

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-134652-1  
Client Project/Site: Ford LTP On-Site

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
8/21/2020 10:33:29 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: 240-134652-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

## 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: 240-134652-1

**Job ID: 240-134652-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

**Client: ARCADIS U.S., Inc.**

**Project: Ford LTP On-Site**

**Report Number: 240-134652-1**

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.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

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

### **RECEIPT**

The samples were received on 8/7/2020 9:20 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2° C.

### **VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples TRIP BLANK (240-134652-1), MW-44\_080420 (240-134652-2), MW-22\_080420 (240-134652-3), DUP-01 (240-134652-4), DUP-02 (240-134652-5), MW-23\_080420 (240-134652-6), PW-16-02\_080420 (240-134652-7) and PW-16-01\_080420 (240-134652-8) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/17/2020 and 08/18/2020.

cis-1,2-Dichloroethene was detected in method blank MB 240-447616/7 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples MW-44\_080420 (240-134652-2)[10X], MW-22\_080420 (240-134652-3)[66.67X], DUP-01 (240-134652-4)[500X], DUP-02 (240-134652-5)[50X], MW-23\_080420 (240-134652-6)[333.33X], PW-16-02\_080420 (240-134652-7)[3.33X] and PW-16-01\_080420 (240-134652-8)[13.33X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

# Case Narrative

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

Job ID: 240-134652-1

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## Job ID: 240-134652-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Canton (Continued)

#### VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-44\_080420 (240-134652-2), MW-22\_080420 (240-134652-3), DUP-01 (240-134652-4), DUP-02 (240-134652-5), MW-23\_080420 (240-134652-6), PW-16-02\_080420 (240-134652-7) and PW-16-01\_080420 (240-134652-8) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/11/2020 and 08/13/2020.

An MS/MSD was done in 240-446478 however the sample and the MS/MSD could not be reported. The effected samples are MW-22\_080420 (240-134652-3), DUP-01 (240-134652-4) and DUP-02 (240-134652-5).

No additional 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 On-Site

Job ID: 240-134652-1

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: 240-134652-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-134652-1	TRIP BLANK	Water	08/04/20 00:00	08/08/20 09:20	
240-134652-2	MW-44_080420	Water	08/04/20 09:55	08/08/20 09:20	
240-134652-3	MW-22_080420	Water	08/04/20 15:05	08/08/20 09:20	
240-134652-4	DUP-01	Water	08/04/20 00:00	08/08/20 09:20	
240-134652-5	DUP-02	Water	08/04/20 00:00	08/08/20 09:20	
240-134652-6	MW-23_080420	Water	08/04/20 12:55	08/08/20 09:20	
240-134652-7	PW-16-02_080420	Water	08/04/20 11:05	08/07/20 09:20	
240-134652-8	PW-16-01_080420	Water	08/04/20 16:45	08/07/20 09:20	

# Detection Summary

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

Job ID: 240-134652-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-134652-1

No Detections.

## Client Sample ID: MW-44\_080420

Lab Sample ID: 240-134652-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	12		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	160		10	5.0	ug/L	10		8260B	Total/NA

## Client Sample ID: MW-22\_080420

Lab Sample ID: 240-134652-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	23		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	160		67	25	ug/L	66.67		8260B	Total/NA
Vinyl chloride	1000		67	33	ug/L	66.67		8260B	Total/NA

## Client Sample ID: DUP-01

Lab Sample ID: 240-134652-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	9200		500	190	ug/L	500		8260B	Total/NA
trans-1,2-Dichloroethene	470	J	500	220	ug/L	500		8260B	Total/NA
Trichloroethene	1200		500	180	ug/L	500		8260B	Total/NA
Vinyl chloride	320	J	500	250	ug/L	500		8260B	Total/NA

## Client Sample ID: DUP-02

Lab Sample ID: 240-134652-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	26		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	160		50	19	ug/L	50		8260B	Total/NA
Vinyl chloride	1600		50	25	ug/L	50		8260B	Total/NA

## Client Sample ID: MW-23\_080420

Lab Sample ID: 240-134652-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	11000		330	130	ug/L	333.33		8260B	Total/NA
trans-1,2-Dichloroethene	420		330	140	ug/L	333.33		8260B	Total/NA
Trichloroethene	1400		330	120	ug/L	333.33		8260B	Total/NA
Vinyl chloride	220	J	330	170	ug/L	333.33		8260B	Total/NA

## Client Sample ID: PW-16-02\_080420

Lab Sample ID: 240-134652-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	29	B	3.3	1.3	ug/L	3.33		8260B	Total/NA
Vinyl chloride	85		3.3	1.7	ug/L	3.33		8260B	Total/NA

## Client Sample ID: PW-16-01\_080420

Lab Sample ID: 240-134652-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	110		13	5.1	ug/L	13.33		8260B	Total/NA
Vinyl chloride	160		13	6.6	ug/L	13.33		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: 240-134652-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-134652-1**

**Date Collected: 08/04/20 00:00**

**Matrix: Water**

**Date Received: 08/08/20 09:20**

**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			08/17/20 18:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/17/20 18:09	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/17/20 18:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/17/20 18:09	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/17/20 18:09	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/17/20 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		08/17/20 18:09	1
4-Bromofluorobenzene (Surr)	70		47 - 134		08/17/20 18:09	1
Toluene-d8 (Surr)	87		69 - 122		08/17/20 18:09	1
Dibromofluoromethane (Surr)	111		78 - 129		08/17/20 18:09	1

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: MW-44\_080420**

**Lab Sample ID: 240-134652-2**

Date Collected: 08/04/20 09:55

Matrix: Water

Date Received: 08/08/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	12		2.0	0.86	ug/L			08/13/20 05:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		08/13/20 05:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	10	U	10	4.6	ug/L			08/17/20 16:09	10
cis-1,2-Dichloroethene	10	U	10	3.8	ug/L			08/17/20 16:09	10
Tetrachloroethene	10	U	10	3.3	ug/L			08/17/20 16:09	10
trans-1,2-Dichloroethene	10	U	10	4.3	ug/L			08/17/20 16:09	10
Trichloroethene	10	U	10	3.6	ug/L			08/17/20 16:09	10
Vinyl chloride	160		10	5.0	ug/L			08/17/20 16:09	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		08/17/20 16:09	10
4-Bromofluorobenzene (Surr)	72		47 - 134		08/17/20 16:09	10
Toluene-d8 (Surr)	86		69 - 122		08/17/20 16:09	10
Dibromofluoromethane (Surr)	105		78 - 129		08/17/20 16:09	10

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: MW-22\_080420**

**Lab Sample ID: 240-134652-3**

Date Collected: 08/04/20 15:05

Matrix: Water

Date Received: 08/08/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	23		2.0	0.86	ug/L			08/11/20 12:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	72		70 - 133		08/11/20 12:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	67	U	67	31	ug/L			08/17/20 16:33	66.67
cis-1,2-Dichloroethene	160		67	25	ug/L			08/17/20 16:33	66.67
Tetrachloroethene	67	U	67	22	ug/L			08/17/20 16:33	66.67
trans-1,2-Dichloroethene	67	U	67	29	ug/L			08/17/20 16:33	66.67
Trichloroethene	67	U	67	24	ug/L			08/17/20 16:33	66.67
Vinyl chloride	1000		67	33	ug/L			08/17/20 16:33	66.67

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		08/17/20 16:33	66.67
4-Bromofluorobenzene (Surr)	70		47 - 134		08/17/20 16:33	66.67
Toluene-d8 (Surr)	85		69 - 122		08/17/20 16:33	66.67
Dibromofluoromethane (Surr)	105		78 - 129		08/17/20 16:33	66.67

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: DUP-01**

**Lab Sample ID: 240-134652-4**

Date Collected: 08/04/20 00:00

Matrix: Water

Date Received: 08/08/20 09:20

**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			08/11/20 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133		08/11/20 12:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	230	ug/L			08/17/20 21:01	500
<b>cis-1,2-Dichloroethene</b>	<b>9200</b>		500	190	ug/L			08/17/20 21:01	500
Tetrachloroethene	500	U	500	160	ug/L			08/17/20 21:01	500
<b>trans-1,2-Dichloroethene</b>	<b>470</b>	<b>J</b>	500	220	ug/L			08/17/20 21:01	500
<b>Trichloroethene</b>	<b>1200</b>		500	180	ug/L			08/17/20 21:01	500
<b>Vinyl chloride</b>	<b>320</b>	<b>J</b>	500	250	ug/L			08/17/20 21:01	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		08/17/20 21:01	500
4-Bromofluorobenzene (Surr)	98		47 - 134		08/17/20 21:01	500
Toluene-d8 (Surr)	92		69 - 122		08/17/20 21:01	500
Dibromofluoromethane (Surr)	88		78 - 129		08/17/20 21:01	500

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: DUP-02**

**Lab Sample ID: 240-134652-5**

Date Collected: 08/04/20 00:00

Matrix: Water

Date Received: 08/08/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	26		2.0	0.86	ug/L			08/11/20 12:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	73		70 - 133		08/11/20 12:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	50	U	50	23	ug/L			08/17/20 21:51	50
cis-1,2-Dichloroethene	160		50	19	ug/L			08/17/20 21:51	50
Tetrachloroethene	50	U	50	16	ug/L			08/17/20 21:51	50
trans-1,2-Dichloroethene	50	U	50	22	ug/L			08/17/20 21:51	50
Trichloroethene	50	U	50	18	ug/L			08/17/20 21:51	50
Vinyl chloride	1600		50	25	ug/L			08/17/20 21:51	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		08/17/20 21:51	50
4-Bromofluorobenzene (Surr)	102		47 - 134		08/17/20 21:51	50
Toluene-d8 (Surr)	91		69 - 122		08/17/20 21:51	50
Dibromofluoromethane (Surr)	89		78 - 129		08/17/20 21:51	50

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: MW-23\_080420**

**Lab Sample ID: 240-134652-6**

Date Collected: 08/04/20 12:55

Matrix: Water

Date Received: 08/08/20 09:20

**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	-		08/13/20 06:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133		08/13/20 06:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	150	ug/L	-		08/17/20 17:45	333.33
<b>cis-1,2-Dichloroethene</b>	<b>11000</b>		330	130	ug/L			08/17/20 17:45	333.33
Tetrachloroethene	330	U	330	110	ug/L			08/17/20 17:45	333.33
<b>trans-1,2-Dichloroethene</b>	<b>420</b>		330	140	ug/L			08/17/20 17:45	333.33
<b>Trichloroethene</b>	<b>1400</b>		330	120	ug/L			08/17/20 17:45	333.33
<b>Vinyl chloride</b>	<b>220</b>	<b>J</b>	330	170	ug/L			08/17/20 17:45	333.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		08/17/20 17:45	333.33
4-Bromofluorobenzene (Surr)	70		47 - 134		08/17/20 17:45	333.33
Toluene-d8 (Surr)	85		69 - 122		08/17/20 17:45	333.33
Dibromofluoromethane (Surr)	108		78 - 129		08/17/20 17:45	333.33

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: PW-16-02\_080420**

**Lab Sample ID: 240-134652-7**

Date Collected: 08/04/20 11:05

Matrix: Water

Date Received: 08/07/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.86	ug/L			08/13/20 06:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		08/13/20 06:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	3.3	U	3.3	1.5	ug/L			08/18/20 17:10	3.33
cis-1,2-Dichloroethene	29	B	3.3	1.3	ug/L			08/18/20 17:10	3.33
Tetrachloroethene	3.3	U	3.3	1.1	ug/L			08/18/20 17:10	3.33
trans-1,2-Dichloroethene	3.3	U	3.3	1.4	ug/L			08/18/20 17:10	3.33
Trichloroethene	3.3	U	3.3	1.2	ug/L			08/18/20 17:10	3.33
Vinyl chloride	85		3.3	1.7	ug/L			08/18/20 17:10	3.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130		08/18/20 17:10	3.33
4-Bromofluorobenzene (Surr)	75		47 - 134		08/18/20 17:10	3.33
Toluene-d8 (Surr)	96		69 - 122		08/18/20 17:10	3.33
Dibromofluoromethane (Surr)	92		78 - 129		08/18/20 17:10	3.33

# Client Sample Results

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

Job ID: 240-134652-1

**Client Sample ID: PW-16-01\_080420**

**Lab Sample ID: 240-134652-8**

Date Collected: 08/04/20 16:45

Matrix: Water

Date Received: 08/07/20 09:20

**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	-		08/13/20 06:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		08/13/20 06:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	13	U	13	6.1	ug/L	-		08/17/20 15:45	13.33
<b>cis-1,2-Dichloroethene</b>	<b>110</b>		13	5.1	ug/L			08/17/20 15:45	13.33
Tetrachloroethene	13	U	13	4.4	ug/L			08/17/20 15:45	13.33
trans-1,2-Dichloroethene	13	U	13	5.8	ug/L			08/17/20 15:45	13.33
Trichloroethene	13	U	13	4.8	ug/L			08/17/20 15:45	13.33
<b>Vinyl chloride</b>	<b>160</b>		13	6.6	ug/L			08/17/20 15:45	13.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		08/17/20 15:45	13.33
4-Bromofluorobenzene (Surr)	73		47 - 134		08/17/20 15:45	13.33
Toluene-d8 (Surr)	87		69 - 122		08/17/20 15:45	13.33
Dibromofluoromethane (Surr)	103		78 - 129		08/17/20 15:45	13.33



# Surrogate Summary

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

Job ID: 240-134652-1

## 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)
240-134593-A-5 MS	Matrix Spike	96	95	102	92
240-134593-A-5 MSD	Matrix Spike Duplicate	92	94	100	87
240-134604-B-10 MS	Matrix Spike	91	97	88	87
240-134604-B-10 MSD	Matrix Spike Duplicate	88	98	89	88
240-134652-1	TRIP BLANK	92	70	87	111
240-134652-2	MW-44_080420	88	72	86	105
240-134652-3	MW-22_080420	86	70	85	105
240-134652-4	DUP-01	89	98	92	88
240-134652-5	DUP-02	90	102	91	89
240-134652-6	MW-23_080420	88	70	85	108
240-134652-7	PW-16-02_080420	108	75	96	92
240-134652-8	PW-16-01_080420	89	73	87	103
240-134718-D-5 MS	Matrix Spike	71 X	89	93	93
240-134718-E-5 MSD	Matrix Spike Duplicate	67 X	86	93	93
LCS 240-447442/4	Lab Control Sample	90	96	90	86
LCS 240-447444/4	Lab Control Sample	83	95	104	101
LCS 240-447616/4	Lab Control Sample	97	97	100	91
MB 240-447442/7	Method Blank	86	98	92	86
MB 240-447444/7	Method Blank	88	74	87	104
MB 240-447616/7	Method Blank	102	79	94	89

**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)
240-134649-E-4 MS	Matrix Spike	92
240-134649-E-4 MSD	Matrix Spike Duplicate	89
240-134652-2	MW-44_080420	86
240-134652-3	MW-22_080420	72
240-134652-4	DUP-01	97
240-134652-5	DUP-02	73
240-134652-6	MW-23_080420	81
240-134652-7	PW-16-02_080420	88
240-134652-8	PW-16-01_080420	86
LCS 240-446478/4	Lab Control Sample	77
LCS 240-446903/4	Lab Control Sample	88
MB 240-446478/5	Method Blank	79
MB 240-446903/5	Method Blank	84

**Surrogate Legend**

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

# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: MB 240-447442/7**  
**Matrix: Water**  
**Analysis Batch: 447442**

**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	0.46	ug/L			08/17/20 14:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/17/20 14:00	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/17/20 14:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/17/20 14:00	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/17/20 14:00	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/17/20 14:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130		08/17/20 14:00	1
4-Bromofluorobenzene (Surr)	98		47 - 134		08/17/20 14:00	1
Toluene-d8 (Surr)	92		69 - 122		08/17/20 14:00	1
Dibromofluoromethane (Surr)	86		78 - 129		08/17/20 14:00	1

**Lab Sample ID: LCS 240-447442/4**  
**Matrix: Water**  
**Analysis Batch: 447442**

**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	9.25		ug/L		93	73 - 129
cis-1,2-Dichloroethene	10.0	9.50		ug/L		95	75 - 124
Tetrachloroethene	10.0	9.78		ug/L		98	70 - 125
trans-1,2-Dichloroethene	10.0	9.53		ug/L		95	74 - 130
Trichloroethene	10.0	9.69		ug/L		97	71 - 121
Vinyl chloride	10.0	10.4		ug/L		104	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	90		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

**Lab Sample ID: 240-134604-B-10 MS**  
**Matrix: Water**  
**Analysis Batch: 447442**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	86000	F1	50000	145000		ug/L		118	68 - 121
Tetrachloroethene	32000		50000	68400		ug/L		74	52 - 129
trans-1,2-Dichloroethene	5000	U	50000	50000		ug/L		100	69 - 126
Trichloroethene	21000		50000	70600		ug/L		99	56 - 124
Vinyl chloride	2900	J	50000	59400		ug/L		113	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	88		69 - 122
Dibromofluoromethane (Surr)	87		78 - 129

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# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: 240-134604-B-10 MSD**

**Matrix: Water**  
**Analysis Batch: 447442**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	86000	F1	50000	150000	F1	ug/L		128	68 - 121	4	35
Tetrachloroethene	32000		50000	74800		ug/L		86	52 - 129	9	35
trans-1,2-Dichloroethene	5000	U	50000	51000		ug/L		102	69 - 126	2	35
Trichloroethene	21000		50000	72800		ug/L		103	56 - 124	3	35
Vinyl chloride	2900	J	50000	59800		ug/L		114	49 - 136	1	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	88		75 - 130
4-Bromofluorobenzene (Surr)	98		47 - 134
Toluene-d8 (Surr)	89		69 - 122
Dibromofluoromethane (Surr)	88		78 - 129

**Lab Sample ID: MB 240-447444/7**

**Matrix: Water**  
**Analysis Batch: 447444**

**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	0.46	ug/L			08/17/20 15:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/17/20 15:21	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/17/20 15:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/17/20 15:21	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/17/20 15:21	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/17/20 15:21	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		08/17/20 15:21	1
4-Bromofluorobenzene (Surr)	74		47 - 134		08/17/20 15:21	1
Toluene-d8 (Surr)	87		69 - 122		08/17/20 15:21	1
Dibromofluoromethane (Surr)	104		78 - 129		08/17/20 15:21	1

**Lab Sample ID: LCS 240-447444/4**

**Matrix: Water**  
**Analysis Batch: 447444**

**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	9.54		ug/L		95	73 - 129
cis-1,2-Dichloroethene	10.0	9.98		ug/L		100	75 - 124
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 125
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	74 - 130
Trichloroethene	10.0	10.3		ug/L		103	71 - 121
Vinyl chloride	10.0	7.49		ug/L		75	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	104		69 - 122
Dibromofluoromethane (Surr)	101		78 - 129

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# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: 240-134718-D-5 MS**

**Matrix: Water**  
**Analysis Batch: 447444**

**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	8.97		ug/L		90	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.39		ug/L		94	68 - 121
Tetrachloroethene	1.0	U	10.0	11.5		ug/L		115	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	10.3		ug/L		103	69 - 126
Trichloroethene	1.0	U	10.0	9.85		ug/L		98	56 - 124
Vinyl chloride	1.0	U	10.0	6.80		ug/L		68	49 - 136

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	71	X	75 - 130
4-Bromofluorobenzene (Surr)	89		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	93		78 - 129

**Lab Sample ID: 240-134718-E-5 MSD**

**Matrix: Water**  
**Analysis Batch: 447444**

**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	9.04		ug/L		90	64 - 132	1	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.33		ug/L		93	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	11.0		ug/L		110	52 - 129	4	35
trans-1,2-Dichloroethene	1.0	U	10.0	9.98		ug/L		100	69 - 126	3	35
Trichloroethene	1.0	U	10.0	9.61		ug/L		96	56 - 124	2	35
Vinyl chloride	1.0	U	10.0	7.18		ug/L		72	49 - 136	5	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	67	X	75 - 130
4-Bromofluorobenzene (Surr)	86		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	93		78 - 129

**Lab Sample ID: MB 240-447616/7**

**Matrix: Water**  
**Analysis Batch: 447616**

**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	0.46	ug/L			08/18/20 12:48	1
cis-1,2-Dichloroethene	0.383	J	1.0	0.38	ug/L			08/18/20 12:48	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/18/20 12:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/18/20 12:48	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/18/20 12:48	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/18/20 12:48	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		08/18/20 12:48	1
4-Bromofluorobenzene (Surr)	79		47 - 134		08/18/20 12:48	1
Toluene-d8 (Surr)	94		69 - 122		08/18/20 12:48	1

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# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: MB 240-447616/7**  
**Matrix: Water**  
**Analysis Batch: 447616**

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	89		78 - 129		08/18/20 12:48	1

**Lab Sample ID: LCS 240-447616/4**  
**Matrix: Water**  
**Analysis Batch: 447616**

**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	9.10		ug/L		91	73 - 129
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	75 - 124
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 125
trans-1,2-Dichloroethene	10.0	9.16		ug/L		92	74 - 130
Trichloroethene	10.0	9.65		ug/L		97	71 - 121
Vinyl chloride	10.0	9.94		ug/L		99	61 - 134

  

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		75 - 130
4-Bromofluorobenzene (Surr)	97		47 - 134
Toluene-d8 (Surr)	100		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

**Lab Sample ID: 240-134593-A-5 MS**  
**Matrix: Water**  
**Analysis Batch: 447616**

**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	1000	U	10000	8580		ug/L		86	64 - 132
cis-1,2-Dichloroethene	1000	U	10000	9110		ug/L		91	68 - 121
Tetrachloroethene	1000	U	10000	8660		ug/L		87	52 - 129
trans-1,2-Dichloroethene	1000	U	10000	8320		ug/L		83	69 - 126
Trichloroethene	1000	U	10000	8370		ug/L		84	56 - 124
Vinyl chloride	1000	U	10000	9600		ug/L		96	49 - 136

  

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 130
4-Bromofluorobenzene (Surr)	95		47 - 134
Toluene-d8 (Surr)	102		69 - 122
Dibromofluoromethane (Surr)	92		78 - 129

**Lab Sample ID: 240-134593-A-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 447616**

**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	1000	U	10000	7900		ug/L		79	64 - 132	8	35
cis-1,2-Dichloroethene	1000	U	10000	8440		ug/L		84	68 - 121	8	35
Tetrachloroethene	1000	U	10000	9510		ug/L		95	52 - 129	9	35
trans-1,2-Dichloroethene	1000	U	10000	7790		ug/L		78	69 - 126	7	35
Trichloroethene	1000	U	10000	8280		ug/L		83	56 - 124	1	35

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: 240-134593-A-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 447616**

**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
Vinyl chloride	1000	U	10000	8220		ug/L		82	49 - 136	16	35
<b>Surrogate</b>	<b>MSD %Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	92		75 - 130								
4-Bromofluorobenzene (Surr)	94		47 - 134								
Toluene-d8 (Surr)	100		69 - 122								
Dibromofluoromethane (Surr)	87		78 - 129								

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

**Lab Sample ID: MB 240-446478/5**  
**Matrix: Water**  
**Analysis Batch: 446478**

**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			08/11/20 05:46	1
<b>Surrogate</b>	<b>MB %Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	79		70 - 133					08/11/20 05:46	1

**Lab Sample ID: LCS 240-446478/4**  
**Matrix: Water**  
**Analysis Batch: 446478**

**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	9.73		ug/L		97	80 - 135
<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	77		70 - 133				

**Lab Sample ID: MB 240-446903/5**  
**Matrix: Water**  
**Analysis Batch: 446903**

**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			08/13/20 04:27	1
<b>Surrogate</b>	<b>MB %Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	84		70 - 133					08/13/20 04:27	1

**Lab Sample ID: LCS 240-446903/4**  
**Matrix: Water**  
**Analysis Batch: 446903**

**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	9.21		ug/L		92	80 - 135

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-134652-1

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

**Lab Sample ID: LCS 240-446903/4**  
**Matrix: Water**  
**Analysis Batch: 446903**

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

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

**Lab Sample ID: 240-134649-E-4 MS**  
**Matrix: Water**  
**Analysis Batch: 446903**

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MS</i> <i>Result</i>	<i>MS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>
1,4-Dioxane	2.0	U	10.0	8.95	U	ug/L	-	89	46 - 170

  

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	92	U	70 - 133

**Lab Sample ID: 240-134649-E-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 446903**

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>Limit</i>
1,4-Dioxane	2.0	U	10.0	8.79	U	ug/L	-	88	46 - 170	2	26

  

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	89	U	70 - 133

# QC Association Summary

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

Job ID: 240-134652-1

## GC/MS VOA

### Analysis Batch: 446478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134652-3	MW-22_080420	Total/NA	Water	8260B SIM	
240-134652-4	DUP-01	Total/NA	Water	8260B SIM	
240-134652-5	DUP-02	Total/NA	Water	8260B SIM	
MB 240-446478/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-446478/4	Lab Control Sample	Total/NA	Water	8260B SIM	

### Analysis Batch: 446903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134652-2	MW-44_080420	Total/NA	Water	8260B SIM	
240-134652-6	MW-23_080420	Total/NA	Water	8260B SIM	
240-134652-7	PW-16-02_080420	Total/NA	Water	8260B SIM	
240-134652-8	PW-16-01_080420	Total/NA	Water	8260B SIM	
MB 240-446903/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-446903/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-134649-E-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-134649-E-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 447442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134652-4	DUP-01	Total/NA	Water	8260B	
240-134652-5	DUP-02	Total/NA	Water	8260B	
MB 240-447442/7	Method Blank	Total/NA	Water	8260B	
LCS 240-447442/4	Lab Control Sample	Total/NA	Water	8260B	
240-134604-B-10 MS	Matrix Spike	Total/NA	Water	8260B	
240-134604-B-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 447444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134652-1	TRIP BLANK	Total/NA	Water	8260B	
240-134652-2	MW-44_080420	Total/NA	Water	8260B	
240-134652-3	MW-22_080420	Total/NA	Water	8260B	
240-134652-6	MW-23_080420	Total/NA	Water	8260B	
240-134652-8	PW-16-01_080420	Total/NA	Water	8260B	
MB 240-447444/7	Method Blank	Total/NA	Water	8260B	
LCS 240-447444/4	Lab Control Sample	Total/NA	Water	8260B	
240-134718-D-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-134718-E-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 447616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134652-7	PW-16-02_080420	Total/NA	Water	8260B	
MB 240-447616/7	Method Blank	Total/NA	Water	8260B	
LCS 240-447616/4	Lab Control Sample	Total/NA	Water	8260B	
240-134593-A-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-134593-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	



# Lab Chronicle

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

Job ID: 240-134652-1

## Client Sample ID: TRIP BLANK

Date Collected: 08/04/20 00:00

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447444	08/17/20 18:09	LEE	TAL CAN

## Client Sample ID: MW-44\_080420

Date Collected: 08/04/20 09:55

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	447444	08/17/20 16:09	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446903	08/13/20 05:40	TJL2	TAL CAN

## Client Sample ID: MW-22\_080420

Date Collected: 08/04/20 15:05

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		66.67	447444	08/17/20 16:33	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 12:00	SAM	TAL CAN

## Client Sample ID: DUP-01

Date Collected: 08/04/20 00:00

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	447442	08/17/20 21:01	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 12:25	SAM	TAL CAN

## Client Sample ID: DUP-02

Date Collected: 08/04/20 00:00

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	447442	08/17/20 21:51	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 12:50	SAM	TAL CAN

## Client Sample ID: MW-23\_080420

Date Collected: 08/04/20 12:55

Date Received: 08/08/20 09:20

## Lab Sample ID: 240-134652-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	447444	08/17/20 17:45	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446903	08/13/20 06:05	TJL2	TAL CAN

# Lab Chronicle

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

Job ID: 240-134652-1

**Client Sample ID: PW-16-02\_080420**

**Lab Sample ID: 240-134652-7**

**Date Collected: 08/04/20 11:05**

**Matrix: Water**

**Date Received: 08/07/20 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		3.33	447616	08/18/20 17:10	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446903	08/13/20 06:30	TJL2	TAL CAN

**Client Sample ID: PW-16-01\_080420**

**Lab Sample ID: 240-134652-8**

**Date Collected: 08/04/20 16:45**

**Matrix: Water**

**Date Received: 08/07/20 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		13.33	447444	08/17/20 15:45	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446903	08/13/20 06:55	TJL2	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: 240-134652-1

## 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.







<b>Eurofins TestAmerica Canton Sample Receipt Form/Narrative</b>		Login # : <u>134652</u>
<b>Canton Facility</b>		
Client <u>Arcadis</u>	Site Name _____	Cooler unpacked by: <u>[Signature]</u>
Cooler Received on <u>8-7-20</u>	Opened on <u>8-7-20</u>	
FedEx: 1 <sup>st</sup> <input checked="" type="checkbox"/> Grd <input checked="" type="checkbox"/> Exp <input type="checkbox"/> UPS <input type="checkbox"/> FAS <input type="checkbox"/> Clipper <input type="checkbox"/> Client Drop Off <input type="checkbox"/> TestAmerica Courier <input type="checkbox"/> Other <input type="checkbox"/>		
<b>Receipt After-hours: Drop-off Date/Time</b>		<b>Storage Location</b>
TestAmerica Cooler # <u>7A</u>	Foam Box <input type="checkbox"/>	Client Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____
Packing material used: <u>Bubble Wrap</u> Foam <input type="checkbox"/> <u>Plastic Bag</u> None <input type="checkbox"/> Other _____		
COOLANT: <u>Wet Ice</u> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Water <input type="checkbox"/> None <input type="checkbox"/>		
1. Cooler temperature upon receipt		<input checked="" type="checkbox"/> 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. _____ °C Corrected Cooler Temp. _____ °C		
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>4</u>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-Were the seals on the outside of the cooler(s) signed & dated?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-Were tamper/custody seals intact and uncompromised?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Shippers' packing slip attached to the cooler(s)?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4. Did custody papers accompany the sample(s)?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Were the custody papers relinquished & signed in the appropriate place?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6. Was/were the person(s) who collected the samples clearly identified on the COC?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7. Did all bottles arrive in good condition (Unbroken)?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8. Could all bottle labels be reconciled with the COC?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9. Were correct bottle(s) used for the test(s) indicated?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
10. Sufficient quantity received to perform indicated analyses?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
11. Are these work share samples?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> NA pH Strip Lot# <u>HC911298</u>
13. Were VOAs on the COC?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
14. Were air bubbles >6 mm in any VOA vials? <input checked="" type="checkbox"/> Larger than this.		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u>NA</u>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
16. Was a LL Hg or Me Hg trip blank present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		
<b>17. CHAIN OF CUSTODY &amp; SAMPLE DISCREPANCIES</b>		Samples processed by: _____
_____ _____ _____ _____		
<b>18. SAMPLE CONDITION</b>		
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)		
<b>19. SAMPLE PRESERVATION</b>		
Sample(s) _____ were further preserved in the laboratory.		
Time preserved: _____ Preservative(s) added/Lot number(s): _____		
VOA Sample Preservation - Date/Time VOAs Frozen: _____		

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

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

