

ANALYTICAL REPORT

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

Laboratory Job ID: 240-160508-1
Client Project/Site: Ford LTP - Off-Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
12/7/2021 7:36:44 AM

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

Job ID: 240-160508-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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 - Off-Site

Job ID: 240-160508-1

Job ID: 240-160508-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-160508-1

Comments

No additional comments.

Receipt

The samples were received on 11/20/2021 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.2° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

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

Job ID: 240-160508-1

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

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- 13
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Sample Summary

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

Job ID: 240-160508-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-160508-1	TRIP BLANK_176	Water	11/18/21 00:00	11/20/21 12:25
240-160508-2	MW-99S_111821	Water	11/18/21 11:15	11/20/21 12:25
240-160508-3	MW-75SR_111821	Water	11/18/21 12:45	11/20/21 12:25
240-160508-4	MW-100S_111821	Water	11/18/21 15:25	11/20/21 12:25

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- 7
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- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-160508-1

Client Sample ID: TRIP BLANK_176

Lab Sample ID: 240-160508-1

No Detections.

Client Sample ID: MW-99S_111821

Lab Sample ID: 240-160508-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.58	J	1.0	0.46	ug/L	1		8260B	Total/NA

Client Sample ID: MW-75SR_111821

Lab Sample ID: 240-160508-3

No Detections.

Client Sample ID: MW-100S_111821

Lab Sample ID: 240-160508-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J F1	2.0	0.86	ug/L	1		8260B SIM	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 - Off-Site

Job ID: 240-160508-1

Client Sample ID: TRIP BLANK_176

Lab Sample ID: 240-160508-1

Date Collected: 11/18/21 00:00

Matrix: Water

Date Received: 11/20/21 12:25

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	0.49	ug/L			11/30/21 06:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/30/21 06:15	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/30/21 06:15	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/30/21 06:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		11/30/21 06:15	1
4-Bromofluorobenzene (Surr)	77		56 - 136		11/30/21 06:15	1
Toluene-d8 (Surr)	114		78 - 122		11/30/21 06:15	1
Dibromofluoromethane (Surr)	95		73 - 120		11/30/21 06:15	1

Client Sample Results

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

Job ID: 240-160508-1

Client Sample ID: MW-99S_111821

Lab Sample ID: 240-160508-2

Date Collected: 11/18/21 11:15

Matrix: Water

Date Received: 11/20/21 12:25

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			11/23/21 21:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120					11/23/21 21:31	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	0.49	ug/L			11/30/21 06:37	1
cis-1,2-Dichloroethene	0.58	J	1.0	0.46	ug/L			11/30/21 06:37	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/30/21 06:37	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:37	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/30/21 06:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137					11/30/21 06:37	1
4-Bromofluorobenzene (Surr)	78		56 - 136					11/30/21 06:37	1
Toluene-d8 (Surr)	114		78 - 122					11/30/21 06:37	1
Dibromofluoromethane (Surr)	94		73 - 120					11/30/21 06:37	1

Client Sample Results

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

Job ID: 240-160508-1

Client Sample ID: MW-75SR_111821

Lab Sample ID: 240-160508-3

Date Collected: 11/18/21 12:45

Matrix: Water

Date Received: 11/20/21 12:25

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			11/24/21 01:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120		11/24/21 01:07	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	0.49	ug/L			11/30/21 06:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/30/21 06:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/30/21 06:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 06:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/30/21 06:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		11/30/21 06:59	1
4-Bromofluorobenzene (Surr)	72		56 - 136		11/30/21 06:59	1
Toluene-d8 (Surr)	105		78 - 122		11/30/21 06:59	1
Dibromofluoromethane (Surr)	87		73 - 120		11/30/21 06:59	1

Client Sample Results

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

Job ID: 240-160508-1

Client Sample ID: MW-100S_111821

Lab Sample ID: 240-160508-4

Date Collected: 11/18/21 15:25

Matrix: Water

Date Received: 11/20/21 12:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	J F1	2.0	0.86	ug/L			11/24/21 22:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	73		66 - 120		11/24/21 22:33	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	0.49	ug/L			12/01/21 16:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			12/01/21 16:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			12/01/21 16:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			12/01/21 16:49	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			12/01/21 16:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			12/01/21 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		12/01/21 16:49	1
4-Bromofluorobenzene (Surr)	72		56 - 136		12/01/21 16:49	1
Toluene-d8 (Surr)	106		78 - 122		12/01/21 16:49	1
Dibromofluoromethane (Surr)	92		73 - 120		12/01/21 16:49	1

Surrogate Summary

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

Job ID: 240-160508-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-160508-1	TRIP BLANK_176	105	77	114	95
240-160508-2	MW-99S_111821	109	78	114	94
240-160508-2 MS	MW-99S-MS_111821	100	83	105	88
240-160508-2 MSD	MW-99S-MSD_111821	90	78	97	79
240-160508-3	MW-75SR_111821	98	72	105	87
240-160508-4	MW-100S_111821	105	72	106	92
240-160508-4 MS	MW-100S-MS_111821	96	80	112	87
240-160508-4 MSD	MW-100S-MSD_111821	91	77	110	86
LCS 240-514928/4	Lab Control Sample	99	85	105	89
LCS 240-515231/4	Lab Control Sample	102	86	105	90
MB 240-514928/6	Method Blank	104	80	106	92
MB 240-515231/6	Method Blank	105	78	112	95

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-160508-2	MW-99S_111821	99
240-160508-2 MS	MW-99S-MS_111821	100
240-160508-2 MSD	MW-99S-MSD_111821	100
240-160508-3	MW-75SR_111821	99
240-160508-4	MW-100S_111821	73
240-160508-4 MS	MW-100S-MS_111821	75
240-160508-4 MSD	MW-100S-MSD_111821	75
LCS 240-514346/3	Lab Control Sample	97
LCS 240-514583/4	Lab Control Sample	75
MB 240-514346/4	Method Blank	96
MB 240-514583/5	Method Blank	75

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

QC Sample Results

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

Job ID: 240-160508-1

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

Lab Sample ID: MB 240-514928/6
Matrix: Water
Analysis Batch: 514928

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/30/21 00:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/30/21 00:43	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 00:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/30/21 00:43	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/30/21 00:43	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/30/21 00:43	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		11/30/21 00:43	1
4-Bromofluorobenzene (Surr)	80		56 - 136		11/30/21 00:43	1
Toluene-d8 (Surr)	106		78 - 122		11/30/21 00:43	1
Dibromofluoromethane (Surr)	92		73 - 120		11/30/21 00:43	1

Lab Sample ID: LCS 240-514928/4
Matrix: Water
Analysis Batch: 514928

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	10.0		ug/L		100	63 - 134
cis-1,2-Dichloroethene	10.0	9.75		ug/L		98	77 - 123
Tetrachloroethene	10.0	9.57		ug/L		96	76 - 123
trans-1,2-Dichloroethene	10.0	9.61		ug/L		96	75 - 124
Trichloroethene	10.0	8.60		ug/L		86	70 - 122
Vinyl chloride	10.0	10.7		ug/L		107	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	85		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: 240-160508-2 MS
Matrix: Water
Analysis Batch: 514928

Client Sample ID: MW-99S-MS_111821
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	6.96		ug/L		70	56 - 135
cis-1,2-Dichloroethene	0.58	J	10.0	8.89		ug/L		83	66 - 128
Tetrachloroethene	1.0	U	10.0	6.93		ug/L		69	62 - 131
trans-1,2-Dichloroethene	1.0	U	10.0	7.70		ug/L		77	56 - 136
Trichloroethene	1.0	U	10.0	6.46		ug/L		65	61 - 124
Vinyl chloride	1.0	U	10.0	9.01		ug/L		90	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	83		56 - 136
Toluene-d8 (Surr)	105		78 - 122

QC Sample Results

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

Job ID: 240-160508-1

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

Lab Sample ID: 240-160508-2 MS
Matrix: Water
Analysis Batch: 514928

Client Sample ID: MW-99S-MS_111821
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	88		73 - 120

Lab Sample ID: 240-160508-2 MSD
Matrix: Water
Analysis Batch: 514928

Client Sample ID: MW-99S-MSD_111821
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>
1,1-Dichloroethene	1.0	U	10.0	8.52		ug/L		85	56 - 135	20	26
cis-1,2-Dichloroethene	0.58	J	10.0	9.57		ug/L		90	66 - 128	7	14
Tetrachloroethene	1.0	U	10.0	8.00		ug/L		80	62 - 131	14	20
trans-1,2-Dichloroethene	1.0	U	10.0	8.62		ug/L		86	56 - 136	11	15
Trichloroethene	1.0	U	10.0	7.03		ug/L		70	61 - 124	8	15
Vinyl chloride	1.0	U	10.0	10.5		ug/L		105	43 - 157	15	24

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	90		62 - 137
<i>4-Bromofluorobenzene (Surr)</i>	78		56 - 136
<i>Toluene-d8 (Surr)</i>	97		78 - 122
<i>Dibromofluoromethane (Surr)</i>	79		73 - 120

Lab Sample ID: MB 240-515231/6
Matrix: Water
Analysis Batch: 515231

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			12/01/21 13:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			12/01/21 13:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			12/01/21 13:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			12/01/21 13:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			12/01/21 13:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			12/01/21 13:52	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		62 - 137		12/01/21 13:52	1
<i>4-Bromofluorobenzene (Surr)</i>	78		56 - 136		12/01/21 13:52	1
<i>Toluene-d8 (Surr)</i>	112		78 - 122		12/01/21 13:52	1
<i>Dibromofluoromethane (Surr)</i>	95		73 - 120		12/01/21 13:52	1

Lab Sample ID: LCS 240-515231/4
Matrix: Water
Analysis Batch: 515231

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,1-Dichloroethene	10.0	9.25		ug/L		93	63 - 134
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	77 - 123
Tetrachloroethene	10.0	9.40		ug/L		94	76 - 123
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	75 - 124
Trichloroethene	10.0	8.54		ug/L		85	70 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-160508-1

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

Lab Sample ID: LCS 240-515231/4

Matrix: Water

Analysis Batch: 515231

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	11.2		ug/L		112	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

Lab Sample ID: 240-160508-4 MS

Matrix: Water

Analysis Batch: 515231

Client Sample ID: MW-100S-MS_111821

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	6.37		ug/L		64	56 - 135
cis-1,2-Dichloroethene	1.0	U	10.0	9.43		ug/L		94	66 - 128
Tetrachloroethene	1.0	U	10.0	9.16		ug/L		92	62 - 131
trans-1,2-Dichloroethene	1.0	U	10.0	8.58		ug/L		86	56 - 136
Trichloroethene	1.0	U	10.0	7.82		ug/L		78	61 - 124
Vinyl chloride	1.0	U	10.0	9.70		ug/L		97	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	80		56 - 136
Toluene-d8 (Surr)	112		78 - 122
Dibromofluoromethane (Surr)	87		73 - 120

Lab Sample ID: 240-160508-4 MSD

Matrix: Water

Analysis Batch: 515231

Client Sample ID: MW-100S-MSD_111821

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	1.0	U	10.0	7.01		ug/L		70	56 - 135	10	26
cis-1,2-Dichloroethene	1.0	U	10.0	9.59		ug/L		96	66 - 128	2	14
Tetrachloroethene	1.0	U	10.0	10.0		ug/L		100	62 - 131	9	20
trans-1,2-Dichloroethene	1.0	U	10.0	9.21		ug/L		92	56 - 136	7	15
Trichloroethene	1.0	U	10.0	8.22		ug/L		82	61 - 124	5	15
Vinyl chloride	1.0	U	10.0	10.2		ug/L		102	43 - 157	5	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		62 - 137
4-Bromofluorobenzene (Surr)	77		56 - 136
Toluene-d8 (Surr)	110		78 - 122
Dibromofluoromethane (Surr)	86		73 - 120

QC Sample Results

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

Job ID: 240-160508-1

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

Lab Sample ID: MB 240-514346/4
Matrix: Water
Analysis Batch: 514346

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			11/23/21 16:45	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 120					11/23/21 16:45	1

Lab Sample ID: LCS 240-514346/3
Matrix: Water
Analysis Batch: 514346

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	9.09		ug/L		91	80 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	97		66 - 120				

Lab Sample ID: 240-160508-2 MS
Matrix: Water
Analysis Batch: 514346

Client Sample ID: MW-99S-MS_111821
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	9.43		ug/L		94	51 - 153
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	100		66 - 120						

Lab Sample ID: 240-160508-2 MSD
Matrix: Water
Analysis Batch: 514346

Client Sample ID: MW-99S-MSD_111821
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	2.0	U	10.0	9.76		ug/L		98	51 - 153	3	16
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	100		66 - 120								

Lab Sample ID: MB 240-514583/5
Matrix: Water
Analysis Batch: 514583

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			11/24/21 20:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		66 - 120					11/24/21 20:04	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-160508-1

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

Lab Sample ID: LCS 240-514583/4
Matrix: Water
Analysis Batch: 514583

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	10.2		ug/L		102	80 - 122
Surrogate							
	%Recovery	LCS Qualifier	LCS Limits				
1,2-Dichloroethane-d4 (Surr)	75		66 - 120				

Lab Sample ID: 240-160508-4 MS
Matrix: Water
Analysis Batch: 514583

Client Sample ID: MW-100S-MS_111821
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.0	J F1	10.0	11.9		ug/L		109	51 - 153
Surrogate									
	%Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	75		66 - 120						

Lab Sample ID: 240-160508-4 MSD
Matrix: Water
Analysis Batch: 514583

Client Sample ID: MW-100S-MSD_111821
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	1.0	J F1	10.0	10.5		ug/L		95	51 - 153	13	16
Surrogate											
	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	75		66 - 120								

QC Association Summary

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

Job ID: 240-160508-1

GC/MS VOA

Analysis Batch: 514346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160508-2	MW-99S_111821	Total/NA	Water	8260B SIM	
240-160508-3	MW-75SR_111821	Total/NA	Water	8260B SIM	
MB 240-514346/4	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-514346/3	Lab Control Sample	Total/NA	Water	8260B SIM	
240-160508-2 MS	MW-99S-MS_111821	Total/NA	Water	8260B SIM	
240-160508-2 MSD	MW-99S-MSD_111821	Total/NA	Water	8260B SIM	

Analysis Batch: 514583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160508-4	MW-100S_111821	Total/NA	Water	8260B SIM	
MB 240-514583/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-514583/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-160508-4 MS	MW-100S-MS_111821	Total/NA	Water	8260B SIM	
240-160508-4 MSD	MW-100S-MSD_111821	Total/NA	Water	8260B SIM	

Analysis Batch: 514928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160508-1	TRIP BLANK_176	Total/NA	Water	8260B	
240-160508-2	MW-99S_111821	Total/NA	Water	8260B	
240-160508-3	MW-75SR_111821	Total/NA	Water	8260B	
MB 240-514928/6	Method Blank	Total/NA	Water	8260B	
LCS 240-514928/4	Lab Control Sample	Total/NA	Water	8260B	
240-160508-2 MS	MW-99S-MS_111821	Total/NA	Water	8260B	
240-160508-2 MSD	MW-99S-MSD_111821	Total/NA	Water	8260B	

Analysis Batch: 515231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160508-4	MW-100S_111821	Total/NA	Water	8260B	
MB 240-515231/6	Method Blank	Total/NA	Water	8260B	
LCS 240-515231/4	Lab Control Sample	Total/NA	Water	8260B	
240-160508-4 MS	MW-100S-MS_111821	Total/NA	Water	8260B	
240-160508-4 MSD	MW-100S-MSD_111821	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-160508-1

Client Sample ID: TRIP BLANK_176

Lab Sample ID: 240-160508-1

Date Collected: 11/18/21 00:00

Matrix: Water

Date Received: 11/20/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514928	11/30/21 06:15	LEE	TAL CAN

Client Sample ID: MW-99S_111821

Lab Sample ID: 240-160508-2

Date Collected: 11/18/21 11:15

Matrix: Water

Date Received: 11/20/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514928	11/30/21 06:37	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	514346	11/23/21 21:31	CS	TAL CAN

Client Sample ID: MW-75SR_111821

Lab Sample ID: 240-160508-3

Date Collected: 11/18/21 12:45

Matrix: Water

Date Received: 11/20/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514928	11/30/21 06:59	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	514346	11/24/21 01:07	CS	TAL CAN

Client Sample ID: MW-100S_111821

Lab Sample ID: 240-160508-4

Date Collected: 11/18/21 15:25

Matrix: Water

Date Received: 11/20/21 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	515231	12/01/21 16:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	514583	11/24/21 22:33	CS	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 - Off-Site

Job ID: 240-160508-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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 Hinskey Telephone: 248-994-2240

Site Contact: Julia McClafferty Telephone: 330-497-9396

Lab Contact: Mike DelMontico Telephone: 734-644-5131

Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377

Project Name: Ford LTP OTE-Site Project Number: 30080642.402.04

PO # 30080642.402.04

Sampler Name: SAMANTHA HENDLE

Source: KRISTINA WEAVER

Method of Shipment/Carrier:

Shipping/Tracking No:

Analysis Turnaround Time: 10 day

TAT if different from below: 3 weeks 2 weeks 1 week 2 days 1 day

Containers & Preservatives: HCl, HNO3, H2SO4, NaOH, NaOH, ZnOH, Laps, Other:

Matrix: Air, Aqueous, Sediment, Solid, Other:

Sample Identification: Sample Date, Sample Time

Filtered Sample (Y/N): NG

Composite (C/Grab/G): G

1-DCE 8260B, cis-1,2-DCE 8260B, Trans-1,2-DCE 8260B, PCE 8260B, TCE 8260B, Vinyl Chloride 8260B, 1,4-Dioxane 8260B SIM

Sample Specific Notes / Special Instructions: 1 Trip Blank

3 VOAs for 8260B, 3 VOAs for 8260B SIM

RUN MS/MSD

RUN MS/MSD

RUN MS/MSD

RUN MS/MSD

RUN MS/MSD

RUN MS/MSD

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RUN MS/MSD

RUN MS/MSD

RUN MS/MSD



Possible Hazard Identification: Non-Hazard Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained): Return to Client Disposal By Lab Archive

Submit all results through Cadena at tomalla@cadenaco.com. Cadena #E203631 Level IV Reporting requested.

Relinquished by: <i>SH Chatterjee</i>	Company: ARCADIS	Date/Time: 11/18/21 / 1700	Received by: <i>NOVE COLD STORAGE</i>	Date/Time: 11/18/21 / 1700
Relinquished by: <i>Christina Weaver</i>	Company: ARCADIS	Date/Time: 11/19/21 / 1013	Received by: <i>Juni-Joe</i>	Date/Time: 11/19/21 / 1013
Relinquished by: <i>Juni-Joe</i>	Company: ETA	Date/Time: 11/19/21 / 1017	Received in Laboratory by: <i>Juni-Joe Weaver</i>	Date/Time: 11-20-21 800

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**Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility**

Login # : 110508

Client Arcadis Site Name _____
Cooler Received on 11-20-21 Opened on 11-20-21
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Cooler unpacked by:
Nancy Berger

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


TestAmerica Cooler # TA 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-14 (CF +0.1 °C) Observed Cooler Temp. 0.1 °C Corrected Cooler Temp. 0.2 °C
IR GUN #IR-15 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 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 No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC157842
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Q0358 Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. 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)

20. 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: _____