

ANALYTICAL REPORT

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

Laboratory Job ID: 240-159138-1
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:
11/17/2021 10:51:19 AM

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

LINKS

Review your project
results through
TotalAccess

Have a Question?

 **Ask
The
Expert**

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	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	18
Lab Chronicle	19
Certification Summary	20
Chain of Custody	21



Definitions/Glossary

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

Job ID: 240-159138-1

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: 240-159138-1

Job ID: 240-159138-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-159138-1

Comments

No additional comments.

Receipt

The samples were received on 11/3/2021 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 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.

- 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 - Off-Site

Job ID: 240-159138-1

Method	Method Description	Protocol	Laboratory
8260B	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

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

Sample Summary

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

Job ID: 240-159138-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-159138-1	TRIP BLANK_15	Water	11/01/21 00:00	11/03/21 08:00
240-159138-2	MW-204S_110121	Water	11/01/21 12:21	11/03/21 08:00
240-159138-3	MW-204_110121	Water	11/01/21 13:26	11/03/21 08:00
240-159138-4	MW-205S_110121	Water	11/01/21 15:36	11/03/21 08:00
240-159138-5	MW-205_110121	Water	11/01/21 16:56	11/03/21 08:00

- 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 - Off-Site

Job ID: 240-159138-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-159138-1

No Detections.

Client Sample ID: MW-204S_110121

Lab Sample ID: 240-159138-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.7		1.0	0.46	ug/L	1		8260B	Total/NA
Trichloroethene	7.4		1.0	0.44	ug/L	1		8260B	Total/NA

Client Sample ID: MW-204_110121

Lab Sample ID: 240-159138-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	51		2.5	1.1	ug/L	2.5		8260B	Total/NA

Client Sample ID: MW-205S_110121

Lab Sample ID: 240-159138-4

No Detections.

Client Sample ID: MW-205_110121

Lab Sample ID: 240-159138-5

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: 240-159138-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-159138-1

Date Collected: 11/01/21 00:00

Matrix: Water

Date Received: 11/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 04:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 04:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 04:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 04:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/11/21 04:04	1
4-Bromofluorobenzene (Surr)	85		56 - 136		11/11/21 04:04	1
Toluene-d8 (Surr)	110		78 - 122		11/11/21 04:04	1
Dibromofluoromethane (Surr)	94		73 - 120		11/11/21 04:04	1

Client Sample Results

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

Job ID: 240-159138-1

Client Sample ID: MW-204S_110121

Lab Sample ID: 240-159138-2

Date Collected: 11/01/21 12:21

Matrix: Water

Date Received: 11/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	2.7		1.0	0.46	ug/L			11/12/21 12:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/12/21 12:20	1
Trichloroethene	7.4		1.0	0.44	ug/L			11/12/21 12:20	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/12/21 12:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		11/12/21 12:20	1
4-Bromofluorobenzene (Surr)	77		56 - 136		11/12/21 12:20	1
Toluene-d8 (Surr)	105		78 - 122		11/12/21 12:20	1
Dibromofluoromethane (Surr)	92		73 - 120		11/12/21 12:20	1

Client Sample Results

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

Job ID: 240-159138-1

Client Sample ID: MW-204_110121

Lab Sample ID: 240-159138-3

Date Collected: 11/01/21 13:26

Matrix: Water

Date Received: 11/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	2.5	U	2.5	1.2	ug/L			11/11/21 19:22	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	1.3	ug/L			11/11/21 19:22	2.5
Trichloroethene	51		2.5	1.1	ug/L			11/11/21 19:22	2.5
Vinyl chloride	2.5	U	2.5	1.1	ug/L			11/11/21 19:22	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		11/11/21 19:22	2.5
4-Bromofluorobenzene (Surr)	75		56 - 136		11/11/21 19:22	2.5
Toluene-d8 (Surr)	104		78 - 122		11/11/21 19:22	2.5
Dibromofluoromethane (Surr)	95		73 - 120		11/11/21 19:22	2.5

Client Sample Results

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

Job ID: 240-159138-1

Client Sample ID: MW-205S_110121

Lab Sample ID: 240-159138-4

Date Collected: 11/01/21 15:36

Matrix: Water

Date Received: 11/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 04:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 04:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 04:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 04:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/11/21 04:26	1
4-Bromofluorobenzene (Surr)	78		56 - 136		11/11/21 04:26	1
Toluene-d8 (Surr)	105		78 - 122		11/11/21 04:26	1
Dibromofluoromethane (Surr)	96		73 - 120		11/11/21 04:26	1

Client Sample Results

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

Job ID: 240-159138-1

Client Sample ID: MW-205_110121

Lab Sample ID: 240-159138-5

Date Collected: 11/01/21 16:56

Matrix: Water

Date Received: 11/03/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 04:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 04:48	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 04:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 04:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/11/21 04:48	1
4-Bromofluorobenzene (Surr)	78		56 - 136		11/11/21 04:48	1
Toluene-d8 (Surr)	102		78 - 122		11/11/21 04:48	1
Dibromofluoromethane (Surr)	90		73 - 120		11/11/21 04:48	1

Surrogate Summary

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

Job ID: 240-159138-1

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)
240-159138-1	TRIP BLANK_15	96	85	110	94
240-159138-2	MW-204S_110121	93	77	105	92
240-159138-3	MW-204_110121	93	75	104	95
240-159138-4	MW-205S_110121	96	78	105	96
240-159138-5	MW-205_110121	91	78	102	90
240-159143-E-3 MSD	Matrix Spike Duplicate	94	97	117	95
240-159143-H-3 MS	Matrix Spike	90	88	108	92
240-159185-C-26 MS	Matrix Spike	89	83	111	87
240-159185-C-26 MSD	Matrix Spike Duplicate	92	90	109	90
240-159556-B-7 MS	Matrix Spike	92	88	106	91
240-159556-B-7 MSD	Matrix Spike Duplicate	90	84	109	93
LCS 240-512327/4	Lab Control Sample	88	84	107	90
LCS 240-512497/4	Lab Control Sample	93	93	113	95
LCS 240-512676/4	Lab Control Sample	94	90	112	95
MB 240-512327/6	Method Blank	92	78	103	91
MB 240-512497/6	Method Blank	94	82	109	92
MB 240-512676/6	Method Blank	97	83	111	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)

QC Sample Results

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

Job ID: 240-159138-1

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

Lab Sample ID: MB 240-512327/6
Matrix: Water
Analysis Batch: 512327

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	0.541	J	1.0	0.46	ug/L			11/10/21 23:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/21 23:58	1
Trichloroethene	0.468	J	1.0	0.44	ug/L			11/10/21 23:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/21 23:58	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	92		62 - 137		11/10/21 23:58	1
4-Bromofluorobenzene (Surr)	78		56 - 136		11/10/21 23:58	1
Toluene-d8 (Surr)	103		78 - 122		11/10/21 23:58	1
Dibromofluoromethane (Surr)	91		73 - 120		11/10/21 23:58	1

Lab Sample ID: LCS 240-512327/4
Matrix: Water
Analysis Batch: 512327

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	75 - 124
Trichloroethene	10.0	9.37		ug/L		94	70 - 122
Vinyl chloride	10.0	8.92		ug/L		89	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	84		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

Lab Sample ID: 240-159143-E-3 MSD
Matrix: Water
Analysis Batch: 512327

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
trans-1,2-Dichloroethene	1.0	U	10.0	9.34		ug/L		93	56 - 136	4	15
Trichloroethene	1.0	U	10.0	7.92		ug/L		79	61 - 124	6	15
Vinyl chloride	1.0	U	10.0	10.1		ug/L		101	43 - 157	6	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	117		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

QC Sample Results

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

Job ID: 240-159138-1

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

Lab Sample ID: 240-159143-H-3 MS
Matrix: Water
Analysis Batch: 512327

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
cis-1,2-Dichloroethene	1.0	U	10.0	9.36		ug/L		94	66 - 128
trans-1,2-Dichloroethene	1.0	U	10.0	8.94		ug/L		89	56 - 136
Trichloroethene	1.0	U	10.0	7.46		ug/L		75	61 - 124
Vinyl chloride	1.0	U	10.0	9.56		ug/L		96	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

Lab Sample ID: MB 240-512497/6
Matrix: Water
Analysis Batch: 512497

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/11/21 12:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/11/21 12:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/11/21 12:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/11/21 12:17	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		11/11/21 12:17	1
4-Bromofluorobenzene (Surr)	82		56 - 136		11/11/21 12:17	1
Toluene-d8 (Surr)	109		78 - 122		11/11/21 12:17	1
Dibromofluoromethane (Surr)	92		73 - 120		11/11/21 12:17	1

Lab Sample ID: LCS 240-512497/4
Matrix: Water
Analysis Batch: 512497

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
cis-1,2-Dichloroethene	10.0	11.1		ug/L		111	77 - 123
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	75 - 124
Trichloroethene	10.0	9.47		ug/L		95	70 - 122
Vinyl chloride	10.0	10.1		ug/L		101	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	93		56 - 136
Toluene-d8 (Surr)	113		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

QC Sample Results

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

Job ID: 240-159138-1

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

Lab Sample ID: 240-159185-C-26 MS
Matrix: Water
Analysis Batch: 512497

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
cis-1,2-Dichloroethene	7100		3330	9520		ug/L		72	66 - 128	
trans-1,2-Dichloroethene	330	U	3330	2870		ug/L		86	56 - 136	
Trichloroethene	8300	F1	3330	10000	F1	ug/L		51	61 - 124	
Vinyl chloride	330	U	3330	2880		ug/L		86	43 - 157	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	83		56 - 136
Toluene-d8 (Surr)	111		78 - 122
Dibromofluoromethane (Surr)	87		73 - 120

Lab Sample ID: 240-159185-C-26 MSD
Matrix: Water
Analysis Batch: 512497

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						Limit	
cis-1,2-Dichloroethene	7100		3330	10100		ug/L		90	66 - 128	6	14	
trans-1,2-Dichloroethene	330	U	3330	3270		ug/L		98	56 - 136	13	15	
Trichloroethene	8300	F1	3330	10700		ug/L		71	61 - 124	6	15	
Vinyl chloride	330	U	3330	3410		ug/L		102	43 - 157	17	24	

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	90		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

Lab Sample ID: MB 240-512676/6
Matrix: Water
Analysis Batch: 512676

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		11/12/21 11:58	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		11/12/21 11:58	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L		11/12/21 11:58	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L		11/12/21 11:58	1	

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	97		62 - 137		11/12/21 11:58	1
4-Bromofluorobenzene (Surr)	83		56 - 136		11/12/21 11:58	1
Toluene-d8 (Surr)	111		78 - 122		11/12/21 11:58	1
Dibromofluoromethane (Surr)	96		73 - 120		11/12/21 11:58	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-159138-1

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

Lab Sample ID: LCS 240-512676/4
Matrix: Water
Analysis Batch: 512676

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	77 - 123
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	75 - 124
Trichloroethene	10.0	9.00		ug/L		90	70 - 122
Vinyl chloride	10.0	10.0		ug/L		100	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	90		56 - 136
Toluene-d8 (Surr)	112		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

Lab Sample ID: 240-159556-B-7 MS
Matrix: Water
Analysis Batch: 512676

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
cis-1,2-Dichloroethene	10	U	100	94.5		ug/L		94	66 - 128
trans-1,2-Dichloroethene	10	U	100	95.2		ug/L		95	56 - 136
Trichloroethene	10	U	100	78.2		ug/L		78	61 - 124
Vinyl chloride	10	U	100	89.4		ug/L		89	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	88		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

Lab Sample ID: 240-159556-B-7 MSD
Matrix: Water
Analysis Batch: 512676

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
cis-1,2-Dichloroethene	10	U	100	102		ug/L		102	66 - 128	8	14
trans-1,2-Dichloroethene	10	U	100	103		ug/L		103	56 - 136	8	15
Trichloroethene	10	U	100	87.1		ug/L		87	61 - 124	11	15
Vinyl chloride	10	U	100	103		ug/L		103	43 - 157	15	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	84		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	93		73 - 120

QC Association Summary

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

Job ID: 240-159138-1

GC/MS VOA

Analysis Batch: 512327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159138-1	TRIP BLANK_15	Total/NA	Water	8260B	
240-159138-4	MW-205S_110121	Total/NA	Water	8260B	
240-159138-5	MW-205_110121	Total/NA	Water	8260B	
MB 240-512327/6	Method Blank	Total/NA	Water	8260B	
LCS 240-512327/4	Lab Control Sample	Total/NA	Water	8260B	
240-159143-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-159143-H-3 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 512497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159138-3	MW-204_110121	Total/NA	Water	8260B	
MB 240-512497/6	Method Blank	Total/NA	Water	8260B	
LCS 240-512497/4	Lab Control Sample	Total/NA	Water	8260B	
240-159185-C-26 MS	Matrix Spike	Total/NA	Water	8260B	
240-159185-C-26 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 512676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159138-2	MW-204S_110121	Total/NA	Water	8260B	
MB 240-512676/6	Method Blank	Total/NA	Water	8260B	
LCS 240-512676/4	Lab Control Sample	Total/NA	Water	8260B	
240-159556-B-7 MS	Matrix Spike	Total/NA	Water	8260B	
240-159556-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-159138-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-159138-1

Date Collected: 11/01/21 00:00

Matrix: Water

Date Received: 11/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512327	11/11/21 04:04	LEE	TAL CAN

Client Sample ID: MW-204S_110121

Lab Sample ID: 240-159138-2

Date Collected: 11/01/21 12:21

Matrix: Water

Date Received: 11/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512676	11/12/21 12:20	LEE	TAL CAN

Client Sample ID: MW-204_110121

Lab Sample ID: 240-159138-3

Date Collected: 11/01/21 13:26

Matrix: Water

Date Received: 11/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	512497	11/11/21 19:22	LEE	TAL CAN

Client Sample ID: MW-205S_110121

Lab Sample ID: 240-159138-4

Date Collected: 11/01/21 15:36

Matrix: Water

Date Received: 11/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512327	11/11/21 04:26	LEE	TAL CAN

Client Sample ID: MW-205_110121

Lab Sample ID: 240-159138-5

Date Collected: 11/01/21 16:56

Matrix: Water

Date Received: 11/03/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	512327	11/11/21 04:48	LEE	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: 240-159138-1

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

0.1/0.2

Chain of Custody Record

TestAmerica

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

Client Contact		Regulatory program		DW	NPDES	RCRA	Other
Company Name: Arcadis		Client Project Manager: Kris Hinskey		Lab Contact: Mike DeLMonico			
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240		Telephone: 330-497-9396			
City/State/Zip: Novi, MI, 48377		Email: kristoffec.hinskey@arcadis.com		1 of 1 CDCs			
Phone: 248-994-2240		Sampler Name: Gary Schaefer		For lab use only			
Project Name: Ford LTP Off-Site		Method of Shipment/Carrier:		Walk-in client			
Project Number: 3088642.402.04		Shipping/Tracking No:		Lab sampling			
PO # 3088642.402.04				Job/SDG No:			
Sample Identification		Sample Date		Sample Time		Sample Specific Notes / Special Instructions:	
TRIP BLANK_ 15							1 Trip Blank
MW-2045-110121		11/01/21	12:21				3 VOAs for 8260B 3 VOAs for 8260B-SIM 21/11/21
MW-204-110121		11/01/21	13:26				
MW-2055-110121		11/01/21	15:36				
MW-205-110121		11/01/21	16:56				

Possible Hazard Identification ✓ Non-Hazard	in Irritant	Poison B	Unknown	Sample Disposal (A fee may be assessed if samples are re- Return to Client ✓ Disposal By Lab ✓ Archive For _____ Months)	
				1-A-Dioxane 8260B SIM	1-DCE 8260B
				1-DCE 8260B	1-DCE 8260B
				Trans-1,2-DCE 8260B	Trans-1,2-DCE 8260B
				PCE 8260B	PCE 8260B
				Vinyl Chloride 8260B	Vinyl Chloride 8260B
				1,4-Dioxane 8260B SIM	1,4-Dioxane 8260B SIM

Relinquished by: Gary Schaefer	Company: Arcadis	Date/Time: 11/1/21 17:55	Received by: MWI Cold Storage	Company: Arcadis	Date/Time: 11/1/21 17:55
Relinquished by: Gary Schaefer	Company: Arcadis	Date/Time: 11/2/21 12:50	Received by: [Signature]	Company: GTM	Date/Time: 11/2/21 12:50
Relinquished by: [Signature]	Company: GTM	Date/Time: 11/2/21 17:51	Received by: [Signature]	Company: ETA	Date/Time: 11/3/21 8:00 AM

Submit all results through Cadena at jcaden@cadena.com Cadena #E203631
Level IV Reporting requested

Relinquished by: Gary Schaefer
Company: Arcadis
Date/Time: 11/1/21 17:55
Received by: MWI Cold Storage
Company: Arcadis
Date/Time: 11/1/21 17:55
Relinquished by: Gary Schaefer
Company: Arcadis
Date/Time: 11/2/21 12:50
Received by: [Signature]
Company: GTM
Date/Time: 11/2/21 12:50
Relinquished by: [Signature]
Company: GTM
Date/Time: 11/2/21 17:51
Received by: [Signature]
Company: ETA
Date/Time: 11/3/21 8:00 AM


Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 159138

Client ARCADIS Site Name _____ Cooler unpacked by Matthew Suma
 Cooler Received on 11/3/21 Opened on 11/3/21
 FedEx 1st Grd Exp UPS FAS Clapper 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 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
 -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
 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 # 01042016 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 _____

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 _____