

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-159846-1
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:
11/26/2021 7:58:19 AM

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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: 240-159846-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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: 240-159846-1

Job ID: 240-159846-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-159846-1

Comments

No additional comments.

Receipt

The samples were received on 11/11/2021 8:00 AM. 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 4.6° 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: 240-159846-1

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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- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-159846-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-159846-1	TRIP BLANK_108	Water	11/09/21 00:00	11/11/21 08:00
240-159846-2	MW-86_110921	Water	11/09/21 15:05	11/11/21 08:00
240-159846-3	MW-86S_110921	Water	11/09/21 16:10	11/11/21 08:00
240-159846-4	MW-134S_110921	Water	11/09/21 12:35	11/11/21 08:00
240-159846-5	MW-84S_110921	Water	11/09/21 11:25	11/11/21 08:00

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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: 240-159846-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-159846-1

No Detections.

Client Sample ID: MW-86_110921

Lab Sample ID: 240-159846-2

No Detections.

Client Sample ID: MW-86S_110921

Lab Sample ID: 240-159846-3

No Detections.

Client Sample ID: MW-134S_110921

Lab Sample ID: 240-159846-4

No Detections.

Client Sample ID: MW-84S_110921

Lab Sample ID: 240-159846-5

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 - Off-Site

Job ID: 240-159846-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-159846-1

Date Collected: 11/09/21 00:00

Matrix: Water

Date Received: 11/11/21 08:00

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	0.49	ug/L			11/18/21 17:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 17:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 17:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 17:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 17:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/18/21 17:38	1
4-Bromofluorobenzene (Surr)	82		56 - 136		11/18/21 17:38	1
Toluene-d8 (Surr)	92		78 - 122		11/18/21 17:38	1
Dibromofluoromethane (Surr)	98		73 - 120		11/18/21 17:38	1

Client Sample Results

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

Job ID: 240-159846-1

Client Sample ID: MW-86_110921

Lab Sample ID: 240-159846-2

Date Collected: 11/09/21 15:05

Matrix: Water

Date Received: 11/11/21 08:00

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			11/13/21 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120		11/13/21 02:24	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			11/18/21 20:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 20:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 20:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/18/21 20:09	1
4-Bromofluorobenzene (Surr)	81		56 - 136		11/18/21 20:09	1
Toluene-d8 (Surr)	92		78 - 122		11/18/21 20:09	1
Dibromofluoromethane (Surr)	97		73 - 120		11/18/21 20:09	1

Client Sample Results

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

Job ID: 240-159846-1

Client Sample ID: MW-86S_110921

Lab Sample ID: 240-159846-3

Date Collected: 11/09/21 16:10

Matrix: Water

Date Received: 11/11/21 08:00

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			11/13/21 02:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120		11/13/21 02:49	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			11/18/21 20:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 20:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 20:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		11/18/21 20:34	1
4-Bromofluorobenzene (Surr)	81		56 - 136		11/18/21 20:34	1
Toluene-d8 (Surr)	94		78 - 122		11/18/21 20:34	1
Dibromofluoromethane (Surr)	100		73 - 120		11/18/21 20:34	1

Client Sample Results

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

Job ID: 240-159846-1

Client Sample ID: MW-134S_110921

Lab Sample ID: 240-159846-4

Date Collected: 11/09/21 12:35

Matrix: Water

Date Received: 11/11/21 08:00

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			11/13/21 03:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		66 - 120		11/13/21 03:14	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			11/18/21 20:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 20:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 20:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 20:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 20:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		11/18/21 20:59	1
4-Bromofluorobenzene (Surr)	81		56 - 136		11/18/21 20:59	1
Toluene-d8 (Surr)	94		78 - 122		11/18/21 20:59	1
Dibromofluoromethane (Surr)	101		73 - 120		11/18/21 20:59	1

Client Sample Results

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

Job ID: 240-159846-1

Client Sample ID: MW-84S_110921

Lab Sample ID: 240-159846-5

Date Collected: 11/09/21 11:25

Matrix: Water

Date Received: 11/11/21 08:00

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			11/13/21 03:39	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		66 - 120					11/13/21 03:39	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			11/18/21 21:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 21:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 21:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 21:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 21:24	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 21:24	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137					11/18/21 21:24	1
4-Bromofluorobenzene (Surr)	80		56 - 136					11/18/21 21:24	1
Toluene-d8 (Surr)	94		78 - 122					11/18/21 21:24	1
Dibromofluoromethane (Surr)	101		73 - 120					11/18/21 21:24	1

Surrogate Summary

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

Job ID: 240-159846-1

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 (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-159846-1	TRIP BLANK_108	91	82	92	98
240-159846-2	MW-86_110921	91	81	92	97
240-159846-3	MW-86S_110921	93	81	94	100
240-159846-4	MW-134S_110921	94	81	94	101
240-159846-5	MW-84S_110921	93	80	94	101
240-159848-E-3 MS	Matrix Spike	89	93	92	95
240-159848-E-3 MSD	Matrix Spike Duplicate	86	95	94	94
LCS 240-513621/5	Lab Control Sample	87	90	95	94
MB 240-513621/8	Method Blank	90	84	93	99

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
		(66-120)
240-159541-G-2 MS	Matrix Spike	77
240-159541-M-2 MSD	Matrix Spike Duplicate	78
240-159846-2	MW-86_110921	77
240-159846-3	MW-86S_110921	79
240-159846-4	MW-134S_110921	75
240-159846-5	MW-84S_110921	78
LCS 240-512785/4	Lab Control Sample	79
MB 240-512785/5	Method Blank	79

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-159846-1

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

Lab Sample ID: MB 240-513621/8
Matrix: Water
Analysis Batch: 513621

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			11/18/21 15:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/21 15:31	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 15:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/21 15:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/21 15:31	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/21 15:31	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		11/18/21 15:31	1
4-Bromofluorobenzene (Surr)	84		56 - 136		11/18/21 15:31	1
Toluene-d8 (Surr)	93		78 - 122		11/18/21 15:31	1
Dibromofluoromethane (Surr)	99		73 - 120		11/18/21 15:31	1

Lab Sample ID: LCS 240-513621/5
Matrix: Water
Analysis Batch: 513621

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	25.0	26.8		ug/L		107	63 - 134
cis-1,2-Dichloroethene	25.0	24.6		ug/L		99	77 - 123
Tetrachloroethene	25.0	26.5		ug/L		106	76 - 123
trans-1,2-Dichloroethene	25.0	25.6		ug/L		102	75 - 124
Trichloroethene	25.0	25.5		ug/L		102	70 - 122
Vinyl chloride	25.0	20.1		ug/L		81	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	87		62 - 137
4-Bromofluorobenzene (Surr)	90		56 - 136
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-159848-E-3 MS
Matrix: Water
Analysis Batch: 513621

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	2.0	U	50.0	52.2		ug/L		104	56 - 135
cis-1,2-Dichloroethene	2.0	U	50.0	52.0		ug/L		104	66 - 128
Tetrachloroethene	2.0	U	50.0	56.8		ug/L		114	62 - 131
trans-1,2-Dichloroethene	2.0	U	50.0	51.2		ug/L		102	56 - 136
Trichloroethene	2.0	U	50.0	51.9		ug/L		104	61 - 124
Vinyl chloride	2.0	U	50.0	41.8		ug/L		84	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	93		56 - 136
Toluene-d8 (Surr)	92		78 - 122

QC Sample Results

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

Job ID: 240-159846-1

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

Lab Sample ID: 240-159848-E-3 MS
Matrix: Water
Analysis Batch: 513621

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: 240-159848-E-3 MSD
Matrix: Water
Analysis Batch: 513621

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	2.0	U	50.0	49.7		ug/L		99	56 - 135	5	26
cis-1,2-Dichloroethene	2.0	U	50.0	48.6		ug/L		97	66 - 128	7	14
Tetrachloroethene	2.0	U	50.0	55.3		ug/L		111	62 - 131	3	20
trans-1,2-Dichloroethene	2.0	U	50.0	48.6		ug/L		97	56 - 136	5	15
Trichloroethene	2.0	U	50.0	49.9		ug/L		100	61 - 124	4	15
Vinyl chloride	2.0	U	50.0	38.6		ug/L		77	43 - 157	8	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	94		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

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

Lab Sample ID: MB 240-512785/5
Matrix: Water
Analysis Batch: 512785

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			11/12/21 18:32	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	79		66 - 120		11/12/21 18:32	1

Lab Sample ID: LCS 240-512785/4
Matrix: Water
Analysis Batch: 512785

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	10.7		ug/L		107	80 - 122

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		66 - 120

Lab Sample ID: 240-159541-G-2 MS
Matrix: Water
Analysis Batch: 512785

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 F1	10.0	10.6		ug/L		106	51 - 153

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-159846-1

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)	77		66 - 120

Lab Sample ID: 240-159541-M-2 MSD
 Matrix: Water
 Analysis Batch: 512785

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U F1	10.0	10.4		ug/L		104	51 - 153	2	16

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	78		66 - 120

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

QC Association Summary

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

Job ID: 240-159846-1

GC/MS VOA

Analysis Batch: 512785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159846-2	MW-86_110921	Total/NA	Water	8260B SIM	
240-159846-3	MW-86S_110921	Total/NA	Water	8260B SIM	
240-159846-4	MW-134S_110921	Total/NA	Water	8260B SIM	
240-159846-5	MW-84S_110921	Total/NA	Water	8260B SIM	
MB 240-512785/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-512785/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159541-G-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-159541-M-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 513621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159846-1	TRIP BLANK_108	Total/NA	Water	8260B	
240-159846-2	MW-86_110921	Total/NA	Water	8260B	
240-159846-3	MW-86S_110921	Total/NA	Water	8260B	
240-159846-4	MW-134S_110921	Total/NA	Water	8260B	
240-159846-5	MW-84S_110921	Total/NA	Water	8260B	
MB 240-513621/8	Method Blank	Total/NA	Water	8260B	
LCS 240-513621/5	Lab Control Sample	Total/NA	Water	8260B	
240-159848-E-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-159848-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-159846-1

Client Sample ID: TRIP BLANK_108

Lab Sample ID: 240-159846-1

Date Collected: 11/09/21 00:00

Matrix: Water

Date Received: 11/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513621	11/18/21 17:38	SAM	TAL CAN

Client Sample ID: MW-86_110921

Lab Sample ID: 240-159846-2

Date Collected: 11/09/21 15:05

Matrix: Water

Date Received: 11/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513621	11/18/21 20:09	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	512785	11/13/21 02:24	CS	TAL CAN

Client Sample ID: MW-86S_110921

Lab Sample ID: 240-159846-3

Date Collected: 11/09/21 16:10

Matrix: Water

Date Received: 11/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513621	11/18/21 20:34	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	512785	11/13/21 02:49	CS	TAL CAN

Client Sample ID: MW-134S_110921

Lab Sample ID: 240-159846-4

Date Collected: 11/09/21 12:35

Matrix: Water

Date Received: 11/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513621	11/18/21 20:59	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	512785	11/13/21 03:14	CS	TAL CAN

Client Sample ID: MW-84S_110921

Lab Sample ID: 240-159846-5

Date Collected: 11/09/21 11:25

Matrix: Water

Date Received: 11/11/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513621	11/18/21 21:24	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	512785	11/13/21 03:39	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: 240-159846-1

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 locations: Brighton -- 10448 Chatham Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinesley
 Telephone: 248-994-2240
 Email: krisstoffer.hinesley@arcadis.com

Site Contact: Julia McClafferty
 Telephone: 734-644-5131

Lab Contact: Mike DellMonte
 Telephone: 330-497-9396

Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240

Project Name: Ford LTP Off-Site
 Project Number: 30000642.402.04
 PO # 30000642.402.04

Sampler Name: Sam Hundle
 Method of Shipments/Carrier:
 Shipping/Tracking No:

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

Filtered Sample (Y/N)
 Composite C / Grab G

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

Containers & Preservatives
 H2SO4
 HNO3
 HCl
 NaOH
 ZnAc
 NaOH
 Upters
 Others:

Matrix
 Air
 Aqueous
 Sediment
 Solid
 Other:

Sample Date Sample Time

TRIP BLANK_ 108

MW-80-110921

MW-86S-110921

MW-134S-110921

MW-84S-110921

1 Trip Blank

3 VOAs for 8260B
 3 VOAs for 8260B SIM

Sample Disposal (A fee may be assessed if samples are returned to Client) Disposal By Lab

240-159846 Chain of Custody

Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631
 Level IV Reporting requested.

Relinquished by: [Signature]
 Date/Time: 11/9/21 13:30
 Company: Arcadis

Relinquished by: [Signature]
 Date/Time: 11/10/21
 Company: Arcadis

Relinquished by: [Signature]
 Date/Time: 11/10/21 10:49
 Company: GTA

Relinquished by: [Signature]
 Date/Time: 11-11-21 8:06
 Company: ETA

Received by: [Signature]
 Date/Time: 11/9/21 18:30
 Company: Arcadis

Received by: [Signature]
 Date/Time: 11/10/21 10:49
 Company: GTA

Received in Laboratory by: [Signature]
 Date/Time: 11-11-21 8:06
 Company: ETA

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login #: 159846

Client Arca di S Site Name _____
 Cooler Received on 11-11-21 Opened on 11-11-21

Cooler unpacked by:
Tanya Boyer

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

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. 4.5 °C Corrected Cooler Temp. 4.6 °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
 - 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
- 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 NA
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 # 60358 Yes No
17. 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 _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

No SMD on TB per corrected COC. ~~one~~ 11-11-21

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: _____