

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

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North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-87718-1

Client Project/Site: Ford LTP Livonia MI

Revision: 1

For:

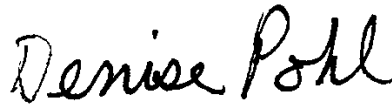
ARCADIS U.S., Inc.

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Attn: Kristoffer Hinskey



Authorized for release by:

12/18/2017 2:20:14 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Job ID: 240-87718-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI

Report Number: 240-87718-1

Revised

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Revision 12/18/2017: Client provided incorrect list of compounds initially and report revised to provide a different list of compounds for volatile organic compounds (GCMS) 8260B.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 11/9/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 1.8° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-57_110717 (240-87718-1), DUP-01_110817 (240-87718-2), MW-65_110817 (240-87718-3) and MW-58_110817 (240-87718-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/15/2017.

Chloromethane failed the recovery criteria low for the MS of sample 240-87717-1 in batch 240-303598. Chloromethane failed the recovery criteria low for the MSD of sample 240-87717-1 in batch 240-303598. Several analytes exceeded the RPD limit.

Samples DUP-01_110817 (240-87718-2)[2.5X] and MW-65_110817 (240-87718-3)[2X] required dilution prior to analysis. The reporting

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Job ID: 240-87718-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-57_110717 (240-87718-1), DUP-01_110817 (240-87718-2), MW-65_110817 (240-87718-3) and MW-58_110817 (240-87718-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/14/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-87718-1	MW-57_110717	Water	11/07/17 17:05	11/09/17 09:30
240-87718-2	DUP-01_110817	Water	11/08/17 00:00	11/09/17 09:30
240-87718-3	MW-65_110817	Water	11/08/17 09:02	11/09/17 09:30
240-87718-4	MW-58_110817	Water	11/08/17 10:17	11/09/17 09:30

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Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-57_110717

Lab Sample ID: 240-87718-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	4.9		2.0	0.24	ug/L	1			8260B SIM	Total/NA

Client Sample ID: DUP-01_110817

Lab Sample ID: 240-87718-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	4.1		2.0	0.24	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	3.8		2.5	0.75	ug/L	2.5			8260B	Total/NA
Vinyl chloride	58		2.5	1.1	ug/L	2.5			8260B	Total/NA

Client Sample ID: MW-65_110817

Lab Sample ID: 240-87718-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	3.8		2.0	0.24	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	3.9		2.0	0.60	ug/L	2			8260B	Total/NA
Vinyl chloride	48		2.0	0.90	ug/L	2			8260B	Total/NA

Client Sample ID: MW-58_110817

Lab Sample ID: 240-87718-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	8.0		2.0	0.24	ug/L	1			8260B SIM	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-57_110717

Lab Sample ID: 240-87718-1

Date Collected: 11/07/17 17:05

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.9		2.0	0.24	ug/L			11/14/17 19:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		63 - 125					11/14/17 19:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			11/15/17 21:15	1
Benzene	1.0	U	1.0	0.28	ug/L			11/15/17 21:15	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			11/15/17 21:15	1
Bromoform	1.0	U	1.0	0.43	ug/L			11/15/17 21:15	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/17 21:15	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			11/15/17 21:15	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			11/15/17 21:15	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			11/15/17 21:15	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 21:15	1
Chloroethane	1.0	U	1.0	0.41	ug/L			11/15/17 21:15	1
Chloroform	1.0	U	1.0	0.31	ug/L			11/15/17 21:15	1
Chloromethane	1.0	U	1.0	0.43	ug/L			11/15/17 21:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 21:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			11/15/17 21:15	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			11/15/17 21:15	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			11/15/17 21:15	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			11/15/17 21:15	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			11/15/17 21:15	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/17 21:15	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 21:15	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			11/15/17 21:15	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 21:15	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			11/15/17 21:15	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			11/15/17 21:15	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			11/15/17 21:15	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			11/15/17 21:15	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			11/15/17 21:15	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			11/15/17 21:15	1
2-Hexanone	10	U	10	1.2	ug/L			11/15/17 21:15	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			11/15/17 21:15	1
Methyl acetate	10	U	10	1.4	ug/L			11/15/17 21:15	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			11/15/17 21:15	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			11/15/17 21:15	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			11/15/17 21:15	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			11/15/17 21:15	1
m-Xylene & p-Xylene	2.0	U	2.0	0.24	ug/L			11/15/17 21:15	1
o-Xylene	1.0	U	1.0	0.28	ug/L			11/15/17 21:15	1
Styrene	1.0	U	1.0	0.23	ug/L			11/15/17 21:15	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			11/15/17 21:15	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 21:15	1
Toluene	1.0	U	1.0	0.23	ug/L			11/15/17 21:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			11/15/17 21:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			11/15/17 21:15	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-57_110717

Lab Sample ID: 240-87718-1

Date Collected: 11/07/17 17:05

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			11/15/17 21:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			11/15/17 21:15	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			11/15/17 21:15	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			11/15/17 21:15	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 21:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/17 21:15	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			11/15/17 21:15	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 21:15	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 21:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/17 21:15	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			11/15/17 21:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120					11/15/17 21:15	1
Dibromofluoromethane (Surr)	97		69 - 124					11/15/17 21:15	1
1,2-Dichloroethane-d4 (Surr)	96		61 - 138					11/15/17 21:15	1
Toluene-d8 (Surr)	91		73 - 120					11/15/17 21:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: DUP-01_110817

Lab Sample ID: 240-87718-2

Date Collected: 11/08/17 00:00

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.1		2.0	0.24	ug/L			11/14/17 19:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		63 - 125					11/14/17 19:40	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25	4.4	ug/L			11/15/17 21:37	2.5
Benzene	2.5	U	2.5	0.70	ug/L			11/15/17 21:37	2.5
Bromodichloromethane	2.5	U	2.5	0.75	ug/L			11/15/17 21:37	2.5
Bromoform	2.5	U	2.5	1.1	ug/L			11/15/17 21:37	2.5
Bromomethane	2.5	U	2.5	1.1	ug/L			11/15/17 21:37	2.5
2-Butanone (MEK)	25	U	25	2.6	ug/L			11/15/17 21:37	2.5
Carbon disulfide	13	U	13	0.85	ug/L			11/15/17 21:37	2.5
Carbon tetrachloride	2.5	U	2.5	0.88	ug/L			11/15/17 21:37	2.5
Chlorobenzene	2.5	U	2.5	0.80	ug/L			11/15/17 21:37	2.5
Chloroethane	2.5	U	2.5	1.0	ug/L			11/15/17 21:37	2.5
Chloroform	2.5	U	2.5	0.78	ug/L			11/15/17 21:37	2.5
Chloromethane	2.5	U	2.5	1.1	ug/L			11/15/17 21:37	2.5
cis-1,2-Dichloroethene	3.8		2.5	0.75	ug/L			11/15/17 21:37	2.5
cis-1,3-Dichloropropene	2.5	U	2.5	0.65	ug/L			11/15/17 21:37	2.5
Cyclohexane	2.5	U	2.5	1.1	ug/L			11/15/17 21:37	2.5
Dibromochloromethane	2.5	U	2.5	0.63	ug/L			11/15/17 21:37	2.5
1,2-Dibromo-3-Chloropropane	2.5	U	2.5	1.2	ug/L			11/15/17 21:37	2.5
1,2-Dibromoethane	2.5	U	2.5	0.58	ug/L			11/15/17 21:37	2.5
1,2-Dichlorobenzene	2.5	U	2.5	0.65	ug/L			11/15/17 21:37	2.5
1,3-Dichlorobenzene	2.5	U	2.5	0.80	ug/L			11/15/17 21:37	2.5
1,4-Dichlorobenzene	2.5	U	2.5	0.58	ug/L			11/15/17 21:37	2.5
Dichlorodifluoromethane	2.5	U	2.5	1.3	ug/L			11/15/17 21:37	2.5
1,1-Dichloroethane	2.5	U	2.5	0.63	ug/L			11/15/17 21:37	2.5
1,2-Dichloroethane	2.5	U	2.5	0.75	ug/L			11/15/17 21:37	2.5
1,1-Dichloroethene	2.5	U	2.5	0.68	ug/L			11/15/17 21:37	2.5
1,2-Dichloropropane	2.5	U	2.5	0.75	ug/L			11/15/17 21:37	2.5
Diethyl ether	5.0	U	5.0	0.88	ug/L			11/15/17 21:37	2.5
Ethylbenzene	2.5	U	2.5	0.65	ug/L			11/15/17 21:37	2.5
2-Hexanone	25	U	25	3.1	ug/L			11/15/17 21:37	2.5
Isopropylbenzene	2.5	U	2.5	0.53	ug/L			11/15/17 21:37	2.5
Methyl acetate	25	U	25	3.6	ug/L			11/15/17 21:37	2.5
Methylcyclohexane	2.5	U	2.5	1.1	ug/L			11/15/17 21:37	2.5
Methylene Chloride	13	U	13	1.3	ug/L			11/15/17 21:37	2.5
4-Methyl-2-pentanone (MIBK)	25	U	25	1.8	ug/L			11/15/17 21:37	2.5
Methyl tert-butyl ether	2.5	U	2.5	0.68	ug/L			11/15/17 21:37	2.5
m-Xylene & p-Xylene	5.0	U	5.0	0.60	ug/L			11/15/17 21:37	2.5
o-Xylene	2.5	U	2.5	0.70	ug/L			11/15/17 21:37	2.5
Styrene	2.5	U	2.5	0.58	ug/L			11/15/17 21:37	2.5
1,1,2,2-Tetrachloroethane	2.5	U	2.5	0.80	ug/L			11/15/17 21:37	2.5
Tetrachloroethene	2.5	U	2.5	0.75	ug/L			11/15/17 21:37	2.5
Toluene	2.5	U	2.5	0.58	ug/L			11/15/17 21:37	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.73	ug/L			11/15/17 21:37	2.5
trans-1,3-Dichloropropene	2.5	U	2.5	0.78	ug/L			11/15/17 21:37	2.5

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: DUP-01_110817

Lab Sample ID: 240-87718-2

Date Collected: 11/08/17 00:00

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.5	U	2.5	0.68	ug/L			11/15/17 21:37	2.5
1,1,1-Trichloroethane	2.5	U	2.5	0.58	ug/L			11/15/17 21:37	2.5
1,1,2-Trichloroethane	2.5	U	2.5	0.85	ug/L			11/15/17 21:37	2.5
Trichloroethene	2.5	U	2.5	0.83	ug/L			11/15/17 21:37	2.5
Trichlorofluoromethane	2.5	U	2.5	1.3	ug/L			11/15/17 21:37	2.5
1,1,2-Trichloro-1,2,2-trifluoroethane	2.5	U	2.5	1.0	ug/L			11/15/17 21:37	2.5
1,2,3-Trimethylbenzene	13	U	13	0.55	ug/L			11/15/17 21:37	2.5
1,2,4-Trimethylbenzene	2.5	U	2.5	0.60	ug/L			11/15/17 21:37	2.5
1,3,5-Trimethylbenzene	2.5	U	2.5	0.60	ug/L			11/15/17 21:37	2.5
Vinyl chloride	58		2.5	1.1	ug/L			11/15/17 21:37	2.5
Xylenes, Total	5.0	U	5.0	0.60	ug/L			11/15/17 21:37	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		11/15/17 21:37	2.5
Dibromofluoromethane (Surr)	96		69 - 124		11/15/17 21:37	2.5
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		11/15/17 21:37	2.5
Toluene-d8 (Surr)	92		73 - 120		11/15/17 21:37	2.5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-65_110817

Lab Sample ID: 240-87718-3

Date Collected: 11/08/17 09:02

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.8		2.0	0.24	ug/L			11/14/17 20:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		63 - 125					11/14/17 20:04	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	3.5	ug/L			11/15/17 21:59	2
Benzene	2.0	U	2.0	0.56	ug/L			11/15/17 21:59	2
Bromodichloromethane	2.0	U	2.0	0.60	ug/L			11/15/17 21:59	2
Bromoform	2.0	U	2.0	0.86	ug/L			11/15/17 21:59	2
Bromomethane	2.0	U	2.0	0.84	ug/L			11/15/17 21:59	2
2-Butanone (MEK)	20	U	20	2.0	ug/L			11/15/17 21:59	2
Carbon disulfide	10	U	10	0.68	ug/L			11/15/17 21:59	2
Carbon tetrachloride	2.0	U	2.0	0.70	ug/L			11/15/17 21:59	2
Chlorobenzene	2.0	U	2.0	0.64	ug/L			11/15/17 21:59	2
Chloroethane	2.0	U	2.0	0.82	ug/L			11/15/17 21:59	2
Chloroform	2.0	U	2.0	0.62	ug/L			11/15/17 21:59	2
Chloromethane	2.0	U	2.0	0.86	ug/L			11/15/17 21:59	2
cis-1,2-Dichloroethene	3.9		2.0	0.60	ug/L			11/15/17 21:59	2
cis-1,3-Dichloropropene	2.0	U	2.0	0.52	ug/L			11/15/17 21:59	2
Cyclohexane	2.0	U	2.0	0.88	ug/L			11/15/17 21:59	2
Dibromochloromethane	2.0	U	2.0	0.50	ug/L			11/15/17 21:59	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.94	ug/L			11/15/17 21:59	2
1,2-Dibromoethane	2.0	U	2.0	0.46	ug/L			11/15/17 21:59	2
1,2-Dichlorobenzene	2.0	U	2.0	0.52	ug/L			11/15/17 21:59	2
1,3-Dichlorobenzene	2.0	U	2.0	0.64	ug/L			11/15/17 21:59	2
1,4-Dichlorobenzene	2.0	U	2.0	0.46	ug/L			11/15/17 21:59	2
Dichlorodifluoromethane	2.0	U	2.0	1.0	ug/L			11/15/17 21:59	2
1,1-Dichloroethane	2.0	U	2.0	0.50	ug/L			11/15/17 21:59	2
1,2-Dichloroethane	2.0	U	2.0	0.60	ug/L			11/15/17 21:59	2
1,1-Dichloroethene	2.0	U	2.0	0.54	ug/L			11/15/17 21:59	2
1,2-Dichloropropane	2.0	U	2.0	0.60	ug/L			11/15/17 21:59	2
Diethyl ether	4.0	U	4.0	0.70	ug/L			11/15/17 21:59	2
Ethylbenzene	2.0	U	2.0	0.52	ug/L			11/15/17 21:59	2
2-Hexanone	20	U	20	2.5	ug/L			11/15/17 21:59	2
Isopropylbenzene	2.0	U	2.0	0.42	ug/L			11/15/17 21:59	2
Methyl acetate	20	U	20	2.9	ug/L			11/15/17 21:59	2
Methylcyclohexane	2.0	U	2.0	0.90	ug/L			11/15/17 21:59	2
Methylene Chloride	10	U	10	1.1	ug/L			11/15/17 21:59	2
4-Methyl-2-pentanone (MIBK)	20	U	20	1.4	ug/L			11/15/17 21:59	2
Methyl tert-butyl ether	2.0	U	2.0	0.54	ug/L			11/15/17 21:59	2
m-Xylene & p-Xylene	4.0	U	4.0	0.48	ug/L			11/15/17 21:59	2
o-Xylene	2.0	U	2.0	0.56	ug/L			11/15/17 21:59	2
Styrene	2.0	U	2.0	0.46	ug/L			11/15/17 21:59	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.64	ug/L			11/15/17 21:59	2
Tetrachloroethene	2.0	U	2.0	0.60	ug/L			11/15/17 21:59	2
Toluene	2.0	U	2.0	0.46	ug/L			11/15/17 21:59	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.58	ug/L			11/15/17 21:59	2
trans-1,3-Dichloropropene	2.0	U	2.0	0.62	ug/L			11/15/17 21:59	2

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-65_110817

Lab Sample ID: 240-87718-3

Date Collected: 11/08/17 09:02

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.0	U	2.0	0.54	ug/L			11/15/17 21:59	2
1,1,1-Trichloroethane	2.0	U	2.0	0.46	ug/L			11/15/17 21:59	2
1,1,2-Trichloroethane	2.0	U	2.0	0.68	ug/L			11/15/17 21:59	2
Trichloroethene	2.0	U	2.0	0.66	ug/L			11/15/17 21:59	2
Trichlorofluoromethane	2.0	U	2.0	1.0	ug/L			11/15/17 21:59	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.82	ug/L			11/15/17 21:59	2
1,2,3-Trimethylbenzene	10	U	10	0.44	ug/L			11/15/17 21:59	2
1,2,4-Trimethylbenzene	2.0	U	2.0	0.48	ug/L			11/15/17 21:59	2
1,3,5-Trimethylbenzene	2.0	U	2.0	0.48	ug/L			11/15/17 21:59	2
Vinyl chloride	48		2.0	0.90	ug/L			11/15/17 21:59	2
Xylenes, Total	4.0	U	4.0	0.48	ug/L			11/15/17 21:59	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		69 - 120					11/15/17 21:59	2
Dibromofluoromethane (Surr)	89		69 - 124					11/15/17 21:59	2
1,2-Dichloroethane-d4 (Surr)	92		61 - 138					11/15/17 21:59	2
Toluene-d8 (Surr)	95		73 - 120					11/15/17 21:59	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-58_110817

Lab Sample ID: 240-87718-4

Date Collected: 11/08/17 10:17

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.0		2.0	0.24	ug/L			11/14/17 20:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		63 - 125					11/14/17 20:29	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			11/15/17 22:21	1
Benzene	1.0	U	1.0	0.28	ug/L			11/15/17 22:21	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			11/15/17 22:21	1
Bromoform	1.0	U	1.0	0.43	ug/L			11/15/17 22:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/17 22:21	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			11/15/17 22:21	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			11/15/17 22:21	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			11/15/17 22:21	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 22:21	1
Chloroethane	1.0	U	1.0	0.41	ug/L			11/15/17 22:21	1
Chloroform	1.0	U	1.0	0.31	ug/L			11/15/17 22:21	1
Chloromethane	1.0	U	1.0	0.43	ug/L			11/15/17 22:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 22:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			11/15/17 22:21	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			11/15/17 22:21	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			11/15/17 22:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			11/15/17 22:21	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			11/15/17 22:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/17 22:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 22:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			11/15/17 22:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 22:21	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			11/15/17 22:21	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			11/15/17 22:21	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			11/15/17 22:21	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			11/15/17 22:21	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			11/15/17 22:21	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			11/15/17 22:21	1
2-Hexanone	10	U	10	1.2	ug/L			11/15/17 22:21	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			11/15/17 22:21	1
Methyl acetate	10	U	10	1.4	ug/L			11/15/17 22:21	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			11/15/17 22:21	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			11/15/17 22:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			11/15/17 22:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			11/15/17 22:21	1
m-Xylene & p-Xylene	2.0	U	2.0	0.24	ug/L			11/15/17 22:21	1
o-Xylene	1.0	U	1.0	0.28	ug/L			11/15/17 22:21	1
Styrene	1.0	U	1.0	0.23	ug/L			11/15/17 22:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			11/15/17 22:21	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 22:21	1
Toluene	1.0	U	1.0	0.23	ug/L			11/15/17 22:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			11/15/17 22:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			11/15/17 22:21	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-58_110817

Lab Sample ID: 240-87718-4

Date Collected: 11/08/17 10:17

Matrix: Water

Date Received: 11/09/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			11/15/17 22:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			11/15/17 22:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			11/15/17 22:21	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			11/15/17 22:21	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 22:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/17 22:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			11/15/17 22:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 22:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 22:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/17 22:21	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			11/15/17 22:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		69 - 120					11/15/17 22:21	1
Dibromofluoromethane (Surr)	88		69 - 124					11/15/17 22:21	1
1,2-Dichloroethane-d4 (Surr)	91		61 - 138					11/15/17 22:21	1
Toluene-d8 (Surr)	95		73 - 120					11/15/17 22:21	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	DCA	TOL
		(69-120)	(69-124)	(61-138)	(73-120)
240-87717-H-1 MS	Matrix Spike	98	102	103	100
240-87717-I-1 MSD	Matrix Spike Duplicate	94	87	91	98
240-87718-1	MW-57_110717	90	97	96	91
240-87718-2	DUP-01_110817	93	96	93	92
240-87718-3	MW-65_110817	96	89	92	95
240-87718-4	MW-58_110817	95	88	91	95
LCS 240-303598/4	Lab Control Sample	94	98	99	99
MB 240-303598/6	Method Blank	94	92	94	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(63-125)
240-87716-A-5 MS	Matrix Spike	84
240-87716-A-5 MSD	Matrix Spike Duplicate	86
240-87718-1	MW-57_110717	84
240-87718-2	DUP-01_110817	83
240-87718-3	MW-65_110817	87
240-87718-4	MW-58_110817	84
LCS 240-303367/4	Lab Control Sample	86
MB 240-303367/5	Method Blank	86

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-303598/6

Matrix: Water

Analysis Batch: 303598

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.8	ug/L			11/15/17 13:41	1
Benzene	1.0	U	1.0	0.28	ug/L			11/15/17 13:41	1
Bromodichloromethane	1.0	U	1.0	0.30	ug/L			11/15/17 13:41	1
Bromoform	1.0	U	1.0	0.43	ug/L			11/15/17 13:41	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/17 13:41	1
2-Butanone (MEK)	10	U	10	1.0	ug/L			11/15/17 13:41	1
Carbon disulfide	5.0	U	5.0	0.34	ug/L			11/15/17 13:41	1
Carbon tetrachloride	1.0	U	1.0	0.35	ug/L			11/15/17 13:41	1
Chlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 13:41	1
Chloroethane	1.0	U	1.0	0.41	ug/L			11/15/17 13:41	1
Chloroform	1.0	U	1.0	0.31	ug/L			11/15/17 13:41	1
Chloromethane	1.0	U	1.0	0.43	ug/L			11/15/17 13:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 13:41	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.26	ug/L			11/15/17 13:41	1
Cyclohexane	1.0	U	1.0	0.44	ug/L			11/15/17 13:41	1
Dibromochloromethane	1.0	U	1.0	0.25	ug/L			11/15/17 13:41	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.47	ug/L			11/15/17 13:41	1
1,2-Dibromoethane	1.0	U	1.0	0.23	ug/L			11/15/17 13:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/17 13:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.32	ug/L			11/15/17 13:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.23	ug/L			11/15/17 13:41	1
Dichlorodifluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 13:41	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			11/15/17 13:41	1
1,2-Dichloroethane	1.0	U	1.0	0.30	ug/L			11/15/17 13:41	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			11/15/17 13:41	1
1,2-Dichloropropane	1.0	U	1.0	0.30	ug/L			11/15/17 13:41	1
Diethyl ether	2.0	U	2.0	0.35	ug/L			11/15/17 13:41	1
Ethylbenzene	1.0	U	1.0	0.26	ug/L			11/15/17 13:41	1
2-Hexanone	10	U	10	1.2	ug/L			11/15/17 13:41	1
Isopropylbenzene	1.0	U	1.0	0.21	ug/L			11/15/17 13:41	1
Methyl acetate	10	U	10	1.4	ug/L			11/15/17 13:41	1
Methylcyclohexane	1.0	U	1.0	0.45	ug/L			11/15/17 13:41	1
Methylene Chloride	5.0	U	5.0	0.53	ug/L			11/15/17 13:41	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.71	ug/L			11/15/17 13:41	1
Methyl tert-butyl ether	1.0	U	1.0	0.27	ug/L			11/15/17 13:41	1
m-Xylene & p-Xylene	2.0	U	2.0	0.24	ug/L			11/15/17 13:41	1
o-Xylene	1.0	U	1.0	0.28	ug/L			11/15/17 13:41	1
Styrene	1.0	U	1.0	0.23	ug/L			11/15/17 13:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.32	ug/L			11/15/17 13:41	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			11/15/17 13:41	1
Toluene	1.0	U	1.0	0.23	ug/L			11/15/17 13:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			11/15/17 13:41	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.31	ug/L			11/15/17 13:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.27	ug/L			11/15/17 13:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.23	ug/L			11/15/17 13:41	1
1,1,2-Trichloroethane	1.0	U	1.0	0.34	ug/L			11/15/17 13:41	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			11/15/17 13:41	1
Trichlorofluoromethane	1.0	U	1.0	0.50	ug/L			11/15/17 13:41	1

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-303598/6
Matrix: Water
Analysis Batch: 303598

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/17 13:41	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.22	ug/L			11/15/17 13:41	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 13:41	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.24	ug/L			11/15/17 13:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/17 13:41	1
Xylenes, Total	2.0	U	2.0	0.24	ug/L			11/15/17 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		69 - 120		11/15/17 13:41	1
Dibromofluoromethane (Surr)	92		69 - 124		11/15/17 13:41	1
1,2-Dichloroethane-d4 (Surr)	94		61 - 138		11/15/17 13:41	1
Toluene-d8 (Surr)	94		73 - 120		11/15/17 13:41	1

Lab Sample ID: LCS 240-303598/4
Matrix: Water
Analysis Batch: 303598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	16.8		ug/L		84	35 - 131
Benzene	10.0	9.50		ug/L		95	79 - 120
Bromodichloromethane	10.0	8.86		ug/L		89	79 - 125
Bromoform	10.0	9.14		ug/L		91	55 - 145
Bromomethane	10.0	4.33		ug/L		43	17 - 158
2-Butanone (MEK)	20.0	26.6		ug/L		133	43 - 149
Carbon disulfide	10.0	7.91		ug/L		79	49 - 141
Carbon tetrachloride	10.0	8.57		ug/L		86	55 - 171
Chlorobenzene	10.0	9.17		ug/L		92	80 - 120
Chloroethane	10.0	3.37		ug/L		34	10 - 149
Chloroform	10.0	8.51		ug/L		85	80 - 120
Chloromethane	10.0	8.16		ug/L		82	59 - 124
cis-1,2-Dichloroethene	10.0	8.75		ug/L		87	77 - 120
cis-1,3-Dichloropropene	10.0	11.0		ug/L		110	75 - 120
Cyclohexane	10.0	9.96		ug/L		100	66 - 135
Dibromochloromethane	10.0	8.62		ug/L		86	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	9.00		ug/L		90	50 - 130
1,2-Dibromoethane	10.0	9.69		ug/L		97	80 - 120
1,2-Dichlorobenzene	10.0	7.99		ug/L		80	80 - 120
1,3-Dichlorobenzene	10.0	8.58		ug/L		86	80 - 120
1,4-Dichlorobenzene	10.0	8.39		ug/L		84	80 - 120
Dichlorodifluoromethane	10.0	12.3		ug/L		123	42 - 141
1,1-Dichloroethane	10.0	9.01		ug/L		90	74 - 120
1,2-Dichloroethane	10.0	9.39		ug/L		94	68 - 133
1,1-Dichloroethene	10.0	9.18		ug/L		92	65 - 127
1,2-Dichloropropane	10.0	10.3		ug/L		103	78 - 127
Diethyl ether	10.0	9.54		ug/L		95	72 - 125
Ethylbenzene	10.0	8.92		ug/L		89	80 - 120
2-Hexanone	20.0	23.3		ug/L		117	28 - 169
Isopropylbenzene	10.0	8.27		ug/L		83	80 - 128

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-303598/4
Matrix: Water
Analysis Batch: 303598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	20.0	18.7		ug/L		93	63 - 137
Methylcyclohexane	10.0	9.82		ug/L		98	63 - 141
Methylene Chloride	10.0	7.56		ug/L		76	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	22.3		ug/L		111	53 - 144
Methyl tert-butyl ether	10.0	8.85		ug/L		88	73 - 120
Styrene	10.0	8.54		ug/L		85	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.75		ug/L		97	58 - 122
Tetrachloroethene	10.0	9.45		ug/L		94	80 - 122
Toluene	10.0	8.77		ug/L		88	78 - 120
trans-1,2-Dichloroethene	10.0	9.10		ug/L		91	74 - 124
trans-1,3-Dichloropropene	10.0	8.84		ug/L		88	67 - 120
1,2,4-Trichlorobenzene	10.0	6.90		ug/L		69	34 - 141
1,1,1-Trichloroethane	10.0	8.27		ug/L		83	64 - 147
1,1,2-Trichloroethane	10.0	9.67		ug/L		97	76 - 121
Trichloroethene	10.0	9.64		ug/L		96	76 - 124
Trichlorofluoromethane	10.0	8.16		ug/L		82	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.0		ug/L		110	65 - 144
1,2,4-Trimethylbenzene	10.0	8.35		ug/L		84	80 - 120
1,3,5-Trimethylbenzene	10.0	8.62		ug/L		86	79 - 120
Vinyl chloride	10.0	9.69		ug/L		97	65 - 124
Xylenes, Total	20.0	17.1		ug/L		85	80 - 120
1,4-Dioxane	200	172		ug/L		86	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		69 - 120
Dibromofluoromethane (Surr)	98		69 - 124
1,2-Dichloroethane-d4 (Surr)	99		61 - 138
Toluene-d8 (Surr)	99		73 - 120

Lab Sample ID: 240-87717-H-1 MS
Matrix: Water
Analysis Batch: 303598

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	13.0		ug/L		65	19 - 133
Benzene	1.0	U F2	10.0	9.56		ug/L		96	69 - 127
Bromodichloromethane	1.0	U	10.0	8.59		ug/L		86	75 - 128
Bromoform	1.0	U	10.0	8.65		ug/L		86	61 - 135
Bromomethane	1.0	U	10.0	2.44		ug/L		24	10 - 148
2-Butanone (MEK)	10	U	20.0	17.8		ug/L		89	34 - 153
Carbon disulfide	5.0	U F2	10.0	11.2		ug/L		112	46 - 143
Carbon tetrachloride	1.0	U	10.0	9.65		ug/L		96	53 - 175
Chlorobenzene	1.0	U	10.0	9.22		ug/L		92	76 - 120
Chloroethane	1.0	U F2	10.0	5.40		ug/L		54	10 - 141
Chloroform	1.0	U F2	10.0	9.31		ug/L		93	74 - 125
Chloromethane	1.0	U F1	10.0	3.12	F1	ug/L		31	34 - 127
cis-1,2-Dichloroethene	1.0	U F2	10.0	9.11		ug/L		91	69 - 127

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-87717-H-1 MS

Matrix: Water

Analysis Batch: 303598

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	1.0	U	10.0	9.98		ug/L		100	68 - 120
Cyclohexane	1.0	U	10.0	11.2		ug/L		112	56 - 135
Dibromochloromethane	1.0	U	10.0	8.47		ug/L		85	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.40		ug/L		74	48 - 130
1,2-Dibromoethane	1.0	U	10.0	9.15		ug/L		91	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	8.32		ug/L		83	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	8.66		ug/L		87	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.92		ug/L		89	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	12.6		ug/L		126	45 - 130
1,1-Dichloroethane	1.0	U F2	10.0	9.59		ug/L		96	69 - 122
1,2-Dichloroethane	1.0	U	10.0	9.21		ug/L		92	64 - 138
1,1-Dichloroethene	1.0	U	10.0	9.91		ug/L		99	62 - 127
1,2-Dichloropropane	1.0	U	10.0	10.1		ug/L		101	72 - 131
Diethyl ether	2.0	U F2	10.0	9.41		ug/L		94	65 - 124
Ethylbenzene	1.0	U	10.0	9.02		ug/L		90	72 - 121
2-Hexanone	10	U	20.0	20.5		ug/L		103	21 - 184
Isopropylbenzene	1.0	U	10.0	8.52		ug/L		85	70 - 132
Methyl acetate	10	U	20.0	16.3		ug/L		81	52 - 139
Methylcyclohexane	1.0	U	10.0	10.6		ug/L		106	46 - 139
Methylene Chloride	5.0	U F2	10.0	8.92		ug/L		89	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	19.7		ug/L		98	53 - 147
Methyl tert-butyl ether	1.0	U F2	10.0	9.00		ug/L		90	67 - 125
Styrene	1.0	U	10.0	8.73		ug/L		87	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.80		ug/L		88	51 - 123
Tetrachloroethene	1.0	U	10.0	10.2		ug/L		102	69 - 126
Toluene	1.0	U	10.0	8.93		ug/L		89	69 - 125
trans-1,2-Dichloroethene	1.0	U F2	10.0	9.69		ug/L		97	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	8.37		ug/L		84	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	6.69		ug/L		67	26 - 138
1,1,1-Trichloroethane	1.0	U F2	10.0	9.56		ug/L		96	57 - 156
1,1,2-Trichloroethane	1.0	U	10.0	9.52		ug/L		95	68 - 127
Trichloroethene	1.0	U	10.0	9.93		ug/L		99	68 - 129
Trichlorofluoromethane	1.0	U F2	10.0	9.52		ug/L		95	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	11.6		ug/L		116	58 - 137
1,2,4-Trimethylbenzene	1.0	U	10.0	8.58		ug/L		86	64 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	8.70		ug/L		87	67 - 120
Vinyl chloride	1.6		10.0	13.2		ug/L		115	55 - 123
Xylenes, Total	2.0	U	20.0	17.3		ug/L		86	71 - 122
1,4-Dioxane	50	U	200	110		ug/L		55	13 - 155

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		69 - 120
Dibromofluoromethane (Surr)	102		69 - 124
1,2-Dichloroethane-d4 (Surr)	103		61 - 138
Toluene-d8 (Surr)	100		73 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-87717-I-1 MSD

Matrix: Water

Analysis Batch: 303598

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier		Added	Result				Qualifier		
Acetone	10	U	20.0	13.2		ug/L		66	19 - 133	2	35
Benzene	1.0	U F2	10.0	8.25	F2	ug/L		82	69 - 127	15	10
Bromodichloromethane	1.0	U	10.0	7.68		ug/L		77	75 - 128	11	13
Bromoform	1.0	U	10.0	8.46		ug/L		85	61 - 135	2	13
Bromomethane	1.0	U	10.0	2.27		ug/L		23	10 - 148	7	35
2-Butanone (MEK)	10	U	20.0	18.5		ug/L		93	34 - 153	4	23
Carbon disulfide	5.0	U F2	10.0	7.88	F2	ug/L		79	46 - 143	35	18
Carbon tetrachloride	1.0	U	10.0	8.30		ug/L		83	53 - 175	15	17
Chlorobenzene	1.0	U	10.0	9.13		ug/L		91	76 - 120	1	12
Chloroethane	1.0	U F2	10.0	2.72	F2	ug/L		27	10 - 141	66	35
Chloroform	1.0	U F2	10.0	7.83	F2	ug/L		78	74 - 125	17	11
Chloromethane	1.0	U F1	10.0	2.69	F1	ug/L		27	34 - 127	15	25
cis-1,2-Dichloroethene	1.0	U F2	10.0	7.71	F2	ug/L		77	69 - 127	17	11
cis-1,3-Dichloropropene	1.0	U	10.0	9.57		ug/L		96	68 - 120	4	13
Cyclohexane	1.0	U	10.0	10.1		ug/L		101	56 - 135	10	35
Dibromochloromethane	1.0	U	10.0	8.30		ug/L		83	62 - 131	2	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.48		ug/L		75	48 - 130	1	31
1,2-Dibromoethane	1.0	U	10.0	9.40		ug/L		94	73 - 121	3	12
1,2-Dichlorobenzene	1.0	U	10.0	8.07		ug/L		81	70 - 120	3	19
1,3-Dichlorobenzene	1.0	U	10.0	8.61		ug/L		86	71 - 120	1	18
1,4-Dichlorobenzene	1.0	U	10.0	8.64		ug/L		86	72 - 120	3	17
Dichlorodifluoromethane	1.0	U	10.0	12.0		ug/L		120	45 - 130	5	34
1,1-Dichloroethane	1.0	U F2	10.0	8.06	F2	ug/L		81	69 - 122	17	11
1,2-Dichloroethane	1.0	U	10.0	8.25		ug/L		83	64 - 138	11	11
1,1-Dichloroethene	1.0	U	10.0	8.60		ug/L		86	62 - 127	14	14
1,2-Dichloropropane	1.0	U	10.0	9.00		ug/L		90	72 - 131	12	12
Diethyl ether	2.0	U F2	10.0	8.06	F2	ug/L		81	65 - 124	16	11
Ethylbenzene	1.0	U	10.0	8.86		ug/L		89	72 - 121	2	15
2-Hexanone	10	U	20.0	21.8		ug/L		109	21 - 184	6	12
Isopropylbenzene	1.0	U	10.0	8.52		ug/L		85	70 - 132	0	16
Methyl acetate	10	U	20.0	15.0		ug/L		75	52 - 139	8	14
Methylcyclohexane	1.0	U	10.0	10.0		ug/L		100	46 - 139	5	35
Methylene Chloride	5.0	U F2	10.0	6.93	F2	ug/L		69	52 - 137	25	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.2		ug/L		91	53 - 147	8	16
Methyl tert-butyl ether	1.0	U F2	10.0	7.66	F2	ug/L		77	67 - 125	16	12
Styrene	1.0	U	10.0	8.56		ug/L		86	74 - 125	2	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.48		ug/L		85	51 - 123	4	17
Tetrachloroethene	1.0	U	10.0	10.0		ug/L		100	69 - 126	2	18
Toluene	1.0	U	10.0	8.96		ug/L		90	69 - 125	0	14
trans-1,2-Dichloroethene	1.0	U F2	10.0	8.12	F2	ug/L		81	66 - 131	18	11
trans-1,3-Dichloropropene	1.0	U	10.0	8.55		ug/L		86	59 - 120	2	14
1,2,4-Trichlorobenzene	1.0	U	10.0	7.45		ug/L		74	26 - 138	11	35
1,1,1-Trichloroethane	1.0	U F2	10.0	7.77	F2	ug/L		78	57 - 156	21	13
1,1,2-Trichloroethane	1.0	U	10.0	9.12		ug/L		91	68 - 127	4	11
Trichloroethene	1.0	U	10.0	8.93		ug/L		89	68 - 129	11	12
Trichlorofluoromethane	1.0	U F2	10.0	7.03	F2	ug/L		70	28 - 172	30	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	10.6		ug/L		106	58 - 137	9	35

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-87717-I-1 MSD

Matrix: Water

Analysis Batch: 303598

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene	1.0	U	10.0	8.41		ug/L		84	64 - 120	2	22
1,3,5-Trimethylbenzene	1.0	U	10.0	8.65		ug/L		87	67 - 120	1	25
Vinyl chloride	1.6		10.0	11.7		ug/L		100	55 - 123	12	12
Xylenes, Total	2.0	U	20.0	17.2		ug/L		86	71 - 122	1	14
1,4-Dioxane	50	U	200	145		ug/L		72	13 - 155	28	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		69 - 120
Dibromofluoromethane (Surr)	87		69 - 124
1,2-Dichloroethane-d4 (Surr)	91		61 - 138
Toluene-d8 (Surr)	98		73 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-303367/5

Matrix: Water

Analysis Batch: 303367

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			11/14/17 12:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125		11/14/17 12:37	1

Lab Sample ID: LCS 240-303367/4

Matrix: Water

Analysis Batch: 303367

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.86		ug/L		99	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		63 - 125

Lab Sample ID: 240-87716-A-5 MS

Matrix: Water

Analysis Batch: 303367

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	49		10.0	59.6	4	ug/L		107	52 - 129

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		63 - 125

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-87716-A-5 MSD

Matrix: Water

Analysis Batch: 303367

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	49		10.0	58.3	4	ug/L		94	52 - 129	2	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	86		63 - 125								

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

GC/MS VOA

Analysis Batch: 303367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-87718-1	MW-57_110717	Total/NA	Water	8260B SIM	
240-87718-2	DUP-01_110817	Total/NA	Water	8260B SIM	
240-87718-3	MW-65_110817	Total/NA	Water	8260B SIM	
240-87718-4	MW-58_110817	Total/NA	Water	8260B SIM	
MB 240-303367/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-303367/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-87716-A-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-87716-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 303598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-87718-1	MW-57_110717	Total/NA	Water	8260B	
240-87718-2	DUP-01_110817	Total/NA	Water	8260B	
240-87718-3	MW-65_110817	Total/NA	Water	8260B	
240-87718-4	MW-58_110817	Total/NA	Water	8260B	
MB 240-303598/6	Method Blank	Total/NA	Water	8260B	
LCS 240-303598/4	Lab Control Sample	Total/NA	Water	8260B	
240-87717-H-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-87717-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Client Sample ID: MW-57_110717

Date Collected: 11/07/17 17:05

Date Received: 11/09/17 09:30

Lab Sample ID: 240-87718-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	303598	11/15/17 21:15	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	303367	11/14/17 19:14	SAM	TAL CAN

Client Sample ID: DUP-01_110817

Date Collected: 11/08/17 00:00

Date Received: 11/09/17 09:30

Lab Sample ID: 240-87718-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	303598	11/15/17 21:37	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	303367	11/14/17 19:40	SAM	TAL CAN

Client Sample ID: MW-65_110817

Date Collected: 11/08/17 09:02

Date Received: 11/09/17 09:30

Lab Sample ID: 240-87718-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	303598	11/15/17 21:59	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	303367	11/14/17 20:04	SAM	TAL CAN

Client Sample ID: MW-58_110817

Date Collected: 11/08/17 10:17

Date Received: 11/09/17 09:30

Lab Sample ID: 240-87718-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	303598	11/15/17 22:21	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	303367	11/14/17 20:29	SAM	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI

TestAmerica Job ID: 240-87718-1

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17 *
Florida	NELAP	4	E87225	06-30-18
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-18 *
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17 *
Minnesota	NELAP	5	039-999-348	12-31-17 *
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-18 *
West Virginia DEP	State Program	3	210	12-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

Client Information Client Contact: Kristoffer Hinskey Company: ARCADIS U.S., Inc. Address: 28550 Cabot Drive Suite 500 City: Novi State, Zip: MI, 48377 Phone:		Lab PM: Pohl, Denise E-Mail: denise.pohl@testamericainc.com Phone:		Camer Tracking No(s): 240-46823-20400.2 Page: Page 2 of 10 Job #:	
Due Date Requested: TAT Requested (days): 10 day PO #: MI001318.0002.00002 WO #: E203631- E203728 Cadena #: E203631- E203728 Project #: 24015353 SSW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - A3NaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Sample Identification MW-57-110717 DUP-01-110817 MW-45-110817 MW-58-110817		Sample Date 11/7/17 11/8/17 11/8/17 11/8/17		Sample Time 1705 - 0902 1017	
Sample Type (C=Comp, G=grab) G G G G		Matrix (W=water, S=solid, G=wastewater, BT=tissue, A=air) Water Water Water Water		Field Filtered Sample (Yes or No) N N N N	
Preservation Code: G G G G		Perform MS/MSD (Yes or No) N N N N		Total Number of Containers 10 6 6 2	
Special Instructions/Note: 240-87718 Chain of Custody		Special Instructions/OC Requirements: Special Instructions/OC Requirements:			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Relinquished by: Ashley Rempel / Ashley Rempel Relinquished by: Jenni Heulin Relinquished by:		Date: 11/8/17 1055 Date: 11/8/17 1230		Date/Time: 11/8/17 1055 Date/Time: 11/9-17 930	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks:			

TestAmerica Canton Sample Receipt Form/Narrative

Login #: 87718

Canton Facility

Client ARCADIS Site Name _____

Cooler unpacked by:

POD

Cooler Received on 11-9-17 Opened on 11-9-17

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN# IR-8 (CF +0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #36 (CF +0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # 627 (CF -1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC697954
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes NA Larger than this. DS
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B71250147B 11/09 Yes No
15. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

RECEIVED 2 TB COC = 6 DS 11/09/17

17. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

