18

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2159
 Canister Size: 6 liter
 Flow Controller ID: 3082
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.9
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -4.3
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Hexane	ND	1.4		ND	4.9	0.702	1/2/17 23:48	CMR
2-Hexanone (MBK)	0.091	0.035		0.37	0.14	0.702	1/2/17 23:48	CMR
Isopropanol	ND	1.4		ND	3.4	0.702	1/2/17 23:48	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/2/17 23:48	CMR
Methylene Chloride	0.93	0.35		3.2	1.2	0.702	1/2/17 23:48	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.035		ND	0.14	0.702	1/2/17 23:48	CMR
Naphthalene	ND	0.035		ND	0.18	0.702	1/2/17 23:48	CMR
Propene	ND	1.4		ND	2.4	0.702	1/2/17 23:48	CMR
Styrene	ND	0.035		ND	0.15	0.702	1/2/17 23:48	CMR
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/2/17 23:48	CMR
Tetrachloroethylene	ND	0.035		ND	0.24	0.702	1/2/17 23:48	CMR
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/2/17 23:48	CMR
Toluene	0.11	0.035		0.41	0.13	0.702	1/2/17 23:48	CMR
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/2/17 23:48	CMR
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 23:48	CMR
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/2/17 23:48	CMR
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/2/17 23:48	CMR
Trichlorofluoromethane (Freon 11)	0.25	0.14		1.4	0.79	0.702	1/2/17 23:48	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14		ND	1.1	0.702	1/2/17 23:48	CMR
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 23:48	CMR
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/2/17 23:48	CMR
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/2/17 23:48	CMR
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/2/17 23:48	CMR
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/2/17 23:48	CMR
o-Xylene	ND	0.035		ND	0.15	0.702	1/2/17 23:48	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.8	70-130	1/2/17 23:48

Tentatively Identified Compounds - Estimated Values Reported

	ppbv	Retention			Q#
	Results	Response	Time	CAS #	
2-Butenal, (E)- (1)	0.13	20288	9.699	000123-73-9	
Benzaldehyde (1)	0.20	59219	18.237	000100-52-7	
Butanal (1)	0.75	113923	8.222	000123-72-8	
Cyclotrisiloxane, hexamethyl- (1)	0.091	26098	15.187	000541-05-9	
Decanal (1)	0.091	25888	23.09	000112-31-2	
Ethene, chlorotrifluoro- (1)	0.88	134465	4.476	000079-38-9	
Heptanal (1)	0.25	70957	16.803	000111-71-7	



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Chiswell-2
 Sample ID: 16L0987-04
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 16:18

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2159
 Canister Size: 6 liter
 Flow Controller ID: 3082
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -29.9
 Final Vacuum(in Hg): -4
 Receipt Vacuum(in Hg): -4.3
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	Retention Time	Dilution	Date/Time Analyzed	Analyst
	Results	RL					
Hexanal (1)	0.34		97903	14.101		000066-25-1	
Octanal (1)	0.28		80271	19.262		000124-13-0	
Propanal, 2-methyl- (1)	0.22		34492	7.44		000078-84-2	

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Poolesville-1
 Sample ID: 16L0987-05
 Sample Matrix: Ambient Air
 Sampled: 12/16/2016 18:10

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2013
 Canister Size: 6 liter
 Flow Controller ID: 3476
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -28.9
 Final Vacuum(in Hg): -5.5
 Receipt Vacuum(in Hg): -5.5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Acetone	4.6	1.4		11	3.3	0.702	1/3/17 0:32	CMR
Benzene	0.18	0.035		0.58	0.11	0.702	1/3/17 0:32	CMR
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/3/17 0:32	CMR
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/3/17 0:32	CMR
Bromoform	ND	0.035		ND	0.36	0.702	1/3/17 0:32	CMR
Bromomethane	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/3/17 0:32	CMR
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/3/17 0:32	CMR
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/3/17 0:32	CMR
Carbon Tetrachloride	0.073	0.035		0.46	0.22	0.702	1/3/17 0:32	CMR
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/3/17 0:32	CMR
Chloroethane	ND	0.035		ND	0.093	0.702	1/3/17 0:32	CMR
Chloroform	ND	0.035		ND	0.17	0.702	1/3/17 0:32	CMR
Chloromethane	0.52	0.070		1.1	0.14	0.702	1/3/17 0:32	CMR
Cyclohexane	ND	0.035		ND	0.12	0.702	1/3/17 0:32	CMR
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/3/17 0:32	CMR
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/3/17 0:32	CMR
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 0:32	CMR
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 0:32	CMR
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 0:32	CMR
Dichlorodifluoromethane (Freon 12)	0.37	0.035		1.8	0.17	0.702	1/3/17 0:32	CMR
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/3/17 0:32	CMR
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/3/17 0:32	CMR
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/3/17 0:32	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/3/17 0:32	CMR
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/3/17 0:32	CMR
Ethanol	ND	1.4		ND	2.6	0.702	1/3/17 0:32	CMR
Ethyl Acetate	ND	0.035		ND	0.13	0.702	1/3/17 0:32	CMR
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/3/17 0:32	CMR
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/3/17 0:32	CMR
Heptane	0.039	0.035		0.16	0.14	0.702	1/3/17 0:32	CMR
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/3/17 0:32	CMR



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Pooleville-1
 Sample ID: 16L0987-05
 Sample Matrix: Ambient Air
 Sampled: 12/16/2016 18:10

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2013
 Canister Size: 6 liter
 Flow Controller ID: 3476
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -28.9
 Final Vacuum(in Hg): -5.5
 Receipt Vacuum(in Hg): -5.5
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Hexane	ND	1.4		ND	4.9	0.702	1/3/17 0:32	CMR
2-Hexanone (MBK)	0.051	0.035		0.21	0.14	0.702	1/3/17 0:32	CMR
Isopropanol	ND	1.4		ND	3.4	0.702	1/3/17 0:32	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/3/17 0:32	CMR
Methylene Chloride	1.3	0.35		4.7	1.2	0.702	1/3/17 0:32	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.035		ND	0.14	0.702	1/3/17 0:32	CMR
Naphthalene	ND	0.035		ND	0.18	0.702	1/3/17 0:32	CMR
Propene	ND	1.4		ND	2.4	0.702	1/3/17 0:32	CMR
Styrene	ND	0.035		ND	0.15	0.702	1/3/17 0:32	CMR
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/3/17 0:32	CMR
Tetrachloroethylene	ND	0.035		ND	0.24	0.702	1/3/17 0:32	CMR
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/3/17 0:32	CMR
Toluene	0.13	0.035		0.50	0.13	0.702	1/3/17 0:32	CMR
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/3/17 0:32	CMR
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/3/17 0:32	CMR
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/3/17 0:32	CMR
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/3/17 0:32	CMR
Trichlorofluoromethane (Freon 11)	0.30	0.14		1.7	0.79	0.702	1/3/17 0:32	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.16	0.14		1.2	1.1	0.702	1/3/17 0:32	CMR
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/3/17 0:32	CMR
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/3/17 0:32	CMR
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/3/17 0:32	CMR
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/3/17 0:32	CMR
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/3/17 0:32	CMR
o-Xylene	ND	0.035		ND	0.15	0.702	1/3/17 0:32	CMR

Surrogates

% Recovery

% REC Limits

4-Bromofluorobenzene (1)	95.9	70-130	1/3/17 0:32
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Tentatively Identified Compounds - Estimated Values Reported

	ppbv	Response	Retention	CAS #	Q#
	Results		Time		
2-Butenal, (E)- (1)	0.056	8714	9.715	000123-73-9	
Butanal (1)	0.35	54272	8.221	000123-72-8	
Ethene, chlorotrifluoro- (1)	1.1	169061	4.469	000079-38-9	

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Poolsville-2
 Sample ID: 16L0987-06
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 18:10

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2190
 Canister Size: 6 liter
 Flow Controller ID: 3476
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -28.5
 Final Vacuum(in Hg): -6.5
 Receipt Vacuum(in Hg): -6.9
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv			ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL	Flag/Qual	Results	RL			
Acetone	6.9	1.4		16	3.3	0.702	1/3/17 1:16	CMR
Benzene	0.18	0.035		0.57	0.11	0.702	1/3/17 1:16	CMR
Benzyl chloride	ND	0.035		ND	0.18	0.702	1/3/17 1:16	CMR
Bromodichloromethane	ND	0.035		ND	0.24	0.702	1/3/17 1:16	CMR
Bromoform	ND	0.035		ND	0.36	0.702	1/3/17 1:16	CMR
Bromomethane	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
1,3-Butadiene	ND	0.035		ND	0.078	0.702	1/3/17 1:16	CMR
2-Butanone (MEK)	ND	1.4		ND	4.1	0.702	1/3/17 1:16	CMR
Carbon Disulfide	ND	0.35		ND	1.1	0.702	1/3/17 1:16	CMR
Carbon Tetrachloride	0.074	0.035		0.47	0.22	0.702	1/3/17 1:16	CMR
Chlorobenzene	ND	0.035		ND	0.16	0.702	1/3/17 1:16	CMR
Chloroethane	ND	0.035		ND	0.093	0.702	1/3/17 1:16	CMR
Chloroform	ND	0.035		ND	0.17	0.702	1/3/17 1:16	CMR
Chloromethane	0.48	0.070		0.99	0.14	0.702	1/3/17 1:16	CMR
Cyclohexane	ND	0.035		ND	0.12	0.702	1/3/17 1:16	CMR
Dibromochloromethane	ND	0.035		ND	0.30	0.702	1/3/17 1:16	CMR
1,2-Dibromoethane (EDB)	ND	0.035		ND	0.27	0.702	1/3/17 1:16	CMR
1,2-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 1:16	CMR
1,3-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 1:16	CMR
1,4-Dichlorobenzene	ND	0.035		ND	0.21	0.702	1/3/17 1:16	CMR
Dichlorodifluoromethane (Freon 12)	0.35	0.035		1.7	0.17	0.702	1/3/17 1:16	CMR
1,1-Dichloroethane	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
1,2-Dichloroethane	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
1,1-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
cis-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
trans-1,2-Dichloroethylene	ND	0.035		ND	0.14	0.702	1/3/17 1:16	CMR
1,2-Dichloropropane	ND	0.035		ND	0.16	0.702	1/3/17 1:16	CMR
cis-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/3/17 1:16	CMR
trans-1,3-Dichloropropene	ND	0.035		ND	0.16	0.702	1/3/17 1:16	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035		ND	0.25	0.702	1/3/17 1:16	CMR
1,4-Dioxane	ND	0.35		ND	1.3	0.702	1/3/17 1:16	CMR
Ethanol	3.0	1.4		5.6	2.6	0.702	1/3/17 1:16	CMR
Ethyl Acetate	ND	0.035		ND	0.13	0.702	1/3/17 1:16	CMR
Ethylbenzene	ND	0.035		ND	0.15	0.702	1/3/17 1:16	CMR
4-Ethyltoluene	ND	0.035		ND	0.17	0.702	1/3/17 1:16	CMR
Heptane	0.038	0.035		0.16	0.14	0.702	1/3/17 1:16	CMR
Hexachlorobutadiene	ND	0.035		ND	0.37	0.702	1/3/17 1:16	CMR

ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
 Date Received: 12/20/2016
 Field Sample #: Pooleville-2
 Sample ID: 16L0987-06
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 18:10

Sample Description/Location:
 Sub Description/Location:
 Canister ID: 2190
 Canister Size: 6 liter
 Flow Controller ID: 3476
 Sample Type: 24 hr

Work Order: 16L0987
 Initial Vacuum(in Hg): -28.5
 Final Vacuum(in Hg): -6.5
 Receipt Vacuum(in Hg): -6.9
 Flow Controller Type: Fixed-Orifice
 Flow Controller Calibration
 RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Hexane	ND	1.4		ND	4.9	0.702	1/3/17 1:16	CMR	
2-Hexanone (MBK)	0.11	0.035		0.45	0.14	0.702	1/3/17 1:16	CMR	
Isopropanol	ND	1.4		ND	3.4	0.702	1/3/17 1:16	CMR	
Methyl tert-Butyl Ether (MTBE)	ND	0.035		ND	0.13	0.702	1/3/17 1:16	CMR	
Methylene Chloride	6.2	0.35		22	1.2	0.702	1/3/17 1:16	CMR	
4-Methyl-2-pentanone (MIBK)	0.050	0.035		0.20	0.14	0.702	1/3/17 1:16	CMR	
Naphthalene	ND	0.035		ND	0.18	0.702	1/3/17 1:16	CMR	
Propene	ND	1.4		ND	2.4	0.702	1/3/17 1:16	CMR	
Styrene	ND	0.035		ND	0.15	0.702	1/3/17 1:16	CMR	
1,1,2,2-Tetrachloroethane	ND	0.035		ND	0.24	0.702	1/3/17 1:16	CMR	
Tetrachloroethylene	ND	0.035		ND	0.24	0.702	1/3/17 1:16	CMR	
Tetrahydrofuran	ND	0.035		ND	0.10	0.702	1/3/17 1:16	CMR	
Toluene	0.17	0.035		0.65	0.13	0.702	1/3/17 1:16	CMR	
1,2,4-Trichlorobenzene	ND	0.035		ND	0.26	0.702	1/3/17 1:16	CMR	
1,1,1-Trichloroethane	ND	0.035		ND	0.19	0.702	1/3/17 1:16	CMR	
1,1,2-Trichloroethane	ND	0.035		ND	0.19	0.702	1/3/17 1:16	CMR	
Trichloroethylene	ND	0.035		ND	0.19	0.702	1/3/17 1:16	CMR	
Trichlorofluoromethane (Freon 11)	0.25	0.14		1.4	0.79	0.702	1/3/17 1:16	CMR	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14		ND	1.1	0.702	1/3/17 1:16	CMR	
1,2,4-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/3/17 1:16	CMR	
1,3,5-Trimethylbenzene	ND	0.035		ND	0.17	0.702	1/3/17 1:16	CMR	
Vinyl Acetate	ND	0.70		ND	2.5	0.702	1/3/17 1:16	CMR	
Vinyl Chloride	ND	0.035		ND	0.090	0.702	1/3/17 1:16	CMR	
m&p-Xylene	ND	0.070		ND	0.30	0.702	1/3/17 1:16	CMR	
o-Xylene	ND	0.035		ND	0.15	0.702	1/3/17 1:16	CMR	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.9	70-130	1/3/17 1:16

Tentatively Identified Compounds - Estimated Values Reported

	ppbv Results	Response	Retention Time	CAS #	Q#
2-Butenal, (E)- (1)	0.14	20957	9.699	000123-73-9	
Butanal (1)	0.89	132000	8.222	000123-72-8	
Hexanal (1)	0.13	34879	14.11	000066-25-1	
Pentanal (1)	0.36	91427	11.162	000110-62-3	
Pentane (1)	0.16	24375	6.545	000109-66-0	
Propanal, 2-methyl- (1)	0.13	20150	7.44	000078-84-2	



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ANALYTICAL RESULTS

Project Location: MOCO RRF - Montgomery Coun
Date Received: 12/20/2016
Field Sample #: **Poolesville-2**
Sample ID: **16L0987-06**
Sample Matrix: Ambient Air
Sampled: 12/17/2016 18:10

Sample Description/Location:
Sub Description/Location:
Canister ID: 2190
Canister Size: 6 liter
Flow Controller ID: 3476
Sample Type: 24 hr

Work Order: **16L0987**
Initial Vacuum(in Hg): -28.5
Final Vacuum(in Hg): -6.5
Receipt Vacuum(in Hg): -6.9
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

Sample Extraction Data

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
16L0987-01 [Goth-1]	B167131	1.5	1	N/A	1000	400	855	01/02/17
16L0987-02 [Goth-2]	B167131	1.5	1	N/A	1000	400	855	01/02/17
16L0987-03 [Chiswell-1]	B167131	1.5	1	N/A	1000	400	855	01/02/17
16L0987-04 [Chiswell-2]	B167131	1.5	1	N/A	1000	400	855	01/02/17
16L0987-05 [Poolesville-1]	B167131	1.5	1	N/A	1000	400	855	01/02/17
16L0987-06 [Poolesville-2]	B167131	1.5	1	N/A	1000	400	855	01/02/17

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m ³		Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL							
Batch B167131 - TO-15 Prep											
Blank (B167131-BLK1)						Prepared & Analyzed: 01/02/17					
Acetone	ND	1.4									
Benzene	ND	0.035									
Benzyl chloride	ND	0.035									
Bromodichloromethane	ND	0.035									
Bromoform	ND	0.035									
Bromomethane	ND	0.035									
1,3-Butadiene	ND	0.035									
2-Butanone (MEK)	ND	1.4									
Carbon Disulfide	ND	0.35									
Carbon Tetrachloride	ND	0.035									
Chlorobenzene	ND	0.035									
Chloroethane	ND	0.035									
Chloroform	ND	0.035									
Chloromethane	ND	0.070									
Cyclohexane	ND	0.035									
Dibromochloromethane	ND	0.035									
1,2-Dibromoethane (EDB)	ND	0.035									
1,2-Dichlorobenzene	ND	0.035									
1,3-Dichlorobenzene	ND	0.035									
1,4-Dichlorobenzene	ND	0.035									
Dichlorodifluoromethane (Freon 12)	ND	0.035									
1,1-Dichloroethane	ND	0.035									
1,2-Dichloroethane	ND	0.035									
1,1-Dichloroethylene	ND	0.035									
cis-1,2-Dichloroethylene	ND	0.035									
trans-1,2-Dichloroethylene	ND	0.035									
1,2-Dichloropropane	ND	0.035									
cis-1,3-Dichloropropene	ND	0.035									
trans-1,3-Dichloropropene	ND	0.035									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035									
1,4-Dioxane	ND	0.35									
Ethanol	ND	1.4									
Ethyl Acetate	ND	0.035									
Ethylbenzene	ND	0.035									
4-Ethyltoluene	ND	0.035									
Heptane	ND	0.035									
Hexachlorobutadiene	ND	0.035									
Hexane	ND	1.4									
2-Hexanone (MBK)	ND	0.035									
Isopropanol	ND	1.4									
Methyl tert-Butyl Ether (MTBE)	ND	0.035									
Methylene Chloride	ND	0.35									
4-Methyl-2-pentanone (MIBK)	ND	0.035									
Naphthalene	ND	0.035									
Propene	ND	1.4									
Styrene	ND	0.035									



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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	%REC Limits	RPD		
Batch B167131 - TO-15 Prep										
Blank (B167131-BLK1)										
Prepared & Analyzed: 01/02/17										
1,1,2,2-Tetrachloroethane	ND	0.035								
Tetrachloroethylene	ND	0.035								
Tetrahydrofuran	ND	0.035								
Toluene	ND	0.035								
1,2,4-Trichlorobenzene	ND	0.035								
1,1,1-Trichloroethane	ND	0.035								
1,1,2-Trichloroethane	ND	0.035								
Trichloroethylene	ND	0.035								
Trichlorofluoromethane (Freon 11)	ND	0.14								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14								
1,2,4-Trimethylbenzene	ND	0.035								
1,3,5-Trimethylbenzene	ND	0.035								
Vinyl Acetate	ND	0.70								
Vinyl Chloride	ND	0.035								
m&p-Xylene	ND	0.070								
o-Xylene	ND	0.035								
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>7.76</i>				<i>8.00</i>		<i>97.0</i>		<i>70-130</i>	
LCS (B167131-BS1)										
Prepared & Analyzed: 01/02/17										
Acetone	5.51				5.00		110		70-130	
Benzene	5.24				5.00		105		70-130	
Benzyl chloride	5.15				5.00		103		70-130	
Bromodichloromethane	5.42				5.00		108		70-130	
Bromoform	6.36				5.00		127		70-130	
Bromomethane	5.05				5.00		101		70-130	
1,3-Butadiene	4.46				5.00		89.1		70-130	
2-Butanone (MEK)	4.82				5.00		96.5		70-130	
Carbon Disulfide	5.12				5.00		102		70-130	
Carbon Tetrachloride	5.14				5.00		103		70-130	
Chlorobenzene	5.90				5.00		118		70-130	
Chloroethane	5.23				5.00		105		70-130	
Chloroform	5.26				5.00		105		70-130	
Chloromethane	4.96				5.00		99.2		70-130	
Cyclohexane	4.98				5.00		99.5		70-130	
Dibromochloromethane	5.99				5.00		120		70-130	
1,2-Dibromoethane (EDB)	5.78				5.00		116		70-130	
1,2-Dichlorobenzene	5.12				5.00		102		70-130	
1,3-Dichlorobenzene	5.52				5.00		110		70-130	
1,4-Dichlorobenzene	5.34				5.00		107		70-130	
Dichlorodifluoromethane (Freon 12)	5.45				5.00		109		70-130	
1,1-Dichloroethane	5.14				5.00		103		70-130	
1,2-Dichloroethane	5.40				5.00		108		70-130	
1,1-Dichloroethylene	5.03				5.00		101		70-130	
cis-1,2-Dichloroethylene	5.27				5.00		105		70-130	
trans-1,2-Dichloroethylene	5.23				5.00		105		70-130	
1,2-Dichloropropane	4.86				5.00		97.3		70-130	

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL							
Batch B167131 - TO-15 Prep											
LCS (B167131-BS1)					Prepared & Analyzed: 01/02/17						
cis-1,3-Dichloropropene	5.65				5.00		113	70-130			
trans-1,3-Dichloropropene	5.67				5.00		113	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.78				5.00		95.6	70-130			
1,4-Dioxane	4.50				5.00		89.9	70-130			
Ethanol	5.57				5.00		111	70-130			
Ethyl Acetate	5.44				5.00		109	70-130			
Ethylbenzene	5.61				5.00		112	70-130			
4-Ethyltoluene	5.42				5.00		108	70-130			
Heptane	4.88				5.00		97.7	70-130			
Hexachlorobutadiene	5.92				5.00		118	70-130			
Hexane	4.78				5.00		95.6	70-130			
2-Hexanone (MBK)	5.02				5.00		100	70-130			
Isopropanol	4.57				5.00		91.3	70-130			
Methyl tert-Butyl Ether (MTBE)	5.08				5.00		102	70-130			
Methylene Chloride	4.50				5.00		89.9	70-130			
4-Methyl-2-pentanone (MIBK)	5.10				5.00		102	70-130			
Naphthalene	5.69				5.00		114	70-130			
Propene	4.90				5.00		97.9	70-130			
Styrene	4.85				5.00		97.0	70-130			
1,1,2-Tetrachloroethane	5.36				5.00		107	70-130			
Tetrachloroethylene	5.68				5.00		114	70-130			
Tetrahydrofuran	4.91				5.00		98.2	70-130			
Toluene	6.20				5.00		124	70-130			
1,2,4-Trichlorobenzene	5.53				5.00		111	70-130			
1,1,1-Trichloroethane	4.90				5.00		97.9	70-130			
1,1,2-Trichloroethane	5.62				5.00		112	70-130			
Trichloroethylene	5.18				5.00		104	70-130			
Trichlorofluoromethane (Freon 11)	5.42				5.00		108	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.26				5.00		105	70-130			
1,2,4-Trimethylbenzene	5.26				5.00		105	70-130			
1,3,5-Trimethylbenzene	5.24				5.00		105	70-130			
Vinyl Acetate	4.33				5.00		86.6	70-130			
Vinyl Chloride	5.24				5.00		105	70-130			
m&p-Xylene	11.7				10.0		117	70-130			
o-Xylene	5.69				5.00		114	70-130			
Surrogate: 4-Bromofluorobenzene (1)	8.02				8.00		100	70-130			



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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL						
Batch B167131 - TO-15 Prep										
Duplicate (B167131-DUP1)	Source: 16L0987-03				Prepared: 01/02/17 Analyzed: 01/03/17					
Acetone	3.1	1.4	7.4	3.3		3.1		1.58		25
Benzene	0.13	0.035	0.40	0.11		0.13		2.20		25
Benzyl chloride	ND	0.035	ND	0.18		ND				25
Bromodichloromethane	ND	0.035	ND	0.24		ND				25
Bromoform	ND	0.035	ND	0.36		ND				25
Bromomethane	ND	0.035	ND	0.14		ND				25
1,3-Butadiene	ND	0.035	ND	0.078		ND				25
2-Butanone (MEK)	0.37	1.4	1.1	4.1		0.36		3.24		25
Carbon Disulfide	ND	0.35	ND	1.1		ND				25
Carbon Tetrachloride	0.062	0.035	0.39	0.22		0.064		3.35		25
Chlorobenzene	ND	0.035	ND	0.16		ND				25
Chloroethane	ND	0.035	ND	0.093		ND				25
Chloroform	ND	0.035	ND	0.17		ND				25
Chloromethane	0.49	0.070	1.0	0.14		0.47		3.92		25
Cyclohexane	ND	0.035	ND	0.12		ND				25
Dibromochloromethane	ND	0.035	ND	0.30		ND				25
1,2-Dibromoethane (EDB)	ND	0.035	ND	0.27		ND				25
1,2-Dichlorobenzene	ND	0.035	ND	0.21		ND				25
1,3-Dichlorobenzene	ND	0.035	ND	0.21		ND				25
1,4-Dichlorobenzene	ND	0.035	ND	0.21		ND				25
Dichlorodifluoromethane (Freon 12)	0.37	0.035	1.8	0.17		0.38		4.13		25
1,1-Dichloroethane	ND	0.035	ND	0.14		ND				25
1,2-Dichloroethane	ND	0.035	ND	0.14		ND				25
1,1-Dichloroethylene	ND	0.035	ND	0.14		ND				25
cis-1,2-Dichloroethylene	ND	0.035	ND	0.14		ND				25
trans-1,2-Dichloroethylene	ND	0.035	ND	0.14		ND				25
1,2-Dichloropropane	ND	0.035	ND	0.16		ND				25
cis-1,3-Dichloropropene	ND	0.035	ND	0.16		ND				25
trans-1,3-Dichloropropene	ND	0.035	ND	0.16		ND				25
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035	ND	0.25		ND				25
1,4-Dioxane	ND	0.35	ND	1.3		ND				25
Ethanol	1.2	1.4	2.3	2.6		1.1		9.90		25
Ethyl Acetate	ND	0.035	ND	0.13		ND				25
Ethylbenzene	ND	0.035	ND	0.15		ND				25
4-Ethyltoluene	ND	0.035	ND	0.17		ND				25
Heptane	ND	0.035	ND	0.14		ND				25
Hexachlorobutadiene	ND	0.035	ND	0.37		ND				25
Hexane	0.16	1.4	0.55	4.9		0.15		0.905		25
2-Hexanone (MBK)	0.062	0.035	0.25	0.14		0.056		9.52		25
Isopropanol	0.13	1.4	0.33	3.4		0.12		13.4		25
Methyl tert-Butyl Ether (MTBE)	ND	0.035	ND	0.13		ND				25
Methylene Chloride	2.0	0.35	6.8	1.2		2.0		1.14		25
4-Methyl-2-pentanone (MIBK)	ND	0.035	ND	0.14		ND				25
Naphthalene	ND	0.035	ND	0.18		ND				25
Propene	ND	1.4	ND	2.4		ND				25
Styrene	ND	0.035	ND	0.15		ND				25

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL						
Batch B167131 - TO-15 Prep										
Duplicate (B167131-DUP1)	Source: 16L0987-03				Prepared: 01/02/17 Analyzed: 01/03/17					
1,1,2,2-Tetrachloroethane	ND	0.035	ND	0.24		ND				25
Tetrachloroethylene	ND	0.035	ND	0.24		ND				25
Tetrahydrofuran	ND	0.035	ND	0.10		ND				25
Toluene	0.071	0.035	0.27	0.13		0.062		12.6		25
1,2,4-Trichlorobenzene	ND	0.035	ND	0.26		ND				25
1,1,1-Trichloroethane	ND	0.035	ND	0.19		ND				25
1,1,2-Trichloroethane	ND	0.035	ND	0.19		ND				25
Trichloroethylene	ND	0.035	ND	0.19		ND				25
Trichlorofluoromethane (Freon 11)	0.24	0.14	1.3	0.79		0.24			0.295	25
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.075	0.14	0.58	1.1		0.072			4.78	25
1,2,4-Trimethylbenzene	ND	0.035	ND	0.17		ND				25
1,3,5-Trimethylbenzene	ND	0.035	ND	0.17		ND				25
Vinyl Acetate	ND	0.70	ND	2.5		ND				25
Vinyl Chloride	ND	0.035	ND	0.090		ND				25
m&p-Xylene	ND	0.070	ND	0.30		ND				25
o-Xylene	ND	0.035	ND	0.15		ND				25
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	7.75				8.00		96.9		70-130	



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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S012944-CCV1)									
			Lab File ID: G010202.D			Analyzed: 01/02/17 13:09			
Bromochloromethane (1)	274084	8.899	297484	8.899	92	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	798016	10.813	856773	10.813	93	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	608975	15.613	670015	15.613	91	60 - 140	0.0000	+/-0.50	
LCS (B167131-BS1)									
			Lab File ID: G010203.D			Analyzed: 01/02/17 13:45			
Bromochloromethane (1)	261715	8.899	274084	8.899	95	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	763027	10.813	798016	10.813	96	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	574913	15.613	608975	15.613	94	60 - 140	0.0000	+/-0.50	
Blank (B167131-BLK1)									
			Lab File ID: G010205.D			Analyzed: 01/02/17 15:02			
Bromochloromethane (1)	256886	8.899	274084	8.899	94	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	723352	10.813	798016	10.813	91	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	554022	15.613	608975	15.613	91	60 - 140	0.0000	+/-0.50	
Goth-1 (16L0987-01)									
			Lab File ID: G010214.D			Analyzed: 01/02/17 21:35			
Bromochloromethane (1)	251380	8.899	274084	8.899	92	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	694911	10.813	798016	10.813	87	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	531952	15.613	608975	15.613	87	60 - 140	0.0000	+/-0.50	
Goth-2 (16L0987-02)									
			Lab File ID: G010215.D			Analyzed: 01/02/17 22:20			
Bromochloromethane (1)	247430	8.899	274084	8.899	90	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	685708	10.813	798016	10.813	86	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	528144	15.613	608975	15.613	87	60 - 140	0.0000	+/-0.50	
Chiswell-1 (16L0987-03)									
			Lab File ID: G010216.D			Analyzed: 01/02/17 23:04			
Bromochloromethane (1)	243124	8.899	274084	8.899	89	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	672177	10.813	798016	10.813	84	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	519551	15.613	608975	15.613	85	60 - 140	0.0000	+/-0.50	
Chiswell-2 (16L0987-04)									
			Lab File ID: G010217.D			Analyzed: 01/02/17 23:48			
Bromochloromethane (1)	245940	8.899	274084	8.899	90	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	678537	10.813	798016	10.813	85	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	525334	15.613	608975	15.613	86	60 - 140	0.0000	+/-0.50	
Poolesville-1 (16L0987-05)									
			Lab File ID: G010218.D			Analyzed: 01/03/17 00:32			
Bromochloromethane (1)	236984	8.899	274084	8.899	86	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	653994	10.813	798016	10.813	82	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	503957	15.613	608975	15.613	83	60 - 140	0.0000	+/-0.50	
Poolesville-2 (16L0987-06)									
			Lab File ID: G010219.D			Analyzed: 01/03/17 01:16			
Bromochloromethane (1)	240074	8.899	274084	8.899	88	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	659398	10.813	798016	10.813	83	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	507335	15.613	608975	15.613	83	60 - 140	0.0000	+/-0.50	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

EPA TO-15

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Duplicate (B167131-DUP1)									
			Lab File ID: G010229.D			Analyzed: 01/03/17 08:27			
Bromochloromethane (1)	258341	8.899	274084	8.899	94	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	732814	10.813	798016	10.813	92	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	562295	15.613	608975	15.613	92	60 - 140	0.0000	+/-0.50	

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CONTINUING CALIBRATION CHECK

EPA TO-15

S012944-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	5.00	4.90	0.8385124	0.8210913		-2.1	30
Benzene	A	5.00	4.91	0.6802602	0.667736		-1.8	30
Benzyl chloride	A	5.00	4.51	0.8904481	0.8036744		-9.7	30
Bromodichloromethane	A	5.00	5.02	0.4467462	0.4479409		0.3	30
Bromoform	A	5.00	5.85	0.4061829	0.4754113		17.0	30
Bromomethane	A	5.00	4.54	0.5602826	0.5089359		-9.2	30
1,3-Butadiene	A	5.00	4.66	0.4789267	0.4459188		-6.9	30
2-Butanone (MEK)	A	5.00	4.37	1.496764	1.308253		-12.6	30
Carbon Disulfide	A	5.00	4.85	1.601752	1.552733		-3.1	30
Carbon Tetrachloride	A	5.00	4.82	0.4069915	0.3926698		-3.5	30
Chlorobenzene	A	5.00	5.52	0.6853776	0.7570728		10.5	30
Chloroethane	A	5.00	5.00	0.2889775	0.2890851		0.04	30
Chloroform	A	5.00	5.18	1.293448	1.33928		3.5	30
Chloromethane	A	5.00	4.66	0.5551339	0.5170152		-6.9	30
Cyclohexane	A	5.00	4.74	0.3021498	0.2862439		-5.3	30
Dibromochloromethane	A	5.00	5.50	0.5019956	0.5526375		10.1	30
1,2-Dibromoethane (EDB)	A	5.00	5.36	0.4811784	0.5153184		7.1	30
1,2-Dichlorobenzene	A	5.00	4.62	0.6072661	0.5605353		-7.7	30
1,3-Dichlorobenzene	A	5.00	4.89	0.629675	0.6158598		-2.2	30
1,4-Dichlorobenzene	A	5.00	4.77	0.6301108	0.6015249		-4.5	30
Dichlorodifluoromethane (Freon 12)	A	5.00	5.18	1.336186	1.38399		3.6	30
1,1-Dichloroethane	A	5.00	5.01	1.157887	1.160339		0.2	30
1,2-Dichloroethane	A	5.00	5.12	0.7570739	0.7749566		2.4	30
1,1-Dichloroethylene	A	5.00	4.96	0.9021062	0.8950482		-0.8	30
cis-1,2-Dichloroethylene	A	5.00	5.15	0.8251171	0.8497074		3.0	30
trans-1,2-Dichloroethylene	A	5.00	5.06	0.8417047	0.8520366		1.2	30
1,2-Dichloropropane	A	5.00	4.68	0.2763725	0.2586996		-6.4	30
cis-1,3-Dichloropropene	A	5.00	5.28	0.3648858	0.3853537		5.6	30
trans-1,3-Dichloropropene	A	5.00	5.19	0.3295105	0.3418478		3.7	30
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	A	5.00	5.19	1.413781	1.46689		3.8	30
1,4-Dioxane	A	5.00	4.84	0.1463001	0.1414929		-3.3	30
Ethanol	A	5.00	5.11	0.1860133	0.1899739		2.1	30
Ethyl Acetate	A	5.00	5.05	0.2148823	0.2169846		1.0	30
Ethylbenzene	A	5.00	5.26	1.213714	1.277113		5.2	30
4-Ethyltoluene	A	5.00	4.99	1.236637	1.233493		-0.3	30
Heptane	A	5.00	4.66	0.2383674	0.2219925		-6.9	30
Hexachlorobutadiene	A	5.00	4.72	0.5472458	0.5161013		-5.7	30
Hexane	A	5.00	4.64	0.795321	0.7373915		-7.3	30



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CONTINUING CALIBRATION CHECK

EPA TO-15

S012944-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone (MBK)	A	5.00	4.65	0.7474465	0.6953271		-7.0	30
Isopropanol	A	5.00	4.67	1.084835	1.012974		-6.6	30
Methyl tert-Butyl Ether (MTBE)	A	5.00	4.90	1.767817	1.731977		-2.0	30
Methylene Chloride	A	5.00	4.50	0.6967207	0.6273872		-10.0	30
4-Methyl-2-pentanone (MIBK)	A	5.00	4.76	0.588574	0.5602294		-4.8	30
Naphthalene	A	5.00	4.78	1.098445	1.050174		-4.4	30
Propene	A	5.00	4.46	0.5751068	0.5126545		-10.9	30
Styrene	A	5.00	5.35	0.651356	0.6975183		7.1	30
1,1,2,2-Tetrachloroethane	A	5.00	4.87	0.7108214	0.6928022		-2.5	30
Tetrachloroethylene	A	5.00	5.26	0.4390798	0.4617464		5.2	30
Tetrahydrofuran	A	5.00	5.10	0.2894272	0.2951446		2.0	30
Toluene	A	5.00	5.62	0.9188476	1.032211		12.3	30
1,2,4-Trichlorobenzene	A	5.00	4.27	0.5217344	0.4456958		-14.6	30
1,1,1-Trichloroethane	A	5.00	4.89	0.4495015	0.4391912		-2.3	30
1,1,2-Trichloroethane	A	5.00	5.04	0.2524147	0.2541924		0.7	30
Trichloroethylene	A	5.00	4.99	0.2795127	0.2789358		-0.2	30
Trichlorofluoromethane (Freon 11)	A	5.00	5.02	1.226316	1.230029		0.3	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	5.00	5.07	1.09908	1.113621		1.3	30
1,2,4-Trimethylbenzene	A	5.00	4.92	0.9999473	0.9846079		-1.5	30
1,3,5-Trimethylbenzene	A	5.00	5.03	1.024308	1.029546		0.5	30
Vinyl Acetate	A	5.00	4.47	2.085639	1.865349		-10.6	30
Vinyl Chloride	A	5.00	5.01	0.5923374	0.5932196		0.1	30
m&p-Xylene	A	10.0	10.9	0.8469747	0.926706		9.4	30
o-Xylene	A	5.00	5.27	0.928379	0.9780947		5.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Acetone	AIHA,NY,ME
Benzene	AIHA,FL,NJ,NY,VA,ME
Benzyl chloride	AIHA,FL,NJ,NY,VA,ME
Bromodichloromethane	AIHA,NJ,NY,VA,ME
Bromoform	AIHA,NJ,NY,VA,ME
Bromomethane	AIHA,FL,NJ,NY,ME
1,3-Butadiene	AIHA,NJ,NY,VA,ME
2-Butanone (MEK)	AIHA,FL,NJ,NY,VA,ME
Carbon Disulfide	AIHA,NJ,NY,VA,ME
Carbon Tetrachloride	AIHA,FL,NJ,NY,VA,ME
Chlorobenzene	AIHA,FL,NJ,NY,VA,ME
Chloroethane	AIHA,FL,NJ,NY,VA,ME
Chloroform	AIHA,FL,NJ,NY,VA,ME
Chloromethane	AIHA,FL,NJ,NY,VA,ME
Cyclohexane	AIHA,NJ,NY,VA,ME
Dibromochloromethane	AIHA,NY,ME
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
1,3-Dichlorobenzene	AIHA,NJ,NY,ME
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,VA,ME
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME
1,1-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,2-Dichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1-Dichloroethylene	AIHA,FL,NJ,NY,VA,ME
cis-1,2-Dichloroethylene	AIHA,FL,NY,VA,ME
trans-1,2-Dichloroethylene	AIHA,NJ,NY,VA,ME
1,2-Dichloropropane	AIHA,FL,NJ,NY,VA,ME
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,VA,ME
trans-1,3-Dichloropropene	AIHA,NY,ME
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,NJ,NY,VA,ME
1,4-Dioxane	AIHA,NJ,NY,VA,ME
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,VA,ME
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,VA,ME
Hexachlorobutadiene	AIHA,NJ,NY,VA,ME
Hexane	AIHA,FL,NJ,NY,VA,ME
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,VA,ME
Methylene Chloride	AIHA,FL,NJ,NY,VA,ME
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME
Naphthalene	NY,ME
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,VA,ME
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,VA,ME



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Tetrachloroethylene	AIHA,FL,NJ,NY,VA,ME
Tetrahydrofuran	AIHA
Toluene	AIHA,FL,NJ,NY,VA,ME
1,2,4-Trichlorobenzene	AIHA,NJ,NY,VA,ME
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,VA,ME
Trichloroethylene	AIHA,FL,NJ,NY,VA,ME
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,VA,ME
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME
Vinyl Acetate	AIHA,FL,NJ,NY,VA,ME
Vinyl Chloride	AIHA,FL,NJ,NY,VA,ME
m&p-Xylene	AIHA,FL,NJ,NY,VA,ME
o-Xylene	AIHA,FL,NJ,NY,VA,ME

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2017
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2017
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2017
RI	Rhode Island Department of Health	LAO00112	12/30/2016
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2017
FL	Florida Department of Health	E871027 NELAP	06/30/2017
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2017
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017

Doc #378 Rev 0 5/8/15
 39 Spruce Street
 East Longmeadow, MA 01028

http://www.contestlabs.com
 CHAIN OF CUSTODY RECORD (A/R)
 Requested Turnaround Time

1610987
 con-test ANALYTICAL LABORATORY
 Phone: 413-525-2332
 Fax: 413-525-8405
 Email: info@contestlabs.com
 TRC

Page 1 of 1

ANALYSIS REQUESTED: **EPA TO-15 + TICS (10)**

Lab Receipt Pressure: _____
 Final Pressure: _____
 Initial Pressure: _____

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Summa Can ID: _____ Flow Controller ID: _____

Matrix Codes:
 SG = SOIL GAS
 IA = INDOOR AIR
 AMB = AMBIENT
 SS = SUB SLAB
 D = DUP
 BL = BLANK
 O = Other

Lab Use	Client Sample ID / Description	Client Use	Collection Data		Duration	Flow Rate	Matrix Code	Volume
			Beginning Date/Time	Ending Date/Time				
01	Goth-1		12-15-14 12:30	12-16-14 12:50	1440	AMB		
02	Goth-2		12-16-14 12:58	12-17-14 1:18	1440	AMB		
03	Chiswell-1		12-16-14 12:06	12-16-14 1:26	1440	AMB		
04	Chiswell-2		12-16-14 12:18	12-16-14 1:38	1440	AMB		
05	Padesville-1		12-15-14 18:10	12-16-14 18:30	1440	AMB		
06	Padesville-2		12-16-14 18:10	12-16-14 18:30	1440	AMB		

Comments: ANALYSIS FOR TO-15 VOLATILES LIST + TICS. RESULTS NEEDED BY 12/30/16 AT 1A TEST.

Relinquished by: (signature) Date/Time: 12/19/16
 Received by: (signature) Date/Time: 12/19/16
 Relinquished by: (signature) Date/Time: 12/19/16
 Received by: (signature) Date/Time: 12-20-14
 Relinquished by: (signature) Date/Time: 12-16-20
 Received by: (signature) Date/Time: 13-20-16

Special Requirements: _____
 Enhanced Data Package Required: _____

Turnaround Time (BUSINESS DAYS) STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON THIS CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME CANNOT START UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT



39 Spruce St.
East Longmeadow, MA.
01028
P: 413-525-2332
F: 413-525-6405

AIR Only Receipt Checklist

CLIENT NAME TRC RECEIVED BY: PB DATE: 122016

1) Was the chain(s) of custody relinquished and signed? Yes No

2) Does the chain agree with the samples? Yes No
If not, explain:

3) Are all the samples in good condition? Yes No
If not, explain:

4) Are there any samples "On Hold"? Yes No Stored where:

5) Are there any RUSH or SHORT HOLDING TIME samples? Yes No
Who was notified _____ Date _____ Time _____

6) Location where samples are stored: Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

7) Number of cans Individually Certified or Batch Certified? NONE

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)	6	6 hr
Tedlar Bags		
TO-17 Tubes		
Regulators	18	6-8 hr / 24 hr / 4 hr
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs		
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:

1) Was all media (used & unused) checked into the WASP?

2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:	8hr	24hr	4hr								
	1160	2013		3245	3412	3475	3288	4629	4633		
	1983	2190		3246	3413	3476	3251	4626	4634		
	1720			3258		3082		4621			
	2159			3259		3083		4622			

Page 2 of 2

Login Sample Receipt Checklist**(Rejection Criteria Listing - Using Sample Acceptance Policy)****Any False statement will be brought to the attention of Client**

<u>Question</u>	<u>Answer (True/False)</u>		<u>Comment</u>
	T/F/NA		
1) The coolers'/boxes' custody seal, if present, is intact.	NA		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	NA		
4) Cooler Temperature is acceptable.	NA		
5) Cooler Temperature is recorded.	NA		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) Samples are received within Holding Time.	T		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T		
12) Sample collection date/times are provided.	T		
13) Appropriate sample/media containers are used.	T		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	NA		

Doc #278 Rev. 5 October 2014

Who notified of False statements?

Log-In Technician Initials: PB

Date/Time:

Date/Time: 12.20.16

19:10



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

January 11, 2017

Gary Hunt
TRC Environmental Corporation - Lowell
650 Suffolk Street
Lowell, MA 01852

Project Location: Moco RRF - Montgomery County MD
Client Job Number:
Project Number: 269706
Laboratory Work Order Number: 16L1075

Enclosed are results of analyses for samples received by the laboratory on December 20, 2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Meghan E. Kelley". The signature is written in a cursive style with a large, stylized 'M' and 'K'.

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

TRC Environmental Corporation - Lowell
 650 Suffolk Street
 Lowell, MA 01852
 ATTN: Gary Hunt

REPORT DATE: 1/11/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 269706

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 16L1075

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Moco RRF - Montgomery County MD

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Goth - Puf - 2	16L1075-01	Ambient Air		EPA TO-13A	
Chiswell - Puf - 1	16L1075-02	Ambient Air		EPA TO-13A	
Chiswell - Puf - 2	16L1075-03	Ambient Air		EPA TO-13A	
Poolesville - Puf - 1	16L1075-04	Ambient Air		EPA TO-13A	
Blank	16L1075-05	Air		EPA TO-13A	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED REPORT - 1/11/2017 - Air volumes revised per clients request for 16L1075-01 through -04.

REVISED REPORT - 12/29/2016 - Air volumes added per clients request.

EPA TO-13A

Qualifications:

S-20

Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.

Analyte & Samples(s) Qualified:

Benzo(a)pyrene-d12

16L1075-02[Chiswell - Puf - 1], 16L1075-04[Pooleville - Puf - 1]

EPA TO-13A

Calculations of concentrations in air are based on information regarding air volumes as reported to the laboratory.

Blank is not subtracted unless otherwise specified.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington". The signature is written in a cursive, flowing style.

Lisa A. Worthington
Project Manager

ANALYTICAL RESULTS

Project Location: Moco RRF - Montgomery County
 Date Received: 12/20/2016
 Field Sample #: Goth - Puf - 2
 Sample ID: 16L1075-01
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 12:45

Sample Description/Location:
 Sub Description/Location:
 Flow Controller ID:
 Sample Type:
 Air Volume L: 281950

Work Order: 16L1075

EPA TO-13A

Analyte	µg/mL		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Surrogates	% Recovery			% REC Limits					
Benzo(a)pyrene-d12		69.3			60-120		12/27/16	16:38	
Fluoranthene-d10		79.6			60-120		12/27/16	16:38	

EPA TO-13A

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acenaphthene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Acenaphthylene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Anthracene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(a)anthracene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(a)pyrene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(b)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(e)pyrene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(g,h,i)perylene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Benzo(k)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Chrysene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Dibenz(a,h)anthracene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Fluoranthene	0.23	0.20		0.00081	0.00071	1	12/27/16	16:38	CJM
Fluorene	0.22	0.20		0.00077	0.00071	1	12/27/16	16:38	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
1-Methylnaphthalene	0.85	0.20		0.003	0.00071	1	12/27/16	16:38	CJM
2-Methylnaphthalene	1.3	0.20		0.0045	0.00071	1	12/27/16	16:38	CJM
Naphthalene	6.0	0.50		0.021	0.0018	1	12/27/16	16:38	CJM
Perylene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM
Phenanthrene	0.54	0.20		0.0019	0.00071	1	12/27/16	16:38	CJM
Pyrene	ND	0.20		ND	0.00071	1	12/27/16	16:38	CJM

Surrogates	% Recovery			% REC Limits					
Fluorene-d10		74.7			60-120		12/27/16	16:38	
Pyrene-d10		81.0			60-120		12/27/16	16:38	



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

ANALYTICAL RESULTS

Project Location: Moco RRF - Montgomery County

Sample Description/Location:

Work Order: 16L1075

Date Received: 12/20/2016

Sub Description/Location:

Field Sample #: Chiswell - Puf - 1

Sample ID: 16L1075-02

Sample Matrix: Ambient Air

Flow Controller ID:

Sampled: 12/16/2016 16:06

Sample Type:

Air Volume L: 281180

EPA TO-13A

Analyte	µg/mL		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Surrogates	% Recovery			% REC Limits					
Benzo(a)pyrene-d12		58.9*	S-20	60-120			12/27/16 17:08		
Fluoranthene-d10		74.3		60-120			12/27/16 17:08		

EPA TO-13A

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acenaphthene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Acenaphthylene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(a)anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(a)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(b)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(e)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(g,h,i)perylene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Benzo(k)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Chrysene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Dibenz(a,h)anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Fluoranthene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Fluorene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Indeno(1,2,3-cd)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
1-Methylnaphthalene	0.58	0.20		0.0021	0.00071	1	12/27/16 17:08		CJM
2-Methylnaphthalene	0.83	0.20		0.0029	0.00071	1	12/27/16 17:08		CJM
Naphthalene	4.3	0.50		0.015	0.0018	1	12/27/16 17:08		CJM
Perylene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Phenanthrene	0.48	0.20		0.0017	0.00071	1	12/27/16 17:08		CJM
Pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:08		CJM
Surrogates	% Recovery			% REC Limits					
Fluorene-d10		73.0		60-120			12/27/16 17:08		
Pyrene-d10		77.1		60-120			12/27/16 17:08		

ANALYTICAL RESULTS

Project Location: Moco RRF - Montgomery County
 Date Received: 12/20/2016
 Field Sample #: Chiswell - Puf - 2
 Sample ID: 16L1075-03
 Sample Matrix: Ambient Air
 Sampled: 12/17/2016 16:18

Sample Description/Location:
 Sub Description/Location:
 Flow Controller ID:
 Sample Type:
 Air Volume L: 280590

Work Order: 16L1075

EPA TO-13A

Analyte	µg/mL		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Surrogates	% Recovery			% REC Limits				
Benzo(a)pyrene-d12		62.1			60-120		12/27/16 17:37	
Fluoranthene-d10		76.4			60-120		12/27/16 17:37	

EPA TO-13A

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Acenaphthene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Acenaphthylene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(a)anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(a)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(b)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(e)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(g,h,i)perylene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Benzo(k)fluoranthene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Chrysene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Dibenz(a,h)anthracene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Fluoranthene	0.22	0.20		0.00077	0.00071	1	12/27/16 17:37	CJM
Fluorene	0.27	0.20		0.00097	0.00071	1	12/27/16 17:37	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
1-Methylnaphthalene	0.86	0.20		0.0031	0.00071	1	12/27/16 17:37	CJM
2-Methylnaphthalene	1.3	0.20		0.0046	0.00071	1	12/27/16 17:37	CJM
Naphthalene	5.9	0.50		0.021	0.0018	1	12/27/16 17:37	CJM
Perylene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM
Phenanthrene	0.73	0.20		0.0026	0.00071	1	12/27/16 17:37	CJM
Pyrene	ND	0.20		ND	0.00071	1	12/27/16 17:37	CJM

Surrogates	% Recovery		% REC Limits			
Fluorene-d10		73.4		60-120		12/27/16 17:37
Pyrene-d10		79.7		60-120		12/27/16 17:37

ANALYTICAL RESULTS

Project Location: Moco RRF - Montgomery County	Sample Description/Location:	Work Order: 16L1075
Date Received: 12/20/2016	Sub Description/Location:	
Field Sample #: Poolesville - Puf - 1		
Sample ID: 16L1075-04		
Sample Matrix: Ambient Air	Flow Controller ID:	
Sampled: 12/16/2016 17:48	Sample Type:	
	Air Volume L: 273510	

EPA TO-13A

Analyte	µg/mL		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Surrogates	% Recovery			% REC Limits					
Benzo(a)pyrene-d12		42.6*	S-20	60-120			12/27/16	18:06	
Fluoranthene-d10		75.9		60-120			12/27/16	18:06	

EPA TO-13A

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acenaphthene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Acenaphthylene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Anthracene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(a)anthracene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(a)pyrene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(b)fluoranthene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(e)pyrene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(g,h,i)perylene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Benzo(k)fluoranthene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Chrysene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Dibenz(a,h)anthracene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Fluoranthene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Fluorene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
1-Methylnaphthalene	0.63	0.20		0.0023	0.00073	1	12/27/16	18:06	CJM
2-Methylnaphthalene	0.94	0.20		0.0034	0.00073	1	12/27/16	18:06	CJM
Naphthalene	4.4	0.50		0.016	0.0018	1	12/27/16	18:06	CJM
Perylene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Phenanthrene	0.43	0.20		0.0016	0.00073	1	12/27/16	18:06	CJM
Pyrene	ND	0.20		ND	0.00073	1	12/27/16	18:06	CJM
Surrogates	% Recovery			% REC Limits					
Fluorene-d10		74.6		60-120			12/27/16	18:06	
Pyrene-d10		74.0		60-120			12/27/16	18:06	

ANALYTICAL RESULTS

Project Location: Moco RRF - Montgomery County
 Date Received: 12/20/2016
 Field Sample #: Blank
 Sample ID: 16L1075-05
 Sample Matrix: Air
 Sampled: 12/17/2016 00:00

Sample Description/Location:
 Sub Description/Location:
 Flow Controller ID:
 Sample Type:

Work Order: 16L1075

EPA TO-13A

Analyte	µg/mL		Flag/Qual	Dilution	Date/Time	Analyst
	Results	RL			Analyzed	
Surrogates	% Recovery		% REC Limits			
Benzo(a)pyrene-d12	71.2		60-120		12/27/16 18:36	
Fluoranthene-d10	80.5		60-120		12/27/16 18:36	

EPA TO-13A

Analyte	Total µg		Flag/Qual	Dilution	Date/Time	Analyst
	Results	RL			Analyzed	
Acenaphthene	ND	0.20		1	12/27/16 18:36	CJM
Acenaphthylene	ND	0.20		1	12/27/16 18:36	CJM
Anthracene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(a)anthracene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(a)pyrene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(b)fluoranthene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(e)pyrene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(g,h,i)perylene	ND	0.20		1	12/27/16 18:36	CJM
Benzo(k)fluoranthene	ND	0.20		1	12/27/16 18:36	CJM
Chrysene	ND	0.20		1	12/27/16 18:36	CJM
Dibenz(a,h)anthracene	ND	0.20		1	12/27/16 18:36	CJM
Fluoranthene	ND	0.20		1	12/27/16 18:36	CJM
Fluorene	ND	0.20		1	12/27/16 18:36	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20		1	12/27/16 18:36	CJM
1-Methylnaphthalene	ND	0.20		1	12/27/16 18:36	CJM
2-Methylnaphthalene	ND	0.20		1	12/27/16 18:36	CJM
Naphthalene	ND	0.50		1	12/27/16 18:36	CJM
Perylene	ND	0.20		1	12/27/16 18:36	CJM
Phenanthrene	ND	0.20		1	12/27/16 18:36	CJM
Pyrene	ND	0.20		1	12/27/16 18:36	CJM

Surrogates	% Recovery	% REC Limits	Date/Time
Fluorene-d10	75.0	60-120	12/27/16 18:36
Pyrene-d10	81.0	60-120	12/27/16 18:36



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Sample Extraction Data

Prep Method: SW-846 3540C-EPA TO-13A

Lab Number [Field ID]	Batch	Initial [Cartridge]	Final [mL]	Date
16L1075-01 [Goth - Puf - 2]	B166531	1.00	1.00	12/23/16
16L1075-02 [Chiswell - Puf - 1]	B166531	1.00	1.00	12/23/16
16L1075-03 [Chiswell - Puf - 2]	B166531	1.00	1.00	12/23/16
16L1075-04 [Pooleville - Puf - 1]	B166531	1.00	1.00	12/23/16
16L1075-05 [Blank]	B166531	1.00	1.00	12/23/16



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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	Total µg		ug/m3		Spike Level Total µg	Source Result	%REC Limits	RPD Limit	RPD Limit	Flag/Qual
	Results	RL	Results	RL						
Batch B166531 - SW-846 3540C										
Blank (B166531-BLK1)										
					Prepared: 12/23/16 Analyzed: 12/27/16					
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Anthracene	ND	0.20								
Benzo(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(e)pyrene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Chrysene	ND	0.20								
Dibenz(a,h)anthracene	ND	0.20								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Naphthalene	ND	0.50								
Perylene	ND	0.20								
Phenanthrene	ND	0.20								
Pyrene	ND	0.20								
<i>Surrogate: Fluorene-d10</i>	<i>0.694</i>				<i>1.00</i>		<i>69.4</i>	<i>60-120</i>		
<i>Surrogate: Pyrene-d10</i>	<i>0.775</i>				<i>1.00</i>		<i>77.5</i>	<i>60-120</i>		
LCS (B166531-BS1)										
					Prepared: 12/23/16 Analyzed: 12/27/16					
Acenaphthene	0.318	0.20	1.3	0.500			63.6	53.4-110		
Acenaphthylene	0.255	0.20	1.2	0.500			51.0	10-110		
Anthracene	0.263	0.20	1.5	0.500			52.6	27.2-110		
Benzo(a)anthracene	0.300	0.20	1.9	0.500			60.0	51.1-110		
Benzo(a)pyrene	0.262	0.20	2.1	0.500			52.4	32-110		
Benzo(b)fluoranthene	0.325	0.20	2.1	0.500			65.0	51.7-110		
Benzo(e)pyrene	0.342	0.20	2.1	0.500			68.4	55.6-110		
Benzo(g,h,i)perylene	0.302	0.20	2.3	0.500			60.4	50.9-110		
Benzo(k)fluoranthene	0.316	0.20	2.1	0.500			63.2	49.5-110		
Chrysene	0.306	0.20	1.9	0.500			61.2	53.6-110		
Dibenz(a,h)anthracene	0.282	0.20	2.3	0.500			56.4	46.8-110		
Fluoranthene	0.344	0.20	1.7	0.500			68.8	50.9-111		
Fluorene	0.322	0.20	1.4	0.500			64.4	55.1-110		
Indeno(1,2,3-cd)pyrene	0.271	0.20	2.3	0.500			54.2	38.5-110		
1-Methylnaphthalene	0.343	0.20	1.2	0.500			68.6	50.4-110		
2-Methylnaphthalene	0.315	0.20	1.2	0.500			63.0	47.3-110		
Naphthalene	0.385	0.50	2.6	0.500			77.0	42.7-127		
Perylene	0.290	0.20	2.1	0.500			58.0	36.8-110		
Phenanthrene	0.359	0.20	1.5	0.500			71.8	59.5-115		
Pyrene	0.339	0.20	1.7	0.500			67.8	51.8-110		
<i>Surrogate: Fluorene-d10</i>	<i>0.823</i>			<i>1.00</i>			<i>82.3</i>	<i>60-120</i>		
<i>Surrogate: Pyrene-d10</i>	<i>0.930</i>			<i>1.00</i>			<i>93.0</i>	<i>60-120</i>		

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	Total µg		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag/Qual
	Results	RL	Results	RL	Total µg	Result	%REC	Limits	RPD	Limit	
Batch B166531 - SW-846 3540C											
LCS Dup (B166531-BSD1)					Prepared: 12/23/16 Analyzed: 12/27/16						
Acenaphthene	0.339	0.20		1.3	0.500		67.8	53.4-110	6.39	28.5	
Acenaphthylene	0.275	0.20		1.2	0.500		55.0	10-110	7.55	81	
Anthracene	0.279	0.20		1.5	0.500		55.8	27.2-110	5.90	45.3	
Benzo(a)anthracene	0.308	0.20		1.9	0.500		61.6	51.1-110	2.63	30.3	
Benzo(a)pyrene	0.262	0.20		2.1	0.500		52.4	32-110	0.00	42.8	
Benzo(b)fluoranthene	0.327	0.20		2.1	0.500		65.4	51.7-110	0.613	30.6	
Benzo(e)pyrene	0.346	0.20		2.1	0.500		69.2	55.6-110	1.16	29.9	
Benzo(g,h,i)perylene	0.282	0.20		2.3	0.500		56.4	50.9-110	6.85	35.8	
Benzo(k)fluoranthene	0.316	0.20		2.1	0.500		63.2	49.5-110	0.00	30.6	
Chrysene	0.315	0.20		1.9	0.500		63.0	53.6-110	2.90	27.8	
Dibenz(a,h)anthracene	0.263	0.20		2.3	0.500		52.6	46.8-110	6.97	36.5	
Fluoranthene	0.352	0.20		1.7	0.500		70.4	50.9-111	2.30	28.5	
Fluorene	0.336	0.20		1.4	0.500		67.2	55.1-110	4.26	28.6	
Indeno(1,2,3-cd)pyrene	0.252	0.20		2.3	0.500		50.4	38.5-110	7.27	41	
1-Methylnaphthalene	0.358	0.20		1.2	0.500		71.6	50.4-110	4.28	29.9	
2-Methylnaphthalene	0.336	0.20		1.2	0.500		67.2	47.3-110	6.45	30.5	
Naphthalene	0.396	0.50		2.6	0.500		79.2	42.7-127	2.82	31	
Perylene	0.290	0.20		2.1	0.500		58.0	36.8-110	0.00	37.2	
Phenanthrene	0.380	0.20		1.5	0.500		76.0	59.5-115	5.68	28.1	
Pyrene	0.355	0.20		1.7	0.500		71.0	51.8-110	4.61	28.5	
Surrogate: Fluorene-d10	0.792				1.00		79.2	60-120			
Surrogate: Pyrene-d10	0.878				1.00		87.8	60-120			

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level.
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
S-20	Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>EPA TO-13A in Air</i>	
Acenaphthene	AIHA,NJ,NY
Acenaphthylene	AIHA,NJ,NY
Anthracene	AIHA,NJ,NY
Benzo(a)anthracene	AIHA,NJ,NY
Benzo(a)pyrene	AIHA,NJ,NY,FL
Benzo(b)fluoranthene	AIHA,NJ,NY
Benzo(e)pyrene	AIHA,NJ
Benzo(g,h,i)perylene	AIHA,NJ,NY
Benzo(k)fluoranthene	AIHA,NJ,NY
Chrysene	AIHA,NJ,NY
Dibenz(a,h)anthracene	AIHA,NJ,NY
Fluoranthene	AIHA,NJ,NY
Fluorene	AIHA,NJ,NY
Indeno(1,2,3-cd)pyrene	AIHA,NJ,NY
1-Methylnaphthalene	AIHA
2-Methylnaphthalene	AIHA
Naphthalene	AIHA,NJ,NY,FL
Perylene	AIHA,NJ
Phenanthrene	AIHA,NJ,NY
Pyrene	AIHA,NJ,NY

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2017
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2017
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2017
RI	Rhode Island Department of Health	LAO00112	12/30/2016
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2017
FL	Florida Department of Health	E871027 NELAP	06/30/2017
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2017
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017

http://www.contestlabs.com
 39 Spruce Street
 East Longmeadow, MA 01028

1661075
 Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com



Address: TRC
 Phone: IMOCO RRF
 Project Location: Montgomery County MD
 Project Number: 264706
 Project Manager:
 Con-Test Bid:
 Invoice Recipient:
 Sampled By: Steve Boyko

7-Day 10-Day
 Other:
 1-Day 3-Day
 2-Day 4-Day
 Format: PDF EXCEL
 Other:
 Enhanced Data Package Required:
 Email To:
 Fax To #:

Lab Use	Client Use	Client Sample ID / Description	Collection Date		Duration Total Minutes Sampled	Flow Rate m ³ /min L/min	Matrix Code	Volume Liters m ³
			Beginning Date/Time	Ending Date/Time				
		Goth - PUF - 1	12-15-16 12:16	12-15-16 12:50	1454	185	AMB	
01		Goth PUF - 2	12-15-16 12:45	12-15-16 14:40	1440	185	AMB	
02		Chiswell - PUF - 1	12-15-16 16:06	12-15-16 16:06	1440	185	AMB	
03		Chiswell - PUF - 2	12-15-16 16:18	12-15-16 16:18	1440	185	AMB	
04		Pookesville-PUF-1	12-15-16 17:48	12-15-16 17:48	1440	186	AMB	
05		Blank					BL	

ANALYSIS REQUESTED: EPA MTD-13A Full List

Initial Pressure: _____ Hg
 Final Pressure: _____ Hg
 Lab Receipt Pressure: _____ Hg

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:
 SG = SOIL GAS
 IA = INDOOR AIR
 AMB = AMBIENT
 SS = SUB SLAB
 D = DUP
 BL = BLANK
 O = Other

Relinquished by: (signature) S Boyko Date/Time: 12/19/16
 Received by: (signature) [Signature] Date/Time: 12/19/16
 Relinquished by: (signature) [Signature] Date/Time: 12/20/16
 Received by: (signature) [Signature] Date/Time: 12/20/16 0857
 Relinquished by: (signature) [Signature] Date/Time: 12/20/16
 Received by: (signature) [Signature] Date/Time: 12/20/16 19:10

Comments:
To 13 PAHS ANALYSES - Full List
RESULT NEEDED BY 12/30/16 AT LATEST

Special Requirements:
 MA MCP Required
 CT RCP Required
 Enhanced Data Package Required

TURNAROUND TIME (BUSINESS DAYS) STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON THIS CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME CANNOT START UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Meghan Kelley

From: Boyko, Steve <SBoyko@trcsolutions.com>
Sent: Thursday, December 22, 2016 9:28 AM
To: mkelley@contestlabs.com
Cc: Hunt, Gary
Subject: TRC COC

Megan,
Blank- Can# 05
Goth-PUF-2 Can#02
Chiswell-PUF-1 Can#06
Chiswell-PUF-2 Can#03
Poolesville-PUF-1 Can#01
Call me if you have any questions.
Steve Boyko
860-558-3316



39 Spruce St.
East Longmeadow, MA.
01028
P: 413-525-2332
F: 413-525-6405

AIR Only Receipt Checklist

CLIENT NAME TRC RECEIVED BY: PR ~~PR~~ 12-20-16 DATE: 12-20-16

- 1) Was the chain(s) of custody relinquished and signed? Yes No
- 2) Does the chain agree with the samples? Yes No
If not, explain:
- 3) Are all the samples in good condition? Yes No
If not, explain:
- 4) Are there any samples "On Hold"? Yes No Stored where:
- 5) Are there any RUSH or SHORT HOLDING TIME samples? Yes No
Who was notified _____ Date _____ Time _____

6) Location where samples are stored: Walk In
 Permission to subcontract samples? Yes No
 (Walk-in clients only) if not already approved
 Client Signature: _____

7) Number of cans Individually Certified or Batch Certified? _____

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		
Tedlar Bags		
TO-17 Tubes		
Regulators		
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs	5	High Volume
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:
 121216-02
 06
 03
 01
 05

- 1) Was all media (used & unused) checked into the WASP?
- 2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:

Page 2 of 2

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

<u>Question</u>	<u>Answer (True/False)</u>		<u>Comment</u>
	<u>T/F/NA</u>		
1) The coolers'/boxes' custody seal, if present, is intact.	NA		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	T		
4) Cooler Temperature is acceptable.	T		
5) Cooler Temperature is recorded.	T		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) Samples are received within Holding Time.	T		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T		
12) Sample collection date/times are provided.	T		
13) Appropriate sample/media containers are used.	T		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	NA		

Doc #278 Rev. 5 October 2014

Who notified of False statements?
 Log-In Technician Initials: PB

Date/Time:
 Date/Time: 10.20.16
 19:10



FINAL LAB REPORT

Montgomery County

A9554

06-Jan-2017

Prepared by

SGS NORTH AMERICA

Prepared for

TRC Environmental Corporation

Gary Hunt

650 Suffolk Street

Lowell, MA 01854

Phone: 978-656-3551

Email: ghunt@trcsolutions.com

This report is approved by

Digitally signed by Amy Boehm
Date: 2017.01.06 16:01:44
-05'00'

Amy Boehm

Senior Project Manager

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PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	Montgomery County
SGS Project #	A9554
Analytical Protocol(s)	PAH, TO-9A
No. Samples Submitted	1
Additional QC Sample(s)	0
No. Laboratory Method Blanks	2
No. OPRs / Batch CS3	2
Date Received	21-Dec-16
Condition Received	Good
Temperature upon Receipt (°C)	10 (XAD/PUF & Filter)
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.
2. The sample extract was split 50% for the analysis of PCDD/Fs and 25% for the analysis of PAHs. The remaining fraction was archived.

Concentration of the extracts prior to the silica column clean-up was noted to have been at 65C instead of 45C. Losses of the heavier PAH standards is seen in the field sample, but not the method blank, likely due to the concentration at too high a temperature. The standards all show signal to noise well in excess of 10-to-1, however with very low extraction standard recoveries, reported results will be more uncertain.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.



SGS CERTIFICATIONS

Arkansas	88-0682
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-14-00135
DoD	2726.01
Florida (Primary NELAP)	E87634
ISO 17025/IEC	2726.01
Louisiana	4115
Maine	#2016028
Massachusetts	M-NC919
Minnesota (Primary NELAP For Method 23)	Lab #037-999-459 Cert #981125
New Jersey	NC100
New York	11685
North Carolina DWR	481
North Dakota	R-197
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	Lab #99029 Cert #99029002
Texas	T104704260-16-9
US Coast Guard	16714/159.317/SGS
Virginia	Lab #460214 Cert #8722
Washington	C913
West Virginia	293

Rev. 12-Sep-2016

A9554 - TEQ

Project ID: Montgomery County

Sample Summary Part 1



Method TO-9A

Analyte	Method Blank A9554_14604 pg/m3	Goth-PUF-1 pg/m3
2,3,7,8-TCDD	(0.0393)	(0.0363)
1,2,3,7,8-PeCDD	(0.0708)	(0.108)
1,2,3,4,7,8-HxCDD	(0.0512)	(0.0345)
1,2,3,6,7,8-HxCDD	(0.0708)	(0.0446)
1,2,3,7,8,9-HxCDD	(0.0819)	(0.0521)
1,2,3,4,6,7,8-HpCDD	(0.0718)	0.316
OCDD	(0.153)	0.421
2,3,7,8-TCDF	(0.0353)	(0.0368)
1,2,3,7,8-PeCDF	(0.035)	(0.0332)
2,3,4,7,8-PeCDF	(0.0365)	0.107
1,2,3,4,7,8-HxCDF	(0.0662)	[0.0742]
1,2,3,6,7,8-HxCDF	(0.0464)	0.0808
2,3,4,6,7,8-HxCDF	(0.0622)	[0.0823]
1,2,3,7,8,9-HxCDF	(0.0825)	(0.0641)
1,2,3,4,6,7,8-HpCDF	(0.0506)	0.164
1,2,3,4,7,8,9-HpCDF	(0.076)	(0.0496)
OCDF	(0.136)	(0.0909)
ITEF TEQ (ND=0; EMPC=0)	0	0.0668
ITEF TEQ (ND=0; EMPC=EMPC)	0	0.0824
ITEF TEQ (ND=DL/2; EMPC=0)	0.0733	0.13
ITEF TEQ (ND=DL/2; EMPC=EMPC)	0.0733	0.14
ITEF TEQ (ND=DL; EMPC=EMPC)	0.147	0.198
Checkcode	631-347-VKM	755-316-CKB
Lab ID	MB1_14604_DF_SDS	A9554_14604_DF_001

() = DL
[] = EMPC

A9554 - TEQ

Project ID: Montgomery County

Sample Summary Part 1



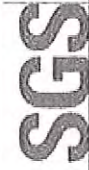
Method TO-9A

Analyte	Method Blank A9554_14604 pg/m3	Goth-PUF-1 pg/m3
2,3,7,8-TCDD	(0.0393)	(0.0363)
1,2,3,7,8-PeCDD	(0.0708)	(0.108)
1,2,3,4,7,8-HxCDD	(0.0512)	(0.0345)
1,2,3,6,7,8-HxCDD	(0.0708)	(0.0446)
1,2,3,7,8,9-HxCDD	(0.0819)	(0.0521)
1,2,3,4,6,7,8-HpCDD	(0.0718)	0.316
OCDD	(0.153)	0.421
2,3,7,8-TCDF	(0.0353)	(0.0368)
1,2,3,7,8-PeCDF	(0.035)	(0.0332)
2,3,4,7,8-PeCDF	(0.0365)	0.107
1,2,3,4,7,8-HxCDF	(0.0662)	[0.0742]
1,2,3,6,7,8-HxCDF	(0.0464)	0.0808
2,3,4,6,7,8-HxCDF	(0.0622)	[0.0823]
1,2,3,7,8,9-HxCDF	(0.0825)	(0.0641)
1,2,3,4,6,7,8-HpCDF	(0.0506)	0.164
1,2,3,4,7,8,9-HpCDF	(0.076)	(0.0496)
OCDF	(0.136)	(0.0909)
WHO-2005 TEQ (ND=0; EMPC=0)	0	0.0451
WHO-2005 TEQ (ND=0; EMPC=EMPC)	0	0.0607
WHO-2005 TEQ (ND=DL/2; EMPC=0)	0.0869	0.135
WHO-2005 TEQ (ND=DL/2; EMPC=EMPC)	0.0869	0.145
WHO-2005 TEQ (ND=DL; EMPC=EMPC)	0.174	0.23
Checkcode	631-347-VKM	755-316-CKB
Lab ID	MB1_14604_DF_SDS	A9554_14604_DF_001

() = DL
[] = EMPC

A9554 - Totals

Project ID: Montgomery County



Sample Summary Part 2

Method TO-9A

Analyte	Method Blank A9554_14604 pg/m3	Goth-PUF-1 pg/m3
Totals		
TCDDs	0	1.86
PeCDDs	0	2.14
HxCDDs	0	1.49
HpCDDs	0	0.316
OCDD	0	0.421
TCDFs	0	2.32
PeCDFs	0	0.943
HxCDFs	0	0.296
HpCDFs	0	0.164
OCDF	0	0
Total PCDD/Fs (ND=0; EMPC=0)	0	9.95
Total PCDD/Fs (ND=0; EMPC=EMPC)	0	11.6
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	1.17	12.2
Total 2378s (ND=0; EMPC=0)	0	1.09
Total 2378s (ND=0.5; EMPC=0)	0.583	1.41
Total 2378s (ND=1; EMPC=0)	1.17	1.74
Total 2378s (ND=0; EMPC=1)	0	1.25
Total 2378s (ND=0.5; EMPC=1)	0.583	1.52
Total 2378s (ND=1; EMPC=1)	1.17	1.8
Checkcode	631-347-VKM	755-316-CKB
Lab ID	MB1_14604_DF_SDS	A9554_14604_DF_001

Total 2378s = Sum of 17 2378-substituted PCDD/PCDF congeners (SARA 313)

() = DL
[] = EMPC
A9554

A9554 - Others
Project ID: Montgomery County

Sample Summary
Part 3



Method TO-9A

Analyte	Method Blank A9554_14604 pg/m3	Goth-PUF-1 pg/m3
Other PCDD/Fs (ND=0, EMPC=0)		
Other TCDD	0	1.86
Other PeCDD	0	2.14
Other HxCDD	0	1.49
Other HpCDD	0	0
Other TCDF	0	2.32
Other PeCDF	0	0.836
Other HxCDF	0	0.215
Other HpCDF	0	0
Other PCDD/Fs (ND=0, EMPC=EMPC)		
Other TCDD	0	2.01
Other PeCDD	0	2.39
Other HxCDD	0	1.49
Other HpCDD	0	0.414
Other TCDF	0	2.7
Other PeCDF	0	0.99
Other HxCDF	0	0.363
Other HpCDF	0	0
Checkcode Lab ID	631-347-VKM MB1_14604_DF_SDS	755-316-CKB A9554_14604_DF_001

() = DL
 [] = EMPC#A9554

A9554 - DLS

Project ID: Montgomery County



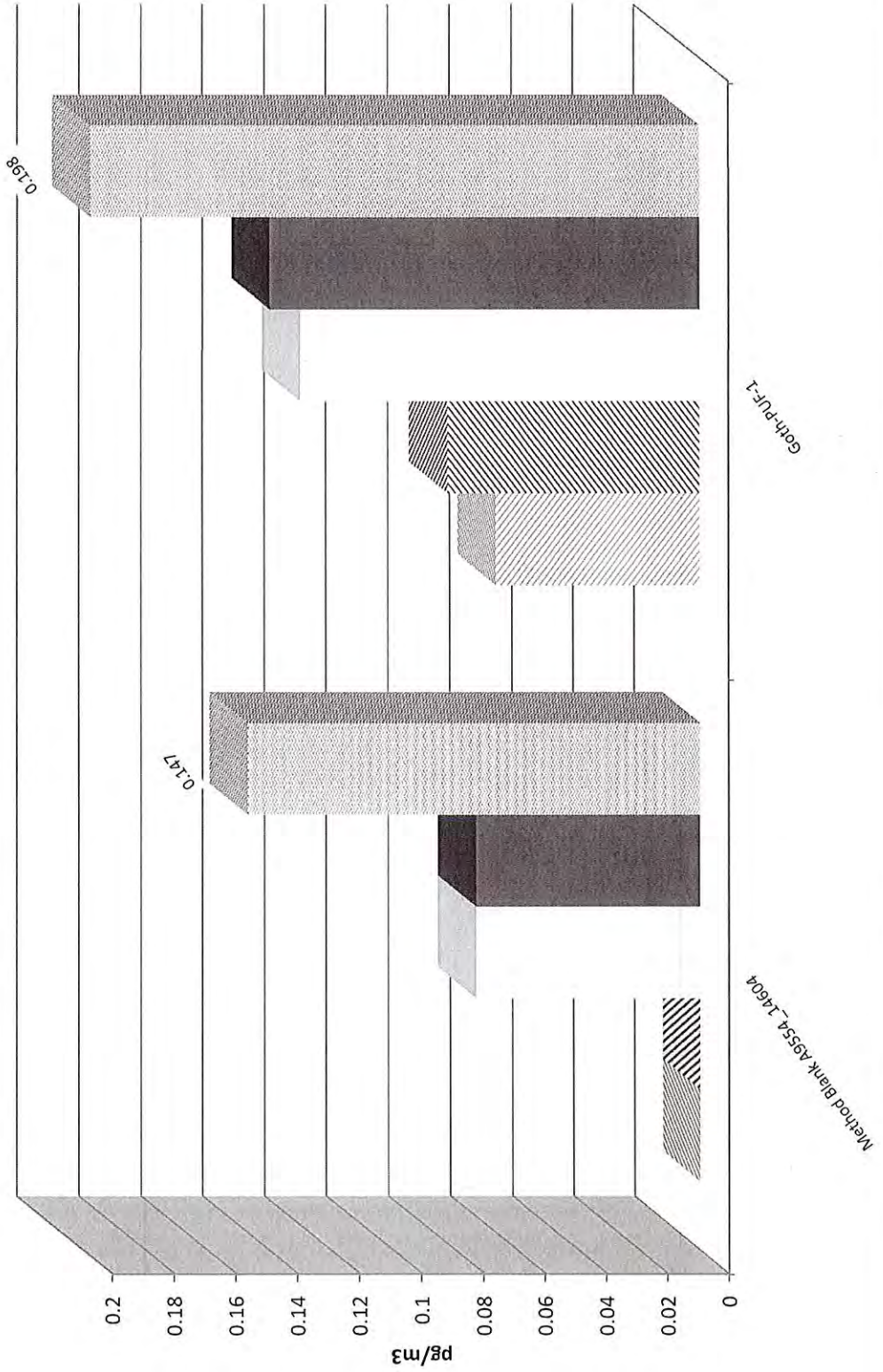
Sample Summary Part 5 (DLS)

Method TO-9A

Analyte	Method Blank A9554_14604 pg/m3	Goth-PUF-1 pg/m3
2,3,7,8-TCDD	0.0393	0.0363
1,2,3,7,8-PeCDD	0.0708	0.108
1,2,3,4,7,8-HxCDD	0.0512	0.0345
1,2,3,6,7,8-HxCDD	0.0708	0.0446
1,2,3,7,8,9-HxCDD	0.0819	0.0521
1,2,3,4,6,7,8-HpCDD	0.0718	0.0706
OCDD	0.153	0.101
2,3,7,8-TCDF	0.0353	0.0368
1,2,3,7,8-PeCDF	0.035	0.0332
2,3,4,7,8-PeCDF	0.0365	0.0374
1,2,3,4,7,8-HxCDF	0.0662	0.0455
1,2,3,6,7,8-HxCDF	0.0464	0.0312
2,3,4,6,7,8-HxCDF	0.0622	0.0509
1,2,3,7,8,9-HxCDF	0.0825	0.0641
1,2,3,4,6,7,8-HpCDF	0.0506	0.0323
1,2,3,4,7,8,9-HpCDF	0.076	0.0496
OCDF	0.136	0.0909
Total TCDD	0.0393	0.0363
Total PeCDD	0.0708	0.108
Total HxCDD	0.0661	0.0427
Total HpCDD	0.0718	0.0706
Total TCDF	0.0353	0.0368
Total PeCDF	0.0355	0.035
Total HxCDF	0.0618	0.0454
Total HpCDF	0.0615	0.0397
Checkcode Lab ID	631-347-VKM MB1_14604_DF_SDS	755-316-CKB A9554_14604_DF_001

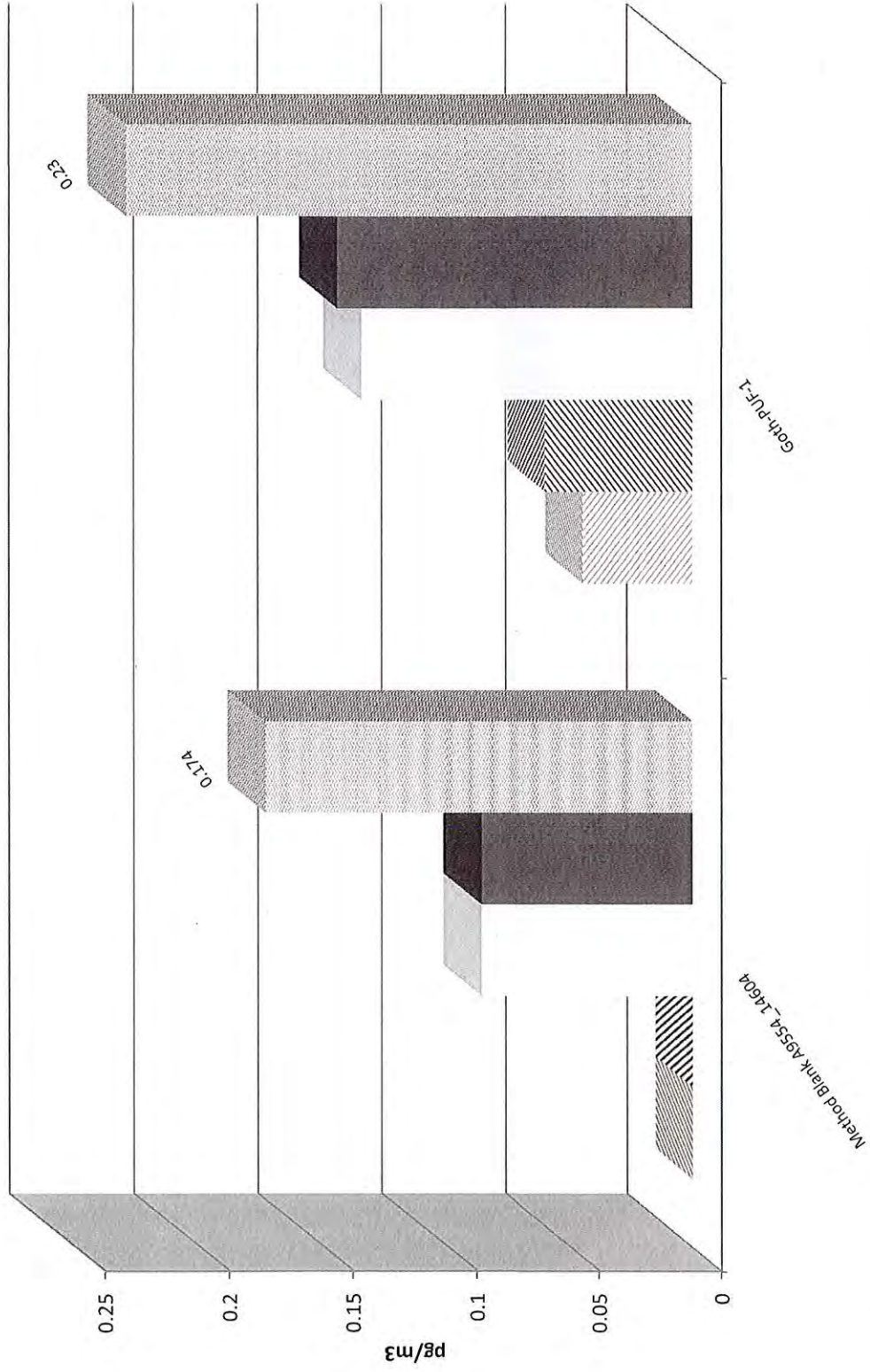
ITEF-TEQ
Project ID: Montgomery County
A9554

- ND=0; EMPC=0
- ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ND=DL; EMPC=EMPC



WHO-2005-TEQ
Project ID: Montgomery County
A9554

- ND=0; EMPC=0
- ▨ ND=0; EMPC=EMPC
- ▩ ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ▨ ND=DL; EMPC=EMPC

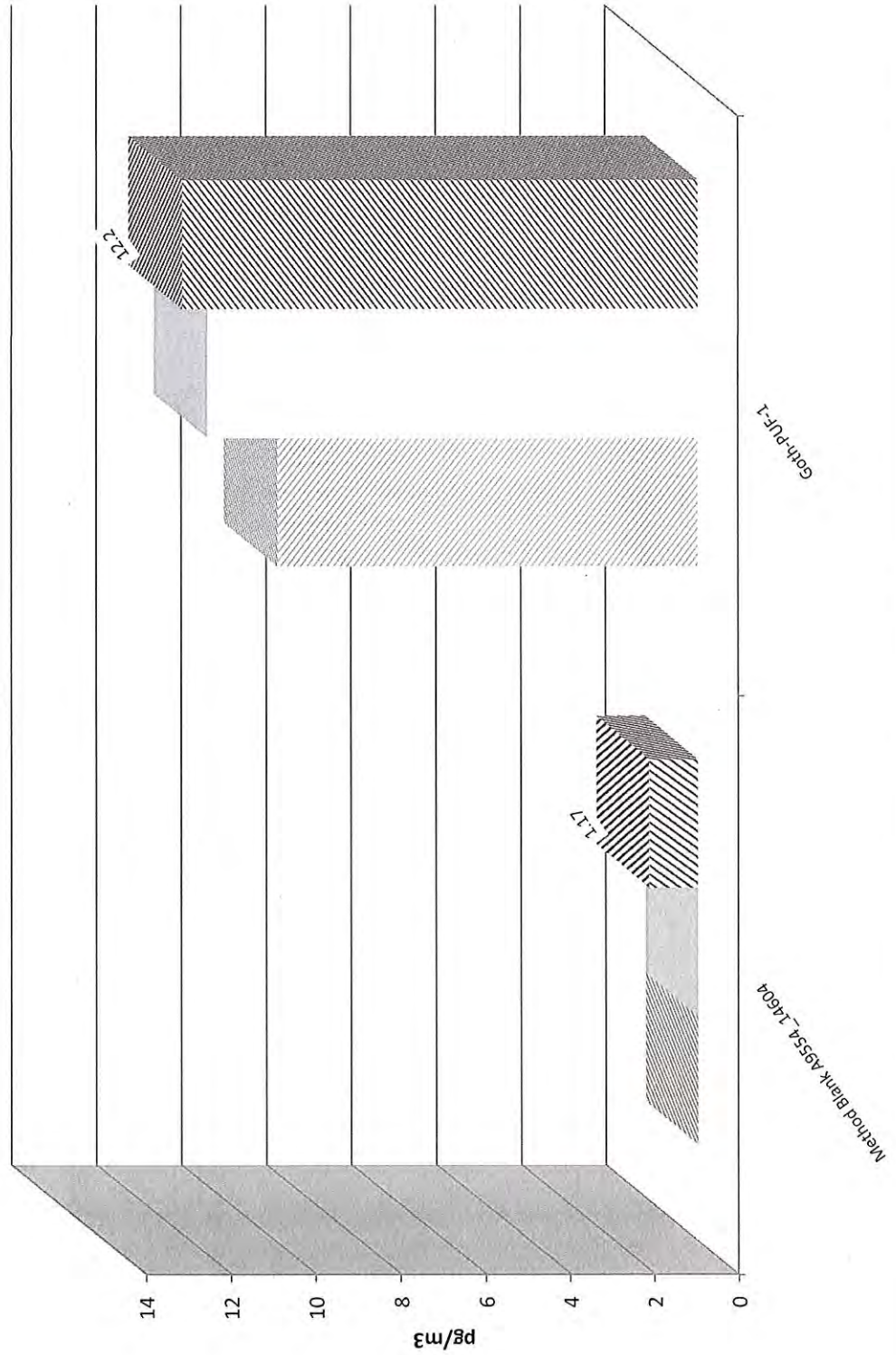


Totals
Project ID: Montgomery County
A9554

✓ Total PCDD/Fs (ND=0; EMPC=0)

✗ Total PCDD/Fs (ND=0; EMPC=EMPC)

✗ Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)

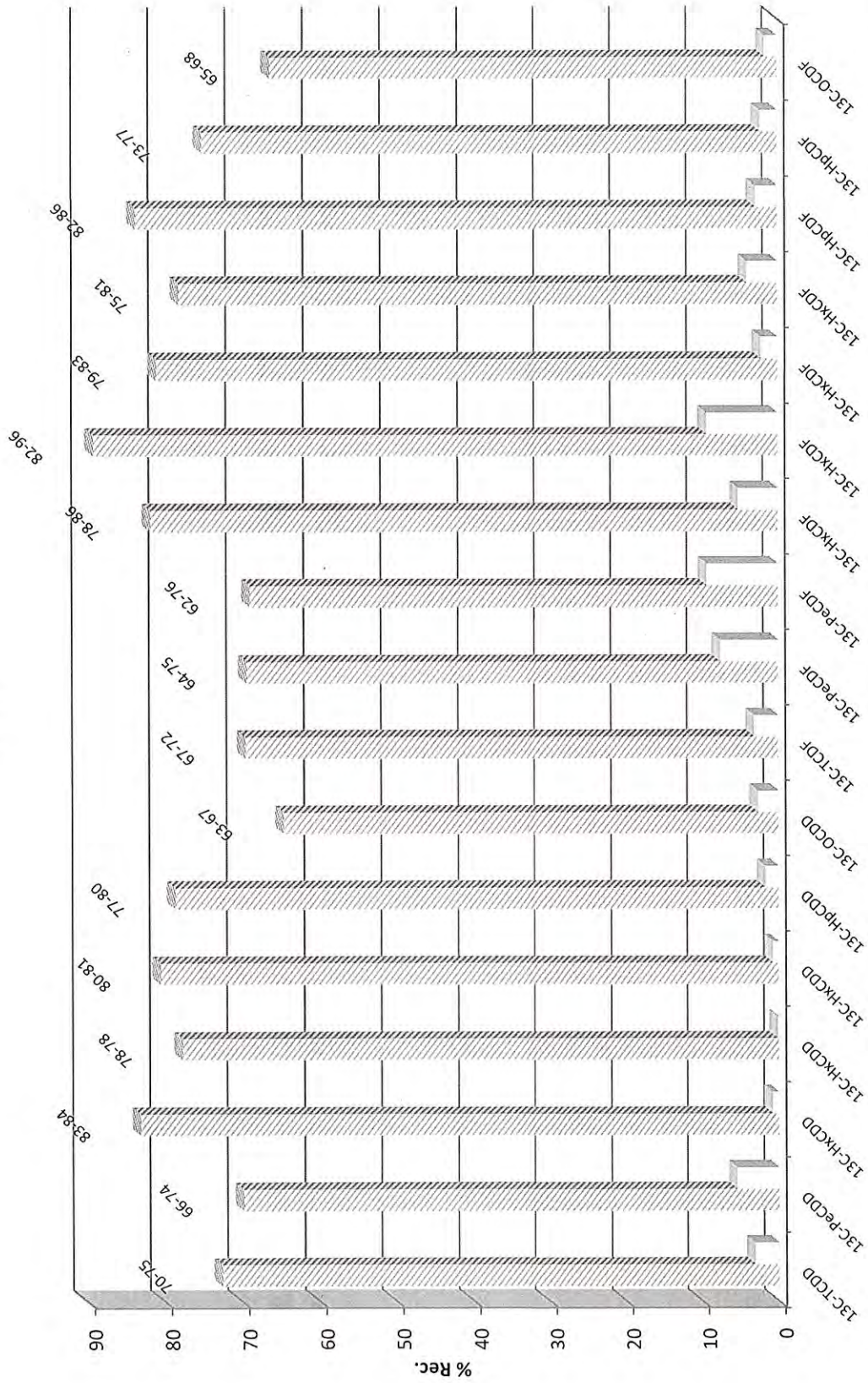


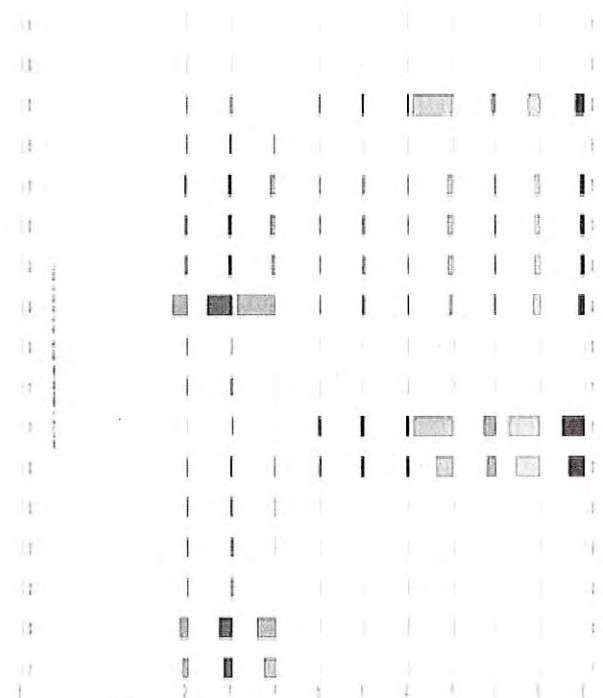
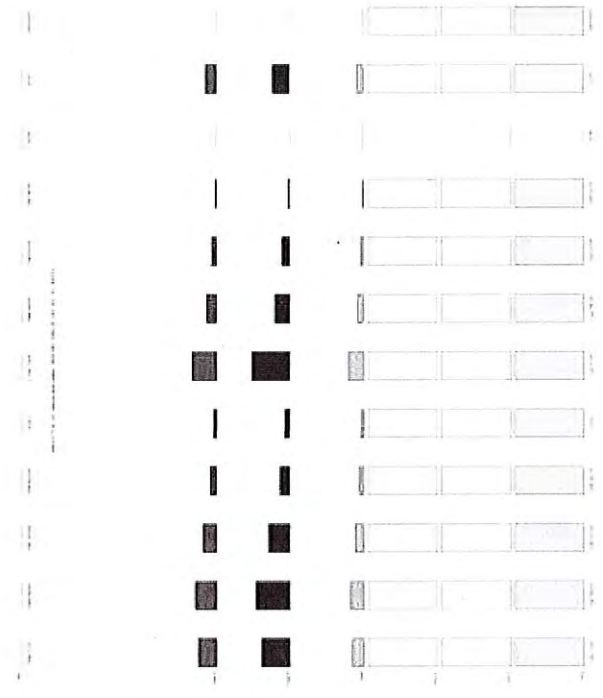
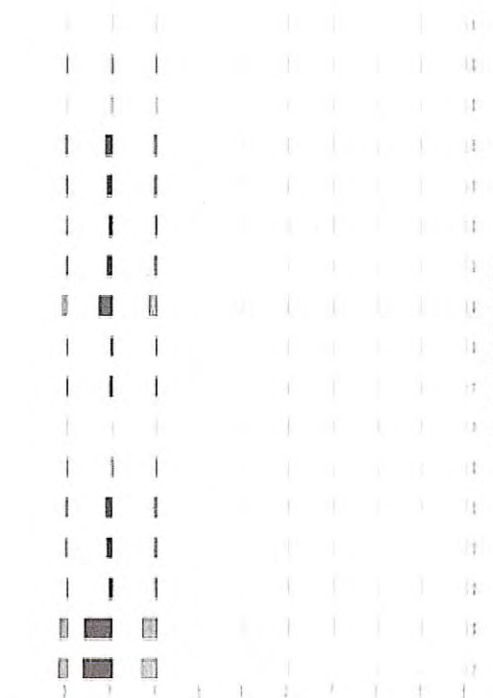
Mean Recoveries of Extraction Standards (N=2)

Project ID: Montgomery County

A9554

Mean Std. Dev.





Sample ID: Goth-PUF-1

Method TO-9A

Client Data		Sample Data		Laboratory Data		Date Received:	
TRC Environmental Corporation Montgomery County 15-Dec-2016		Matrix: Air Weight/Volume: 284.7 m3 Split: 2		Lab Project ID: A9554 Lab Sample ID A9554_14604_DF_001 QC Batch No: 14604 Dilution: -		21-Dec-2016 30-Dec-2016 04-Jan-2017 23:11:52	
Analyte	Conc. (pg/m3)	DL (pg/m3)	EMPC (pg/m3)	Standard	ES Recoveries	Qualifiers	
2378-TCDD	ND	0.0363		ES 2378-TCDD	74.9		
12378-PeCDD	ND	0.108		ES 12378-PeCDD	73.8		
123478-HxCDD	ND	0.0345		ES 123478-HxCDD	82.6		
123678-HxCDD	ND	0.0446		ES 123678-HxCDD	77.9		
123789-HxCDD	ND	0.0521		ES 123789-HxCDD	81.1		
1234678-HpCDD	0.316			ES 1234678-HpCDD	79.9		
OCDD	0.421			ES OCDD	66.6		
2378-TCDF	ND	0.0368		ES 2378-TCDF	67.3		
12378-PeCDF	ND	0.0332		ES 12378-PeCDF	74.8		
23478-PeCDF	0.107			ES 23478-PeCDF	75.6	J	
123478-HxCDF	EMPC		0.0742	ES 123478-HxCDF	85.5	J	
123678-HxCDF	0.0808			ES 123678-HxCDF	95.8	J	
234678-HxCDF	EMPC		0.0823	ES 234678-HxCDF	82.6	J	
123789-HxCDF	ND	0.0641		ES 123789-HxCDF	81		
1234678-HpCDF	0.164			ES 1234678-HpCDF	85.8	J	
1234789-HpCDF	ND	0.0496		ES 1234789-HpCDF	76.7		
OCDF	ND	0.0909		ES OCDF	67.5		
Totals				Standard	SS/AS Recoveries		
Total TCDD	1.86		2.01	SS 37Cl-2378-TCDD	n/a		
Total PeCDD	2.14		2.39	SS 12347-PeCDD	n/a		
Total HxCDD	1.49		1.49	SS 12346-PeCDF	n/a		
Total HpCDD	0.316		0.73	SS 123469-HxCDF	n/a		
				SS 1234689-HpCDF	n/a		
Total TCDF	2.32		2.7	AS 1368-TCDD	61		
Total PeCDF	0.943		1.1	AS 1368-TCDF	63.4		
Total HxCDF	0.296		0.6				
Total HpCDF	0.164		0.164				
Total PCDD/Fs	9.95		11.6				
ITEF TEQs							
TEQ: ND=0	0.0668		0.0824				
TEQ: ND=DL/2	0.13	0.0743	0.14				
TEQ: ND=DL	0.192	0.149	0.198				



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Sample ID: Method Blank A9554_14604

Method TO-9A

Client Data		Sample Data		Laboratory Data		Date Received:	
Name:	TRC Environmental Corporation	Matrix:	Air	Lab Project ID:	A9554	Date Received:	n/a
Project ID:	Montgomery County	Weight/Volume:	300 m3	Lab Sample ID:	MB1_14604_DF_SDS	Date Extracted:	30-Dec-2016
Date Collected:	n/a	Split:	2	QC Batch No:	14604	Date Analyzed:	04-Jan-2017
				Dilution:	-	Time Analyzed:	22:23:29
Analyte	Conc. (pg/m3)	DL (pg/m3)	EMPC (pg/m3)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.0393			ES 2378-TCDD	70.4	
12378-PeCDD	ND	0.0708			ES 12378-PeCDD	66	
123478-HxCDD	ND	0.0512			ES 123478-HxCDD	83.8	
123678-HxCDD	ND	0.0708			ES 123678-HxCDD	77.6	
123789-HxCDD	ND	0.0819			ES 123789-HxCDD	80	
1234678-HpCDD	ND	0.0718			ES 1234678-HpCDD	77.4	
OCDD	ND	0.153			ES OCDD	62.7	
2378-TCDF	ND	0.0353			ES 2378-TCDF	71.8	
12378-PeCDF	ND	0.035			ES 12378-PeCDF	64	
23478-PeCDF	ND	0.0365			ES 23478-PeCDF	62.3	
123478-HxCDF	ND	0.0662			ES 123478-HxCDF	78.1	
123678-HxCDF	ND	0.0464			ES 123678-HxCDF	82.5	
234678-HxCDF	ND	0.0622			ES 234678-HxCDF	79.4	
123789-HxCDF	ND	0.0825			ES 123789-HxCDF	75.2	
1234678-HpCDF	ND	0.0506			ES 1234678-HpCDF	81.6	
1234789-HpCDF	ND	0.076			ES 1234789-HpCDF	73.4	
OCDF	ND	0.136			ES OCDF	65.1	
Totals					Standard	SS/AS Recoveries	
Total TCDD	ND	0.0393	ND		SS 37Cl-2378-TCDD	n/a	
Total PeCDD	ND	0.0708	ND		SS 12347-PeCDD	n/a	
Total HxCDD	ND	0.0661	ND		SS 12346-PeCDF	n/a	
Total HpCDD	ND	0.0718	ND		SS 123469-HxCDF	n/a	
Total TCDF	ND	0.0353	ND		SS 1234689-HpCDF	n/a	
Total PeCDF	ND	0.0355	ND		AS 1368-TCDD	72.6	
Total HxCDF	ND	0.0618	ND		AS 1368-TCDF	71.1	
Total HpCDF	ND	0.0615	ND				
Total PCDD/FS	ND		ND				
ITEF TEQs							
TEQ: ND=0	0	0.0733	0				
TEQ: ND=DL/2	0.0733	0.0733	0.0733				
TEQ: ND=DL	0.147	0.147	0.147				



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Report Created: 06-Jan-2017 11:37 Analyst: TF

SGS North America - 103 For 058

Method: 631-347-SRR

A9554

Project ID: Montgomery County



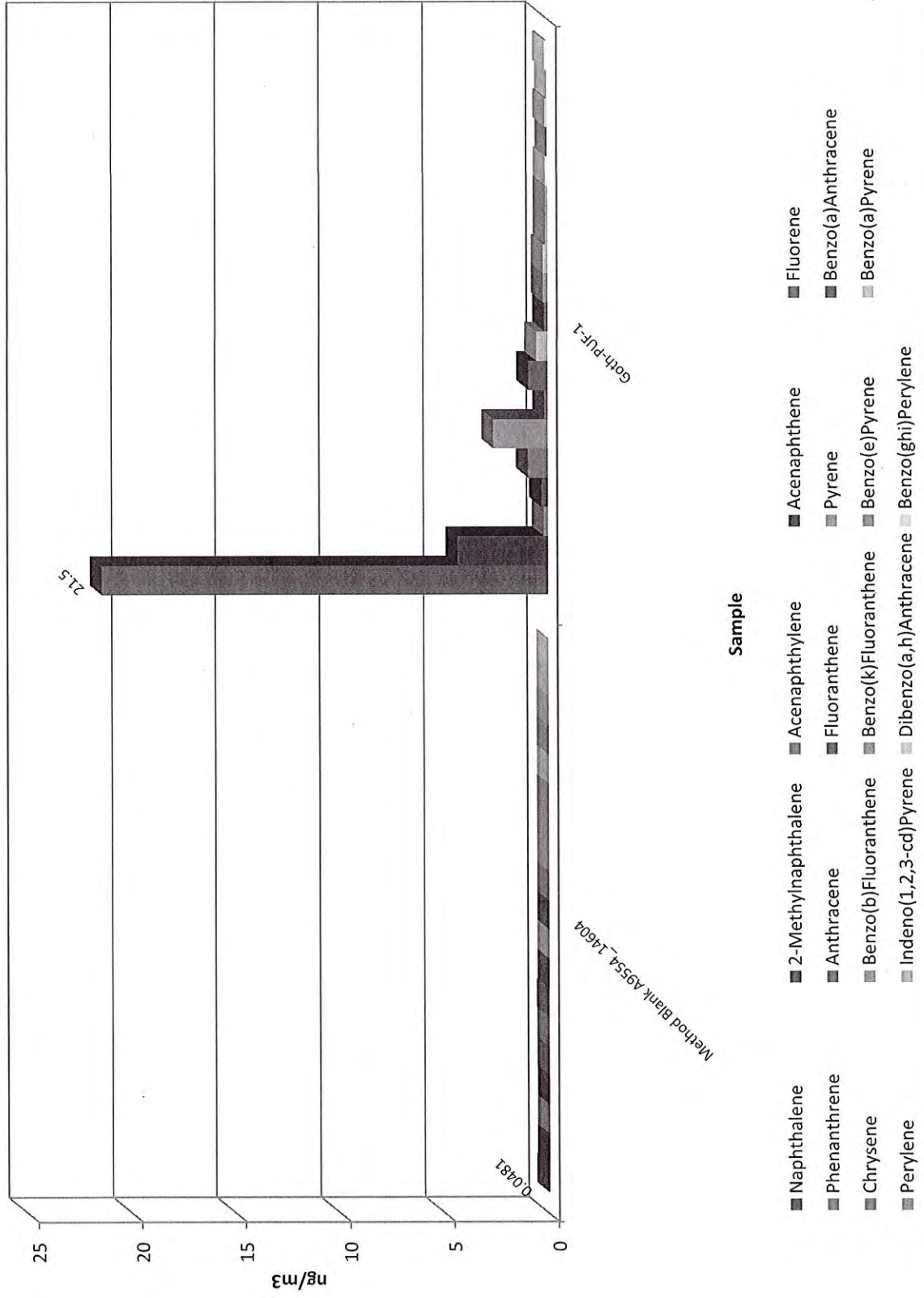
Sample Summary	Method HR-PAH	
Analyte	Method Blank A9554_14604 Conc ng/m3	Goth-PUF-1 Conc ng/m3
Naphthalene	0.0481	21.5
2-Methylnaphthalene	0.0206	4.38
Acenaphthylene	< 0.000871	0.201
Acenaphthene	0.00143	0.33
Fluorene	0.0144	0.966
Phenanthrene	0.0152	2.63
Anthracene	0.0415	0.164
Fluoranthene	0.00295	0.934
Pyrene	0.00497	0.549
Benzo(a)Anthracene	0.00129	0.158
Chrysene	0.00187	0.233
Benzo(b)Fluoranthene	0.00384	0.23
Benzo(k)Fluoranthene	0.00176	0.114
Benzo(e)Pyrene	0.00194	0.12
Benzo(a)Pyrene	0.00234	0.108
Perylene	0.00197	0.0302
Indeno(1,2,3-cd)Pyrene	0.0022	0.116
Dibenzo(a,h)Anthracene	0.00196	0.034
Benzo(ghi)Perylene	0.00297	0.128

950-664-JGV
0.17129

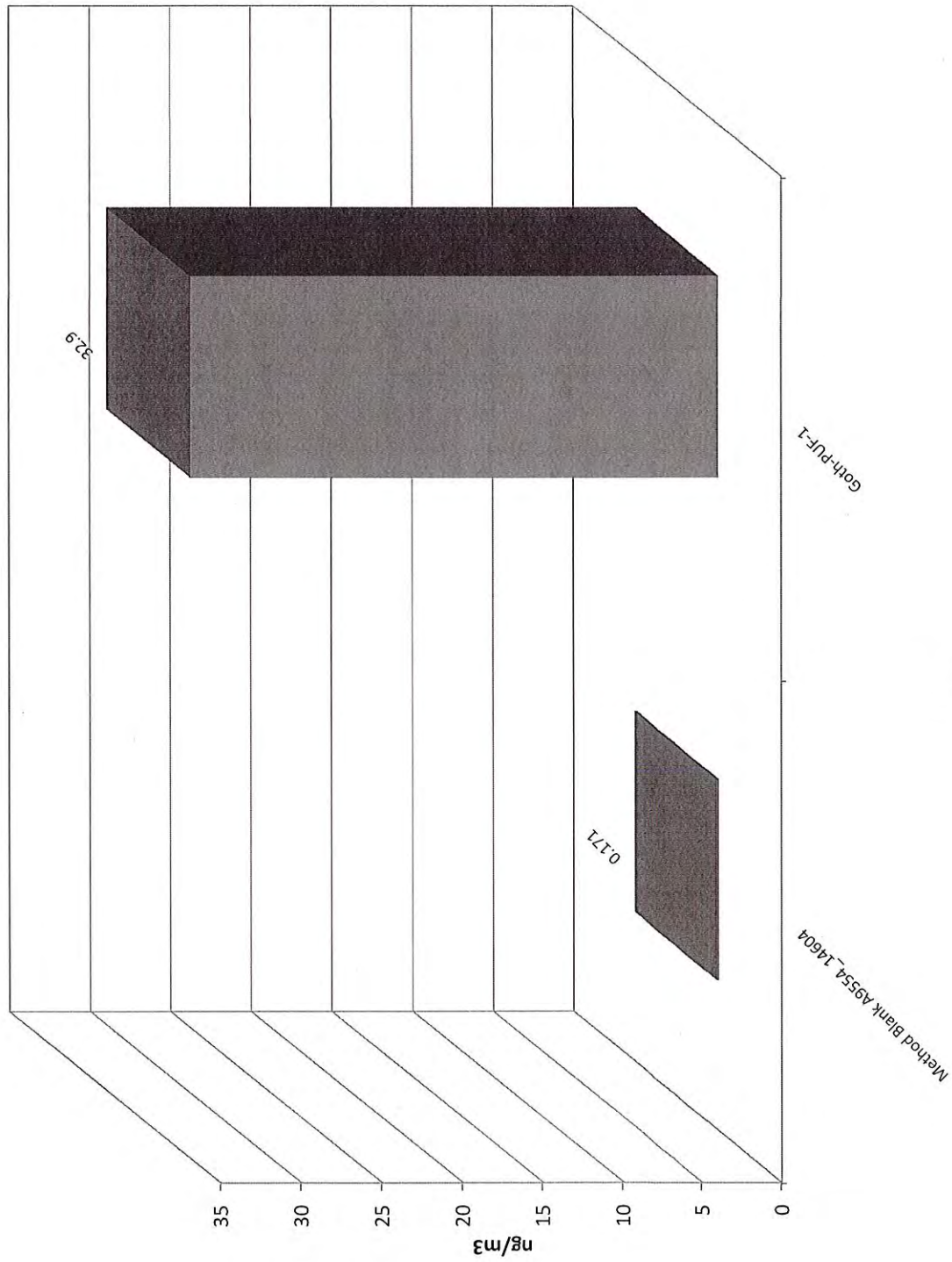
059-038-KSW
32.9252

Checkcode:
Total PAH

A9554 PAHS



A9554 Total PAHs



Sample

Sample ID: Goth-PUF-1 Method HR-PAH

Client Data		Sample Data		Laboratory Data	
Name:	TRC Environmental Corporation	Matrix:	Air	Project No.:	A9554
Project ID:	Montgomery County	Weight/Volume:	284.70 m3	Date Received:	21-Dec-16
Date Collected:	15-Dec-16			Date Extracted:	30-Dec-16
				QC Batch No.:	14604
				Date Analyzed:	05-Jan-17

Analyte	Conc.	DL	Qual.	Extraction Standards (ES)	Recovery	Qual.
	ng/m3	ng/m3			%	
Naphthalene	21.5		B E	¹³ C ₆ -Naphthalene	62.4	
2-Methylnaphthalene	4.38		B E	¹³ C ₆ -2-Methylnaphthalene	52.7	
Acenaphthylene	0.201		B	¹³ C ₆ -Acenaphthylene	56.8	
Acenaphthene	0.33		B	¹³ C ₆ -Acenaphthene	52	
Fluorene	0.966		B	¹³ C ₆ -Fluorene	51.8	
Phenanthrene	2.63		B E	¹³ C ₆ -Phenanthrene	43.6	
Anthracene	0.164		B	¹³ C ₆ -Anthracene	42.4	
Fluoranthene	0.934		B	¹³ C ₆ -Fluoranthene	54.5	
Pyrene	0.549		B	¹³ C ₃ -Pyrene	63.4	
Benzo(a)Anthracene	0.158		B	¹³ C ₆ -Benzo(a)Anthracene	51.5	
Chrysene	0.233		B	¹³ C ₆ -Chrysene	54	h
Benzo(b)Fluoranthene	0.23		B	¹³ C ₆ -Benzo(b)Fluoranthene	4.33	h
Benzo(k)Fluoranthene	0.114		B	¹³ C ₆ -Benzo(k)Fluoranthene	4.31	h
Benzo(e)Pyrene	0.12		B	¹³ C ₄ -Benzo(e)Pyrene	4.61	h
Benzo(a)Pyrene	0.108		B	¹³ C ₄ -Benzo(a)Pyrene	4.66	h
Perylene	0.0302		B	d ₁₂ -Perylene	5.12	h
Indeno(1,2,3-cd)Pyrene	0.116		B	¹³ C ₆ -Indeno(1,2,3-cd)Pyrene	5.19	h
Dibenzo(a,h)Anthracene	0.034		B	¹³ C ₆ -Dibenzo(a,h)Anthracene	3.87	h
Benzo(ghi)Perylene	0.128		B	¹³ C ₁₂ -Benzo(ghi)Perylene	4.54	h

Alternate Standard (AS)	
d ₁₀ -Anthracene	36.6
Sampling Standards (SS)	
d ₁₀ -Fluorene	-
d ₁₄ -Terphenyl	-



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Sample ID: Method Blank A9554_14604 **Method HR-PAH**

<u>Client Data</u>		<u>Sample Data</u>		<u>Laboratory Data</u>	
Name:	TRC Environmental Corporation	Matrix:	Air	Project No.:	A9554
Project ID:	Montgomery County	Weight/Volume:	300.00 m3	Date Received:	n/a
Date Collected:	n/a			Sample ID:	MS1_14604_PAH_SDS
				Date Extracted:	30-Dec-16
				QC Batch No.:	14604
				Date Analyzed:	05-Jan-17

Analyte	Conc.	DL	Qual.	Extraction Standards (ES)	Recovery	Qual.
	ng/m3	ng/m3			%	
Naphthalene	0.0481			¹³ C ₆ -Naphthalene	57	
2-Methylnaphthalene	0.0206			¹³ C ₆ -2-Methylnaphthalene	53.3	
Acenaphthylene	ND	0.000871		¹³ C ₆ -Acenaphthylene	52	
Acenaphthene	0.00143		J	¹³ C ₆ -Acenaphthene	51.7	
Fluorene	0.0144			¹³ C ₆ -Fluorene	50.2	
Phenanthrene	0.0152			¹³ C ₆ -Phenanthrene	44	
Anthracene	0.0415			¹³ C ₆ -Anthracene	41.6	
Fluoranthene	0.00295		J	¹³ C ₆ -Fluoranthene	57.5	
Pyrene	0.00497		J	¹³ C ₃ -Pyrene	61.5	
Benzo(a)Anthracene	0.00129		J	¹³ C ₆ -Benzo(a)Anthracene	54.5	
Chrysene	0.00187		J	¹³ C ₆ -Chrysene	60.2	
Benzo(b)Fluoranthene	0.00384		J	¹³ C ₆ -Benzo(b)Fluoranthene	66.4	
Benzo(k)Fluoranthene	0.00176		J	¹³ C ₆ -Benzo(k)Fluoranthene	67.5	
Benzo(e)Pyrene	0.00194		J	¹³ C ₄ -Benzo(e)Pyrene	72	
Benzo(a)Pyrene	0.00234		J	¹³ C ₄ -Benzo(a)Pyrene	58.7	
Perylene	0.00197		J	d ₁₂ -Perylene	51.4	
Indeno(1,2,3-cd)Pyrene	0.0022		J	¹³ C ₆ -Indeno(1,2,3-cd)Pyrene	45.9	
Dibenzo(a,h)Anthracene	0.00196		J	¹³ C ₆ -Dibenzo(a,h)Anthracene	54.2	
Benzo(ghi)Perylene	0.00297		J	¹³ C ₁₂ -Benzo(ghi)Perylene	62.9	

<u>Alternate Standard (AS)</u>		<u>Sampling Standards (SS)</u>	
d ₁₀ -Anthracene	41	d ₁₀ -Fluorene	-
		d ₁₄ -Terphenyl	-

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