

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Tel: (330)497-9396

Laboratory Job ID: 240-126150-1
Client Project/Site: Ford LTP On Site

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
2/26/2020 12:23:55 PM

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



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Definitions/Glossary

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

Job ID: 240-126150-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	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 On Site

Job ID: 240-126150-1

Job ID: 240-126150-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On Site

Report Number: 240-126150-1

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.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins 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 Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 2/12/2020 8:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-126150-1), MW-39_021020 (240-126150-2), MW-32_021020 (240-126150-3), MW-201S_021020 (240-126150-4) and MW-28_021020 (240-126150-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/17/2020.

Samples MW-201S_021020 (240-126150-4)[5X] and MW-28_021020 (240-126150-5)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-201S_021020 (240-126150-4) and MW-28_021020 (240-126150-5). Elevated reporting limits (RLs) are provided.

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-39_021020 (240-126150-2), MW-32_021020 (240-126150-3), MW-201S_021020 (240-126150-4) and MW-28_021020 (240-126150-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The

Case Narrative

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

Job ID: 240-126150-1

Job ID: 240-126150-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

samples were analyzed on 02/18/2020.

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

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Method Summary

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

Job ID: 240-126150-1

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



Sample Summary

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

Job ID: 240-126150-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126150-1	TRIP BLANK	Water	02/10/20 00:00	02/12/20 08:10	
240-126150-2	MW-39_021020	Water	02/10/20 10:31	02/12/20 08:10	
240-126150-3	MW-32_021020	Water	02/10/20 12:20	02/12/20 08:10	
240-126150-4	MW-201S_021020	Water	02/10/20 14:25	02/12/20 08:10	
240-126150-5	MW-28_021020	Water	02/10/20 16:05	02/12/20 08:10	

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

Detection Summary

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

Job ID: 240-126150-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126150-1

No Detections.

Client Sample ID: MW-39_021020

Lab Sample ID: 240-126150-2

No Detections.

Client Sample ID: MW-32_021020

Lab Sample ID: 240-126150-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.31	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-201S_021020

Lab Sample ID: 240-126150-4

No Detections.

Client Sample ID: MW-28_021020

Lab Sample ID: 240-126150-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-126150-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126150-1

Date Collected: 02/10/20 00:00

Matrix: Water

Date Received: 02/12/20 08:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 16:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/17/20 16:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/17/20 16:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 16:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/17/20 16:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/17/20 16:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		02/17/20 16:45	1
4-Bromofluorobenzene (Surr)	105		47 - 134		02/17/20 16:45	1
Toluene-d8 (Surr)	96		69 - 122		02/17/20 16:45	1
Dibromofluoromethane (Surr)	89		78 - 129		02/17/20 16:45	1

Client Sample Results

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

Job ID: 240-126150-1

Client Sample ID: MW-39_021020

Lab Sample ID: 240-126150-2

Date Collected: 02/10/20 10:31

Matrix: Water

Date Received: 02/12/20 08:10

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	0.86	ug/L			02/18/20 07:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133		02/18/20 07:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 17:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/17/20 17:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/17/20 17:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 17:11	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/17/20 17:11	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/17/20 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		02/17/20 17:11	1
4-Bromofluorobenzene (Surr)	106		47 - 134		02/17/20 17:11	1
Toluene-d8 (Surr)	95		69 - 122		02/17/20 17:11	1
Dibromofluoromethane (Surr)	83		78 - 129		02/17/20 17:11	1

Client Sample Results

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

Job ID: 240-126150-1

Client Sample ID: MW-32_021020

Lab Sample ID: 240-126150-3

Date Collected: 02/10/20 12:20

Matrix: Water

Date Received: 02/12/20 08:10

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	0.86	ug/L			02/18/20 07:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133					02/18/20 07:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 17:36	1
cis-1,2-Dichloroethene	0.31	J	1.0	0.16	ug/L			02/17/20 17:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/17/20 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 17:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/17/20 17:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/17/20 17:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130					02/17/20 17:36	1
4-Bromofluorobenzene (Surr)	104		47 - 134					02/17/20 17:36	1
Toluene-d8 (Surr)	99		69 - 122					02/17/20 17:36	1
Dibromofluoromethane (Surr)	90		78 - 129					02/17/20 17:36	1

Client Sample Results

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

Job ID: 240-126150-1

Client Sample ID: MW-201S_021020

Lab Sample ID: 240-126150-4

Date Collected: 02/10/20 14:25

Matrix: Water

Date Received: 02/12/20 08:10

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	0.86	ug/L			02/18/20 08:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 133		02/18/20 08:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	5.0	U	5.0	0.95	ug/L			02/17/20 18:01	5
cis-1,2-Dichloroethene	5.0	U	5.0	0.80	ug/L			02/17/20 18:01	5
Tetrachloroethene	5.0	U	5.0	0.75	ug/L			02/17/20 18:01	5
trans-1,2-Dichloroethene	5.0	U	5.0	0.95	ug/L			02/17/20 18:01	5
Trichloroethene	5.0	U	5.0	0.50	ug/L			02/17/20 18:01	5
Vinyl chloride	5.0	U	5.0	1.0	ug/L			02/17/20 18:01	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		02/17/20 18:01	5
4-Bromofluorobenzene (Surr)	105		47 - 134		02/17/20 18:01	5
Toluene-d8 (Surr)	96		69 - 122		02/17/20 18:01	5
Dibromofluoromethane (Surr)	86		78 - 129		02/17/20 18:01	5

Client Sample Results

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

Job ID: 240-126150-1

Client Sample ID: MW-28_021020

Lab Sample ID: 240-126150-5

Date Collected: 02/10/20 16:05

Matrix: Water

Date Received: 02/12/20 08:10

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	0.86	ug/L			02/18/20 08:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 133		02/18/20 08:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	5.0	U	5.0	0.95	ug/L			02/17/20 18:26	5
cis-1,2-Dichloroethene	5.0	U	5.0	0.80	ug/L			02/17/20 18:26	5
Tetrachloroethene	5.0	U	5.0	0.75	ug/L			02/17/20 18:26	5
trans-1,2-Dichloroethene	5.0	U	5.0	0.95	ug/L			02/17/20 18:26	5
Trichloroethene	5.0	U	5.0	0.50	ug/L			02/17/20 18:26	5
Vinyl chloride	5.0	U	5.0	1.0	ug/L			02/17/20 18:26	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/17/20 18:26	5
4-Bromofluorobenzene (Surr)	103		47 - 134		02/17/20 18:26	5
Toluene-d8 (Surr)	97		69 - 122		02/17/20 18:26	5
Dibromofluoromethane (Surr)	88		78 - 129		02/17/20 18:26	5

Surrogate Summary

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

Job ID: 240-126150-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-126098-D-3 MS	Matrix Spike	87	102	94	91
240-126098-D-3 MSD	Matrix Spike Duplicate	85	104	93	90
240-126150-1	TRIP BLANK	92	105	96	89
240-126150-2	MW-39_021020	86	106	95	83
240-126150-3	MW-32_021020	85	104	99	90
240-126150-4	MW-201S_021020	86	105	96	86
240-126150-5	MW-28_021020	90	103	97	88
LCS 240-423052/4	Lab Control Sample	87	103	94	90
MB 240-423052/7	Method Blank	83	103	93	86

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-126150-2	MW-39_021020	96
240-126150-3	MW-32_021020	102
240-126150-4	MW-201S_021020	103
240-126150-5	MW-28_021020	104
240-126150-5 MS	MW-28_021020	102
240-126150-5 MSD	MW-28_021020	106
LCS 240-423128/4	Lab Control Sample	102
MB 240-423128/5	Method Blank	102

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-126150-1

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

Lab Sample ID: MB 240-423052/7
Matrix: Water
Analysis Batch: 423052

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 14:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/17/20 14:14	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/17/20 14:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/17/20 14:14	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/17/20 14:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/17/20 14:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		75 - 130		02/17/20 14:14	1
4-Bromofluorobenzene (Surr)	103		47 - 134		02/17/20 14:14	1
Toluene-d8 (Surr)	93		69 - 122		02/17/20 14:14	1
Dibromofluoromethane (Surr)	86		78 - 129		02/17/20 14:14	1

Lab Sample ID: LCS 240-423052/4
Matrix: Water
Analysis Batch: 423052

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	10.3		ug/L		103	73 - 129
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	75 - 124
Tetrachloroethene	10.0	9.58		ug/L		96	70 - 125
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	74 - 130
Trichloroethene	10.0	9.60		ug/L		96	71 - 121
Vinyl chloride	10.0	10.9		ug/L		109	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

Lab Sample ID: 240-126098-D-3 MS
Matrix: Water
Analysis Batch: 423052

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
1,1-Dichloroethene	13	U	133	129		ug/L		97	64 - 132
cis-1,2-Dichloroethene	91		133	225		ug/L		100	68 - 121
Tetrachloroethene	13	U	133	116		ug/L		87	52 - 129
trans-1,2-Dichloroethene	13	U	133	135		ug/L		101	69 - 126
Trichloroethene	13	U	133	113		ug/L		85	56 - 124
Vinyl chloride	370		133	516		ug/L		107	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	102		47 - 134
Toluene-d8 (Surr)	94		69 - 122

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QC Sample Results

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

Job ID: 240-126150-1

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

Lab Sample ID: 240-126098-D-3 MS
Matrix: Water
Analysis Batch: 423052

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-126098-D-3 MSD
Matrix: Water
Analysis Batch: 423052

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
1,1-Dichloroethene	13	U	133	126		ug/L		95	64 - 132	2	35
cis-1,2-Dichloroethene	91		133	228		ug/L		103	68 - 121	1	35
Tetrachloroethene	13	U	133	115		ug/L		86	52 - 129	1	35
trans-1,2-Dichloroethene	13	U	133	130		ug/L		98	69 - 126	3	35
Trichloroethene	13	U	133	113		ug/L		84	56 - 124	0	35
Vinyl chloride	370		133	491		ug/L		88	49 - 136	5	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	90		78 - 129

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

Lab Sample ID: MB 240-423128/5
Matrix: Water
Analysis Batch: 423128

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	0.86	ug/L			02/18/20 06:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133		02/18/20 06:05	1

Lab Sample ID: LCS 240-423128/4
Matrix: Water
Analysis Batch: 423128

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	9.22		ug/L		92	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 133

Lab Sample ID: 240-126150-5 MS
Matrix: Water
Analysis Batch: 423128

Client Sample ID: MW-28_021020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	8.81		ug/L		88	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-126150-1

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

<i>Surrogate</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	102		70 - 133

Lab Sample ID: 240-126150-5 MSD
 Matrix: Water
 Analysis Batch: 423128

Client Sample ID: MW-28_021020
 Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	8.76		ug/L		88	46 - 170	1	26

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		70 - 133



QC Association Summary

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

Job ID: 240-126150-1

GC/MS VOA

Analysis Batch: 423052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126150-1	TRIP BLANK	Total/NA	Water	8260B	
240-126150-2	MW-39_021020	Total/NA	Water	8260B	
240-126150-3	MW-32_021020	Total/NA	Water	8260B	
240-126150-4	MW-201S_021020	Total/NA	Water	8260B	
240-126150-5	MW-28_021020	Total/NA	Water	8260B	
MB 240-423052/7	Method Blank	Total/NA	Water	8260B	
LCS 240-423052/4	Lab Control Sample	Total/NA	Water	8260B	
240-126098-D-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-126098-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 423128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126150-2	MW-39_021020	Total/NA	Water	8260B SIM	
240-126150-3	MW-32_021020	Total/NA	Water	8260B SIM	
240-126150-4	MW-201S_021020	Total/NA	Water	8260B SIM	
240-126150-5	MW-28_021020	Total/NA	Water	8260B SIM	
MB 240-423128/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-423128/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-126150-5 MS	MW-28_021020	Total/NA	Water	8260B SIM	
240-126150-5 MSD	MW-28_021020	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-126150-1

Client Sample ID: TRIP BLANK

Date Collected: 02/10/20 00:00

Date Received: 02/12/20 08:10

Lab Sample ID: 240-126150-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423052	02/17/20 16:45	LRW	TAL CAN

Client Sample ID: MW-39_021020

Date Collected: 02/10/20 10:31

Date Received: 02/12/20 08:10

Lab Sample ID: 240-126150-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423052	02/17/20 17:11	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423128	02/18/20 07:32	TJL2	TAL CAN

Client Sample ID: MW-32_021020

Date Collected: 02/10/20 12:20

Date Received: 02/12/20 08:10

Lab Sample ID: 240-126150-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423052	02/17/20 17:36	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423128	02/18/20 07:57	TJL2	TAL CAN

Client Sample ID: MW-201S_021020

Date Collected: 02/10/20 14:25

Date Received: 02/12/20 08:10

Lab Sample ID: 240-126150-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	423052	02/17/20 18:01	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423128	02/18/20 08:23	TJL2	TAL CAN

Client Sample ID: MW-28_021020

Date Collected: 02/10/20 16:05

Date Received: 02/12/20 08:10

Lab Sample ID: 240-126150-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	423052	02/17/20 18:26	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	423128	02/18/20 08:49	TJL2	TAL CAN

Laboratory References:

TAL CAN = Eurofins 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 On Site

Job ID: 240-126150-1

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20 *
Connecticut	State	PH-0590	12-31-19 *
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20 *
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20 *
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19 *
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

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





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

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 On-Site Project Number: 30042006.0401.02 PO # 30042006.0401.02		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinsley Telephone: 248-994-2240 Email: kristoffer.hinsley@arcadis.com		Lab Contact: Mike DeMonico Telephone: 330-497-9396	
Sampler Name: M. J. Weaver		Analysis Turnaround Time TAT (different from below) <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
Method of Shipment/Carrier: Shipping/Tracking No:		Analyses 1,4-Dioxane 8260B SIM Vinyl Chloride 8260B TCE 8260B PCE 8260B Trans-1,2-DCE 8260B Cis-1,2-DCE 8260B 1,1-DCE 8260B Composite-C / Grab-C Filtered Sample (Y/N)	
Sample Identification TRIP BLANK MW-39.021020 MW-32-021020 MW-2015-021020 MW-28-021020		Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc Upters Other:	
Matrix Air Aqueous Sediment Solid Other:		Sample Date Sample Time 2/10/20 1031 2/10/20 1200 2/10/20 1425 2/10/20 1605	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed... are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements & Comments: Relinquished by: M. J. Weaver Relinquished by: Michaela Gilbertson Relinquished by: Julia McClafferty		Date/Time: 2/10/20 1700 Date/Time: 2/10/20 1830 Date/Time: 2/11/20 1100 Date/Time: 2/11/21 0204	
Company: Arcadis Company: Arcadis Company: Arcadis Company: EPA		Received by: Michaela Gilbertson Received by: Arcadis Received in Laboratory by: [Signature] Company: Arcadis Company: EPA TA 2-12-20 870	



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Eurofins TestAmerica Canton Sample Receipt Form/Narrative		Login # : <u>126150</u>
Canton Facility		
Client <u>Arceadis</u>	Site Name _____	Cooler unpacked by: 
Cooler Received on <u>2-12-20</u>	Opened on <u>2-12-20</u>	
FedEx: 1 st <input checked="" type="checkbox"/> Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____		
Receipt After-hours: Drop-off Date/Time		Storage Location
TestAmerica Cooler # <u>TA</u>	Foam Box _____	Client Cooler _____
Packing material used: <u>Bubble Wrap</u>	Foam _____	Plastic Bag _____
COOLANT: <u>Wet Ice</u>	Blue Ice _____	Dry Ice _____
Water _____	None _____	Other _____
<input type="checkbox"/> See Multiple Cooler Form		
1. Cooler temperature upon receipt	IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. <u>27</u> °C	Corrected Cooler Temp. <u>34</u> °C
	IR GUN #IR-11 (CF +0.9 °C) Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>	Yes <input checked="" type="checkbox"/> No _____	
-Were the seals on the outside of the cooler(s) signed & dated?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA _____	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA _____	
-Were tamper/custody seals intact and uncompromised?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA _____	
3. Shippers' packing slip attached to the cooler(s)?	Yes <input checked="" type="checkbox"/> No _____	
4. Did custody papers accompany the sample(s)?	Yes <input checked="" type="checkbox"/> No _____	
5. Were the custody papers relinquished & signed in the appropriate place?	Yes <input checked="" type="checkbox"/> No _____	
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes <input checked="" type="checkbox"/> No _____	
7. Did all bottles arrive in good condition (Unbroken)?	Yes <input checked="" type="checkbox"/> No _____	
8. Could all bottle labels be reconciled with the COC?	Yes <input checked="" type="checkbox"/> No _____	
9. Were correct bottle(s) used for the test(s) indicated?	Yes <input checked="" type="checkbox"/> No _____	
10. Sufficient quantity received to perform indicated analyses?	Yes <input checked="" type="checkbox"/> No _____	
11. Are these work share samples?	Yes <input checked="" type="checkbox"/> No _____	
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 <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA	pH Strip Lot# <u>HC995364</u>
13. Were VOAs on the COC?	Yes <input checked="" type="checkbox"/> No _____	
14. Were air bubbles >6 mm in any VOA vials?  ← Larger than this.	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA	
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes <input checked="" type="checkbox"/> No _____	
16. Was a LL Hg or Me Hg trip blank present? _____	Yes <input checked="" type="checkbox"/> No _____	
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: <u>AG</u>
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
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): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____	