

ANALYTICAL REPORT

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

Laboratory Job ID: 240-144576-1
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:
2/28/2021 2:06:51 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 - Off Site

Job ID: 240-144576-1

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 - Off Site

Job ID: 240-144576-1

Job ID: 240-144576-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-144576-1

Comments

No additional comments.

Receipt

The samples were received on 2/17/2021 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 1.1° 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: 240-144576-1

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: 240-144576-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144576-1	TRIP BLANK	Water	02/12/21 00:00	02/17/21 08:00	
240-144576-2	MW-100S_021221	Water	02/12/21 10:10	02/17/21 08:00	
240-144576-3	MW-101S_021221	Water	02/12/21 11:57	02/17/21 08:00	
240-144576-4	MW-76_021221	Water	02/12/21 13:20	02/17/21 08:00	
240-144576-5	MW-76S_021221	Water	02/12/21 15:12	02/17/21 08:00	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-144576-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144576-1

No Detections.

Client Sample ID: MW-100S_021221

Lab Sample ID: 240-144576-2

No Detections.

Client Sample ID: MW-101S_021221

Lab Sample ID: 240-144576-3

No Detections.

Client Sample ID: MW-76_021221

Lab Sample ID: 240-144576-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.52	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-76S_021221

Lab Sample ID: 240-144576-5

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: 240-144576-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144576-1

Date Collected: 02/12/21 00:00

Matrix: Water

Date Received: 02/17/21 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	0.19	ug/L			02/23/21 17:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/23/21 17:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/23/21 17:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/23/21 17:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/23/21 17:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/23/21 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		02/23/21 17:50	1
4-Bromofluorobenzene (Surr)	85		47 - 134		02/23/21 17:50	1
Toluene-d8 (Surr)	99		69 - 122		02/23/21 17:50	1
Dibromofluoromethane (Surr)	98		78 - 129		02/23/21 17:50	1

Client Sample Results

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

Job ID: 240-144576-1

Client Sample ID: MW-100S_021221

Lab Sample ID: 240-144576-2

Date Collected: 02/12/21 10:10

Matrix: Water

Date Received: 02/17/21 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			02/22/21 20:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133		02/22/21 20:24	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	0.19	ug/L			02/23/21 18:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/23/21 18:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/23/21 18:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/23/21 18:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/23/21 18:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/23/21 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130		02/23/21 18:13	1
4-Bromofluorobenzene (Surr)	92		47 - 134		02/23/21 18:13	1
Toluene-d8 (Surr)	103		69 - 122		02/23/21 18:13	1
Dibromofluoromethane (Surr)	103		78 - 129		02/23/21 18:13	1

Client Sample Results

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

Job ID: 240-144576-1

Client Sample ID: MW-101S_021221

Lab Sample ID: 240-144576-3

Date Collected: 02/12/21 11:57

Matrix: Water

Date Received: 02/17/21 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			02/22/21 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133		02/22/21 21:40	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			02/23/21 19:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/23/21 19:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/23/21 19:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/23/21 19:19	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/23/21 19:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/23/21 19:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		02/23/21 19:19	1
4-Bromofluorobenzene (Surr)	90		47 - 134		02/23/21 19:19	1
Toluene-d8 (Surr)	102		69 - 122		02/23/21 19:19	1
Dibromofluoromethane (Surr)	100		78 - 129		02/23/21 19:19	1

Client Sample Results

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

Job ID: 240-144576-1

Client Sample ID: MW-76_021221

Lab Sample ID: 240-144576-4

Date Collected: 02/12/21 13:20

Matrix: Water

Date Received: 02/17/21 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			02/22/21 22:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133					02/22/21 22:05	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			02/24/21 11:35	1
cis-1,2-Dichloroethene	0.52	J	1.0	0.16	ug/L			02/24/21 11:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 11:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 11:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 11:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 11:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 130					02/24/21 11:35	1
4-Bromofluorobenzene (Surr)	91		47 - 134					02/24/21 11:35	1
Toluene-d8 (Surr)	98		69 - 122					02/24/21 11:35	1
Dibromofluoromethane (Surr)	98		78 - 129					02/24/21 11:35	1

Client Sample Results

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

Job ID: 240-144576-1

Client Sample ID: MW-76S_021221

Lab Sample ID: 240-144576-5

Date Collected: 02/12/21 15:12

Matrix: Water

Date Received: 02/17/21 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			02/22/21 22:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133					02/22/21 22:30	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			02/24/21 11:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 11:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 11:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 11:57	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 11:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 11:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 130					02/24/21 11:57	1
4-Bromofluorobenzene (Surr)	94		47 - 134					02/24/21 11:57	1
Toluene-d8 (Surr)	107		69 - 122					02/24/21 11:57	1
Dibromofluoromethane (Surr)	102		78 - 129					02/24/21 11:57	1

Surrogate Summary

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

Job ID: 240-144576-1

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)
240-144576-1	TRIP BLANK	96	85	99	98
240-144576-2	MW-100S_021221	103	92	103	103
240-144576-2 MS	MW-100S-MS_021221	97	96	103	97
240-144576-2 MSD	MW-100S-MSD_021221	95	93	98	97
240-144576-3	MW-101S_021221	102	90	102	100
240-144576-4	MW-76_021221	101	91	98	98
240-144576-5	MW-76S_021221	105	94	107	102
240-144585-E-7 MS	Matrix Spike	96	91	97	100
240-144585-E-7 MSD	Matrix Spike Duplicate	101	98	105	103
LCS 240-474092/4	Lab Control Sample	101	103	105	109
LCS 240-474261/4	Lab Control Sample	93	91	98	95
MB 240-474092/6	Method Blank	98	87	101	98
MB 240-474261/6	Method Blank	102	93	105	100

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)
240-144576-2	MW-100S_021221	80
240-144576-2 MS	MW-100S-MS_021221	81
240-144576-2 MSD	MW-100S-MSD_021221	81
240-144576-3	MW-101S_021221	83
240-144576-4	MW-76_021221	86
240-144576-5	MW-76S_021221	83
LCS 240-473970/4	Lab Control Sample	80
MB 240-473970/5	Method Blank	81

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144576-1

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

Lab Sample ID: MB 240-474092/6
Matrix: Water
Analysis Batch: 474092

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			02/23/21 11:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/23/21 11:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/23/21 11:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/23/21 11:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/23/21 11:10	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/23/21 11:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130		02/23/21 11:10	1
4-Bromofluorobenzene (Surr)	87		47 - 134		02/23/21 11:10	1
Toluene-d8 (Surr)	101		69 - 122		02/23/21 11:10	1
Dibromofluoromethane (Surr)	98		78 - 129		02/23/21 11:10	1

Lab Sample ID: LCS 240-474092/4
Matrix: Water
Analysis Batch: 474092

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	10.9		ug/L		109	73 - 129
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	75 - 124
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 125
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	74 - 130
Trichloroethene	10.0	10.4		ug/L		104	71 - 121
Vinyl chloride	10.0	11.4		ug/L		114	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	109		78 - 129

Lab Sample ID: 240-144576-2 MS
Matrix: Water
Analysis Batch: 474092

Client Sample ID: MW-100S-MS_021221
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	9.00		ug/L		90	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.45		ug/L		95	68 - 121
Tetrachloroethene	1.0	U	10.0	8.55		ug/L		85	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.17		ug/L		92	69 - 126
Trichloroethene	1.0	U	10.0	9.03		ug/L		90	56 - 124
Vinyl chloride	1.0	U	10.0	9.58		ug/L		96	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	103		69 - 122

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QC Sample Results

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

Job ID: 240-144576-1

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

Lab Sample ID: 240-144576-2 MS
Matrix: Water
Analysis Batch: 474092

Client Sample ID: MW-100S-MS_021221
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	97		78 - 129

Lab Sample ID: 240-144576-2 MSD
Matrix: Water
Analysis Batch: 474092

Client Sample ID: MW-100S-MSD_021221
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	9.58		ug/L		96	64 - 132	6	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.91		ug/L		99	68 - 121	5	35
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	52 - 129	17	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.82		ug/L		98	69 - 126	7	35
Trichloroethene	1.0	U	10.0	10.2		ug/L		102	56 - 124	12	35
Vinyl chloride	1.0	U	10.0	10.5		ug/L		105	49 - 136	9	35

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	95		75 - 130
<i>4-Bromofluorobenzene (Surr)</i>	93		47 - 134
<i>Toluene-d8 (Surr)</i>	98		69 - 122
<i>Dibromofluoromethane (Surr)</i>	97		78 - 129

Lab Sample ID: MB 240-474261/6
Matrix: Water
Analysis Batch: 474261

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	0.19	ug/L			02/24/21 11:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/21 11:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/21 11:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/21 11:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/21 11:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/21 11:12	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>	102		75 - 130		02/24/21 11:12	1
<i>4-Bromofluorobenzene (Surr)</i>	93		47 - 134		02/24/21 11:12	1
<i>Toluene-d8 (Surr)</i>	105		69 - 122		02/24/21 11:12	1
<i>Dibromofluoromethane (Surr)</i>	100		78 - 129		02/24/21 11:12	1

Lab Sample ID: LCS 240-474261/4
Matrix: Water
Analysis Batch: 474261

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	10.2		ug/L		102	73 - 129
cis-1,2-Dichloroethene	10.0	9.76		ug/L		98	75 - 124
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 125
trans-1,2-Dichloroethene	10.0	9.65		ug/L		97	74 - 130
Trichloroethene	10.0	10.1		ug/L		101	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144576-1

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

Lab Sample ID: LCS 240-474261/4
Matrix: Water
Analysis Batch: 474261

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	9.62		ug/L		96	61 - 134
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	93		75 - 130				
4-Bromofluorobenzene (Surr)	91		47 - 134				
Toluene-d8 (Surr)	98		69 - 122				
Dibromofluoromethane (Surr)	95		78 - 129				

Lab Sample ID: 240-144585-E-7 MS
Matrix: Water
Analysis Batch: 474261

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	17	U	167	148		ug/L		89	64 - 132
cis-1,2-Dichloroethene	260		167	407		ug/L		90	68 - 121
Tetrachloroethene	17	U	167	148		ug/L		89	52 - 129
trans-1,2-Dichloroethene	17	U	167	161		ug/L		96	69 - 126
Trichloroethene	17	U	167	149		ug/L		89	56 - 124
Vinyl chloride	460		167	594		ug/L		78	49 - 136
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	96		75 - 130						
4-Bromofluorobenzene (Surr)	91		47 - 134						
Toluene-d8 (Surr)	97		69 - 122						
Dibromofluoromethane (Surr)	100		78 - 129						

Lab Sample ID: 240-144585-E-7 MSD
Matrix: Water
Analysis Batch: 474261

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	17	U	167	167		ug/L		100	64 - 132	12	35
cis-1,2-Dichloroethene	260		167	426		ug/L		101	68 - 121	5	35
Tetrachloroethene	17	U	167	165		ug/L		99	52 - 129	11	35
trans-1,2-Dichloroethene	17	U	167	168		ug/L		101	69 - 126	4	35
Trichloroethene	17	U	167	166		ug/L		99	56 - 124	11	35
Vinyl chloride	460		167	625		ug/L		96	49 - 136	5	35
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	101		75 - 130								
4-Bromofluorobenzene (Surr)	98		47 - 134								
Toluene-d8 (Surr)	105		69 - 122								
Dibromofluoromethane (Surr)	103		78 - 129								

QC Sample Results

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

Job ID: 240-144576-1

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

Lab Sample ID: MB 240-473970/5
Matrix: Water
Analysis Batch: 473970

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			02/22/21 14:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/22/21 14:03	1

Lab Sample ID: LCS 240-473970/4
Matrix: Water
Analysis Batch: 473970

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	10.3		ug/L		103	80 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	80		70 - 133				

Lab Sample ID: 240-144576-2 MS
Matrix: Water
Analysis Batch: 473970

Client Sample ID: MW-100S-MS_021221
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	10.7		ug/L		107	46 - 170
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	81		70 - 133						

Lab Sample ID: 240-144576-2 MSD
Matrix: Water
Analysis Batch: 473970

Client Sample ID: MW-100S-MSD_021221
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	11.1		ug/L		111	46 - 170	4	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	81		70 - 133								

QC Association Summary

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

Job ID: 240-144576-1

GC/MS VOA

Analysis Batch: 473970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144576-2	MW-100S_021221	Total/NA	Water	8260B SIM	
240-144576-3	MW-101S_021221	Total/NA	Water	8260B SIM	
240-144576-4	MW-76_021221	Total/NA	Water	8260B SIM	
240-144576-5	MW-76S_021221	Total/NA	Water	8260B SIM	
MB 240-473970/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-473970/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144576-2 MS	MW-100S-MS_021221	Total/NA	Water	8260B SIM	
240-144576-2 MSD	MW-100S-MSD_021221	Total/NA	Water	8260B SIM	

Analysis Batch: 474092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144576-1	TRIP BLANK	Total/NA	Water	8260B	
240-144576-2	MW-100S_021221	Total/NA	Water	8260B	
240-144576-3	MW-101S_021221	Total/NA	Water	8260B	
MB 240-474092/6	Method Blank	Total/NA	Water	8260B	
LCS 240-474092/4	Lab Control Sample	Total/NA	Water	8260B	
240-144576-2 MS	MW-100S-MS_021221	Total/NA	Water	8260B	
240-144576-2 MSD	MW-100S-MSD_021221	Total/NA	Water	8260B	

Analysis Batch: 474261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144576-4	MW-76_021221	Total/NA	Water	8260B	
240-144576-5	MW-76S_021221	Total/NA	Water	8260B	
MB 240-474261/6	Method Blank	Total/NA	Water	8260B	
LCS 240-474261/4	Lab Control Sample	Total/NA	Water	8260B	
240-144585-E-7 MS	Matrix Spike	Total/NA	Water	8260B	
240-144585-E-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-144576-1

Client Sample ID: TRIP BLANK

Date Collected: 02/12/21 00:00

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144576-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474092	02/23/21 17:50	LEE	TAL CAN

Client Sample ID: MW-100S_021221

Date Collected: 02/12/21 10:10

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144576-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474092	02/23/21 18:13	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473970	02/22/21 20:24	SAM	TAL CAN

Client Sample ID: MW-101S_021221

Date Collected: 02/12/21 11:57

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144576-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474092	02/23/21 19:19	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473970	02/22/21 21:40	SAM	TAL CAN

Client Sample ID: MW-76_021221

Date Collected: 02/12/21 13:20

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144576-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474261	02/24/21 11:35	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473970	02/22/21 22:05	SAM	TAL CAN

Client Sample ID: MW-76S_021221

Date Collected: 02/12/21 15:12

Date Received: 02/17/21 08:00

Lab Sample ID: 240-144576-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	474261	02/24/21 11:57	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473970	02/22/21 22:30	SAM	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: 240-144576-1

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	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
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	12-21-23
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	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Eurofins TestAmerica, Canton

Chain of Custody Record

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		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		Lab Contact: Mike DelMonico Telephone: 330-497-9396	
Site Contact: Julia McClafferty Telephone: 734-644-5131		COC No: _____ of _____ COCs	
Sampler Name: ANNSON HAVITZ		Analyses	
Method of Shipment/Carrier: Shipping/Tracking No:		Walk-in client Lab sampling Job/SDG No:	
Sample Identification		Sample Specific Notes / Special Instructions:	
Sample Date Sample Time		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-G Filtered Sample (Y/N)	
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 if) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal B	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631 Level IV Reporting requested.		240-144576 Chain of Custody	

Sample ID	Sample Date	Sample Time	Matrix	Containers & Preservatives	Analysis Turnaround Time	Received by:	Date/Time:	Company:
TRIP BLANK					10 day			
MW-1005-021221	2/12/21	10:10	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 10:30	Arcadis
MW-1005-MS-021221	2/12/21	10:10	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 10:30	Arcadis
MW-1005-MSD-021221	2/12/21	10:10	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 10:30	Arcadis
MW-1015-021221	2/12/21	11:57	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 11:57	Arcadis
MW-70-021221	2/12/21	13:20	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 13:20	Arcadis
MW-705-021221	2/12/21	15:12	Aqueous	H2SO4, HNO3, HCl, NaOH, Upret, Other:	3 weeks 2 weeks 1 week 2 days 1 day	Nov 1 Cold Storage	2/12/21 15:12	Arcadis

Relinquished by: *Arcadis* Date/Time: *2/12/21 10:30* Company: *Arcadis*

Relinquished by: *Choyan Chen* Date/Time: *2/15/21 10:10* Company: *Arcadis*

Relinquished by: *Amanda Battaglia* Date/Time: *2/15/21 10:57* Company: *ETA*

Relinquished by: *Amanda Battaglia* Date/Time: *2/16/21 9:07* Company: *ETA*

Relinquished by: *Amanda Battaglia* Date/Time: *2/15/21 10:57* Company: *ETA*

Relinquished by: *Amanda Battaglia* Date/Time: *2/17/21 8:00* Company: *ETA*



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 144574

Canton Facility

Client Arcadis Site Name

Cooler unpacked by: Matt Snyder

Cooler Received on 2-17-21 Opened on 2-17-21

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

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

TestAmerica Cooler # JA 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-11 (CF +0.1 °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 2.1 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 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 (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)? 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# HC907861 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 # 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: