

ANALYTICAL REPORT

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

Laboratory Job ID: 240-135452-1
Client Project/Site: Ford LTP On-Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
9/8/2020 4:41:32 PM

Michael DelMonico, Project Manager I
(330)497-9396
Michael.DelMonico@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	15
QC Sample Results	16
QC Association Summary	19
Lab Chronicle	20
Certification Summary	21
Chain of Custody	22

Definitions/Glossary

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

Job ID: 240-135452-1

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.
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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 240-135452-1

Job ID: 240-135452-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On-Site

Report Number: 240-135452-1

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 8/22/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.0° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-135452-1), MW-201S_082020 (240-135452-2), MW-201_082020 (240-135452-3), MW-10_082020 (240-135452-4), DUP-16 (240-135452-5) and MW-28_082020 (240-135452-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/02/2020.

Samples MW-10_082020 (240-135452-4)[333.33X] and DUP-16 (240-135452-5)[333.33X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The continuing calibration verification (CCV) associated with batch 449847 recovered above the upper control limit for 1,1-Dichloroethene. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: TRIP BLANK (240-135452-1), MW-201S_082020 (240-135452-2), MW-201_082020 (240-135452-3), MW-10_082020 (240-135452-4), DUP-16 (240-135452-5), MW-28_082020 (240-135452-6) and (240-135342-C-1).

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Case Narrative

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

Job ID: 240-135452-1

Job ID: 240-135452-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

Samples MW-201S_082020 (240-135452-2), MW-201_082020 (240-135452-3), MW-10_082020 (240-135452-4), DUP-16 (240-135452-5) and MW-28_082020 (240-135452-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/29/2020.

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

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

Method Summary

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

Job ID: 240-135452-1

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: 240-135452-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135452-1	TRIP BLANK	Water	08/20/20 00:00	08/22/20 10:00	
240-135452-2	MW-201S_082020	Water	08/20/20 11:30	08/22/20 10:00	
240-135452-3	MW-201_082020	Water	08/20/20 10:25	08/22/20 10:00	
240-135452-4	MW-10_082020	Water	08/20/20 14:30	08/22/20 10:00	
240-135452-5	DUP-16	Water	08/20/20 00:00	08/22/20 10:00	
240-135452-6	MW-28_082020	Water	08/20/20 17:00	08/22/20 10:00	

- 1
- 2
- 3
- 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: 240-135452-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135452-1

No Detections.

Client Sample ID: MW-201S_082020

Lab Sample ID: 240-135452-2

No Detections.

Client Sample ID: MW-201_082020

Lab Sample ID: 240-135452-3

No Detections.

Client Sample ID: MW-10_082020

Lab Sample ID: 240-135452-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	5500		330	170	ug/L	333.33		8260B	Total/NA

Client Sample ID: DUP-16

Lab Sample ID: 240-135452-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.3		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	5900		330	170	ug/L	333.33		8260B	Total/NA

Client Sample ID: MW-28_082020

Lab Sample ID: 240-135452-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.52	J	1.0	0.46	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.63	J	1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	0.51	J	1.0	0.36	ug/L	1		8260B	Total/NA

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: 240-135452-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135452-1

Date Collected: 08/20/20 00:00

Matrix: Water

Date Received: 08/22/20 10:00

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	0.46	ug/L			09/02/20 15:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/02/20 15:30	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/02/20 15:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/02/20 15:30	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/02/20 15:30	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/02/20 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		09/02/20 15:30	1
4-Bromofluorobenzene (Surr)	95		47 - 134		09/02/20 15:30	1
Toluene-d8 (Surr)	106		69 - 122		09/02/20 15:30	1
Dibromofluoromethane (Surr)	115		78 - 129		09/02/20 15:30	1

Client Sample Results

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

Job ID: 240-135452-1

Client Sample ID: MW-201S_082020

Lab Sample ID: 240-135452-2

Date Collected: 08/20/20 11:30

Matrix: Water

Date Received: 08/22/20 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	0.86	ug/L			08/29/20 09:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133		08/29/20 09:21	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	0.46	ug/L			09/02/20 15:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/02/20 15:52	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/02/20 15:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/02/20 15:52	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/02/20 15:52	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/02/20 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		09/02/20 15:52	1
4-Bromofluorobenzene (Surr)	97		47 - 134		09/02/20 15:52	1
Toluene-d8 (Surr)	101		69 - 122		09/02/20 15:52	1
Dibromofluoromethane (Surr)	113		78 - 129		09/02/20 15:52	1

Client Sample Results

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

Job ID: 240-135452-1

Client Sample ID: MW-201_082020

Lab Sample ID: 240-135452-3

Date Collected: 08/20/20 10:25

Matrix: Water

Date Received: 08/22/20 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	0.86	ug/L			08/29/20 09:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133					08/29/20 09:46	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	0.46	ug/L			09/02/20 16:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/02/20 16:15	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/02/20 16:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/02/20 16:15	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/02/20 16:15	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/02/20 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130					09/02/20 16:15	1
4-Bromofluorobenzene (Surr)	97		47 - 134					09/02/20 16:15	1
Toluene-d8 (Surr)	105		69 - 122					09/02/20 16:15	1
Dibromofluoromethane (Surr)	117		78 - 129					09/02/20 16:15	1

Client Sample Results

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

Job ID: 240-135452-1

Client Sample ID: MW-10_082020

Lab Sample ID: 240-135452-4

Date Collected: 08/20/20 14:30

Matrix: Water

Date Received: 08/22/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.8		2.0	0.86	ug/L			08/29/20 10:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		08/29/20 10:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	150	ug/L			09/02/20 16:37	333.33
cis-1,2-Dichloroethene	330	U	330	130	ug/L			09/02/20 16:37	333.33
Tetrachloroethene	330	U	330	110	ug/L			09/02/20 16:37	333.33
trans-1,2-Dichloroethene	330	U	330	140	ug/L			09/02/20 16:37	333.33
Trichloroethene	330	U	330	120	ug/L			09/02/20 16:37	333.33
Vinyl chloride	5500		330	170	ug/L			09/02/20 16:37	333.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		09/02/20 16:37	333.33
4-Bromofluorobenzene (Surr)	101		47 - 134		09/02/20 16:37	333.33
Toluene-d8 (Surr)	106		69 - 122		09/02/20 16:37	333.33
Dibromofluoromethane (Surr)	112		78 - 129		09/02/20 16:37	333.33

Client Sample Results

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

Job ID: 240-135452-1

Client Sample ID: DUP-16

Lab Sample ID: 240-135452-5

Date Collected: 08/20/20 00:00

Matrix: Water

Date Received: 08/22/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.3		2.0	0.86	ug/L			08/29/20 10:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					08/29/20 10:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	150	ug/L			09/02/20 17:00	333.33
cis-1,2-Dichloroethene	330	U	330	130	ug/L			09/02/20 17:00	333.33
Tetrachloroethene	330	U	330	110	ug/L			09/02/20 17:00	333.33
trans-1,2-Dichloroethene	330	U	330	140	ug/L			09/02/20 17:00	333.33
Trichloroethene	330	U	330	120	ug/L			09/02/20 17:00	333.33
Vinyl chloride	5900		330	170	ug/L			09/02/20 17:00	333.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130					09/02/20 17:00	333.33
4-Bromofluorobenzene (Surr)	100		47 - 134					09/02/20 17:00	333.33
Toluene-d8 (Surr)	109		69 - 122					09/02/20 17:00	333.33
Dibromofluoromethane (Surr)	117		78 - 129					09/02/20 17:00	333.33

Client Sample Results

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

Job ID: 240-135452-1

Client Sample ID: MW-28_082020

Lab Sample ID: 240-135452-6

Date Collected: 08/20/20 17:00

Matrix: Water

Date Received: 08/22/20 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	0.86	ug/L			08/29/20 11:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					08/29/20 11:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.52	J	1.0	0.46	ug/L			09/02/20 17:22	1
cis-1,2-Dichloroethene	0.63	J	1.0	0.38	ug/L			09/02/20 17:22	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/02/20 17:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/02/20 17:22	1
Trichloroethene	0.51	J	1.0	0.36	ug/L			09/02/20 17:22	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/02/20 17:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130					09/02/20 17:22	1
4-Bromofluorobenzene (Surr)	110		47 - 134					09/02/20 17:22	1
Toluene-d8 (Surr)	118		69 - 122					09/02/20 17:22	1
Dibromofluoromethane (Surr)	123		78 - 129					09/02/20 17:22	1

Surrogate Summary

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

Job ID: 240-135452-1

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)
240-135342-C-1 MS	Matrix Spike	88	108	108	115
240-135342-C-1 MSD	Matrix Spike Duplicate	88	104	109	114
240-135452-1	TRIP BLANK	89	95	106	115
240-135452-2	MW-201S_082020	88	97	101	113
240-135452-3	MW-201_082020	91	97	105	117
240-135452-4	MW-10_082020	89	101	106	112
240-135452-5	DUP-16	94	100	109	117
240-135452-6	MW-28_082020	98	110	118	123
LCS 240-449847/4	Lab Control Sample	87	100	101	110
MB 240-449847/6	Method Blank	94	101	107	116

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)
240-135452-2	MW-201S_082020	85
240-135452-3	MW-201_082020	88
240-135452-4	MW-10_082020	86
240-135452-5	DUP-16	87
240-135452-6	MW-28_082020	87
240-135515-B-2 MS	Matrix Spike	91
240-135515-B-2 MSD	Matrix Spike Duplicate	88
LCS 240-449273/4	Lab Control Sample	86
MB 240-449273/5	Method Blank	88

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-135452-1

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

Lab Sample ID: MB 240-449847/6
Matrix: Water
Analysis Batch: 449847

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	0.46	ug/L			09/02/20 11:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			09/02/20 11:46	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			09/02/20 11:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			09/02/20 11:46	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			09/02/20 11:46	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			09/02/20 11:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 130		09/02/20 11:46	1
4-Bromofluorobenzene (Surr)	101		47 - 134		09/02/20 11:46	1
Toluene-d8 (Surr)	107		69 - 122		09/02/20 11:46	1
Dibromofluoromethane (Surr)	116		78 - 129		09/02/20 11:46	1

Lab Sample ID: LCS 240-449847/4
Matrix: Water
Analysis Batch: 449847

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	12.6		ug/L		126	73 - 129
cis-1,2-Dichloroethene	10.0	11.7		ug/L		117	75 - 124
Tetrachloroethene	10.0	9.93		ug/L		99	70 - 125
trans-1,2-Dichloroethene	10.0	12.0		ug/L		120	74 - 130
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	10.3		ug/L		103	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		75 - 130
4-Bromofluorobenzene (Surr)	100		47 - 134
Toluene-d8 (Surr)	101		69 - 122
Dibromofluoromethane (Surr)	110		78 - 129

Lab Sample ID: 240-135342-C-1 MS
Matrix: Water
Analysis Batch: 449847

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	10	U	100	113		ug/L		113	64 - 132
cis-1,2-Dichloroethene	98		100	214		ug/L		115	68 - 121
Tetrachloroethene	10	U	100	89.2		ug/L		89	52 - 129
trans-1,2-Dichloroethene	14		100	128		ug/L		114	69 - 126
Trichloroethene	210		100	306		ug/L		96	56 - 124
Vinyl chloride	9.1	J	100	105		ug/L		96	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	108		47 - 134
Toluene-d8 (Surr)	108		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135452-1

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

Lab Sample ID: 240-135342-C-1 MS
Matrix: Water
Analysis Batch: 449847

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

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	115		78 - 129

Lab Sample ID: 240-135342-C-1 MSD
Matrix: Water
Analysis Batch: 449847

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	10	U	100	125		ug/L		125	64 - 132	10	35
cis-1,2-Dichloroethene	98		100	208		ug/L		110	68 - 121	3	35
Tetrachloroethene	10	U	100	102		ug/L		102	52 - 129	13	35
trans-1,2-Dichloroethene	14		100	130		ug/L		116	69 - 126	2	35
Trichloroethene	210		100	302		ug/L		92	56 - 124	1	35
Vinyl chloride	9.1	J	100	115		ug/L		106	49 - 136	9	35

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	104		47 - 134
Toluene-d8 (Surr)	109		69 - 122
Dibromofluoromethane (Surr)	114		78 - 129

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

Lab Sample ID: MB 240-449273/5
Matrix: Water
Analysis Batch: 449273

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			08/29/20 06:52	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		08/29/20 06:52	1

Lab Sample ID: LCS 240-449273/4
Matrix: Water
Analysis Batch: 449273

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	10.5		ug/L		105	80 - 135

Surrogate	%Recovery	LCS LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 133

Lab Sample ID: 240-135515-B-2 MS
Matrix: Water
Analysis Batch: 449273

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	2.0	U	10.0	9.50		ug/L		95	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135452-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	91		70 - 133

Lab Sample ID: 240-135515-B-2 MSD
Matrix: Water
Analysis Batch: 449273

Client Sample ID: Matrix Spike Duplicate
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	10.1		ug/L		101	46 - 170	6	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	88		70 - 133



QC Association Summary

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

Job ID: 240-135452-1

GC/MS VOA

Analysis Batch: 449273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135452-2	MW-201S_082020	Total/NA	Water	8260B SIM	
240-135452-3	MW-201_082020	Total/NA	Water	8260B SIM	
240-135452-4	MW-10_082020	Total/NA	Water	8260B SIM	
240-135452-5	DUP-16	Total/NA	Water	8260B SIM	
240-135452-6	MW-28_082020	Total/NA	Water	8260B SIM	
MB 240-449273/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-449273/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135515-B-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-135515-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 449847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135452-1	TRIP BLANK	Total/NA	Water	8260B	
240-135452-2	MW-201S_082020	Total/NA	Water	8260B	
240-135452-3	MW-201_082020	Total/NA	Water	8260B	
240-135452-4	MW-10_082020	Total/NA	Water	8260B	
240-135452-5	DUP-16	Total/NA	Water	8260B	
240-135452-6	MW-28_082020	Total/NA	Water	8260B	
MB 240-449847/6	Method Blank	Total/NA	Water	8260B	
LCS 240-449847/4	Lab Control Sample	Total/NA	Water	8260B	
240-135342-C-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-135342-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-135452-1

Client Sample ID: TRIP BLANK

Date Collected: 08/20/20 00:00

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449847	09/02/20 15:30	LEE	TAL CAN

Client Sample ID: MW-201S_082020

Date Collected: 08/20/20 11:30

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449847	09/02/20 15:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449273	08/29/20 09:21	SAM	TAL CAN

Client Sample ID: MW-201_082020

Date Collected: 08/20/20 10:25

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449847	09/02/20 16:15	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449273	08/29/20 09:46	SAM	TAL CAN

Client Sample ID: MW-10_082020

Date Collected: 08/20/20 14:30

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	449847	09/02/20 16:37	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449273	08/29/20 10:10	SAM	TAL CAN

Client Sample ID: DUP-16

Date Collected: 08/20/20 00:00

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	449847	09/02/20 17:00	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449273	08/29/20 10:35	SAM	TAL CAN

Client Sample ID: MW-28_082020

Date Collected: 08/20/20 17:00

Date Received: 08/22/20 10:00

Lab Sample ID: 240-135452-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	449847	09/02/20 17:22	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	449273	08/29/20 11:00	SAM	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-135452-1

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	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20 *
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
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.

Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 135452


Canton Facility

Client Arcadis Site Name _____
 Cooler Received on 8-22-20 Opened on 8-22-20
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by:
Math Snyark

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

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

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. 3.1 °C Corrected Cooler Temp. 4.0 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC911298
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No 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 No

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

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

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:
Ryan

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: _____