



Environment Testing America



ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-134647-1
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: 240-134647-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD 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
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: 240-134647-1

Job ID: 240-134647-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Off-Site

Report Number: 240-134647-1

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 2.1° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-134647-1), MW-80SR_080420 (240-134647-2), MW-137S_080420 (240-134647-3), MW-136S_080420 (240-134647-4), MW-107S_080420 (240-134647-5) and DUP-09 (240-134647-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/14/2020.

cis-1,2-Dichloroethene failed the recovery criteria high for LCS 240-447176/4. Refer to the QC report for details.

The laboratory control sample (LCS) for 447176 recovered outside control limits for one or multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported: TRIP BLANK (240-134647-1), MW-80SR_080420 (240-134647-2), MW-137S_080420 (240-134647-3), MW-136S_080420 (240-134647-4), MW-107S_080420 (240-134647-5), DUP-09 (240-134647-6) and (LCS 240-447176/4).

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-80SR_080420 (240-134647-2), MW-137S_080420 (240-134647-3), MW-136S_080420 (240-134647-4), MW-107S_080420

Case Narrative

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

Job ID: 240-134647-1

Job ID: 240-134647-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

(240-134647-5) and DUP-09 (240-134647-6) 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-80SR_080420 (240-134647-2), MW-137S_080420 (240-134647-3), MW-136S_080420 (240-134647-4) and MW-107S_080420 (240-134647-5).

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 Off-Site

Job ID: 240-134647-1

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

Protocol References:

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

Laboratory References:

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

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Sample Summary

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

Job ID: 240-134647-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-134647-1	TRIP BLANK	Water	08/04/20 00:00	08/07/20 09:20	
240-134647-2	MW-80SR_080420	Water	08/04/20 11:21	08/07/20 09:20	
240-134647-3	MW-137S_080420	Water	08/04/20 12:56	08/07/20 09:20	
240-134647-4	MW-136S_080420	Water	08/04/20 14:26	08/07/20 09:20	
240-134647-5	MW-107S_080420	Water	08/04/20 16:11	08/07/20 09:20	
240-134647-6	DUP-09	Water	08/04/20 00:00	08/07/20 09:20	

Detection Summary

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

Job ID: 240-134647-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-134647-1

No Detections.

Client Sample ID: MW-80SR_080420

Lab Sample ID: 240-134647-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	4.3		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: MW-137S_080420

Lab Sample ID: 240-134647-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.54	J	1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: MW-136S_080420

Lab Sample ID: 240-134647-4

No Detections.

Client Sample ID: MW-107S_080420

Lab Sample ID: 240-134647-5

No Detections.

Client Sample ID: DUP-09

Lab Sample ID: 240-134647-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	4.7		1.0	0.50	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: TRIP BLANK

Date Collected: 08/04/20 00:00

Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-1

Matrix: Water

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		08/14/20 14:49		1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L		08/14/20 14:49		1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L		08/14/20 14:49		1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L		08/14/20 14:49		1
Trichloroethene	1.0	U	1.0	0.36	ug/L		08/14/20 14:49		1
Vinyl chloride	1.0	U	1.0	0.50	ug/L		08/14/20 14:49		1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130				08/14/20 14:49		1
4-Bromofluorobenzene (Surr)	104		47 - 134				08/14/20 14:49		1
Toluene-d8 (Surr)	105		69 - 122				08/14/20 14:49		1
Dibromofluoromethane (Surr)	120		78 - 129				08/14/20 14:49		1

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: MW-80SR_080420

Lab Sample ID: 240-134647-2

Matrix: Water

Date Collected: 08/04/20 11:21
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			08/11/20 09:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133					08/11/20 09:30	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			08/14/20 15:11	1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L			08/14/20 15:11	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 15:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 15:11	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 15:11	1
Vinyl chloride	4.3		1.0	0.50	ug/L			08/14/20 15:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 130					08/14/20 15:11	1
4-Bromofluorobenzene (Surr)	101		47 - 134					08/14/20 15:11	1
Toluene-d8 (Surr)	103		69 - 122					08/14/20 15:11	1
Dibromofluoromethane (Surr)	122		78 - 129					08/14/20 15:11	1

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: MW-137S_080420

Lab Sample ID: 240-134647-3

Matrix: Water

Date Collected: 08/04/20 12:56
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			08/11/20 09:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	73		70 - 133					08/11/20 09:54	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			08/14/20 15:33	1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L			08/14/20 15:33	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 15:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 15:33	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 15:33	1
Vinyl chloride	0.54	J	1.0	0.50	ug/L			08/14/20 15:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130					08/14/20 15:33	1
4-Bromofluorobenzene (Surr)	106		47 - 134					08/14/20 15:33	1
Toluene-d8 (Surr)	110		69 - 122					08/14/20 15:33	1
Dibromofluoromethane (Surr)	127		78 - 129					08/14/20 15:33	1

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: MW-136S_080420

Lab Sample ID: 240-134647-4

Matrix: Water

Date Collected: 08/04/20 14:26
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			08/11/20 10:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surrogate)	73		70 - 133					08/11/20 10:19	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			08/14/20 15:55	1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L			08/14/20 15:55	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 15:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 15:55	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 15:55	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/14/20 15:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surrogate)	101		75 - 130					08/14/20 15:55	1
4-Bromofluorobenzene (Surrogate)	100		47 - 134					08/14/20 15:55	1
Toluene-d8 (Surrogate)	105		69 - 122					08/14/20 15:55	1
Dibromofluoromethane (Surrogate)	119		78 - 129					08/14/20 15:55	1

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: MW-107S_080420

Lab Sample ID: 240-134647-5

Matrix: Water

Date Collected: 08/04/20 16:11
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			08/11/20 10:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surrogate)	71		70 - 133					08/11/20 10:44	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			08/14/20 16:18	1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L			08/14/20 16:18	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 16:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 16:18	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 16:18	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/14/20 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surrogate)	106		75 - 130					08/14/20 16:18	1
4-Bromofluorobenzene (Surrogate)	108		47 - 134					08/14/20 16:18	1
Toluene-d8 (Surrogate)	109		69 - 122					08/14/20 16:18	1
Dibromofluoromethane (Surrogate)	123		78 - 129					08/14/20 16:18	1

Client Sample Results

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

Job ID: 240-134647-1

Client Sample ID: DUP-09
Date Collected: 08/04/20 00:00
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/13/20 05:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		70 - 133					08/13/20 05:16	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			08/14/20 16:40	1
cis-1,2-Dichloroethene	1.0	U *	1.0	0.38	ug/L			08/14/20 16:40	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 16:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 16:40	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 16:40	1
Vinyl chloride	4.7		1.0	0.50	ug/L			08/14/20 16:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 130					08/14/20 16:40	1
4-Bromofluorobenzene (Surr)	100		47 - 134					08/14/20 16:40	1
Toluene-d8 (Surr)	104		69 - 122					08/14/20 16:40	1
Dibromofluoromethane (Surr)	118		78 - 129					08/14/20 16:40	1

Surrogate Summary

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

Job ID: 240-134647-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)				
240-134647-1	TRIP BLANK	104	104	105	120				
240-134647-2	MW-80SR_080420	104	101	103	122				
240-134647-3	MW-137S_080420	107	106	110	127				
240-134647-4	MW-136S_080420	101	100	105	119				
240-134647-5	MW-107S_080420	106	108	109	123				
240-134647-6	DUP-09	103	100	104	118				
240-134647-6 MS	DUP-09	103	107	105	125				
240-134647-6 MSD	DUP-09	103	103	105	124				
LCS 240-447176/4	Lab Control Sample	102	102	107	123				
MB 240-447176/6	Method Blank	102	103	105	120				

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

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (70-133)							
240-134647-2	MW-80SR_080420	80							
240-134647-3	MW-137S_080420	73							
240-134647-4	MW-136S_080420	73							
240-134647-5	MW-107S_080420	71							
240-134647-6	DUP-09	85							
240-134649-E-4 MS	Matrix Spike	92							
240-134649-E-4 MSD	Matrix Spike Duplicate	89							
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 Off-Site

Job ID: 240-134647-1

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

Lab Sample ID: MB 240-447176/6

Matrix: Water

Analysis Batch: 447176

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			08/14/20 09:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/14/20 09:38	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/14/20 09:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/14/20 09:38	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/14/20 09:38	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/14/20 09:38	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		08/14/20 09:38	1
4-Bromofluorobenzene (Surr)	103		47 - 134		08/14/20 09:38	1
Toluene-d8 (Surr)	105		69 - 122		08/14/20 09:38	1
Dibromofluoromethane (Surr)	120		78 - 129		08/14/20 09:38	1

Lab Sample ID: LCS 240-447176/4

Matrix: Water

Analysis Batch: 447176

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
1,1-Dichloroethene	10.0	12.4		ug/L		124	73 - 129
cis-1,2-Dichloroethene	10.0	12.5	*	ug/L		125	75 - 124
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 125
trans-1,2-Dichloroethene	10.0	12.3		ug/L		123	74 - 130
Trichloroethene	10.0	11.4		ug/L		114	71 - 121
Vinyl chloride	10.0	11.8		ug/L		118	61 - 134

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		75 - 130
4-Bromofluorobenzene (Surr)	102		47 - 134
Toluene-d8 (Surr)	107		69 - 122
Dibromofluoromethane (Surr)	123		78 - 129

Lab Sample ID: 240-134647-6 MS

Matrix: Water

Analysis Batch: 447176

Client Sample ID: DUP-09
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	11.2		ug/L		112	64 - 132
cis-1,2-Dichloroethene	1.0	U *	10.0	11.7		ug/L		117	68 - 121
Tetrachloroethene	1.0	U	10.0	9.90		ug/L		99	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	12.0		ug/L		120	69 - 126
Trichloroethene	1.0	U	10.0	10.8		ug/L		108	56 - 124
Vinyl chloride	4.7		10.0	16.3		ug/L		115	49 - 136

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		75 - 130
4-Bromofluorobenzene (Surr)	107		47 - 134
Toluene-d8 (Surr)	105		69 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-134647-1

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

Lab Sample ID: 240-134647-6 MS

Matrix: Water

Analysis Batch: 447176

Client Sample ID: DUP-09
Prep Type: Total/NA

Surrogate **MS** **MS**

Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	125		78 - 129

Lab Sample ID: 240-134647-6 MSD

Matrix: Water

Analysis Batch: 447176

Client Sample ID: DUP-09
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
1,1-Dichloroethene	1.0	U	10.0	11.7		ug/L	117	64 - 132	4	35
cis-1,2-Dichloroethene	1.0	U *	10.0	11.9		ug/L	119	68 - 121	1	35
Tetrachloroethene	1.0	U	10.0	10.2		ug/L	102	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	11.5		ug/L	115	69 - 126	4	35
Trichloroethene	1.0	U	10.0	10.6		ug/L	106	56 - 124	1	35
Vinyl chloride	4.7		10.0	16.7		ug/L	120	49 - 136	3	35

Surrogate **MSD** **MSD**

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	105		69 - 122
Dibromofluoromethane (Surr)	124		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
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
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.
1,4-Dioxane	10.0	9.73		ug/L	97	80 - 135
Surrogate	MB %Recovery	MB Qualifier	Limits			
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

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-134647-1

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

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
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
Surrogate							
1,2-Dichloroethane-d4 (Surr)							
	88						
Limits							
70 - 133							

Lab Sample ID: 240-134649-E-4 MS

Matrix: Water

Analysis Batch: 446903

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	8.95		ug/L		89	46 - 170
Surrogate									
1,2-Dichloroethane-d4 (Surr)									
	92								
Limits									
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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	8.79		ug/L		88	46 - 170	2	26
Surrogate											
1,2-Dichloroethane-d4 (Surr)											
	89										
Limits											
70 - 133											

QC Association Summary

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

Job ID: 240-134647-1

GC/MS VOA

Analysis Batch: 446478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134647-2	MW-80SR_080420	Total/NA	Water	8260B SIM	
240-134647-3	MW-137S_080420	Total/NA	Water	8260B SIM	
240-134647-4	MW-136S_080420	Total/NA	Water	8260B SIM	
240-134647-5	MW-107S_080420	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
240-134647-6	DUP-09	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: 447176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-134647-1	TRIP BLANK	Total/NA	Water	8260B	
240-134647-2	MW-80SR_080420	Total/NA	Water	8260B	
240-134647-3	MW-137S_080420	Total/NA	Water	8260B	
240-134647-4	MW-136S_080420	Total/NA	Water	8260B	
240-134647-5	MW-107S_080420	Total/NA	Water	8260B	
240-134647-6	DUP-09	Total/NA	Water	8260B	
MB 240-447176/6	Method Blank	Total/NA	Water	8260B	
LCS 240-447176/4	Lab Control Sample	Total/NA	Water	8260B	
240-134647-6 MS	DUP-09	Total/NA	Water	8260B	
240-134647-6 MSD	DUP-09	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-134647-1

Client Sample ID: TRIP BLANK
Date Collected: 08/04/20 00:00
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 14:49	LEE	TAL CAN

Client Sample ID: MW-80SR_080420
Date Collected: 08/04/20 11:21
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 15:11	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 09:30	SAM	TAL CAN

Client Sample ID: MW-137S_080420
Date Collected: 08/04/20 12:56
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 15:33	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 09:54	SAM	TAL CAN

Client Sample ID: MW-136S_080420
Date Collected: 08/04/20 14:26
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 15:55	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 10:19	SAM	TAL CAN

Client Sample ID: MW-107S_080420
Date Collected: 08/04/20 16:11
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 16:18	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446478	08/11/20 10:44	SAM	TAL CAN

Client Sample ID: DUP-09
Date Collected: 08/04/20 00:00
Date Received: 08/07/20 09:20

Lab Sample ID: 240-134647-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	447176	08/14/20 16:40	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	446903	08/13/20 05:16	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: 240-134647-1

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

Chain of Custody Record

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

Client Contact		Regulatory program:		DW	NPDES	RCRA	Other	Lab Contact: Mike DelMonico		COC No:	
Company Name: Arcadis	Client Project Manager: Kris Hinskey	Site Contact: Julia McCafferty		Telephone: 734-644-5131		Telephone: 330-497-9396					
Address: 28550 Cabot Drive, Suite 500	City/State/Zip: Novi, MI, 48377	Analysis Turnaround Time		TAT if different from below:		Analyses		I of COCs		For lab use only	
Phone: 248-994-2240	Project Name: Ford LTP Off-Site	10 day		<input checked="" type="checkbox"/> 3 weeks	<input checked="" type="checkbox"/> 2 weeks	1-A-Dioxane 8260B SIM		Walk-in client			
Project Number: 30050315;402.04	Method of Shipment/Carrier:	1 week		<input checked="" type="checkbox"/> 1 week	<input checked="" type="checkbox"/> 2 days	Vinyl Chloride 8260B		Lab sampling			
PO # 30050315;402.04	Shipping/Tracking No:	1 day		<input checked="" type="checkbox"/> 2 days	<input checked="" type="checkbox"/> 1 day	1,4-Dioxane 8260B SIM		Job/SID No:			
Compressed Sample (Y/N)											
Filtered Sample (Y/N)											
Containers & Preservatives											
Sample Identification:		Sample Date	Sample Time	Matrix	Aqueous	Solid	NH4OH	HNO3	H2SO4	HC1	NaOH
TRIP BLANK		8/4/20			X		2			N G X	X
NIN-N-0805R-080420		8/4/20	11:21		X		6			N G X	X
NIN-N-1375-080420		8/4/20	12:56		X		6			N G X	X
NIN-N-1345-080420		8/4/20	14:24		X		6			N G X	X
NIN-N-1675-080420		8/4/20	16:11		X		6			N G X	X
DUP-09		8/4/20			X		6			N G X	X
Special Instructions/QC Requirements & Comments:											
Submit all results through Cadena at jtmallia@cadenaaco.com. Cadena #E203631											
Level IV Reporting requested.											
Reinforced by: <i>J. J. Schubert</i> Received by: <i>M. DelMonico</i> Date/Time: <i>8/5/20 7:30</i> Date/Time: <i>8/5/20 7:30</i>											
Reinforced by: <i>Christopher Brannick</i> Received by: <i>C. M. M.</i> Date/Time: <i>8/6/20 11:45</i> Date/Time: <i>8/6/20 12:56</i>											
Reinforced by: <i>Jeffrey J. Murphy</i> Received by: <i>Company EMTM</i> Date/Time: <i>8/6/20 13:00</i> Date/Time: <i>8/6/20 13:00</i>											



240-134647 Chain of Custody

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**Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility**

Login # : 134447

Client <u>Arcadis</u>	Site Name	Cooler unpacked by:
Cooler Received on <u>8-7-20</u>	Opened on <u>8-7-20</u>	
FedEx: 1 st Grd Exp	UPS FAS Clipper	Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler #	Foam Box	Client Cooler	Box	Other
Packing material used:	<u>Bubble Wrap</u>	<u>Foam</u>	<u>Plastic Bag</u>	None
COOLANT:	<u>Wet Ice</u>	<u>Blue Ice</u>	<u>Dry Ice</u>	<u>Water</u>
				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. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 9 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 (LL Hg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels 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?
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
14. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # NA Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

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

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

Concerning _____

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: _____

WT-NC-099

Login #: 134447

See Temperature Excursion Form