

## ANALYTICAL REPORT

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Laboratory Job ID: 460-198343-1  
Client Project/Site: Ford LTP Off-Site

For:  
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Attn: Kristoffer Hinskey



Authorized for release by:  
12/19/2019 10:15:04 AM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Surrogate Summary . . . . .	10
QC Sample Results . . . . .	11
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	15
Certification Summary . . . . .	16
Method Summary . . . . .	17
Sample Summary . . . . .	18
Chain of Custody . . . . .	19
Receipt Checklists . . . . .	21

# Definitions/Glossary

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

Job ID: 460-198343-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

# Case Narrative

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

Job ID: 460-198343-1

**Job ID: 460-198343-1**

**Laboratory: Eurofins TestAmerica, Edison**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP Off-Site**

**Report Number: 460-198343-1**

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, Edison 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 12/5/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.0° C.

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

Samples Trip Blank (460-198343-1), MW-100S\_112619 (460-198343-2), MW-75SR\_112619 (460-198343-3), MW-75D\_112619 (460-198343-4) and MW-96S\_112619 (460-198343-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 12/09/2019.

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

### **VOLATILE ORGANIC COMPOUNDS (GC/MS)**

Samples MW-100S\_112619 (460-198343-2), MW-75SR\_112619 (460-198343-3), MW-75D\_112619 (460-198343-4) and MW-96S\_112619 (460-198343-5) were analyzed for Volatile organic compounds (GC/MS) in accordance with SW-846 Method 8260C SIM. The samples were analyzed on 12/09/2019.

No 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 Off-Site

Job ID: 460-198343-1

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**Job ID: 460-198343-1 (Continued)**

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**Laboratory: Eurofins TestAmerica, Edison (Continued)**

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# Detection Summary

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

Job ID: 460-198343-1

## Client Sample ID: Trip Blank

Lab Sample ID: 460-198343-1

No Detections.

## Client Sample ID: MW-100S\_112619

Lab Sample ID: 460-198343-2

No Detections.

## Client Sample ID: MW-75SR\_112619

Lab Sample ID: 460-198343-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.33	J	1.0	0.17	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-75D\_112619

Lab Sample ID: 460-198343-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.33	ug/L	1		8260C SIM	Total/NA
Vinyl chloride	2.2		1.0	0.17	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-96S\_112619

Lab Sample ID: 460-198343-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Edison

# Client Sample Results

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

Job ID: 460-198343-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 460-198343-1**

Date Collected: 11/26/19 15:20

Matrix: Water

Date Received: 12/05/19 09:30

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/09/19 16:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/09/19 16:22	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/09/19 16:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/09/19 16:22	1
Trichloroethene	1.0	U	1.0	0.31	ug/L	-		12/09/19 16:22	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L	-		12/09/19 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		74 - 132		12/09/19 16:22	1
Toluene-d8 (Surr)	90		80 - 120		12/09/19 16:22	1
Dibromofluoromethane (Surr)	89		72 - 131		12/09/19 16:22	1
4-Bromofluorobenzene	91		77 - 124		12/09/19 16:22	1

**Client Sample ID: MW-100S\_112619**

**Lab Sample ID: 460-198343-2**

Date Collected: 11/26/19 09:35

Matrix: Water

Date Received: 12/05/19 09:30

**Method: 8260C 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	0.33	ug/L	-		12/09/19 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	84		72 - 133		12/09/19 18:10	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/09/19 18:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/09/19 18:22	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/09/19 18:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/09/19 18:22	1
Trichloroethene	1.0	U	1.0	0.31	ug/L	-		12/09/19 18:22	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L	-		12/09/19 18:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		74 - 132		12/09/19 18:22	1
Toluene-d8 (Surr)	89		80 - 120		12/09/19 18:22	1
Dibromofluoromethane (Surr)	88		72 - 131		12/09/19 18:22	1
4-Bromofluorobenzene	92		77 - 124		12/09/19 18:22	1

**Client Sample ID: MW-75SR\_112619**

**Lab Sample ID: 460-198343-3**

Date Collected: 11/26/19 12:40

Matrix: Water

Date Received: 12/05/19 09:30

**Method: 8260C 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	0.33	ug/L	-		12/09/19 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	84		72 - 133		12/09/19 18:36	1

# Client Sample Results

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

Job ID: 460-198343-1

**Client Sample ID: MW-75SR\_112619**

**Lab Sample ID: 460-198343-3**

Date Collected: 11/26/19 12:40

Matrix: Water

Date Received: 12/05/19 09:30

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/09/19 18:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/09/19 18:46	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/09/19 18:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/09/19 18:46	1
Trichloroethene	1.0	U	1.0	0.31	ug/L	-		12/09/19 18:46	1
<b>Vinyl chloride</b>	<b>0.33</b>	<b>J</b>	1.0	0.17	ug/L	-		12/09/19 18:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		74 - 132		12/09/19 18:46	1
Toluene-d8 (Surr)	90		80 - 120		12/09/19 18:46	1
Dibromofluoromethane (Surr)	88		72 - 131		12/09/19 18:46	1
4-Bromofluorobenzene	92		77 - 124		12/09/19 18:46	1

**Client Sample ID: MW-75D\_112619**

**Lab Sample ID: 460-198343-4**

Date Collected: 11/26/19 14:05

Matrix: Water

Date Received: 12/05/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>1.9</b>	<b>J</b>	2.0	0.33	ug/L	-		12/09/19 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	87		72 - 133		12/09/19 19:01	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/09/19 19:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/09/19 19:10	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/09/19 19:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/09/19 19:10	1
Trichloroethene	1.0	U	1.0	0.31	ug/L	-		12/09/19 19:10	1
<b>Vinyl chloride</b>	<b>2.2</b>		1.0	0.17	ug/L	-		12/09/19 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		74 - 132		12/09/19 19:10	1
Toluene-d8 (Surr)	88		80 - 120		12/09/19 19:10	1
Dibromofluoromethane (Surr)	88		72 - 131		12/09/19 19:10	1
4-Bromofluorobenzene	91		77 - 124		12/09/19 19:10	1

**Client Sample ID: MW-96S\_112619**

**Lab Sample ID: 460-198343-5**

Date Collected: 11/26/19 15:20

Matrix: Water

Date Received: 12/05/19 09:30

**Method: 8260C 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	0.33	ug/L	-		12/09/19 19:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	85		72 - 133		12/09/19 19:26	1



# Client Sample Results

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

Job ID: 460-198343-1

**Client Sample ID: MW-96S\_112619**

**Lab Sample ID: 460-198343-5**

**Date Collected: 11/26/19 15:20**

**Matrix: Water**

**Date Received: 12/05/19 09:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L			12/09/19 19:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L			12/09/19 19:34	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			12/09/19 19:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			12/09/19 19:34	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			12/09/19 19:34	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			12/09/19 19:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		74 - 132		12/09/19 19:34	1
Toluene-d8 (Surr)	89		80 - 120		12/09/19 19:34	1
Dibromofluoromethane (Surr)	89		72 - 131		12/09/19 19:34	1
4-Bromofluorobenzene	91		77 - 124		12/09/19 19:34	1

# Surrogate Summary

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

Job ID: 460-198343-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (74-132)	TOL (80-120)	DBFM (72-131)	BFB (77-124)
460-198048-A-3 MS	Matrix Spike	85	91	87	92
460-198048-A-3 MSD	Matrix Spike Duplicate	85	90	88	92
460-198343-1	Trip Blank	87	90	89	91
460-198343-2	MW-100S_112619	87	89	88	92
460-198343-3	MW-75SR_112619	86	90	88	92
460-198343-4	MW-75D_112619	87	88	88	91
460-198343-5	MW-96S_112619	87	89	89	91
LCS 460-660920/4	Lab Control Sample	84	91	87	91
MB 460-660920/7	Method Blank	87	91	88	91

#### Surrogate Legend

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

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (72-133)
460-198343-2	MW-100S_112619	84
460-198343-3	MW-75SR_112619	84
460-198343-4	MW-75D_112619	87
460-198343-5	MW-96S_112619	85
LCS 460-660978/3	Lab Control Sample	87
LCSD 460-660978/4	Lab Control Sample Dup	90
MB 460-660978/7	Method Blank	86

#### Surrogate Legend

BFB = 4-Bromofluorobenzene

# QC Sample Results

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

Job ID: 460-198343-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 460-660920/7**  
**Matrix: Water**  
**Analysis Batch: 660920**

**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	0.26	ug/L			12/09/19 11:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L			12/09/19 11:33	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			12/09/19 11:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			12/09/19 11:33	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			12/09/19 11:33	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			12/09/19 11:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		74 - 132		12/09/19 11:33	1
Toluene-d8 (Surr)	91		80 - 120		12/09/19 11:33	1
Dibromofluoromethane (Surr)	88		72 - 131		12/09/19 11:33	1
4-Bromofluorobenzene	91		77 - 124		12/09/19 11:33	1

**Lab Sample ID: LCS 460-660920/4**  
**Matrix: Water**  
**Analysis Batch: 660920**

**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	20.0	16.9		ug/L		85	74 - 123
cis-1,2-Dichloroethene	20.0	17.4		ug/L		87	80 - 120
Tetrachloroethene	20.0	18.8		ug/L		94	78 - 122
trans-1,2-Dichloroethene	20.0	17.2		ug/L		86	79 - 120
Trichloroethene	20.0	15.8		ug/L		79	77 - 120
Vinyl chloride	20.0	17.7		ug/L		88	62 - 138

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		74 - 132
Toluene-d8 (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	87		72 - 131
4-Bromofluorobenzene	91		77 - 124

**Lab Sample ID: 460-198048-A-3 MS**  
**Matrix: Water**  
**Analysis Batch: 660920**

**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	200	162		ug/L		81	74 - 123
cis-1,2-Dichloroethene	1.0	U	200	169		ug/L		85	80 - 120
Tetrachloroethene	1.0	U	200	189		ug/L		94	78 - 122
trans-1,2-Dichloroethene	1.0	U	200	168		ug/L		84	79 - 120
Trichloroethene	1.0	U F1	200	150	F1	ug/L		75	77 - 120
Vinyl chloride	1.0	U	200	192		ug/L		96	62 - 138

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		74 - 132
Toluene-d8 (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	87		72 - 131

Eurofins TestAmerica, Edison

# QC Sample Results

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

Job ID: 460-198343-1

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

**Lab Sample ID: 460-198048-A-3 MS**  
**Matrix: Water**  
**Analysis Batch: 660920**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene	92		77 - 124

**Lab Sample ID: 460-198048-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 660920**

**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	200	180		ug/L		90	74 - 123	10	30
cis-1,2-Dichloroethene	1.0	U	200	189		ug/L		94	80 - 120	11	30
Tetrachloroethene	1.0	U	200	206		ug/L		103	78 - 122	9	30
trans-1,2-Dichloroethene	1.0	U	200	187		ug/L		93	79 - 120	10	30
Trichloroethene	1.0	U F1	200	165		ug/L		83	77 - 120	9	30
Vinyl chloride	1.0	U	200	213		ug/L		107	62 - 138	10	30

  

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		74 - 132
Toluene-d8 (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	88		72 - 131
4-Bromofluorobenzene	92		77 - 124

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

**Lab Sample ID: MB 460-660978/7**  
**Matrix: Water**  
**Analysis Batch: 660978**

**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	0.33	ug/L			12/09/19 14:49	1

  

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	86		72 - 133		12/09/19 14:49	1

**Lab Sample ID: LCS 460-660978/3**  
**Matrix: Water**  
**Analysis Batch: 660978**

**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	5.00	4.40		ug/L		88	66 - 135

  

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	87		72 - 133

**Lab Sample ID: LCSD 460-660978/4**  
**Matrix: Water**  
**Analysis Batch: 660978**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	5.00	5.07		ug/L		101	66 - 135	14	30

Eurofins TestAmerica, Edison

# QC Sample Results

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

Job ID: 460-198343-1

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

<i>Surrogate</i>	<i>LCS</i>	<i>D</i>	<i>LCS</i>	<i>D</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>			
4-Bromofluorobenzene	90				72 - 133

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# QC Association Summary

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

Job ID: 460-198343-1

## GC/MS VOA

### Analysis Batch: 660920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-198343-1	Trip Blank	Total/NA	Water	8260C	
460-198343-2	MW-100S_112619	Total/NA	Water	8260C	
460-198343-3	MW-75SR_112619	Total/NA	Water	8260C	
460-198343-4	MW-75D_112619	Total/NA	Water	8260C	
460-198343-5	MW-96S_112619	Total/NA	Water	8260C	
MB 460-660920/7	Method Blank	Total/NA	Water	8260C	
LCS 460-660920/4	Lab Control Sample	Total/NA	Water	8260C	
460-198048-A-3 MS	Matrix Spike	Total/NA	Water	8260C	
460-198048-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

### Analysis Batch: 660978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-198343-2	MW-100S_112619	Total/NA	Water	8260C SIM	
460-198343-3	MW-75SR_112619	Total/NA	Water	8260C SIM	
460-198343-4	MW-75D_112619	Total/NA	Water	8260C SIM	
460-198343-5	MW-96S_112619	Total/NA	Water	8260C SIM	
MB 460-660978/7	Method Blank	Total/NA	Water	8260C SIM	
LCS 460-660978/3	Lab Control Sample	Total/NA	Water	8260C SIM	
LCSD 460-660978/4	Lab Control Sample Dup	Total/NA	Water	8260C SIM	

# Lab Chronicle

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

Job ID: 460-198343-1

## Client Sample ID: Trip Blank

Date Collected: 11/26/19 15:20

Date Received: 12/05/19 09:30

Lab Sample ID: 460-198343-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	660920	12/09/19 16:22	SZD	TAL EDI

## Client Sample ID: MW-100S\_112619

Date Collected: 11/26/19 09:35

Date Received: 12/05/19 09:30

Lab Sample ID: 460-198343-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	660920	12/09/19 18:22	SZD	TAL EDI
Total/NA	Analysis	8260C SIM		1	660978	12/09/19 18:10	KLB	TAL EDI

## Client Sample ID: MW-75SR\_112619

Date Collected: 11/26/19 12:40

Date Received: 12/05/19 09:30

Lab Sample ID: 460-198343-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	660920	12/09/19 18:46	SZD	TAL EDI
Total/NA	Analysis	8260C SIM		1	660978	12/09/19 18:36	KLB	TAL EDI

## Client Sample ID: MW-75D\_112619

Date Collected: 11/26/19 14:05

Date Received: 12/05/19 09:30

Lab Sample ID: 460-198343-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	660920	12/09/19 19:10	SZD	TAL EDI
Total/NA	Analysis	8260C SIM		1	660978	12/09/19 19:01	KLB	TAL EDI

## Client Sample ID: MW-96S\_112619

Date Collected: 11/26/19 15:20

Date Received: 12/05/19 09:30

Lab Sample ID: 460-198343-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	660920	12/09/19 19:34	SZD	TAL EDI
Total/NA	Analysis	8260C SIM		1	660978	12/09/19 19:26	KLB	TAL EDI

### Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Accreditation/Certification Summary

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

Job ID: 460-198343-1

## Laboratory: Eurofins TestAmerica, Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
Massachusetts	State	M-NJ312	06-30-20
Massachusetts	State Program	M-NJ312	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

## 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	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19



# Method Summary

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

Job ID: 460-198343-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL EDI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900



# Sample Summary

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

Job ID: 460-198343-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-198343-1	Trip Blank	Water	11/26/19 15:20	12/05/19 09:30	
460-198343-2	MW-100S_112619	Water	11/26/19 09:35	12/05/19 09:30	
460-198343-3	MW-75SR_112619	Water	11/26/19 12:40	12/05/19 09:30	
460-198343-4	MW-75D_112619	Water	11/26/19 14:05	12/05/19 09:30	
460-198343-5	MW-96S_112619	Water	11/26/19 15:20	12/05/19 09:30	

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**Chain of Custody Record**

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

<b>Client Contact</b> Company Name: Areadis Address: 28950 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Off-Site Project Number: 30016346.0002B PO # 30016346.0002B		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other		<b>Client Project Manager:</b> Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		<b>Site Contact:</b> Rachel Bielak Telephone: 248-946-6331		<b>Lab Contact:</b> Mike DelMonico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No:			
<b>Sampler Name:</b> S. JANSSEN		<b>Analysis Turnaround Time</b> TAT if different from below: <input checked="" type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		<b>Containers &amp; Preservatives</b> H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> ZnAc <input type="checkbox"/> NaOH <input type="checkbox"/> Upret <input type="checkbox"/> Other:		<b>Matrix</b> Air <input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Solid <input type="checkbox"/> Other:		<b>Filtered Sample (Y/N)</b> Composite-C/Grab-G <input type="checkbox"/> 1,1-DCE 8260B <input type="checkbox"/> cis-1,2-DCE 8260B <input type="checkbox"/> Trans-1,2-DCE 8260B <input type="checkbox"/> PCE 8260B <input type="checkbox"/> TCE 8260B <input type="checkbox"/> Vinyl Chloride 8260B <input type="checkbox"/> 1,4-Dioxane 8260B SIM <input type="checkbox"/>		<b>Analyses</b>		For lab use only Walk-in client: <input type="checkbox"/> Lab sampling: <input type="checkbox"/> Job/SDG No: 198343	
<b>Shipping/Tracking No:</b>		<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Identification</b>		Sample Specific Notes / Special Instructions:		Date/Time: 11/27/19 12:35 Date/Time: 11/27/19 12:35 Date/Time: 12/5/19 09:30			
TRIP BLANK		11/26/19 9:35		11/26/19 12:40		11/26/19 14:05		11/26/19 15:20		11/26/19 12:35 11/27/19 12:35 12/5/19 09:30			
MW-100S-112619		MW-755R-112619		MW-75D-112619		MW-96S-112619		MW-100S-112619		MW-755R-112619 MW-75D-112619 MW-96S-112619			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadena.com. Cadena #E203631 Level IV Reporting requested.		Date/Time: 11/26/19 17:00 Date/Time: 11/27/19 12:35 Date/Time: 12/4/19 16:14		Company: ARCADIS Company: ARCADIS Company: STAL-MI		Date/Time: 11/26/19 17:00 Date/Time: 11/27/19 12:35 Date/Time: 12/5/19 09:30			
Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:			
Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:		Requisitioned by:			

4.7°C IR11 Via FedEx



**Eurofins TestAmerica Edison**  
**Receipt Temperature and pH Log**

Job Number: 19834

Number of Coolers: <u>    </u>		IR Gun # <u>    </u>	
<b>Cooler Temperatures</b>			
	RAW	CORRECTED	
Cooler #1:	<u>4.7</u>	<u>5.0</u>	Cooler #7: <u>    </u> °C
Cooler #2:	<u>    </u>	<u>    </u>	Cooler #8: <u>    </u> °C
Cooler #3:	<u>    </u>	<u>    </u>	Cooler #9: <u>    </u> °C

TALS Sample Number	Ammonia (pH<2)	Nitrate Nitrite (pH<2)	Metals (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

*If pH adjustments are required record the information below:*

Sample No(s), adjusted: \_\_\_\_\_

Preservative Name/Conc.: \_\_\_\_\_

Lot # of Preservative(s): \_\_\_\_\_

Volume of Preservative used (ml): \_\_\_\_\_

Expiration Date: \_\_\_\_\_

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

\* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:      Date: 12/5/19



## Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 460-198343-1

**Login Number: 198343**

**List Number: 1**

**Creator: Rivera, Kenneth**

**List Source: Eurofins TestAmerica, Edison**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	Refer to Job Narrative for details.
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

