

ANALYTICAL REPORT

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

Laboratory Job ID: 240-149680-1
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:
6/4/2021 10:30:40 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: 240-149680-1

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: 240-149680-1

Job ID: 240-149680-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-149680-1

Comments

No additional comments.

Receipt

The samples were received on 5/20/2021 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 1.3° 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: 240-149680-1

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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Sample Summary

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

Job ID: 240-149680-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149680-1	TRIP BLANK_95	Water	05/18/21 00:00	05/20/21 08:00	
240-149680-2	MW-132S_051821	Water	05/18/21 09:09	05/20/21 08:00	
240-149680-3	MW-131S_051821	Water	05/18/21 10:40	05/20/21 08:00	
240-149680-4	MW-105S_051821	Water	05/18/21 12:27	05/20/21 08:00	
240-149680-5	MW-102_051821	Water	05/18/21 14:13	05/20/21 08:00	
240-149680-6	MW-102S_051821	Water	05/18/21 15:07	05/20/21 08:00	
240-149680-7	DUP-13	Water	05/18/21 00:00	05/20/21 08:00	

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Detection Summary

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

Job ID: 240-149680-1

Client Sample ID: TRIP BLANK_95

Lab Sample ID: 240-149680-1

No Detections.

Client Sample ID: MW-132S_051821

Lab Sample ID: 240-149680-2

No Detections.

Client Sample ID: MW-131S_051821

Lab Sample ID: 240-149680-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.99	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-105S_051821

Lab Sample ID: 240-149680-4

No Detections.

Client Sample ID: MW-102_051821

Lab Sample ID: 240-149680-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.89	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.5		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-102S_051821

Lab Sample ID: 240-149680-6

No Detections.

Client Sample ID: DUP-13

Lab Sample ID: 240-149680-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.77	J	1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: TRIP BLANK_95

Lab Sample ID: 240-149680-1

Date Collected: 05/18/21 00:00

Matrix: Water

Date Received: 05/20/21 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			05/28/21 16:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 16:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 16:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 16:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 16:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		05/28/21 16:49	1
4-Bromofluorobenzene (Surr)	90		47 - 134		05/28/21 16:49	1
Toluene-d8 (Surr)	110		69 - 122		05/28/21 16:49	1
Dibromofluoromethane (Surr)	111		78 - 129		05/28/21 16:49	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: MW-132S_051821

Lab Sample ID: 240-149680-2

Date Collected: 05/18/21 09:09

Matrix: Water

Date Received: 05/20/21 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			05/24/21 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133					05/24/21 17:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 18:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 18:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 18:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 18:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 18:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 18:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130					05/28/21 18:55	1
4-Bromofluorobenzene (Surr)	94		47 - 134					05/28/21 18:55	1
Toluene-d8 (Surr)	113		69 - 122					05/28/21 18:55	1
Dibromofluoromethane (Surr)	110		78 - 129					05/28/21 18:55	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: MW-131S_051821

Lab Sample ID: 240-149680-3

Date Collected: 05/18/21 10:40

Matrix: Water

Date Received: 05/20/21 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			05/24/21 18:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133					05/24/21 18:11	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			05/28/21 19:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 19:20	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 19:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 19:20	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 19:20	1
Vinyl chloride	0.99	J	1.0	0.20	ug/L			05/28/21 19:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130					05/28/21 19:20	1
4-Bromofluorobenzene (Surr)	91		47 - 134					05/28/21 19:20	1
Toluene-d8 (Surr)	109		69 - 122					05/28/21 19:20	1
Dibromofluoromethane (Surr)	109		78 - 129					05/28/21 19:20	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: MW-105S_051821

Lab Sample ID: 240-149680-4

Date Collected: 05/18/21 12:27

Matrix: Water

Date Received: 05/20/21 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			05/24/21 18:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 133					05/24/21 18:36	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			05/28/21 19:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 19:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 19:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 19:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 19:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 19:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130					05/28/21 19:45	1
4-Bromofluorobenzene (Surr)	88		47 - 134					05/28/21 19:45	1
Toluene-d8 (Surr)	107		69 - 122					05/28/21 19:45	1
Dibromofluoromethane (Surr)	106		78 - 129					05/28/21 19:45	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: MW-102_051821

Lab Sample ID: 240-149680-5

Date Collected: 05/18/21 14:13

Matrix: Water

Date Received: 05/20/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.89	J	2.0	0.86	ug/L			05/24/21 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133		05/24/21 19:01	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			05/28/21 20:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 20:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 20:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 20:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 20:10	1
Vinyl chloride	1.5		1.0	0.20	ug/L			05/28/21 20:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		05/28/21 20:10	1
4-Bromofluorobenzene (Surr)	90		47 - 134		05/28/21 20:10	1
Toluene-d8 (Surr)	109		69 - 122		05/28/21 20:10	1
Dibromofluoromethane (Surr)	108		78 - 129		05/28/21 20:10	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: MW-102S_051821

Lab Sample ID: 240-149680-6

Date Collected: 05/18/21 15:07

Matrix: Water

Date Received: 05/20/21 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			05/24/21 19:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133					05/24/21 19:26	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			05/28/21 20:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 20:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 20:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 20:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 20:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 20:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130					05/28/21 20:35	1
4-Bromofluorobenzene (Surr)	88		47 - 134					05/28/21 20:35	1
Toluene-d8 (Surr)	106		69 - 122					05/28/21 20:35	1
Dibromofluoromethane (Surr)	110		78 - 129					05/28/21 20:35	1

Client Sample Results

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

Job ID: 240-149680-1

Client Sample ID: DUP-13
Date Collected: 05/18/21 00:00
Date Received: 05/20/21 08:00

Lab Sample ID: 240-149680-7
Matrix: Water

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			05/24/21 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 133					05/24/21 19:51	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			05/28/21 21:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 21:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 21:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 21:01	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 21:01	1
Vinyl chloride	0.77	J	1.0	0.20	ug/L			05/28/21 21:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130					05/28/21 21:01	1
4-Bromofluorobenzene (Surr)	84		47 - 134					05/28/21 21:01	1
Toluene-d8 (Surr)	103		69 - 122					05/28/21 21:01	1
Dibromofluoromethane (Surr)	109		78 - 129					05/28/21 21:01	1

Surrogate Summary

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

Job ID: 240-149680-1

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 (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-149680-1	TRIP BLANK_95	109	90	110	111
240-149680-2	MW-132S_051821	111	94	113	110
240-149680-3	MW-131S_051821	106	91	109	109
240-149680-4	MW-105S_051821	103	88	107	106
240-149680-5	MW-102_051821	108	90	109	108
240-149680-6	MW-102S_051821	110	88	106	110
240-149680-7	DUP-13	106	84	103	109
240-149704-C-3 MS	Matrix Spike	110	101	104	111
240-149704-C-3 MSD	Matrix Spike Duplicate	108	103	108	113
LCS 240-488079/5	Lab Control Sample	101	102	105	107
MB 240-488079/7	Method Blank	106	96	111	107

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 (70-133)
240-149527-I-2 MS	Matrix Spike	96
240-149527-P-2 MSD	Matrix Spike Duplicate	97
240-149680-2	MW-132S_051821	98
240-149680-3	MW-131S_051821	97
240-149680-4	MW-105S_051821	100
240-149680-5	MW-102_051821	99
240-149680-6	MW-102S_051821	97
240-149680-7	DUP-13	100
LCS 240-487242/4	Lab Control Sample	100
MB 240-487242/5	Method Blank	97

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-149680-1

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

Lab Sample ID: MB 240-488079/7
Matrix: Water
Analysis Batch: 488079

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	0.19	ug/L			05/28/21 13:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/28/21 13:53	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/28/21 13:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/28/21 13:53	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/28/21 13:53	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/28/21 13:53	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		05/28/21 13:53	1
4-Bromofluorobenzene (Surr)	96		47 - 134		05/28/21 13:53	1
Toluene-d8 (Surr)	111		69 - 122		05/28/21 13:53	1
Dibromofluoromethane (Surr)	107		78 - 129		05/28/21 13:53	1

Lab Sample ID: LCS 240-488079/5
Matrix: Water
Analysis Batch: 488079

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	23.7		ug/L		95	73 - 129
cis-1,2-Dichloroethene	25.0	27.8		ug/L		111	75 - 124
Tetrachloroethene	25.0	27.7		ug/L		111	70 - 125
trans-1,2-Dichloroethene	25.0	25.8		ug/L		103	74 - 130
Trichloroethene	25.0	26.6		ug/L		106	71 - 121
Vinyl chloride	25.0	19.3		ug/L		77	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	101		75 - 130
4-Bromofluorobenzene (Surr)	102		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	107		78 - 129

Lab Sample ID: 240-149704-C-3 MS
Matrix: Water
Analysis Batch: 488079

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	6.7	U	167	149		ug/L		89	64 - 132
cis-1,2-Dichloroethene	42		167	229		ug/L		112	68 - 121
Tetrachloroethene	6.7	U	167	173		ug/L		104	52 - 129
trans-1,2-Dichloroethene	6.7	U	167	173		ug/L		104	69 - 126
Trichloroethene	6.7	U	167	176		ug/L		105	56 - 124
Vinyl chloride	130		167	253		ug/L		74	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		75 - 130
4-Bromofluorobenzene (Surr)	101		47 - 134
Toluene-d8 (Surr)	104		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149680-1

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

Lab Sample ID: 240-149704-C-3 MS
Matrix: Water
Analysis Batch: 488079

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

Surrogate	%Recovery	MS MS Qualifier	Limits
Dibromofluoromethane (Surr)	111		78 - 129

Lab Sample ID: 240-149704-C-3 MSD
Matrix: Water
Analysis Batch: 488079

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	6.7	U	167	143		ug/L		86	64 - 132	4	35
cis-1,2-Dichloroethene	42		167	226		ug/L		111	68 - 121	1	35
Tetrachloroethene	6.7	U	167	178		ug/L		107	52 - 129	3	35
trans-1,2-Dichloroethene	6.7	U	167	172		ug/L		103	69 - 126	1	35
Trichloroethene	6.7	U	167	174		ug/L		104	56 - 124	1	35
Vinyl chloride	130		167	281		ug/L		91	49 - 136	11	35

Surrogate	%Recovery	MSD MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	108		69 - 122
Dibromofluoromethane (Surr)	113		78 - 129

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

Lab Sample ID: MB 240-487242/5
Matrix: Water
Analysis Batch: 487242

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			05/24/21 16:31	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133		05/24/21 16:31	1

Lab Sample ID: LCS 240-487242/4
Matrix: Water
Analysis Batch: 487242

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	%Recovery	LCS LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 133

Lab Sample ID: 240-149527-I-2 MS
Matrix: Water
Analysis Batch: 487242

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.3		ug/L		103	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149680-1

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)	96		70 - 133

Lab Sample ID: 240-149527-P-2 MSD
 Matrix: Water
 Analysis Batch: 487242

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	10.0	10.2		ug/L		102	46 - 170	1	26

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	97		70 - 133

QC Association Summary

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

Job ID: 240-149680-1

GC/MS VOA

Analysis Batch: 487242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149680-2	MW-132S_051821	Total/NA	Water	8260B SIM	
240-149680-3	MW-131S_051821	Total/NA	Water	8260B SIM	
240-149680-4	MW-105S_051821	Total/NA	Water	8260B SIM	
240-149680-5	MW-102_051821	Total/NA	Water	8260B SIM	
240-149680-6	MW-102S_051821	Total/NA	Water	8260B SIM	
240-149680-7	DUP-13	Total/NA	Water	8260B SIM	
MB 240-487242/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-487242/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149527-I-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149527-P-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 488079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149680-1	TRIP BLANK_95	Total/NA	Water	8260B	
240-149680-2	MW-132S_051821	Total/NA	Water	8260B	
240-149680-3	MW-131S_051821	Total/NA	Water	8260B	
240-149680-4	MW-105S_051821	Total/NA	Water	8260B	
240-149680-5	MW-102_051821	Total/NA	Water	8260B	
240-149680-6	MW-102S_051821	Total/NA	Water	8260B	
240-149680-7	DUP-13	Total/NA	Water	8260B	
MB 240-488079/7	Method Blank	Total/NA	Water	8260B	
LCS 240-488079/5	Lab Control Sample	Total/NA	Water	8260B	
240-149704-C-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-149704-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-149680-1

Client Sample ID: TRIP BLANK_95

Lab Sample ID: 240-149680-1

Date Collected: 05/18/21 00:00

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 16:49	SAM	TAL CAN

Client Sample ID: MW-132S_051821

Lab Sample ID: 240-149680-2

Date Collected: 05/18/21 09:09

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 18:55	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 17:46	CS	TAL CAN

Client Sample ID: MW-131S_051821

Lab Sample ID: 240-149680-3

Date Collected: 05/18/21 10:40

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 19:20	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 18:11	CS	TAL CAN

Client Sample ID: MW-105S_051821

Lab Sample ID: 240-149680-4

Date Collected: 05/18/21 12:27

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 19:45	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 18:36	CS	TAL CAN

Client Sample ID: MW-102_051821

Lab Sample ID: 240-149680-5

Date Collected: 05/18/21 14:13

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 20:10	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 19:01	CS	TAL CAN

Client Sample ID: MW-102S_051821

Lab Sample ID: 240-149680-6

Date Collected: 05/18/21 15:07

Matrix: Water

Date Received: 05/20/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	488079	05/28/21 20:35	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 19:26	CS	TAL CAN

Lab Chronicle

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

Job ID: 240-149680-1

Client Sample ID: DUP-13

Lab Sample ID: 240-149680-7

Date Collected: 05/18/21 00:00

Matrix: Water

Date Received: 05/20/21 08:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	8260B		1	488079	05/28/21 21:01	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	487242	05/24/21 19:51	CS	TAL CAN

Laboratory References:

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

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Accreditation/Certification Summary

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

Job ID: 240-149680-1

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	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
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.



Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinsky
Site Contact: Julia McClafferty
Telephone: 248-994-2240
Telephone: 734-644-5131

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

Project Name: Ford LTP O/E-Site
Project Number: 30080642.402.04
PO # 30080642.402.04

Sampler Name: Andrew Bentz
Method of Shipment/Carrier:
Shipping/Tracking No:

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

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives						Filtered Sample (Y/N)	Composite C/Crb=C	Analyses						Sample Specific Notes / Special Instructions:		
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH			ZnOH	Other:	1-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B		Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM
Trip Blank - 9S	---	---	X																		1 Trip Blank	
MW-1325 - 051821	5/18/21	0904	X																			3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-1315 - 051821	5/18/21	1040	X																			
MW-1055 - 051821	5/18/21	1227	X																			
MW-102 - 051821	5/18/21	1413	X																			
MW-102S - 051821	5/18/21	1507	X																			
DUP-13	5/18/21	-	X																			

Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown

Sample Disposal (A fee may apply)
 Return to Client

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

Relinquished by: [Signature]
Relinquished by: [Signature]
Relinquished by: [Signature]

Received by: [Signature]
Received by: [Signature]
Received in Laboratory by: [Signature]

Company: Arcadis
Company: ARCADIS
Company: EPA

Date/Time: 5/18/21 1630
Date/Time: 5/19/21
Date/Time: 5/19/21 520

Company: Arcadis
Company: Arcadis
Company: EPA

Date/Time: 5/18/21 1630
Date/Time: 5/19/21
Date/Time: 5/19/21 18:00



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 149680

Canton Facility

Client Areadis Site Name _____

Cooler unpacked by: [Signature]

Cooler Received on 5/20/21 Opened on 5/20/21

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

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

TestAmerica Cooler # _____ 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. 1.2 °C Corrected Cooler Temp. 1.3 °C
 IR GUN #IR-12 (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# HC022887
14. Were VOAs on the COC? Yes No NA
15. Were air bubbles >6 mm in any VOA vials? Yes No NA ← Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # covered 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: _____