

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-95547-1

Client Project/Site: Ford LTP Livonia MI - E203631

For:

ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
5/29/2018 11:57:38 AM

Michael DelMonico, Project Manager I
(330)497-9396
michael.delmonico@testamericainc.com

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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 - E203631

TestAmerica Job ID: 240-95547-1

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.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time
F1	MS and/or MSD Recovery is outside acceptance limits.
E	Result exceeded calibration range.

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 - E203631

TestAmerica Job ID: 240-95547-1

Job ID: 240-95547-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-95547-1

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.

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 5/12/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.9° C, 2.1° C, 2.3° C and 3.9° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-73D_050918 (240-95547-1), DUP-01_050918 (240-95547-2), MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-75D_050918 (240-95547-5), MW-76_051018 (240-95547-6), MW-81_051018 (240-95547-7), MW-82S_051018 (240-95547-8), MW-82D_051018 (240-95547-9), MW-86_051018 (240-95547-10), MW-87_051018 (240-95547-11), MW-77_051118 (240-95547-12), MW-83_051118 (240-95547-13) and TRIP BLANK (240-95547-14) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/23/2018 and 05/24/2018.

1,2,4-Trichlorobenzene was detected in method blank MB 240-328190/6 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

1,4-Dioxane was detected in method blank MB 240-328190/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Job ID: 240-95547-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

1,2-Dichloroethane-d4 (Surr) and Dibromofluoromethane (Surr) failed the surrogate recovery criteria high for MW-86_051018 (240-95547-10).

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria low for MW-74_050918 (240-95547-3) and MW-75S_050918 (240-95547-4). Refer to the QC report for details.

1,1,2-Trichloroethane, 1,1-Dichloroethane and Toluene failed the recovery criteria high for LCS 240-328190/4. 1,1-Dichloroethene and Diethyl ether failed the recovery criteria high for LCS 240-328365/4. Refer to the QC report for details.

2-Hexanone exceeded the RPD limit for the MSD of sample 240-95530-2 in batch 240-328344.

Carbon tetrachloride failed the recovery criteria low for the MS of sample 240-95559-1 in batch 240-328365. 1,1-Dichloroethene, Bromomethane and Chloroethane failed the recovery criteria high.

Carbon tetrachloride and Chloroform failed the recovery criteria low for the MSD of sample 240-95559-1 in batch 240-328365. Bromomethane failed the recovery criteria high. Refer to the QC report for details.

Method(s) 8260B: Surrogate recovery for the following samples were outside control limits: MW-74_050918 (240-95547-3) and MW-75S_050918 (240-95547-4). Re-extraction and/or re-analysis was performed. Both sets of data have been reported because this analysis is within the holding time period.

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 328190 recovered above the upper control limit for Toluene. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: MW-73D_050918 (240-95547-1), DUP-01_050918 (240-95547-2), MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-75D_050918 (240-95547-5), MW-76_051018 (240-95547-6), MW-81_051018 (240-95547-7), MW-82S_051018 (240-95547-8), MW-82D_051018 (240-95547-9), MW-87_051018 (240-95547-11) and TRIP BLANK (240-95547-14).

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 240-328365 recovered above the upper control limit for Vinyl Chloride and 1,1-Dichloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-86_051018 (240-95547-10) and (CCVIS 240-328365/2)

Method(s) 8260B: The laboratory control sample (LCS) for 328190 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-73D_050918 (240-95547-1), DUP-01_050918 (240-95547-2), MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-75D_050918 (240-95547-5), MW-76_051018 (240-95547-6), MW-81_051018 (240-95547-7), MW-82S_051018 (240-95547-8), MW-82D_051018 (240-95547-9), MW-87_051018 (240-95547-11), TRIP BLANK (240-95547-14) and (LCS 240-328190/4).

Method(s) 8260B: The laboratory control sample (LCS) for analytical batch 240-328365 recovered outside control limits for the following analytes: 1,1-Dichloroethene and Ethyl ether. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-86_051018 (240-95547-10) and (LCS 240-328365/4).

Method(s) 8260B: The method blank for preparation batch 328190 contained 1,2,4-Trichlorobenzene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed: MW-73D_050918 (240-95547-1), DUP-01_050918 (240-95547-2), MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-75D_050918 (240-95547-5), MW-76_051018 (240-95547-6), MW-81_051018 (240-95547-7), MW-82S_051018 (240-95547-8), MW-82D_051018 (240-95547-9), MW-87_051018 (240-95547-11) and TRIP BLANK (240-95547-14).

Method(s) 8260B: Surrogate recovery for the following samples were outside control limits: MW-74_050918 (240-95547-3) and MW-75S_050918 (240-95547-4). Re-analysis was performed outside of holding time. Both sets of data have been reported

Method(s) 8260B: Surrogate recovery for the following samples were outside the upper control limit: MW-75S_050918 (240-95547-4) and MW-86_051018 (240-95547-10). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Job ID: 240-95547-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

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-73D_050918 (240-95547-1), DUP-01_050918 (240-95547-2), MW-74_050918 (240-95547-3), MW-75S_050918 (240-95547-4), MW-75D_050918 (240-95547-5), MW-76_051018 (240-95547-6), MW-81_051018 (240-95547-7), MW-82S_051018 (240-95547-8), MW-82D_051018 (240-95547-9), MW-86_051018 (240-95547-10), MW-87_051018 (240-95547-11), MW-77_051118 (240-95547-12) and MW-83_051118 (240-95547-13) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 05/16/2018 and 05/17/2018.

1,4-Dioxane failed the recovery criteria low for the MSD of sample 240-95375-9 in batch 240-327100. Refer to the QC report for details.

No additional 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 - E203631

TestAmerica Job ID: 240-95547-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	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

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Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-95547-1	MW-73D_050918	Water	05/09/18 13:32	05/12/18 10:00
240-95547-2	DUP-01_050918	Water	05/09/18 00:00	05/12/18 10:00
240-95547-3	MW-74_050918	Water	05/09/18 15:02	05/12/18 10:00
240-95547-4	MW-75S_050918	Water	05/09/18 16:12	05/12/18 10:00
240-95547-5	MW-75D_050918	Water	05/09/18 17:22	05/12/18 10:00
240-95547-6	MW-76_051018	Water	05/10/18 09:17	05/12/18 10:00
240-95547-7	MW-81_051018	Water	05/10/18 10:22	05/12/18 10:00
240-95547-8	MW-82S_051018	Water	05/10/18 11:12	05/12/18 10:00
240-95547-9	MW-82D_051018	Water	05/10/18 11:52	05/12/18 10:00
240-95547-10	MW-86_051018	Water	05/10/18 13:32	05/12/18 10:00
240-95547-11	MW-87_051018	Water	05/10/18 14:22	05/12/18 10:00
240-95547-12	MW-77_051118	Water	05/11/18 08:47	05/12/18 10:00
240-95547-13	MW-83_051118	Water	05/11/18 09:57	05/12/18 10:00
240-95547-14	TRIP BLANK	Water	05/09/18 00:00	05/12/18 10:00

Detection Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-73D_050918

Lab Sample ID: 240-95547-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	3.0		2.0	0.24	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.35	J	1.0	0.30	ug/L	1			8260B	Total/NA
Vinyl chloride	0.80	J	1.0	0.45	ug/L	1			8260B	Total/NA

Client Sample ID: DUP-01_050918

Lab Sample ID: 240-95547-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	2.9		2.0	0.24	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.37	J	1.0	0.30	ug/L	1			8260B	Total/NA
Vinyl chloride	0.81	J	1.0	0.45	ug/L	1			8260B	Total/NA

Client Sample ID: MW-74_050918

Lab Sample ID: 240-95547-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.34	J	2.0	0.24	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.96	J	1.0	0.30	ug/L	1			8260B	Total/NA
Vinyl chloride	0.70	J	1.0	0.45	ug/L	1			8260B	Total/NA
cis-1,2-Dichloroethene - RA	1.0	H	1.0	0.30	ug/L	1			8260B	Total/NA
Vinyl chloride - RA	0.84	J H	1.0	0.45	ug/L	1			8260B	Total/NA

Client Sample ID: MW-75S_050918

Lab Sample ID: 240-95547-4

No Detections.

Client Sample ID: MW-75D_050918

Lab Sample ID: 240-95547-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.65	J	2.0	0.24	ug/L	1			8260B SIM	Total/NA
Vinyl chloride	2.4		1.0	0.45	ug/L	1			8260B	Total/NA

Client Sample ID: MW-76_051018

Lab Sample ID: 240-95547-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.6		1.0	0.30	ug/L	1			8260B	Total/NA
trans-1,2-Dichloroethene	0.35	J	1.0	0.29	ug/L	1			8260B	Total/NA

Client Sample ID: MW-81_051018

Lab Sample ID: 240-95547-7

No Detections.

Client Sample ID: MW-82S_051018

Lab Sample ID: 240-95547-8

No Detections.

Client Sample ID: MW-82D_051018

Lab Sample ID: 240-95547-9

No Detections.

Client Sample ID: MW-86_051018

Lab Sample ID: 240-95547-10

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-86_051018 (Continued)

Lab Sample ID: 240-95547-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-87_051018

Lab Sample ID: 240-95547-11

No Detections.

Client Sample ID: MW-77_051118

Lab Sample ID: 240-95547-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.27	J	2.0	0.24	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.54	J	1.0	0.30	ug/L	1		8260B	Total/NA

Client Sample ID: MW-83_051118

Lab Sample ID: 240-95547-13

No Detections.

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-95547-14

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-73D_050918

Lab Sample ID: 240-95547-1

Date Collected: 05/09/18 13:32

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.0		2.0	0.24	ug/L			05/16/18 19:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					05/16/18 19:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.35	J	1.0	0.30	ug/L			05/23/18 17:18	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 17:18	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 17:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 17:18	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 17:18	1
Vinyl chloride	0.80	J	1.0	0.45	ug/L			05/23/18 17:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		69 - 120					05/23/18 17:18	1
Dibromofluoromethane (Surr)	109		69 - 124					05/23/18 17:18	1
1,2-Dichloroethane-d4 (Surr)	108		61 - 138					05/23/18 17:18	1
Toluene-d8 (Surr)	119		73 - 120					05/23/18 17:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: DUP-01_050918

Lab Sample ID: 240-95547-2

Date Collected: 05/09/18 00:00

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.9		2.0	0.24	ug/L			05/16/18 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		63 - 125					05/16/18 19:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.37	J	1.0	0.30	ug/L			05/23/18 17:41	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 17:41	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 17:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 17:41	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 17:41	1
Vinyl chloride	0.81	J	1.0	0.45	ug/L			05/23/18 17:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		69 - 120					05/23/18 17:41	1
Dibromofluoromethane (Surr)	102		69 - 124					05/23/18 17:41	1
1,2-Dichloroethane-d4 (Surr)	108		61 - 138					05/23/18 17:41	1
Toluene-d8 (Surr)	113		73 - 120					05/23/18 17:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-74_050918

Lab Sample ID: 240-95547-3

Date Collected: 05/09/18 15:02

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.34	J	2.0	0.24	ug/L			05/16/18 20:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/16/18 20:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.96	J	1.0	0.30	ug/L			05/23/18 18:04	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 18:04	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 18:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 18:04	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 18:04	1
Vinyl chloride	0.70	J	1.0	0.45	ug/L			05/23/18 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	64	X	69 - 120					05/23/18 18:04	1
Dibromofluoromethane (Surr)	92		69 - 124					05/23/18 18:04	1
1,2-Dichloroethane-d4 (Surr)	90		61 - 138					05/23/18 18:04	1
Toluene-d8 (Surr)	97		73 - 120					05/23/18 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	H	1.0	0.30	ug/L			05/24/18 12:55	1
1,1-Dichloroethene	1.0	U H *	1.0	0.27	ug/L			05/24/18 12:55	1
Tetrachloroethene	1.0	U H	1.0	0.30	ug/L			05/24/18 12:55	1
trans-1,2-Dichloroethene	1.0	U H	1.0	0.29	ug/L			05/24/18 12:55	1
Trichloroethene	1.0	U H	1.0	0.33	ug/L			05/24/18 12:55	1
Vinyl chloride	0.84	J H	1.0	0.45	ug/L			05/24/18 12:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		69 - 120					05/24/18 12:55	1
Dibromofluoromethane (Surr)	109		69 - 124					05/24/18 12:55	1
1,2-Dichloroethane-d4 (Surr)	109		61 - 138					05/24/18 12:55	1
Toluene-d8 (Surr)	95		73 - 120					05/24/18 12:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-75S_050918

Lab Sample ID: 240-95547-4

Date Collected: 05/09/18 16:12

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/16/18 20:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		63 - 125					05/16/18 20:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 18:27	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 18:27	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 18:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 18:27	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 18:27	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 18:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66	X	69 - 120					05/23/18 18:27	1
Dibromofluoromethane (Surr)	92		69 - 124					05/23/18 18:27	1
1,2-Dichloroethane-d4 (Surr)	96		61 - 138					05/23/18 18:27	1
Toluene-d8 (Surr)	96		73 - 120					05/23/18 18:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U H	1.0	0.30	ug/L			05/24/18 13:17	1
1,1-Dichloroethene	1.0	U H *	1.0	0.27	ug/L			05/24/18 13:17	1
Tetrachloroethene	1.0	U H	1.0	0.30	ug/L			05/24/18 13:17	1
trans-1,2-Dichloroethene	1.0	U H	1.0	0.29	ug/L			05/24/18 13:17	1
Trichloroethene	1.0	U H	1.0	0.33	ug/L			05/24/18 13:17	1
Vinyl chloride	1.0	U H	1.0	0.45	ug/L			05/24/18 13:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		69 - 120					05/24/18 13:17	1
Dibromofluoromethane (Surr)	137	X	69 - 124					05/24/18 13:17	1
1,2-Dichloroethane-d4 (Surr)	137		61 - 138					05/24/18 13:17	1
Toluene-d8 (Surr)	101		73 - 120					05/24/18 13:17	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-75D_050918

Lab Sample ID: 240-95547-5

Date Collected: 05/09/18 17:22

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.65	J	2.0	0.24	ug/L			05/16/18 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125					05/16/18 21:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 18:49	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 18:49	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 18:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 18:49	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 18:49	1
Vinyl chloride	2.4		1.0	0.45	ug/L			05/23/18 18:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		69 - 120					05/23/18 18:49	1
Dibromofluoromethane (Surr)	102		69 - 124					05/23/18 18:49	1
1,2-Dichloroethane-d4 (Surr)	105		61 - 138					05/23/18 18:49	1
Toluene-d8 (Surr)	108		73 - 120					05/23/18 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-76_051018

Lab Sample ID: 240-95547-6

Date Collected: 05/10/18 09:17

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 14:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/17/18 14:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	2.6		1.0	0.30	ug/L			05/23/18 19:12	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 19:12	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 19:12	1
trans-1,2-Dichloroethene	0.35	J	1.0	0.29	ug/L			05/23/18 19:12	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 19:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 19:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		69 - 120					05/23/18 19:12	1
Dibromofluoromethane (Surr)	105		69 - 124					05/23/18 19:12	1
1,2-Dichloroethane-d4 (Surr)	109		61 - 138					05/23/18 19:12	1
Toluene-d8 (Surr)	112		73 - 120					05/23/18 19:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-81_051018

Lab Sample ID: 240-95547-7

Date Collected: 05/10/18 10:22

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/17/18 14:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 19:35	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 19:35	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 19:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 19:35	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 19:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 19:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		69 - 120					05/23/18 19:35	1
Dibromofluoromethane (Surr)	104		69 - 124					05/23/18 19:35	1
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/23/18 19:35	1
Toluene-d8 (Surr)	112		73 - 120					05/23/18 19:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-82S_051018

Lab Sample ID: 240-95547-8

Date Collected: 05/10/18 11:12

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					05/17/18 15:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 19:57	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 19:57	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 19:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 19:57	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 19:57	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 19:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		69 - 120					05/23/18 19:57	1
Dibromofluoromethane (Surr)	108		69 - 124					05/23/18 19:57	1
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/23/18 19:57	1
Toluene-d8 (Surr)	117		73 - 120					05/23/18 19:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-82D_051018

Lab Sample ID: 240-95547-9

Date Collected: 05/10/18 11:52

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 15:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		63 - 125					05/17/18 15:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 20:20	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 20:20	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 20:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 20:20	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 20:20	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 20:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		69 - 120					05/23/18 20:20	1
Dibromofluoromethane (Surr)	107		69 - 124					05/23/18 20:20	1
1,2-Dichloroethane-d4 (Surr)	109		61 - 138					05/23/18 20:20	1
Toluene-d8 (Surr)	115		73 - 120					05/23/18 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-86_051018

Lab Sample ID: 240-95547-10

Date Collected: 05/10/18 13:32

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.24	ug/L			05/17/18 16:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					05/17/18 16:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 13:39	1
1,1-Dichloroethene	1.0	U *	1.0	0.27	ug/L			05/24/18 13:39	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 13:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 13:39	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 13:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 13:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		69 - 120					05/24/18 13:39	1
Dibromofluoromethane (Surr)	145	X	69 - 124					05/24/18 13:39	1
1,2-Dichloroethane-d4 (Surr)	145	X	61 - 138					05/24/18 13:39	1
Toluene-d8 (Surr)	97		73 - 120					05/24/18 13:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-87_051018

Lab Sample ID: 240-95547-11

Date Collected: 05/10/18 14:22

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/17/18 16:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 21:06	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 21:06	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 21:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 21:06	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 21:06	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 21:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		69 - 120					05/23/18 21:06	1
Dibromofluoromethane (Surr)	109		69 - 124					05/23/18 21:06	1
1,2-Dichloroethane-d4 (Surr)	111		61 - 138					05/23/18 21:06	1
Toluene-d8 (Surr)	114		73 - 120					05/23/18 21:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-77_051118

Lab Sample ID: 240-95547-12

Date Collected: 05/11/18 08:47

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.27	J	2.0	0.24	ug/L			05/17/18 17:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		63 - 125					05/17/18 17:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.54	J	1.0	0.30	ug/L			05/24/18 18:23	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 18:23	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 18:23	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 18:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		69 - 120					05/24/18 18:23	1
Dibromofluoromethane (Surr)	99		69 - 124					05/24/18 18:23	1
1,2-Dichloroethane-d4 (Surr)	102		61 - 138					05/24/18 18:23	1
Toluene-d8 (Surr)	92		73 - 120					05/24/18 18:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-83_051118

Lab Sample ID: 240-95547-13

Date Collected: 05/11/18 09:57

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L			05/17/18 17:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					05/17/18 17:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 18:46	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 18:46	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 18:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 18:46	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 18:46	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 18:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		69 - 120					05/24/18 18:46	1
Dibromofluoromethane (Surr)	101		69 - 124					05/24/18 18:46	1
1,2-Dichloroethane-d4 (Surr)	106		61 - 138					05/24/18 18:46	1
Toluene-d8 (Surr)	93		73 - 120					05/24/18 18:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-95547-14

Date Collected: 05/09/18 00:00

Matrix: Water

Date Received: 05/12/18 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 21:28	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 21:28	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 21:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 21:28	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 21:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 21:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		69 - 120		05/23/18 21:28	1
Dibromofluoromethane (Surr)	108		69 - 124		05/23/18 21:28	1
1,2-Dichloroethane-d4 (Surr)	111		61 - 138		05/23/18 21:28	1
Toluene-d8 (Surr)	112		73 - 120		05/23/18 21:28	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (69-120)	DBFM (69-124)	DCA (61-138)	TOL (73-120)
240-95530-A-2 MS	Matrix Spike	94	96	101	99
240-95530-C-2 MSD	Matrix Spike Duplicate	96	96	102	100
240-95546-A-11 MSD	Matrix Spike Duplicate	84	98	109	119
240-95546-E-11 MS	Matrix Spike	85	102	109	115
240-95547-1	MW-73D_050918	80	109	108	119
240-95547-2	DUP-01_050918	73	102	108	113
240-95547-3	MW-74_050918	64 X	92	90	97
240-95547-3 - RA	MW-74_050918	78	109	109	95
240-95547-4	MW-75S_050918	66 X	92	96	96
240-95547-4 - RA	MW-75S_050918	83	137 X	137	101
240-95547-5	MW-75D_050918	72	102	105	108
240-95547-6	MW-76_051018	73	105	109	112
240-95547-7	MW-81_051018	75	104	110	112
240-95547-8	MW-82S_051018	81	108	110	117
240-95547-9	MW-82D_051018	77	107	109	115
240-95547-10	MW-86_051018	79	145 X	145 X	97
240-95547-11	MW-87_051018	74	109	111	114
240-95547-12	MW-77_051118	87	99	102	92
240-95547-13	MW-83_051118	88	101	106	93
240-95547-14	TRIP BLANK	74	108	111	112
240-95559-B-1 MS	Matrix Spike	98	103	100	108
240-95559-B-1 MSD	Matrix Spike Duplicate	93	100	93	104
LCS 240-328190/4	Lab Control Sample	79	99	104	109
LCS 240-328344/4	Lab Control Sample	92	96	95	99
LCS 240-328344/5	Lab Control Sample	87	96	98	93
LCS 240-328365/4	Lab Control Sample	94	98	94	101
MB 240-328190/6	Method Blank	70	100	100	110
MB 240-328344/7	Method Blank	93	97	101	98
MB 240-328365/6	Method Blank	78	106	106	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (63-125)
240-95375-C-9 MS	Matrix Spike	95
240-95375-C-9 MSD	Matrix Spike Duplicate	91
240-95546-D-11 MS	Matrix Spike	94
240-95546-D-11 MSD	Matrix Spike Duplicate	92
240-95547-1	MW-73D_050918	102
240-95547-2	DUP-01_050918	89
240-95547-3	MW-74_050918	94

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Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (63-125)
240-95547-4	MW-75S_050918	96
240-95547-5	MW-75D_050918	93
240-95547-6	MW-76_051018	94
240-95547-7	MW-81_051018	94
240-95547-8	MW-82S_051018	98
240-95547-9	MW-82D_051018	91
240-95547-10	MW-86_051018	95
240-95547-11	MW-87_051018	94
240-95547-12	MW-77_051118	91
240-95547-13	MW-83_051118	95
LCS 240-327100/4	Lab Control Sample	89
LCS 240-327329/4	Lab Control Sample	91
MB 240-327100/5	Method Blank	94
MB 240-327329/5	Method Blank	85

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: MB 240-328190/6

Matrix: Water

Analysis Batch: 328190

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 12:34	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/23/18 12:34	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/23/18 12:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/23/18 12:34	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/23/18 12:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/23/18 12:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		69 - 120		05/23/18 12:34	1
Dibromofluoromethane (Surr)	100		69 - 124		05/23/18 12:34	1
1,2-Dichloroethane-d4 (Surr)	100		61 - 138		05/23/18 12:34	1
Toluene-d8 (Surr)	110		73 - 120		05/23/18 12:34	1

Lab Sample ID: LCS 240-328190/4

Matrix: Water

Analysis Batch: 328190

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	15.9		ug/L		79	35 - 131
Benzene	10.0	11.6		ug/L		116	79 - 120
Bromodichloromethane	10.0	11.3		ug/L		113	79 - 125
Bromoform	10.0	8.96		ug/L		90	55 - 145
Bromomethane	10.0	12.9		ug/L		129	17 - 158
2-Butanone (MEK)	20.0	19.5		ug/L		98	43 - 149
Carbon disulfide	10.0	10.8		ug/L		108	49 - 141
Carbon tetrachloride	10.0	10.6		ug/L		106	55 - 171
Chlorobenzene	10.0	11.1		ug/L		111	80 - 120
Chloroethane	10.0	13.1		ug/L		131	10 - 149
Chloroform	10.0	11.8		ug/L		118	80 - 120
Chloromethane	10.0	10.2		ug/L		102	59 - 124
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	77 - 120
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	75 - 120
Cyclohexane	10.0	12.4		ug/L		124	66 - 135
Dibromochloromethane	10.0	10.9		ug/L		109	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	7.64		ug/L		76	50 - 130
1,2-Dibromoethane	10.0	10.6		ug/L		106	80 - 120
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
Dichlorodifluoromethane	10.0	9.35		ug/L		94	42 - 141
1,1-Dichloroethane	10.0	12.4	*	ug/L		124	74 - 120
1,2-Dichloroethane	10.0	12.6		ug/L		126	68 - 133
1,1-Dichloroethene	10.0	10.3		ug/L		103	65 - 127
1,2-Dichloropropane	10.0	12.6		ug/L		126	78 - 127
Diethyl ether	10.0	11.6		ug/L		116	72 - 125
Ethylbenzene	10.0	10.8		ug/L		108	80 - 120
2-Hexanone	20.0	19.5		ug/L		97	28 - 169
Isopropylbenzene	10.0	9.52		ug/L		95	80 - 128

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: LCS 240-328190/4
Matrix: Water
Analysis Batch: 328190

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	21.3		ug/L		107	63 - 137
Methylcyclohexane	10.0	10.1		ug/L		101	63 - 141
Methylene Chloride	10.0	10.8		ug/L		108	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	19.6		ug/L		98	53 - 144
Methyl tert-butyl ether	10.0	10.2		ug/L		102	73 - 120
Styrene	10.0	9.64		ug/L		96	80 - 121
1,1,2,2-Tetrachloroethane	10.0	11.7		ug/L		117	58 - 122
Tetrachloroethene	10.0	11.0		ug/L		110	80 - 122
Toluene	10.0	12.8	*	ug/L		128	78 - 120
trans-1,2-Dichloroethene	10.0	11.4		ug/L		114	74 - 124
trans-1,3-Dichloropropene	10.0	11.7		ug/L		117	67 - 120
1,2,4-Trichlorobenzene	10.0	8.74		ug/L		87	34 - 141
1,1,1-Trichloroethane	10.0	11.4		ug/L		114	64 - 147
1,1,2-Trichloroethane	10.0	12.6	*	ug/L		126	76 - 121
Trichloroethene	10.0	10.6		ug/L		106	76 - 124
Trichlorofluoromethane	10.0	12.8		ug/L		128	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.4		ug/L		104	65 - 144
1,2,4-Trimethylbenzene	10.0	10.8		ug/L		108	80 - 120
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	79 - 120
Vinyl chloride	10.0	11.3		ug/L		113	65 - 124
Xylenes, Total	20.0	20.6		ug/L		103	80 - 120
1,4-Dioxane	200	168		ug/L		84	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		69 - 120
Dibromofluoromethane (Surr)	99		69 - 124
1,2-Dichloroethane-d4 (Surr)	104		61 - 138
Toluene-d8 (Surr)	109		73 - 120

Lab Sample ID: 240-95546-A-11 MSD
Matrix: Water
Analysis Batch: 328190

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
Acetone	2.7	J	20.0	16.0		ug/L		66	19 - 133	4	35
Benzene	1.0	U	10.0	11.0		ug/L		110	69 - 127	1	10
Bromodichloromethane	1.0	U	10.0	10.7		ug/L		107	75 - 128	3	13
Bromoform	1.0	U	10.0	8.56		ug/L		86	61 - 135	3	13
Bromomethane	1.0	U	10.0	13.5		ug/L		135	10 - 148	2	35
2-Butanone (MEK)	10	U	20.0	19.0		ug/L		95	34 - 153	2	23
Carbon disulfide	5.0	U	10.0	10.5		ug/L		105	46 - 143	1	18
Carbon tetrachloride	1.0	U	10.0	10.0		ug/L		100	53 - 175	4	17
Chlorobenzene	1.0	U	10.0	11.1		ug/L		111	76 - 120	1	12
Chloroethane	1.0	U	10.0	14.1		ug/L		141	10 - 141	1	35
Chloroform	1.0	U	10.0	11.2		ug/L		112	74 - 125	5	11
Chloromethane	1.0	U	10.0	9.02		ug/L		90	34 - 127	9	25
cis-1,2-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	69 - 127	3	11

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95546-A-11 MSD

Matrix: Water

Analysis Batch: 328190

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
cis-1,3-Dichloropropene	1.0	U	10.0	10.3		ug/L		103	68 - 120	2	13
Cyclohexane	1.0	U	10.0	11.4		ug/L		114	56 - 135	12	35
Dibromochloromethane	1.0	U	10.0	10.7		ug/L		107	62 - 131	1	15
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.99		ug/L		90	48 - 130	9	31
1,2-Dibromoethane	1.0	U	10.0	10.7		ug/L		107	73 - 121	2	12
1,2-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	70 - 120	1	19
1,3-Dichlorobenzene	1.0	U	10.0	9.84		ug/L		98	71 - 120	1	18
1,4-Dichlorobenzene	1.0	U	10.0	10.1		ug/L		101	72 - 120	1	17
Dichlorodifluoromethane	1.0	U	10.0	9.69		ug/L		97	45 - 130	0	34
1,1-Dichloroethane	1.0	U *	10.0	11.9		ug/L		119	69 - 122	3	11
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138	2	11
1,1-Dichloroethene	1.0	U	10.0	9.63		ug/L		96	62 - 127	3	14
1,2-Dichloropropane	1.0	U	10.0	11.8		ug/L		118	72 - 131	2	12
Diethyl ether	2.0	U	10.0	11.0		ug/L		110	65 - 124	1	11
Ethylbenzene	1.0	U	10.0	10.4		ug/L		104	72 - 121	2	15
2-Hexanone	10	U	20.0	22.2		ug/L		111	21 - 184	3	12
Isopropylbenzene	1.0	U	10.0	9.02		ug/L		90	70 - 132	2	16
Methyl acetate	10	U	20.0	20.2		ug/L		101	52 - 139	5	14
Methylcyclohexane	1.0	U	10.0	9.36		ug/L		94	46 - 139	11	35
Methylene Chloride	5.0	U	10.0	9.94		ug/L		99	52 - 137	0	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	22.1		ug/L		111	53 - 147	1	16
Methyl tert-butyl ether	1.0	U	10.0	10.1		ug/L		101	67 - 125	1	12
Styrene	1.0	U	10.0	9.44		ug/L		94	74 - 125	1	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	11.9		ug/L		119	51 - 123	1	17
Tetrachloroethene	1.0	U	10.0	11.1		ug/L		111	69 - 126	3	18
Toluene	1.0	U *	10.0	12.5		ug/L		125	69 - 125	2	14
trans-1,2-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	66 - 131	1	11
trans-1,3-Dichloropropene	1.0	U	10.0	11.5		ug/L		115	59 - 120	1	14
1,2,4-Trichlorobenzene	1.0	U	10.0	9.22		ug/L		92	26 - 138	10	35
1,1,1-Trichloroethane	1.0	U	10.0	10.4		ug/L		104	57 - 156	1	13
1,1,2-Trichloroethane	1.0	U *	10.0	12.5		ug/L		125	68 - 127	1	11
Trichloroethene	1.0	U	10.0	10.1		ug/L		101	68 - 129	2	12
Trichlorofluoromethane	1.0	U	10.0	12.9		ug/L		129	28 - 172	2	26
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.50		ug/L		95	58 - 137	9	35
1,2,4-Trimethylbenzene	1.0	U	10.0	10.2		ug/L		102	64 - 120	0	22
1,3,5-Trimethylbenzene	1.0	U	10.0	10.4		ug/L		104	67 - 120	2	25
Vinyl chloride	0.48	J	10.0	12.2		ug/L		117	55 - 123	5	12
Xylenes, Total	2.0	U	20.0	20.5		ug/L		103	71 - 122	4	14
1,4-Dioxane	50	U	200	201		ug/L		100	13 - 155	13	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		69 - 120
Dibromofluoromethane (Surr)	98		69 - 124
1,2-Dichloroethane-d4 (Surr)	109		61 - 138
Toluene-d8 (Surr)	119		73 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95546-E-11 MS

Matrix: Water

Analysis Batch: 328190

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Acetone	2.7	J	20.0	16.6		ug/L		69	19 - 133
Benzene	1.0	U	10.0	11.2		ug/L		112	69 - 127
Bromodichloromethane	1.0	U	10.0	11.0		ug/L		110	75 - 128
Bromoform	1.0	U	10.0	8.32		ug/L		83	61 - 135
Bromomethane	1.0	U	10.0	13.2		ug/L		132	10 - 148
2-Butanone (MEK)	10	U	20.0	19.4		ug/L		97	34 - 153
Carbon disulfide	5.0	U	10.0	10.7		ug/L		107	46 - 143
Carbon tetrachloride	1.0	U	10.0	9.65		ug/L		96	53 - 175
Chlorobenzene	1.0	U	10.0	11.0		ug/L		110	76 - 120
Chloroethane	1.0	U	10.0	13.9		ug/L		139	10 - 141
Chloroform	1.0	U	10.0	11.8		ug/L		118	74 - 125
Chloromethane	1.0	U	10.0	8.25		ug/L		82	34 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	69 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	10.5		ug/L		105	68 - 120
Cyclohexane	1.0	U	10.0	10.2		ug/L		102	56 - 135
Dibromochloromethane	1.0	U	10.0	10.8		ug/L		108	62 - 131
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.24		ug/L		82	48 - 130
1,2-Dibromoethane	1.0	U	10.0	10.6		ug/L		106	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.93		ug/L		99	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	72 - 120
Dichlorodifluoromethane	1.0	U	10.0	9.71		ug/L		97	45 - 130
1,1-Dichloroethane	1.0	U *	10.0	12.2		ug/L		122	69 - 122
1,2-Dichloroethane	1.0	U	10.0	12.1		ug/L		121	64 - 138
1,1-Dichloroethene	1.0	U	10.0	9.38		ug/L		94	62 - 127
1,2-Dichloropropane	1.0	U	10.0	12.0		ug/L		120	72 - 131
Diethyl ether	2.0	U	10.0	11.1		ug/L		111	65 - 124
Ethylbenzene	1.0	U	10.0	10.2		ug/L		102	72 - 121
2-Hexanone	10	U	20.0	21.7		ug/L		108	21 - 184
Isopropylbenzene	1.0	U	10.0	8.81		ug/L		88	70 - 132
Methyl acetate	10	U	20.0	21.3		ug/L		106	52 - 139
Methylcyclohexane	1.0	U	10.0	8.36		ug/L		84	46 - 139
Methylene Chloride	5.0	U	10.0	9.89		ug/L		99	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	22.4		ug/L		112	53 - 147
Methyl tert-butyl ether	1.0	U	10.0	10.2		ug/L		102	67 - 125
Styrene	1.0	U	10.0	9.31		ug/L		93	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	12.0		ug/L		120	51 - 123
Tetrachloroethene	1.0	U	10.0	10.7		ug/L		107	69 - 126
Toluene	1.0	U *	10.0	12.3		ug/L		123	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	10.9		ug/L		109	66 - 131
trans-1,3-Dichloropropene	1.0	U	10.0	11.4		ug/L		114	59 - 120
1,2,4-Trichlorobenzene	1.0	U	10.0	8.30		ug/L		83	26 - 138
1,1,1-Trichloroethane	1.0	U	10.0	10.4		ug/L		104	57 - 156
1,1,2-Trichloroethane	1.0	U *	10.0	12.4		ug/L		124	68 - 127
Trichloroethene	1.0	U	10.0	10.3		ug/L		103	68 - 129
Trichlorofluoromethane	1.0	U	10.0	12.6		ug/L		126	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	8.69		ug/L		87	58 - 137

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95546-E-11 MS

Matrix: Water

Analysis Batch: 328190

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
1,2,4-Trimethylbenzene	1.0	U	10.0	10.1		ug/L		101	64 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	10.2		ug/L		102	67 - 120
Vinyl chloride	0.48	J	10.0	11.6		ug/L		111	55 - 123
Xylenes, Total	2.0	U	20.0	19.8		ug/L		99	71 - 122
1,4-Dioxane	50	U	200	177		ug/L		88	13 - 155

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	85		69 - 120
Dibromofluoromethane (Surr)	102		69 - 124
1,2-Dichloroethane-d4 (Surr)	109		61 - 138
Toluene-d8 (Surr)	115		73 - 120

Lab Sample ID: MB 240-328344/7

Matrix: Water

Analysis Batch: 328344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 12:35	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 12:35	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 12:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 12:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		69 - 120		05/24/18 12:35	1
Dibromofluoromethane (Surr)	97		69 - 124		05/24/18 12:35	1
1,2-Dichloroethane-d4 (Surr)	101		61 - 138		05/24/18 12:35	1
Toluene-d8 (Surr)	98		73 - 120		05/24/18 12:35	1

Lab Sample ID: LCS 240-328344/4

Matrix: Water

Analysis Batch: 328344

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	21.4		ug/L		107	35 - 131
Benzene	10.0	10.5		ug/L		105	79 - 120
Bromodichloromethane	10.0	10.3		ug/L		103	79 - 125
Bromoform	10.0	9.53		ug/L		95	55 - 145
Bromomethane	10.0	10.7		ug/L		107	17 - 158
2-Butanone (MEK)	20.0	22.6		ug/L		113	43 - 149
Carbon disulfide	10.0	10.7		ug/L		107	49 - 141
Carbon tetrachloride	10.0	9.63		ug/L		96	55 - 171
Chlorobenzene	10.0	10.7		ug/L		107	80 - 120
Chloroethane	10.0	11.9		ug/L		119	10 - 149
Chloroform	10.0	10.7		ug/L		107	80 - 120
Chloromethane	10.0	9.95		ug/L		100	59 - 124
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	77 - 120

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: LCS 240-328344/4

Matrix: Water

Analysis Batch: 328344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	10.0	9.17		ug/L		92	75 - 120
Cyclohexane	10.0	10.8		ug/L		108	66 - 135
Dibromochloromethane	10.0	10.3		ug/L		103	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.31		ug/L		83	50 - 130
1,2-Dibromoethane	10.0	10.2		ug/L		102	80 - 120
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120
1,3-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
Dichlorodifluoromethane	10.0	7.83		ug/L		78	42 - 141
1,1-Dichloroethane	10.0	10.6		ug/L		106	74 - 120
1,2-Dichloroethane	10.0	11.3		ug/L		113	68 - 133
1,1-Dichloroethene	10.0	10.8		ug/L		108	65 - 127
1,2-Dichloropropane	10.0	10.8		ug/L		108	78 - 127
Diethyl ether	10.0	11.8		ug/L		118	72 - 125
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
2-Hexanone	20.0	19.7		ug/L		98	28 - 169
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 128
Methyl acetate	20.0	20.8		ug/L		104	63 - 137
Methylcyclohexane	10.0	9.68		ug/L		97	63 - 141
Methylene Chloride	10.0	10.4		ug/L		104	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	18.3		ug/L		91	53 - 144
Methyl tert-butyl ether	10.0	7.39		ug/L		74	73 - 120
Styrene	10.0	10.4		ug/L		104	80 - 121
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	58 - 122
Tetrachloroethene	10.0	10.5		ug/L		105	80 - 122
Toluene	10.0	10.8		ug/L		108	78 - 120
trans-1,2-Dichloroethene	10.0	11.3		ug/L		113	74 - 124
trans-1,3-Dichloropropene	10.0	8.14		ug/L		81	67 - 120
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	34 - 141
1,1,1-Trichloroethane	10.0	9.56		ug/L		96	64 - 147
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	76 - 121
Trichloroethene	10.0	10.0		ug/L		100	76 - 124
Trichlorofluoromethane	10.0	12.3		ug/L		123	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.3		ug/L		113	65 - 144
1,2,4-Trimethylbenzene	10.0	10.0		ug/L		100	80 - 120
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	79 - 120
Vinyl chloride	10.0	10.9		ug/L		109	65 - 124
Xylenes, Total	20.0	20.5		ug/L		103	80 - 120
1,4-Dioxane	200	97.3		ug/L		49	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	95		61 - 138
Toluene-d8 (Surr)	99		73 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: LCS 240-328344/5

Matrix: Water

Analysis Batch: 328344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trimethylbenzene	10.0	10.5		ug/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	98		61 - 138
Toluene-d8 (Surr)	93		73 - 120

Lab Sample ID: 240-95530-A-2 MS

Matrix: Water

Analysis Batch: 328344

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	22.1		ug/L		111	19 - 133
Benzene	1.0	U	10.0	10.6		ug/L		106	69 - 127
2-Butanone (MEK)	10	U	20.0	23.7		ug/L		119	34 - 153
Carbon tetrachloride	1.0	U	10.0	10.0		ug/L		100	53 - 175
Chlorobenzene	1.0	U	10.0	10.6		ug/L		106	76 - 120
Chloroform	1.0	U	10.0	10.7		ug/L		107	74 - 125
Chloromethane	1.0	U	10.0	11.0		ug/L		110	34 - 127
cis-1,3-Dichloropropene	1.0	U	10.0	9.16		ug/L		92	68 - 120
1,2-Dibromoethane	1.0	U	10.0	10.2		ug/L		102	73 - 121
1,2-Dichlorobenzene	1.0	U	10.0	10.2		ug/L		102	70 - 120
1,3-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	71 - 120
1,4-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	72 - 120
1,1-Dichloroethane	1.0	U	10.0	10.6		ug/L		106	69 - 122
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138
1,1-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	62 - 127
1,2-Dichloropropane	1.0	U	10.0	11.1		ug/L		111	72 - 131
Ethylbenzene	1.0	U	10.0	10.4		ug/L		104	72 - 121
2-Hexanone	10	U F2	20.0	19.9		ug/L		100	21 - 184
Methylene Chloride	5.0	U	10.0	10.1		ug/L		101	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	20.0	20.0		ug/L		100	53 - 147
Styrene	1.0	U	10.0	10.3		ug/L		103	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	10.0	10.7		ug/L		107	51 - 123
Tetrachloroethene	1.0	U	10.0	10.8		ug/L		108	69 - 126
Toluene	1.0	U	10.0	10.6		ug/L		106	69 - 125
trans-1,2-Dichloroethene	1.0	U	10.0	11.4		ug/L		114	66 - 131
1,1,1-Trichloroethane	1.0	U	10.0	9.44		ug/L		94	57 - 156
Trichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 129
Trichlorofluoromethane	1.0	U	10.0	12.5		ug/L		125	28 - 172
Vinyl chloride	1.0	U	10.0	11.6		ug/L		116	55 - 123
Xylenes, Total	2.0	U	20.0	20.4		ug/L		102	71 - 122
1,4-Dioxane	50	U	200	97.8		ug/L		49	13 - 155

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		69 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95530-A-2 MS
Matrix: Water
Analysis Batch: 328344

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	101		61 - 138
Toluene-d8 (Surr)	99		73 - 120

Lab Sample ID: 240-95530-C-2 MSD
Matrix: Water
Analysis Batch: 328344

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
Acetone	10	U	20.0	23.9		ug/L		120	19 - 133	8	35
Benzene	1.0	U	10.0	10.7		ug/L		107	69 - 127	1	10
2-Butanone (MEK)	10	U	20.0	25.7		ug/L		129	34 - 153	8	23
Carbon tetrachloride	1.0	U	10.0	9.85		ug/L		98	53 - 175	2	17
Chlorobenzene	1.0	U	10.0	10.9		ug/L		109	76 - 120	3	12
Chloroform	1.0	U	10.0	10.8		ug/L		108	74 - 125	1	11
Chloromethane	1.0	U	10.0	11.1		ug/L		111	34 - 127	1	25
cis-1,3-Dichloropropene	1.0	U	10.0	9.30		ug/L		93	68 - 120	1	13
1,2-Dibromoethane	1.0	U	10.0	11.0		ug/L		110	73 - 121	7	12
1,2-Dichlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 120	1	19
1,3-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	71 - 120	0	18
1,4-Dichlorobenzene	1.0	U	10.0	10.4		ug/L		104	72 - 120	0	17
1,1-Dichloroethane	1.0	U	10.0	10.7		ug/L		107	69 - 122	1	11
1,2-Dichloroethane	1.0	U	10.0	11.8		ug/L		118	64 - 138	0	11
1,1-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	62 - 127	3	14
1,2-Dichloropropane	1.0	U	10.0	10.9		ug/L		109	72 - 131	1	12
Ethylbenzene	1.0	U	10.0	10.7		ug/L		107	72 - 121	3	15
2-Hexanone	10	U F2	20.0	23.2	F2	ug/L		116	21 - 184	15	12
Methylene Chloride	5.0	U	10.0	10.2		ug/L		102	52 - 137	1	12
4-Methyl-2-pentanone (MIBK)	10	U	20.0	21.4		ug/L		107	53 - 147	7	16
Styrene	1.0	U	10.0	10.7		ug/L		107	74 - 125	3	14
1,1,2,2-Tetrachloroethane	1.0	U	10.0	11.1		ug/L		111	51 - 123	4	17
Tetrachloroethene	1.0	U	10.0	11.0		ug/L		110	69 - 126	2	18
Toluene	1.0	U	10.0	11.2		ug/L		112	69 - 125	6	14
trans-1,2-Dichloroethene	1.0	U	10.0	11.5		ug/L		115	66 - 131	1	11
1,1,1-Trichloroethane	1.0	U	10.0	9.60		ug/L		96	57 - 156	2	13
Trichloroethene	1.0	U	10.0	10.4		ug/L		104	68 - 129	0	12
Trichlorofluoromethane	1.0	U	10.0	12.4		ug/L		124	28 - 172	1	26
Vinyl chloride	1.0	U	10.0	11.8		ug/L		118	55 - 123	1	12
Xylenes, Total	2.0	U	20.0	20.9		ug/L		105	71 - 122	2	14
1,4-Dioxane	50	U	200	136		ug/L		68	13 - 155	33	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		69 - 120
Dibromofluoromethane (Surr)	96		69 - 124
1,2-Dichloroethane-d4 (Surr)	102		61 - 138
Toluene-d8 (Surr)	100		73 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: MB 240-328365/6

Matrix: Water

Analysis Batch: 328365

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:12	1
1,1-Dichloroethene	1.0	U	1.0	0.27	ug/L			05/24/18 12:12	1
Tetrachloroethene	1.0	U	1.0	0.30	ug/L			05/24/18 12:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.29	ug/L			05/24/18 12:12	1
Trichloroethene	1.0	U	1.0	0.33	ug/L			05/24/18 12:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/18 12:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		69 - 120		05/24/18 12:12	1
Dibromofluoromethane (Surr)	106		69 - 124		05/24/18 12:12	1
1,2-Dichloroethane-d4 (Surr)	106		61 - 138		05/24/18 12:12	1
Toluene-d8 (Surr)	94		73 - 120		05/24/18 12:12	1

Lab Sample ID: LCS 240-328365/4

Matrix: Water

Analysis Batch: 328365

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	25.0		ug/L		125	35 - 131
Benzene	10.0	10.0		ug/L		100	79 - 120
Bromodichloromethane	10.0	9.70		ug/L		97	79 - 125
Bromoform	10.0	8.61		ug/L		86	55 - 145
Bromomethane	10.0	15.1		ug/L		151	17 - 158
2-Butanone (MEK)	20.0	18.3		ug/L		92	43 - 149
Carbon disulfide	10.0	10.8		ug/L		108	49 - 141
Carbon tetrachloride	10.0	9.91		ug/L		99	55 - 171
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Chloroethane	10.0	11.9		ug/L		119	10 - 149
Chloroform	10.0	10.4		ug/L		104	80 - 120
Chloromethane	10.0	8.84		ug/L		88	59 - 124
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	77 - 120
cis-1,3-Dichloropropene	10.0	8.29		ug/L		83	75 - 120
Cyclohexane	10.0	9.75		ug/L		98	66 - 135
Dibromochloromethane	10.0	9.17		ug/L		92	64 - 129
1,2-Dibromo-3-Chloropropane	10.0	8.14		ug/L		81	50 - 130
1,2-Dibromoethane	10.0	9.76		ug/L		98	80 - 120
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
1,3-Dichlorobenzene	10.0	9.76		ug/L		98	80 - 120
1,4-Dichlorobenzene	10.0	9.82		ug/L		98	80 - 120
Dichlorodifluoromethane	10.0	6.77		ug/L		68	42 - 141
1,1-Dichloroethane	10.0	10.4		ug/L		104	74 - 120
1,2-Dichloroethane	10.0	9.82		ug/L		98	68 - 133
1,1-Dichloroethene	10.0	13.7	*	ug/L		137	65 - 127
1,2-Dichloropropane	10.0	10.7		ug/L		107	78 - 127
Diethyl ether	10.0	13.6	*	ug/L		136	72 - 125
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
2-Hexanone	20.0	16.9		ug/L		85	28 - 169
Isopropylbenzene	10.0	9.87		ug/L		99	80 - 128

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: LCS 240-328365/4
Matrix: Water
Analysis Batch: 328365

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	18.9		ug/L		95	63 - 137
Methylcyclohexane	10.0	8.75		ug/L		87	63 - 141
Methylene Chloride	10.0	11.2		ug/L		112	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	16.8		ug/L		84	53 - 144
Methyl tert-butyl ether	10.0	8.19		ug/L		82	73 - 120
Styrene	10.0	10.5		ug/L		105	80 - 121
1,1,2,2-Tetrachloroethane	10.0	9.71		ug/L		97	58 - 122
Tetrachloroethene	10.0	10.2		ug/L		102	80 - 122
Toluene	10.0	10.5		ug/L		105	78 - 120
trans-1,2-Dichloroethene	10.0	11.1		ug/L		111	74 - 124
trans-1,3-Dichloropropene	10.0	7.60		ug/L		76	67 - 120
1,2,4-Trichlorobenzene	10.0	7.48		ug/L		75	34 - 141
1,1,1-Trichloroethane	10.0	9.79		ug/L		98	64 - 147
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	76 - 121
Trichloroethene	10.0	9.41		ug/L		94	76 - 124
Trichlorofluoromethane	10.0	13.3		ug/L		133	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	12.4		ug/L		124	65 - 144
1,2,4-Trimethylbenzene	10.0	9.52		ug/L		95	80 - 120
1,3,5-Trimethylbenzene	10.0	9.52		ug/L		95	79 - 120
Vinyl chloride	10.0	11.3		ug/L		113	65 - 124
Xylenes, Total	20.0	20.8		ug/L		104	80 - 120
1,4-Dioxane	200	129		ug/L		64	35 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		69 - 120
Dibromofluoromethane (Surr)	98		69 - 124
1,2-Dichloroethane-d4 (Surr)	94		61 - 138
Toluene-d8 (Surr)	101		73 - 120

Lab Sample ID: 240-95559-B-1 MS
Matrix: Water
Analysis Batch: 328365

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	100	U	200	209		ug/L		104	19 - 133
Benzene	10	U	100	97.4		ug/L		97	69 - 127
Bromodichloromethane	10	U	100	94.9		ug/L		95	75 - 128
Bromoform	10	U	100	81.5		ug/L		82	61 - 135
Bromomethane	10	U F1	100	190	F1	ug/L		190	10 - 148
2-Butanone (MEK)	100	U	200	182		ug/L		91	34 - 153
Carbon disulfide	50	U	100	92.8		ug/L		93	46 - 143
Carbon tetrachloride	390	F1	100	432	E F1	ug/L		43	53 - 175
Chlorobenzene	30		100	128		ug/L		99	76 - 120
Chloroethane	10	U F1	100	143	F1	ug/L		143	10 - 141
Chloroform	200	F1	100	275		ug/L		78	74 - 125
Chloromethane	10	U	100	98.4		ug/L		98	34 - 127
cis-1,2-Dichloroethene	10	U	100	101		ug/L		101	69 - 127

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95559-B-1 MS

Matrix: Water

Analysis Batch: 328365

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
cis-1,3-Dichloropropene	10	U	100	75.1		ug/L		75	68 - 120
Cyclohexane	10	U	100	78.3		ug/L		78	56 - 135
Dibromochloromethane	10	U	100	88.0		ug/L		88	62 - 131
1,2-Dibromo-3-Chloropropane	10	U	100	65.0		ug/L		65	48 - 130
1,2-Dibromoethane	10	U	100	94.9		ug/L		95	73 - 121
1,2-Dichlorobenzene	49		100	142		ug/L		93	70 - 120
1,3-Dichlorobenzene	11		100	99.1		ug/L		88	71 - 120
1,4-Dichlorobenzene	41		100	134		ug/L		93	72 - 120
Dichlorodifluoromethane	10	U	100	68.7		ug/L		69	45 - 130
1,1-Dichloroethane	10	U	100	101		ug/L		101	69 - 122
1,2-Dichloroethane	10	U	100	96.2		ug/L		96	64 - 138
1,1-Dichloroethene	10	U F1 *	100	128	F1	ug/L		128	62 - 127
1,2-Dichloropropane	10	U	100	103		ug/L		103	72 - 131
Ethylbenzene	10	U	100	90.7		ug/L		91	72 - 121
2-Hexanone	100	U	200	162		ug/L		81	21 - 184
Isopropylbenzene	10	U	100	80.5		ug/L		81	70 - 132
Methyl acetate	100	U	200	188		ug/L		94	52 - 139
Methylcyclohexane	10	U	100	67.7		ug/L		68	46 - 139
Methylene Chloride	50	U	100	111		ug/L		111	52 - 137
4-Methyl-2-pentanone (MIBK)	100	U	200	162		ug/L		81	53 - 147
Methyl tert-butyl ether	10	U	100	80.5		ug/L		80	67 - 125
Styrene	10	U	100	93.8		ug/L		94	74 - 125
1,1,2,2-Tetrachloroethane	10	U	100	95.0		ug/L		95	51 - 123
Tetrachloroethene	10	U	100	90.3		ug/L		90	69 - 126
Toluene	10	U	100	102		ug/L		102	69 - 125
trans-1,2-Dichloroethene	10	U	100	106		ug/L		106	66 - 131
trans-1,3-Dichloropropene	10	U	100	73.1		ug/L		73	59 - 120
1,2,4-Trichlorobenzene	11		100	57.9		ug/L		47	26 - 138
1,1,1-Trichloroethane	10	U	100	93.4		ug/L		93	57 - 156
1,1,2-Trichloroethane	10	U	100	106		ug/L		106	68 - 127
Trichloroethene	10	U	100	89.1		ug/L		89	68 - 129
Trichlorofluoromethane	10	U	100	139		ug/L		139	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	100	104		ug/L		104	58 - 137
Vinyl chloride	10	U	100	119		ug/L		119	55 - 123
Xylenes, Total	20	U	200	178		ug/L		89	71 - 122

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		69 - 120
Dibromofluoromethane (Surr)	103		69 - 124
1,2-Dichloroethane-d4 (Surr)	100		61 - 138
Toluene-d8 (Surr)	108		73 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95559-B-1 MSD

Matrix: Water

Analysis Batch: 328365

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
Acetone	100	U	200	186		ug/L		93	19 - 133	12	35
Benzene	10	U	100	96.8		ug/L		97	69 - 127	1	10
Bromodichloromethane	10	U	100	91.8		ug/L		92	75 - 128	3	13
Bromoform	10	U	100	78.0		ug/L		78	61 - 135	4	13
Bromomethane	10	U F1	100	151	F1	ug/L		151	10 - 148	23	35
2-Butanone (MEK)	100	U	200	175		ug/L		88	34 - 153	4	23
Carbon disulfide	50	U	100	98.9		ug/L		99	46 - 143	6	18
Carbon tetrachloride	390	F1	100	434	E F1	ug/L		45	53 - 175	1	17
Chlorobenzene	30		100	128		ug/L		98	76 - 120	0	12
Chloroethane	10	U F1	100	119		ug/L		119	10 - 141	19	35
Chloroform	200	F1	100	267	F1	ug/L		70	74 - 125	3	11
Chloromethane	10	U	100	97.0		ug/L		97	34 - 127	1	25
cis-1,2-Dichloroethene	10	U	100	99.7		ug/L		100	69 - 127	1	11
cis-1,3-Dichloropropene	10	U	100	72.0		ug/L		72	68 - 120	4	13
Cyclohexane	10	U	100	92.9		ug/L		93	56 - 135	17	35
Dibromochloromethane	10	U	100	86.1		ug/L		86	62 - 131	2	15
1,2-Dibromo-3-Chloropropane	10	U	100	65.5		ug/L		66	48 - 130	1	31
1,2-Dibromoethane	10	U	100	91.5		ug/L		92	73 - 121	4	12
1,2-Dichlorobenzene	49		100	139		ug/L		90	70 - 120	2	19
1,3-Dichlorobenzene	11		100	101		ug/L		90	71 - 120	2	18
1,4-Dichlorobenzene	41		100	131		ug/L		90	72 - 120	2	17
Dichlorodifluoromethane	10	U	100	67.4		ug/L		67	45 - 130	2	34
1,1-Dichloroethane	10	U	100	99.6		ug/L		100	69 - 122	2	11
1,2-Dichloroethane	10	U	100	92.9		ug/L		93	64 - 138	3	11
1,1-Dichloroethene	10	U F1 *	100	114		ug/L		114	62 - 127	11	14
1,2-Dichloropropane	10	U	100	101		ug/L		101	72 - 131	2	12
Ethylbenzene	10	U	100	96.7		ug/L		97	72 - 121	6	15
2-Hexanone	100	U	200	161		ug/L		80	21 - 184	1	12
Isopropylbenzene	10	U	100	88.2		ug/L		88	70 - 132	9	16
Methyl acetate	100	U	200	181		ug/L		90	52 - 139	4	14
Methylcyclohexane	10	U	100	81.1		ug/L		81	46 - 139	18	35
Methylene Chloride	50	U	100	109		ug/L		109	52 - 137	3	12
4-Methyl-2-pentanone (MIBK)	100	U	200	154		ug/L		77	53 - 147	5	16
Methyl tert-butyl ether	10	U	100	78.1		ug/L		78	67 - 125	3	12
Styrene	10	U	100	93.7		ug/L		94	74 - 125	0	14
1,1,2,2-Tetrachloroethane	10	U	100	93.4		ug/L		93	51 - 123	2	17
Tetrachloroethene	10	U	100	98.6		ug/L		99	69 - 126	9	18
Toluene	10	U	100	104		ug/L		104	69 - 125	2	14
trans-1,2-Dichloroethene	10	U	100	110		ug/L		110	66 - 131	4	11
trans-1,3-Dichloropropene	10	U	100	72.4		ug/L		72	59 - 120	1	14
1,2,4-Trichlorobenzene	11		100	63.2		ug/L		53	26 - 138	9	35
1,1,1-Trichloroethane	10	U	100	97.6		ug/L		98	57 - 156	4	13
1,1,2-Trichloroethane	10	U	100	103		ug/L		103	68 - 127	3	11
Trichloroethene	10	U	100	91.2		ug/L		91	68 - 129	2	12
Trichlorofluoromethane	10	U	100	132		ug/L		132	28 - 172	5	26
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	100	101		ug/L		101	58 - 137	3	35
Vinyl chloride	10	U	100	120		ug/L		120	55 - 123	1	12

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95559-B-1 MSD
Matrix: Water
Analysis Batch: 328365

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
Xylenes, Total	20	U	200	190		ug/L		95	71 - 122	6	14
Surrogate	%Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	93		69 - 120								
Dibromofluoromethane (Surr)	100		69 - 124								
1,2-Dichloroethane-d4 (Surr)	93		61 - 138								
Toluene-d8 (Surr)	104		73 - 120								

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

Lab Sample ID: MB 240-327100/5
Matrix: Water
Analysis Batch: 327100

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			05/16/18 11:31	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 125					05/16/18 11:31	1

Lab Sample ID: LCS 240-327100/4
Matrix: Water
Analysis Batch: 327100

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	9.04		ug/L		90	59 - 131
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	89		63 - 125				

Lab Sample ID: 240-95375-C-9 MS
Matrix: Water
Analysis Batch: 327100

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	71		10.0	76.8	4	ug/L		53	52 - 129
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	95		63 - 125						

Lab Sample ID: 240-95375-C-9 MSD
Matrix: Water
Analysis Batch: 327100

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	71		10.0	75.9	4	ug/L		45	52 - 129	1	13

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

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

Lab Sample ID: 240-95375-C-9 MSD
Matrix: Water
Analysis Batch: 327100

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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		63 - 125

Lab Sample ID: MB 240-327329/5
Matrix: Water
Analysis Batch: 327329

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.24	ug/L	-		05/17/18 13:43	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	85		63 - 125				05/17/18 13:43	1	

Lab Sample ID: LCS 240-327329/4
Matrix: Water
Analysis Batch: 327329

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
1,4-Dioxane	10.0	9.17		ug/L	-	92	59 - 131
Surrogate	LCS	LCS	Limits				
1,2-Dichloroethane-d4 (Surr)	91		63 - 125				

Lab Sample ID: 240-95546-D-11 MS
Matrix: Water
Analysis Batch: 327329

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
1,4-Dioxane	1.2	J	10.0	9.71		ug/L	-	85	52 - 129
Surrogate	MS	MS	Limits						
1,2-Dichloroethane-d4 (Surr)	94		63 - 125						

Lab Sample ID: 240-95546-D-11 MSD
Matrix: Water
Analysis Batch: 327329

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				Limits	RPD	Limit
1,4-Dioxane	1.2	J	10.0	8.80		ug/L	-	76	52 - 129	10	13
Surrogate	MSD	MSD	Limits								
1,2-Dichloroethane-d4 (Surr)	92		63 - 125								

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

GC/MS VOA

Analysis Batch: 327100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95547-1	MW-73D_050918	Total/NA	Water	8260B SIM	
240-95547-2	DUP-01_050918	Total/NA	Water	8260B SIM	
240-95547-3	MW-74_050918	Total/NA	Water	8260B SIM	
240-95547-4	MW-75S_050918	Total/NA	Water	8260B SIM	
240-95547-5	MW-75D_050918	Total/NA	Water	8260B SIM	
MB 240-327100/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-327100/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-95375-C-9 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-95375-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 327329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95547-6	MW-76_051018	Total/NA	Water	8260B SIM	
240-95547-7	MW-81_051018	Total/NA	Water	8260B SIM	
240-95547-8	MW-82S_051018	Total/NA	Water	8260B SIM	
240-95547-9	MW-82D_051018	Total/NA	Water	8260B SIM	
240-95547-10	MW-86_051018	Total/NA	Water	8260B SIM	
240-95547-11	MW-87_051018	Total/NA	Water	8260B SIM	
240-95547-12	MW-77_051118	Total/NA	Water	8260B SIM	
240-95547-13	MW-83_051118	Total/NA	Water	8260B SIM	
MB 240-327329/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-327329/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-95546-D-11 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-95546-D-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 328190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95547-1	MW-73D_050918	Total/NA	Water	8260B	
240-95547-2	DUP-01_050918	Total/NA	Water	8260B	
240-95547-3	MW-74_050918	Total/NA	Water	8260B	
240-95547-4	MW-75S_050918	Total/NA	Water	8260B	
240-95547-5	MW-75D_050918	Total/NA	Water	8260B	
240-95547-6	MW-76_051018	Total/NA	Water	8260B	
240-95547-7	MW-81_051018	Total/NA	Water	8260B	
240-95547-8	MW-82S_051018	Total/NA	Water	8260B	
240-95547-9	MW-82D_051018	Total/NA	Water	8260B	
240-95547-11	MW-87_051018	Total/NA	Water	8260B	
240-95547-14	TRIP BLANK	Total/NA	Water	8260B	
MB 240-328190/6	Method Blank	Total/NA	Water	8260B	
LCS 240-328190/4	Lab Control Sample	Total/NA	Water	8260B	
240-95546-A-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-95546-E-11 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 328344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95547-12	MW-77_051118	Total/NA	Water	8260B	
240-95547-13	MW-83_051118	Total/NA	Water	8260B	
MB 240-328344/7	Method Blank	Total/NA	Water	8260B	
LCS 240-328344/4	Lab Control Sample	Total/NA	Water	8260B	
LCS 240-328344/5	Lab Control Sample	Total/NA	Water	8260B	
240-95530-A-2 MS	Matrix Spike	Total/NA	Water	8260B	

TestAmerica Canton

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

GC/MS VOA (Continued)

Analysis Batch: 328344 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95530-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 328365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-95547-3 - RA	MW-74_050918	Total/NA	Water	8260B	
240-95547-4 - RA	MW-75S_050918	Total/NA	Water	8260B	
240-95547-10	MW-86_051018	Total/NA	Water	8260B	
MB 240-328365/6	Method Blank	Total/NA	Water	8260B	
LCS 240-328365/4	Lab Control Sample	Total/NA	Water	8260B	
240-95559-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-95559-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-73D_050918

Date Collected: 05/09/18 13:32

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 17:18	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327100	05/16/18 19:27	SAM	TAL CAN

Client Sample ID: DUP-01_050918

Date Collected: 05/09/18 00:00

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 17:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327100	05/16/18 19:53	SAM	TAL CAN

Client Sample ID: MW-74_050918

Date Collected: 05/09/18 15:02

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 18:04	LEE	TAL CAN
Total/NA	Analysis	8260B	RA	1	328365	05/24/18 12:55	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327100	05/16/18 20:17	SAM	TAL CAN

Client Sample ID: MW-75S_050918

Date Collected: 05/09/18 16:12

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 18:27	LEE	TAL CAN
Total/NA	Analysis	8260B	RA	1	328365	05/24/18 13:17	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327100	05/16/18 20:42	SAM	TAL CAN

Client Sample ID: MW-75D_050918

Date Collected: 05/09/18 17:22

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 18:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327100	05/16/18 21:07	SAM	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-76_051018

Lab Sample ID: 240-95547-6

Date Collected: 05/10/18 09:17

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 19:12	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 14:33	SAM	TAL CAN

Client Sample ID: MW-81_051018

Lab Sample ID: 240-95547-7

Date Collected: 05/10/18 10:22

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 19:35	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 14:58	SAM	TAL CAN

Client Sample ID: MW-82S_051018

Lab Sample ID: 240-95547-8

Date Collected: 05/10/18 11:12

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 19:57	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 15:23	SAM	TAL CAN

Client Sample ID: MW-82D_051018

Lab Sample ID: 240-95547-9

Date Collected: 05/10/18 11:52

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 20:20	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 15:48	SAM	TAL CAN

Client Sample ID: MW-86_051018

Lab Sample ID: 240-95547-10

Date Collected: 05/10/18 13:32

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328365	05/24/18 13:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 16:13	SAM	TAL CAN

Client Sample ID: MW-87_051018

Lab Sample ID: 240-95547-11

Date Collected: 05/10/18 14:22

Matrix: Water

Date Received: 05/12/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 21:06	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-95547-1

Client Sample ID: MW-87_051018

Date Collected: 05/10/18 14:22

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 16:38	SAM	TAL CAN

Client Sample ID: MW-77_051118

Date Collected: 05/11/18 08:47

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328344	05/24/18 18:23	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 17:03	SAM	TAL CAN

Client Sample ID: MW-83_051118

Date Collected: 05/11/18 09:57

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328344	05/24/18 18:46	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	327329	05/17/18 17:29	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Date Collected: 05/09/18 00:00

Date Received: 05/12/18 10:00

Lab Sample ID: 240-95547-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	328190	05/23/18 21:28	LEE	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 - E203631

TestAmerica Job ID: 240-95547-1

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	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-18 *
Illinois	NELAP	5	200004	07-31-18 *
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
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	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
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	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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

3.8/C3.9 1.8/C1.9
2.2/C2.3 20/C2.1

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Brighton -- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinsky
 Telephone: 248-994-2240
 Email: kristoffer.hinsky@arcadis.com

Site Contact: Angela DeGrandis
 Telephone: 734-320-8065

Lab Contact: Denise Pohl
 Telephone: 330-966-9789

Company Name: Arcadis
 Address: 26550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377

Project Name: Ford LTP
 Project Number: MI001454.0004.00002
 PO # MI001454.0004.00002

Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives							Filtered Sample (Y/N)	Composite C/Grab-C	Analyses								Sample Specific Notes / Special Instructions:	
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnOH			LiOH	Others:	1,1-DCE 8260B	6:1-2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B		1,4-Dioxane 8260B SIM
MW-73D-050918	5/9/18	1332	X													X	X	X	X	X	X	X		
DUP-01-050918	5/9/18	---	X													X	X	X	X	X	X	X		
MW-74-050918	5/9/18	1502	X													X	X	X	X	X	X	X		
MW-75S-050918	5/9/18	1612	X													X	X	X	X	X	X	X		
MW-75D-050918	5/9/18	1722	X													X	X	X	X	X	X	X		
MW-76-051018	5/10/18	0917	X													X	X	X	X	X	X	X		
MW-81-051018	5/10/18	1022	X													X	X	X	X	X	X	X		
MW-82S-051018	5/10/18	1112	X													X	X	X	X	X	X	X		
MW-82D-051018	5/10/18	1152	X													X	X	X	X	X	X	X		
MW-86-051018	5/10/18	1332	X													X	X	X	X	X	X	X		



correct sample number 15 MW-82D-051018

Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Level IV Reporting

Relinquished by: Ashley Rebel (Ashley Rebel)
 Relinquished by: Denise Pohl
 Relinquished by: Denise Pohl

Company: Arcadis
 Company: TA
 Company: TA

Date/Time: 5/11/18 13:49
 Date/Time: 5/11/18 14:41
 Date/Time: 5/11/18 13:49

Received by: Ashley Rebel
 Received by: Denise Pohl
 Received in Laboratory by:

Submit all results through Cadena at jim.tomalin@cadenalabs.com, Cadena 4E200531

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Chain of Custody Record

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

Client Contact
Company Name: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240
Project Name: Ford LTP
Project Number: MI001454.0004.00001
PO # MI001454.0004.00001

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kris@for.hinskey@arcadis.com

Site Contact: Angela DeGrandis
Telephone: 734-320-0065

Lab Contact: Denise Pohl
Telephone: 330-966-9789

Method of Shipment/Carrier:
Shipping/Tracking No:

Analysis Turnaround Time
TAT if different from below:
10 day
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Containers & Preservatives
H2SO4
HNO3
HCl
NaOH
NaOH
Lipres
Other:

Matrix
Air
Aqueous
Solid
Other:

Filtered Sample (Y/N)
Composite C/Grab-G
VOCs 8260B
1,4-Dioxane 8260B SIM

Sample Identification

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Solid	Other:	H2SO4	HNO3	HCl	NaOH	NaOH	Lipres	Other:	Filtered Sample (Y/N)	Composite C/Grab-G	VOCs 8260B	1,4-Dioxane 8260B SIM	Analyses
MW-87-051018	5/10/18	1422	X											NG	X	X	X	
MW-77-051118	5/11/18	847	X											NG	X	X	X	
MW-83-051118	5/11/18	957	X											UG	X	X	X	
TRIP BLANK	---	---	X											NG	X	X	X	

Sample Specific Notes / Special Instructions:
See below for SPECIFIC VOCs

Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
LEVEL IV Reporting ONLY ANALYZE FOR: 1,1-DCE, CIS-1,2-DCE, TRANS-1,2-DCE, PCE, TCE, + VINYL CHLORIDE 8260B

Relinquished by: Ashley Reibel [Signature]
Relinquished by: [Signature]
Relinquished by: [Signature]

Received by: [Signature]
Received by: [Signature]
Received in Laboratory by: [Signature]

Company: Arcadis
Company: TAC
Company: TAC

Date/Time: 5/11/18 13:47
Date/Time: 5/11/18 19:41
Date/Time: 5/11/18 13:49
Date/Time: 5/12/18 10:00

Submit all results through California at jim.tomalia@cardona.com, Cardona #E203728



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TestAmerica Canton Sample Receipt Form/Narrative Login # : 95547
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: [Signature]
Cooler Received on 5.12.18 Opened on 5.12.18
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 mut.
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 +0.1 °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 4 Yes No
-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 NA
-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 NA
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 NA
If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC732776
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes NA

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

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

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: JF

MW-82D Label = MW-83D date + time match - w/ 11 log ID per COC.

18. 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)

19. SAMPLE PRESERVATION

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

