

ANALYTICAL REPORT

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

Laboratory Job ID: 240-149634-1
Client Project/Site: Ford LTP On-Site

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

Attn: Kristoffer Hinskey



Authorized for release by:
6/1/2021 11:43:51 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 On-Site

Job ID: 240-149634-1

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 On-Site

Job ID: 240-149634-1

Job ID: 240-149634-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-149634-1

Comments

No additional comments.

Receipt

The samples were received on 5/18/2021 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7° C, 3.9° C and 4.5° C.

GC/MS VOA

Method 8260B: The matrix spike/matrix spike duplicate (MS/MSD) for samples TRIP BLANK_90 (240-149634-1) was not reported, because the analyte list for these samples did not match the analyte list for the MS/MSD parent sample.

No additional analytical or quality issues were noted, other than those described above or 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 On-Site

Job ID: 240-149634-1

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



Sample Summary

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

Job ID: 240-149634-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149634-1	TRIP BLANK_90	Water	05/15/21 00:00	05/18/21 10:00	
240-149634-2	MW-209S_051521	Water	05/15/21 10:32	05/18/21 10:00	
240-149634-3	MW-41_051521	Water	05/15/21 11:54	05/18/21 10:00	
240-149634-4	MW-210S_051521	Water	05/15/21 13:30	05/18/21 10:00	
240-149634-5	DUP-04	Water	05/15/21 00:00	05/18/21 10:00	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-149634-1

Client Sample ID: TRIP BLANK_90

Lab Sample ID: 240-149634-1

No Detections.

Client Sample ID: MW-209S_051521

Lab Sample ID: 240-149634-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.40	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-41_051521

Lab Sample ID: 240-149634-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.2		1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	1.1		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-210S_051521

Lab Sample ID: 240-149634-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	12		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.5		1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	14		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: DUP-04

Lab Sample ID: 240-149634-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.26	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.60	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 On-Site

Job ID: 240-149634-1

Client Sample ID: TRIP BLANK_90

Lab Sample ID: 240-149634-1

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/18/21 10:00

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			05/27/21 20:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 20:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 20:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 20:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 20:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 20:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		75 - 130		05/27/21 20:32	1
4-Bromofluorobenzene (Surr)	92		47 - 134		05/27/21 20:32	1
Toluene-d8 (Surr)	98		69 - 122		05/27/21 20:32	1
Dibromofluoromethane (Surr)	86		78 - 129		05/27/21 20:32	1

Client Sample Results

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

Job ID: 240-149634-1

Client Sample ID: MW-209S_051521

Lab Sample ID: 240-149634-2

Date Collected: 05/15/21 10:32

Matrix: Water

Date Received: 05/18/21 10:00

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			05/21/21 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		70 - 133		05/21/21 22:02	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			05/27/21 09:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 09:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 09:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 09:39	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 09:39	1
Vinyl chloride	0.40	J	1.0	0.20	ug/L			05/27/21 09:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 130		05/27/21 09:39	1
4-Bromofluorobenzene (Surr)	95		47 - 134		05/27/21 09:39	1
Toluene-d8 (Surr)	98		69 - 122		05/27/21 09:39	1
Dibromofluoromethane (Surr)	85		78 - 129		05/27/21 09:39	1

Client Sample Results

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

Job ID: 240-149634-1

Client Sample ID: MW-41_051521

Lab Sample ID: 240-149634-3

Date Collected: 05/15/21 11:54

Matrix: Water

Date Received: 05/18/21 10:00

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			05/21/21 22:27	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133					05/21/21 22:27	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			05/27/21 10:04	1
cis-1,2-Dichloroethene	1.2		1.0	0.16	ug/L			05/27/21 10:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 10:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 10:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 10:04	1
Vinyl chloride	1.1		1.0	0.20	ug/L			05/27/21 10:04	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 130					05/27/21 10:04	1
4-Bromofluorobenzene (Surr)	90		47 - 134					05/27/21 10:04	1
Toluene-d8 (Surr)	98		69 - 122					05/27/21 10:04	1
Dibromofluoromethane (Surr)	86		78 - 129					05/27/21 10:04	1

Client Sample Results

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

Job ID: 240-149634-1

Client Sample ID: MW-210S_051521

Lab Sample ID: 240-149634-4

Date Collected: 05/15/21 13:30

Matrix: Water

Date Received: 05/18/21 10:00

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			05/21/21 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133		05/21/21 22:52	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			05/27/21 10:29	1
cis-1,2-Dichloroethene	12		1.0	0.16	ug/L			05/27/21 10:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 10:29	1
trans-1,2-Dichloroethene	1.5		1.0	0.19	ug/L			05/27/21 10:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 10:29	1
Vinyl chloride	14		1.0	0.20	ug/L			05/27/21 10:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		75 - 130		05/27/21 10:29	1
4-Bromofluorobenzene (Surr)	93		47 - 134		05/27/21 10:29	1
Toluene-d8 (Surr)	99		69 - 122		05/27/21 10:29	1
Dibromofluoromethane (Surr)	85		78 - 129		05/27/21 10:29	1

Client Sample Results

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

Job ID: 240-149634-1

Client Sample ID: DUP-04

Lab Sample ID: 240-149634-5

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/18/21 10:00

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			05/21/21 23:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					05/21/21 23:17	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			05/27/21 10:55	1
cis-1,2-Dichloroethene	0.26	J	1.0	0.16	ug/L			05/27/21 10:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 10:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 10:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 10:55	1
Vinyl chloride	0.60	J	1.0	0.20	ug/L			05/27/21 10:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		75 - 130					05/27/21 10:55	1
4-Bromofluorobenzene (Surr)	91		47 - 134					05/27/21 10:55	1
Toluene-d8 (Surr)	97		69 - 122					05/27/21 10:55	1
Dibromofluoromethane (Surr)	84		78 - 129					05/27/21 10:55	1

Surrogate Summary

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

Job ID: 240-149634-1

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)
240-149630-K-3 MS	Matrix Spike	82	95	97	87
240-149630-L-3 MSD	Matrix Spike Duplicate	78	96	97	86
240-149634-1	TRIP BLANK_90	79	92	98	86
240-149634-2	MW-209S_051521	81	95	98	85
240-149634-3	MW-41_051521	81	90	98	86
240-149634-4	MW-210S_051521	78	93	99	85
240-149634-5	DUP-04	79	91	97	84
LCS 240-487706/4	Lab Control Sample	79	94	98	86
LCS 240-487870/4	Lab Control Sample	77	94	96	89
MB 240-487706/7	Method Blank	80	91	98	85
MB 240-487870/7	Method Blank	78	92	97	87

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)
240-149526-H-3 MS	Matrix Spike	85
240-149526-K-3 MSD	Matrix Spike Duplicate	81
240-149634-2	MW-209S_051521	83
240-149634-3	MW-41_051521	82
240-149634-4	MW-210S_051521	87
240-149634-5	DUP-04	87
LCS 240-486956/4	Lab Control Sample	82
MB 240-486956/5	Method Blank	80

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-149634-1

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

Lab Sample ID: MB 240-487706/7
Matrix: Water
Analysis Batch: 487706

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			05/27/21 03:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 03:24	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 03:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 03:24	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 03:24	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 03:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		75 - 130		05/27/21 03:24	1
4-Bromofluorobenzene (Surr)	91		47 - 134		05/27/21 03:24	1
Toluene-d8 (Surr)	98		69 - 122		05/27/21 03:24	1
Dibromofluoromethane (Surr)	85		78 - 129		05/27/21 03:24	1

Lab Sample ID: LCS 240-487706/4
Matrix: Water
Analysis Batch: 487706

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	8.40		ug/L		84	73 - 129
cis-1,2-Dichloroethene	10.0	8.78		ug/L		88	75 - 124
Tetrachloroethene	10.0	9.43		ug/L		94	70 - 125
trans-1,2-Dichloroethene	10.0	8.65		ug/L		87	74 - 130
Trichloroethene	10.0	8.56		ug/L		86	71 - 121
Vinyl chloride	10.0	10.8		ug/L		108	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	98		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

Lab Sample ID: 240-149630-K-3 MS
Matrix: Water
Analysis Batch: 487706

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	1.0	U	10.0	7.72		ug/L		77	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.30		ug/L		83	68 - 121
Tetrachloroethene	1.0	U	10.0	8.39		ug/L		84	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.06		ug/L		81	69 - 126
Trichloroethene	1.0	U	10.0	7.58		ug/L		76	56 - 124
Vinyl chloride	0.24	J	10.0	10.1		ug/L		98	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	97		69 - 122

QC Sample Results

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

Job ID: 240-149634-1

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

Lab Sample ID: 240-149630-K-3 MS

Matrix: Water

Analysis Batch: 487706

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	87		78 - 129

Lab Sample ID: 240-149630-L-3 MSD

Matrix: Water

Analysis Batch: 487706

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	1.0	U	10.0	8.34		ug/L		83	64 - 132	8	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.51		ug/L		85	68 - 121	2	35
Tetrachloroethene	1.0	U	10.0	9.16		ug/L		92	52 - 129	9	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.57		ug/L		86	69 - 126	6	35
Trichloroethene	1.0	U	10.0	8.07		ug/L		81	56 - 124	6	35
Vinyl chloride	0.24	J	10.0	10.2		ug/L		99	49 - 136	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	97		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

Lab Sample ID: MB 240-487870/7

Matrix: Water

Analysis Batch: 487870

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			05/27/21 16:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/27/21 16:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/27/21 16:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/27/21 16:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/27/21 16:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/27/21 16:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		75 - 130		05/27/21 16:17	1
4-Bromofluorobenzene (Surr)	92		47 - 134		05/27/21 16:17	1
Toluene-d8 (Surr)	97		69 - 122		05/27/21 16:17	1
Dibromofluoromethane (Surr)	87		78 - 129		05/27/21 16:17	1

Lab Sample ID: LCS 240-487870/4

Matrix: Water

Analysis Batch: 487870

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	8.40		ug/L		84	73 - 129
cis-1,2-Dichloroethene	10.0	8.72		ug/L		87	75 - 124
Tetrachloroethene	10.0	9.34		ug/L		93	70 - 125
trans-1,2-Dichloroethene	10.0	8.39		ug/L		84	74 - 130
Trichloroethene	10.0	8.26		ug/L		83	71 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149634-1

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

Lab Sample ID: LCS 240-487870/4
Matrix: Water
Analysis Batch: 487870

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	11.6		ug/L		116	61 - 134
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	77		75 - 130				
4-Bromofluorobenzene (Surr)	94		47 - 134				
Toluene-d8 (Surr)	96		69 - 122				
Dibromofluoromethane (Surr)	89		78 - 129				

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

Lab Sample ID: MB 240-486956/5
Matrix: Water
Analysis Batch: 486956

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			05/21/21 13:40	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133					05/21/21 13:40	1

Lab Sample ID: LCS 240-486956/4
Matrix: Water
Analysis Batch: 486956

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	10.8		ug/L		108	80 - 135
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	82		70 - 133				

Lab Sample ID: 240-149526-H-3 MS
Matrix: Water
Analysis Batch: 486956

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
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	85		70 - 133						

Lab Sample ID: 240-149526-K-3 MSD
Matrix: Water
Analysis Batch: 486956

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	10.3		ug/L		103	46 - 170	0	26

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-149634-1

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

Lab Sample ID: 240-149526-K-3 MSD
Matrix: Water
Analysis Batch: 486956

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

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	81		70 - 133

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

QC Association Summary

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

Job ID: 240-149634-1

GC/MS VOA

Analysis Batch: 486956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149634-2	MW-209S_051521	Total/NA	Water	8260B SIM	
240-149634-3	MW-41_051521	Total/NA	Water	8260B SIM	
240-149634-4	MW-210S_051521	Total/NA	Water	8260B SIM	
240-149634-5	DUP-04	Total/NA	Water	8260B SIM	
MB 240-486956/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-486956/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-149526-H-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-149526-K-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 487706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149634-2	MW-209S_051521	Total/NA	Water	8260B	
240-149634-3	MW-41_051521	Total/NA	Water	8260B	
240-149634-4	MW-210S_051521	Total/NA	Water	8260B	
240-149634-5	DUP-04	Total/NA	Water	8260B	
MB 240-487706/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487706/4	Lab Control Sample	Total/NA	Water	8260B	
240-149630-K-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-149630-L-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 487870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149634-1	TRIP BLANK_90	Total/NA	Water	8260B	
MB 240-487870/7	Method Blank	Total/NA	Water	8260B	
LCS 240-487870/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-149634-1

Client Sample ID: TRIP BLANK_90

Lab Sample ID: 240-149634-1

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487870	05/27/21 20:32	LRW	TAL CAN

Client Sample ID: MW-209S_051521

Lab Sample ID: 240-149634-2

Date Collected: 05/15/21 10:32

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 09:39	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	486956	05/21/21 22:02	CS	TAL CAN

Client Sample ID: MW-41_051521

Lab Sample ID: 240-149634-3

Date Collected: 05/15/21 11:54

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 10:04	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	486956	05/21/21 22:27	CS	TAL CAN

Client Sample ID: MW-210S_051521

Lab Sample ID: 240-149634-4

Date Collected: 05/15/21 13:30

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 10:29	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	486956	05/21/21 22:52	CS	TAL CAN

Client Sample ID: DUP-04

Lab Sample ID: 240-149634-5

Date Collected: 05/15/21 00:00

Matrix: Water

Date Received: 05/18/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	487706	05/27/21 10:55	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	486956	05/21/21 23:17	CS	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-149634-1

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.



Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

MICHIGAN

TestAmerica Laboratories, Inc.

190

Lab Contact: Mike DelMonico

Telephone: 330-497-9396

Site Contact: Julia McClafferty

Telephone: 734-644-5131

Client Project Manager: Kris Hinskey

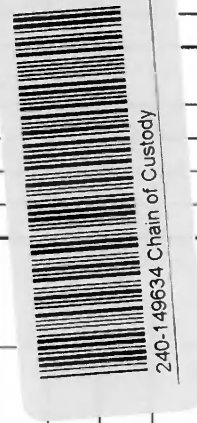
Company Name: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240
Project Name: Ford LTP On-Site
Project Number: 30080642.401.03
PO # 30080642.401.03

Regulatory program: DW NPDES RCRA Other

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

Sampler Name: S. JHUGU
Method of Shipment/Carrier:
Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix						Filtered Sample (Y/N)	Composite=C/Grab=G	Analyses						Sample Specific Notes / Special Instructions:			
			Air	Aqueous	Sediment	Solid	Other:	H2SO4			HNO3	HCl	NaOH	ZnAc	NaOH	Umpres		Other:	1-DCE 8260B	cis-1,2-DCE 8260B
TRIP Blank 290			X						NG	X	X	X	X	X	X	X	X	X	X	1 Trip Blank
MW-209S-051S24	5/5/21	1032	X							X	X	X	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-41-051S24	5/5/21	1154	X							X	X	X	X	X	X	X	X	X	X	
MW-210S-051S24	5/5/21	1330	X							X	X	X	X	X	X	X	X	X	X	
TRIP Blank 290	5/5/21	---	X							X	X	X	X	X	X	X	X	X	X	3 VOAs 8260B 3 VOAs 8260B SIM
DUP-04	5/15/21	---	X						NG	X	X	X	X	X	X	X	X	X	X	



Possible Hazard Identification
 Non-Hazard
 Irritable
 Ammable
 sin Irritant
 Poison B
 Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client
 Disposal By Lab
 Archive For _____ Months

Submit all results through Cadena at jomaliala@cadenaco.com, Cadena #E203728
Level IV Reporting requested.

Relinquished by:	Relinquished by:	Relinquished by:	Relinquished by:	Relinquished by:
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
Company: ARCADIS	Company: ARCADIS	Company: ARCADIS	Company: ARCADIS	Company: ARCADIS
Date/Time: 5/5/21 1430	Date/Time: 5/17/21	Date/Time: 5/17/21 1131	Date/Time: 5/18/21 1100	Date/Time: 5/18/21 1100
Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>
Company: ARCADIS	Company: ARCADIS	Company: ARCADIS	Company: ARCADIS	Company: ARCADIS

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 149634
Canton Facility

Client Arcadis Site Name Ford LTP Cooler unpacked by: [Signature]
Cooler Received on 5-18-21 Opened on 5-18-21
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # TIA 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. _____ °C Corrected Cooler Temp. _____ °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 3 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? 1 on each 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)? 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? Larger than this. Yes No NA
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

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

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

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: _____

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form						
Cooler Description (Circle)			IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(A) Client	Box	Other	(IR-11) IR-12	3.8	3.9	(Wet Ice) Blue Ice Dry Ice Water None
(A) Client	Box	Other	(IR-11) IR-12	2.6	2.7	(Wet Ice) Blue Ice Dry Ice Water None
(A) Client	Box	Other	(IR-11) IR-12	4.4	4.5	(Wet Ice) Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client	Box	Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
<input type="checkbox"/> See Temperature Excursion Form						