

ANALYTICAL REPORT

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

Laboratory Job ID: 240-135186-1
Client Project/Site: Ford LTP Off-Site

For:
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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: 240-135186-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 240-135186-1

Job ID: 240-135186-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Off-Site

Report Number: 240-135186-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 8/19/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-135186-1), MW-72S_081420 (240-135186-2), MW-105S_081420 (240-135186-3), MW-102_081420 (240-135186-4), MW-102S_081420 (240-135186-5) and DUP-06 (240-135186-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/25/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-72S_081420 (240-135186-2), MW-105S_081420 (240-135186-3), MW-102_081420 (240-135186-4), MW-102S_081420 (240-135186-5) and DUP-06 (240-135186-6) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/25/2020 and 08/26/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

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

Job ID: 240-135186-1

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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- 2
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- 5
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- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-135186-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135186-1	TRIP BLANK	Water	08/14/20 00:00	08/19/20 09:30	
240-135186-2	MW-72S_081420	Water	08/14/20 10:56	08/19/20 09:30	
240-135186-3	MW-105S_081420	Water	08/14/20 12:39	08/19/20 09:30	
240-135186-4	MW-102_081420	Water	08/14/20 14:06	08/19/20 09:30	
240-135186-5	MW-102S_081420	Water	08/14/20 15:31	08/19/20 09:30	
240-135186-6	DUP-06	Water	08/14/20 00:00	08/19/20 09:30	

- 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: 240-135186-1

Client Sample ID: TRIP BLANK **Lab Sample ID: 240-135186-1**

No Detections.

Client Sample ID: MW-72S_081420 **Lab Sample ID: 240-135186-2**

No Detections.

Client Sample ID: MW-105S_081420 **Lab Sample ID: 240-135186-3**

No Detections.

Client Sample ID: MW-102_081420 **Lab Sample ID: 240-135186-4**

No Detections.

Client Sample ID: MW-102S_081420 **Lab Sample ID: 240-135186-5**

No Detections.

Client Sample ID: DUP-06 **Lab Sample ID: 240-135186-6**

No Detections.

- 1
- 2
- 3
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- 7
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- 10
- 11
- 12
- 13
- 14

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: 240-135186-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135186-1

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

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	0.46	ug/L			08/25/20 03:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 03:24	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 03:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 03:24	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 03:24	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 03:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130		08/25/20 03:24	1
4-Bromofluorobenzene (Surr)	76		47 - 134		08/25/20 03:24	1
Toluene-d8 (Surr)	96		69 - 122		08/25/20 03:24	1
Dibromofluoromethane (Surr)	98		78 - 129		08/25/20 03:24	1

Client Sample Results

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

Job ID: 240-135186-1

Client Sample ID: MW-72S_081420

Lab Sample ID: 240-135186-2

Date Collected: 08/14/20 10:56

Matrix: Water

Date Received: 08/19/20 09:30

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			08/25/20 21:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 133		08/25/20 21:41	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	0.46	ug/L			08/25/20 03:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 03:46	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 03:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 03:46	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 03:46	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 03:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 130		08/25/20 03:46	1
4-Bromofluorobenzene (Surr)	76		47 - 134		08/25/20 03:46	1
Toluene-d8 (Surr)	99		69 - 122		08/25/20 03:46	1
Dibromofluoromethane (Surr)	99		78 - 129		08/25/20 03:46	1

Client Sample Results

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

Job ID: 240-135186-1

Client Sample ID: MW-105S_081420

Lab Sample ID: 240-135186-3

Date Collected: 08/14/20 12:39

Matrix: Water

Date Received: 08/19/20 09:30

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			08/25/20 22:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		08/25/20 22:06	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	0.46	ug/L			08/25/20 04:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 04:08	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 04:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 04:08	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 04:08	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 04:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130		08/25/20 04:08	1
4-Bromofluorobenzene (Surr)	76		47 - 134		08/25/20 04:08	1
Toluene-d8 (Surr)	97		69 - 122		08/25/20 04:08	1
Dibromofluoromethane (Surr)	98		78 - 129		08/25/20 04:08	1

Client Sample Results

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

Job ID: 240-135186-1

Client Sample ID: MW-102_081420

Lab Sample ID: 240-135186-4

Date Collected: 08/14/20 14:06

Matrix: Water

Date Received: 08/19/20 09:30

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			08/25/20 22:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		70 - 133					08/25/20 22:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/25/20 04:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 04:30	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 04:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 04:30	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 04:30	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 04:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130					08/25/20 04:30	1
4-Bromofluorobenzene (Surr)	75		47 - 134					08/25/20 04:30	1
Toluene-d8 (Surr)	97		69 - 122					08/25/20 04:30	1
Dibromofluoromethane (Surr)	97		78 - 129					08/25/20 04:30	1

Client Sample Results

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

Job ID: 240-135186-1

Client Sample ID: MW-102S_081420

Lab Sample ID: 240-135186-5

Date Collected: 08/14/20 15:31

Matrix: Water

Date Received: 08/19/20 09:30

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			08/26/20 08:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133		08/26/20 08:13	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	0.46	ug/L			08/25/20 04:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 04:52	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 04:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 04:52	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 04:52	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 04:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 130		08/25/20 04:52	1
4-Bromofluorobenzene (Surr)	76		47 - 134		08/25/20 04:52	1
Toluene-d8 (Surr)	96		69 - 122		08/25/20 04:52	1
Dibromofluoromethane (Surr)	101		78 - 129		08/25/20 04:52	1

Client Sample Results

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

Job ID: 240-135186-1

Client Sample ID: DUP-06

Lab Sample ID: 240-135186-6

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

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			08/26/20 08:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		70 - 133		08/26/20 08:38	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	0.46	ug/L			08/25/20 05:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 05:14	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 05:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 05:14	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 05:14	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 05:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130		08/25/20 05:14	1
4-Bromofluorobenzene (Surr)	77		47 - 134		08/25/20 05:14	1
Toluene-d8 (Surr)	96		69 - 122		08/25/20 05:14	1
Dibromofluoromethane (Surr)	96		78 - 129		08/25/20 05:14	1

Surrogate Summary

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

Job ID: 240-135186-1

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)
240-135186-1	TRIP BLANK	112	76	96	98
240-135186-2	MW-72S_081420	114	76	99	99
240-135186-3	MW-105S_081420	115	76	97	98
240-135186-4	MW-102_081420	112	75	97	97
240-135186-5	MW-102S_081420	114	76	96	101
240-135186-6	DUP-06	111	77	96	96
240-135187-E-2 MSD	Matrix Spike Duplicate	102	94	101	91
240-135187-H-2 MS	Matrix Spike	101	94	102	97
LCS 240-448467/4	Lab Control Sample	95	97	104	88
MB 240-448467/7	Method Blank	107	82	98	93

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)
240-134918-X-5 MS	Matrix Spike	84
240-134918-X-5 MSD	Matrix Spike Duplicate	85
240-135186-2	MW-72S_081420	90
240-135186-3	MW-105S_081420	89
240-135186-4	MW-102_081420	91
240-135186-5	MW-102S_081420	81
240-135186-6	DUP-06	82
240-135187-B-2 MS	Matrix Spike	83
240-135187-B-2 MSD	Matrix Spike Duplicate	88
LCS 240-448596/4	Lab Control Sample	86
LCS 240-448707/5	Lab Control Sample	85
MB 240-448596/5	Method Blank	84
MB 240-448707/6	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-135186-1

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

Lab Sample ID: MB 240-448467/7
Matrix: Water
Analysis Batch: 448467

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	0.46	ug/L			08/24/20 23:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/24/20 23:03	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/24/20 23:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/24/20 23:03	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/24/20 23:03	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/24/20 23:03	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		75 - 130		08/24/20 23:03	1
4-Bromofluorobenzene (Surr)	82		47 - 134		08/24/20 23:03	1
Toluene-d8 (Surr)	98		69 - 122		08/24/20 23:03	1
Dibromofluoromethane (Surr)	93		78 - 129		08/24/20 23:03	1

Lab Sample ID: LCS 240-448467/4
Matrix: Water
Analysis Batch: 448467

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	9.49		ug/L		95	75 - 124
Tetrachloroethene	10.0	9.33		ug/L		93	70 - 125
trans-1,2-Dichloroethene	10.0	8.89		ug/L		89	74 - 130
Trichloroethene	10.0	8.66		ug/L		87	71 - 121
Vinyl chloride	10.0	8.77		ug/L		88	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	104		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

Lab Sample ID: 240-135187-E-2 MSD
Matrix: Water
Analysis Batch: 448467

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

Analyte	Sample	Sample	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier									
1,1-Dichloroethene	1.0	U	10.0	8.68		ug/L		87	64 - 132	30	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.14		ug/L		91	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	8.20		ug/L		82	52 - 129	4	35
trans-1,2-Dichloroethene	1.0	U	10.0	8.32		ug/L		83	69 - 126	7	35
Trichloroethene	1.0	U	10.0	7.70		ug/L		77	56 - 124	0	35
Vinyl chloride	1.0	U	10.0	8.78		ug/L		88	49 - 136	2	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	101		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135186-1

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

Lab Sample ID: 240-135187-E-2 MSD
Matrix: Water
Analysis Batch: 448467

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-135187-H-2 MS
Matrix: Water
Analysis Batch: 448467

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	6.45		ug/L		64	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.24		ug/L		92	68 - 121
Tetrachloroethene	1.0	U	10.0	7.89		ug/L		79	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.88		ug/L		89	69 - 126
Trichloroethene	1.0	U	10.0	7.69		ug/L		77	56 - 124
Vinyl chloride	1.0	U	10.0	8.99		ug/L		90	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	102		69 - 122
Dibromofluoromethane (Surr)	97		78 - 129

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

Lab Sample ID: MB 240-448596/5
Matrix: Water
Analysis Batch: 448596

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			08/25/20 13:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		08/25/20 13:00	1

Lab Sample ID: LCS 240-448596/4
Matrix: Water
Analysis Batch: 448596

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	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 133

Lab Sample ID: 240-134918-X-5 MS
Matrix: Water
Analysis Batch: 448596

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	9.78		ug/L		98	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135186-1

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

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	84		70 - 133

Lab Sample ID: 240-134918-X-5 MSD
Matrix: Water
Analysis Batch: 448596

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	9.56		ug/L		96	46 - 170	2	26

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133

Lab Sample ID: MB 240-448707/6
Matrix: Water
Analysis Batch: 448707

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/26/20 06:59	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,2-Dichloroethane-d4 (Surr)	84		70 - 133		08/26/20 06:59	1

Lab Sample ID: LCS 240-448707/5
Matrix: Water
Analysis Batch: 448707

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	10.0	10.6		ug/L		106	80 - 135

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133

Lab Sample ID: 240-135187-B-2 MS
Matrix: Water
Analysis Batch: 448707

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	2.0	U	10.0	9.96		ug/L		100	46 - 170

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	83		70 - 133

Lab Sample ID: 240-135187-B-2 MSD
Matrix: Water
Analysis Batch: 448707

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	9.71		ug/L		97	46 - 170	3	26

QC Sample Results

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

Job ID: 240-135186-1

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

Lab Sample ID: 240-135187-B-2 MSD
Matrix: Water
Analysis Batch: 448707

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

<u>Surrogate</u>	<u>MSD</u> <u>%Recovery</u>	<u>MSD</u> <u>Qualifier</u>	<u>Limits</u>
1,2-Dichloroethane-d4 (Surr)	88		70 - 133

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

QC Association Summary

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

Job ID: 240-135186-1

GC/MS VOA

Analysis Batch: 448467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135186-1	TRIP BLANK	Total/NA	Water	8260B	
240-135186-2	MW-72S_081420	Total/NA	Water	8260B	
240-135186-3	MW-105S_081420	Total/NA	Water	8260B	
240-135186-4	MW-102_081420	Total/NA	Water	8260B	
240-135186-5	MW-102S_081420	Total/NA	Water	8260B	
240-135186-6	DUP-06	Total/NA	Water	8260B	
MB 240-448467/7	Method Blank	Total/NA	Water	8260B	
LCS 240-448467/4	Lab Control Sample	Total/NA	Water	8260B	
240-135187-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-135187-H-2 MS	Matrix Spike	Total/NA	Water	8260B	

Analysis Batch: 448596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135186-2	MW-72S_081420	Total/NA	Water	8260B SIM	
240-135186-3	MW-105S_081420	Total/NA	Water	8260B SIM	
240-135186-4	MW-102_081420	Total/NA	Water	8260B SIM	
MB 240-448596/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-448596/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-134918-X-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-134918-X-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 448707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135186-5	MW-102S_081420	Total/NA	Water	8260B SIM	
240-135186-6	DUP-06	Total/NA	Water	8260B SIM	
MB 240-448707/6	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-448707/5	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135187-B-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-135187-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-135186-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135186-1

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 03:24	LEE	TAL CAN

Client Sample ID: MW-72S_081420

Lab Sample ID: 240-135186-2

Date Collected: 08/14/20 10:56

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 03:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448596	08/25/20 21:41	SAM	TAL CAN

Client Sample ID: MW-105S_081420

Lab Sample ID: 240-135186-3

Date Collected: 08/14/20 12:39

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 04:08	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448596	08/25/20 22:06	SAM	TAL CAN

Client Sample ID: MW-102_081420

Lab Sample ID: 240-135186-4

Date Collected: 08/14/20 14:06

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 04:30	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448596	08/25/20 22:30	SAM	TAL CAN

Client Sample ID: MW-102S_081420

Lab Sample ID: 240-135186-5

Date Collected: 08/14/20 15:31

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 04:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 08:13	TJL2	TAL CAN

Client Sample ID: DUP-06

Lab Sample ID: 240-135186-6

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 05:14	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 08:38	TJL2	TAL CAN

Laboratory References:

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

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-135186-1

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20 *
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

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



Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 135186
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: [Signature]
Cooler Received on 8-19-20 Opened on 8-19-20
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____


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

TestAmerica Cooler # TA Foam Bqx. 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-10 (CF +0.7°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. 14 °C Corrected Cooler Temp. 23 °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 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 be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC911298
13. Were VOAs on the COC? Yes No NA
14. Were air bubbles >6 mm in any VOA vials? Yes No NA  Larger than this.
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
16. 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

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: _____

18. 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)

19. 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: _____