

ANALYTICAL REPORT

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

Laboratory Job ID: 240-135187-1
Client Project/Site: Ford LTP On-Site

For:
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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
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Surrogate Summary	12
QC Sample Results	13
QC Association Summary	16
Lab Chronicle	17
Certification Summary	18
Chain of Custody	19

Definitions/Glossary

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

Job ID: 240-135187-1

Qualifiers

GC/MS VOA

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

Glossary

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

Case Narrative

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

Job ID: 240-135187-1

Job ID: 240-135187-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On-Site

Report Number: 240-135187-1

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

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

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

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

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

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

RECEIPT

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

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-135187-1), MW-33_081420 (240-135187-2), MW-38_081420 (240-135187-3) and MW-37_081420 (240-135187-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/25/2020.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-33_081420 (240-135187-2), MW-38_081420 (240-135187-3) and MW-37_081420 (240-135187-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/26/2020.

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

Method Summary

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

Job ID: 240-135187-1

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

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

Sample Summary

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

Job ID: 240-135187-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-135187-1	TRIP BLANK	Water	08/14/20 00:00	08/19/20 09:30	
240-135187-2	MW-33_081420	Water	08/14/20 09:50	08/19/20 09:30	
240-135187-3	MW-38_081420	Water	08/14/20 11:25	08/19/20 09:30	
240-135187-4	MW-37_081420	Water	08/14/20 12:55	08/19/20 09:30	

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

Detection Summary

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

Job ID: 240-135187-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135187-1

No Detections.

Client Sample ID: MW-33_081420

Lab Sample ID: 240-135187-2

No Detections.

Client Sample ID: MW-38_081420

Lab Sample ID: 240-135187-3

No Detections.

Client Sample ID: MW-37_081420

Lab Sample ID: 240-135187-4

No Detections.

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

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-135187-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135187-1

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/25/20 05:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 05:36	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 05:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 05:36	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 05:36	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 05:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130		08/25/20 05:36	1
4-Bromofluorobenzene (Surr)	77		47 - 134		08/25/20 05:36	1
Toluene-d8 (Surr)	96		69 - 122		08/25/20 05:36	1
Dibromofluoromethane (Surr)	97		78 - 129		08/25/20 05:36	1

Client Sample Results

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

Job ID: 240-135187-1

Client Sample ID: MW-33_081420

Lab Sample ID: 240-135187-2

Date Collected: 08/14/20 09:50

Matrix: Water

Date Received: 08/19/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/26/20 09:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133					08/26/20 09:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/25/20 05:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 05:58	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 05:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 05:58	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 05:58	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 05:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130					08/25/20 05:58	1
4-Bromofluorobenzene (Surr)	76		47 - 134					08/25/20 05:58	1
Toluene-d8 (Surr)	98		69 - 122					08/25/20 05:58	1
Dibromofluoromethane (Surr)	100		78 - 129					08/25/20 05:58	1

Client Sample Results

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

Job ID: 240-135187-1

Client Sample ID: MW-38_081420

Lab Sample ID: 240-135187-3

Date Collected: 08/14/20 11:25

Matrix: Water

Date Received: 08/19/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/26/20 10:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 133					08/26/20 10:16	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			08/25/20 07:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 07:03	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 07:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 07:03	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 07:03	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 07:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130					08/25/20 07:03	1
4-Bromofluorobenzene (Surr)	80		47 - 134					08/25/20 07:03	1
Toluene-d8 (Surr)	97		69 - 122					08/25/20 07:03	1
Dibromofluoromethane (Surr)	97		78 - 129					08/25/20 07:03	1

Client Sample Results

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

Job ID: 240-135187-1

Client Sample ID: MW-37_081420

Lab Sample ID: 240-135187-4

Date Collected: 08/14/20 12:55

Matrix: Water

Date Received: 08/19/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/26/20 10:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		70 - 133		08/26/20 10:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/25/20 07:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/25/20 07:25	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/25/20 07:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/25/20 07:25	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/25/20 07:25	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/25/20 07:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 130		08/25/20 07:25	1
4-Bromofluorobenzene (Surr)	77		47 - 134		08/25/20 07:25	1
Toluene-d8 (Surr)	98		69 - 122		08/25/20 07:25	1
Dibromofluoromethane (Surr)	93		78 - 129		08/25/20 07:25	1

Surrogate Summary

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

Job ID: 240-135187-1

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)
240-135187-1	TRIP BLANK	112	77	96	97
240-135187-2	MW-33_081420	115	76	98	100
240-135187-2 MS	MW-33-MS_081420	101	94	102	97
240-135187-2 MSD	MW-33-MSD_081420	102	94	101	91
240-135187-3	MW-38_081420	109	80	97	97
240-135187-4	MW-37_081420	109	77	98	93
LCS 240-448467/4	Lab Control Sample	95	97	104	88
MB 240-448467/7	Method Blank	107	82	98	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (70-133)
240-135187-2	MW-33_081420	86
240-135187-2 MS	MW-33-MS_081420	83
240-135187-2 MSD	MW-33-MSD_081420	88
240-135187-3	MW-38_081420	87
240-135187-4	MW-37_081420	86
LCS 240-448707/5	Lab Control Sample	85
MB 240-448707/6	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-135187-1

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

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

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/20 23:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.38	ug/L			08/24/20 23:03	1
Tetrachloroethene	1.0	U	1.0	0.33	ug/L			08/24/20 23:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.43	ug/L			08/24/20 23:03	1
Trichloroethene	1.0	U	1.0	0.36	ug/L			08/24/20 23:03	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			08/24/20 23:03	1

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

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

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	9.16		ug/L		92	73 - 129
cis-1,2-Dichloroethene	10.0	9.49		ug/L		95	75 - 124
Tetrachloroethene	10.0	9.33		ug/L		93	70 - 125
trans-1,2-Dichloroethene	10.0	8.89		ug/L		89	74 - 130
Trichloroethene	10.0	8.66		ug/L		87	71 - 121
Vinyl chloride	10.0	8.77		ug/L		88	61 - 134

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

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

Client Sample ID: MW-33-MS_081420
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	6.45		ug/L		64	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	9.24		ug/L		92	68 - 121
Tetrachloroethene	1.0	U	10.0	7.89		ug/L		79	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.88		ug/L		89	69 - 126
Trichloroethene	1.0	U	10.0	7.69		ug/L		77	56 - 124
Vinyl chloride	1.0	U	10.0	8.99		ug/L		90	49 - 136

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

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QC Sample Results

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

Job ID: 240-135187-1

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

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

Client Sample ID: MW-33-MS_081420
Prep Type: Total/NA

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	97		78 - 129

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

Client Sample ID: MW-33-MSD_081420
Prep Type: Total/NA

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

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		75 - 130
4-Bromofluorobenzene (Surr)	94		47 - 134
Toluene-d8 (Surr)	101		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

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

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

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

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

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

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

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

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

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

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

Client Sample ID: MW-33-MS_081420
Prep Type: Total/NA

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

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-135187-1

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

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

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

Client Sample ID: MW-33-MSD_081420
Prep Type: Total/NA

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

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



QC Association Summary

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

Job ID: 240-135187-1

GC/MS VOA

Analysis Batch: 448467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135187-1	TRIP BLANK	Total/NA	Water	8260B	
240-135187-2	MW-33_081420	Total/NA	Water	8260B	
240-135187-3	MW-38_081420	Total/NA	Water	8260B	
240-135187-4	MW-37_081420	Total/NA	Water	8260B	
MB 240-448467/7	Method Blank	Total/NA	Water	8260B	
LCS 240-448467/4	Lab Control Sample	Total/NA	Water	8260B	
240-135187-2 MS	MW-33-MS_081420	Total/NA	Water	8260B	
240-135187-2 MSD	MW-33-MSD_081420	Total/NA	Water	8260B	

Analysis Batch: 448707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-135187-2	MW-33_081420	Total/NA	Water	8260B SIM	
240-135187-3	MW-38_081420	Total/NA	Water	8260B SIM	
240-135187-4	MW-37_081420	Total/NA	Water	8260B SIM	
MB 240-448707/6	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-448707/5	Lab Control Sample	Total/NA	Water	8260B SIM	
240-135187-2 MS	MW-33-MS_081420	Total/NA	Water	8260B SIM	
240-135187-2 MSD	MW-33-MSD_081420	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-135187-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-135187-1

Date Collected: 08/14/20 00:00

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 05:36	LEE	TAL CAN

Client Sample ID: MW-33_081420

Lab Sample ID: 240-135187-2

Date Collected: 08/14/20 09:50

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 05:58	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 09:02	TJL2	TAL CAN

Client Sample ID: MW-38_081420

Lab Sample ID: 240-135187-3

Date Collected: 08/14/20 11:25

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 07:03	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 10:16	TJL2	TAL CAN

Client Sample ID: MW-37_081420

Lab Sample ID: 240-135187-4

Date Collected: 08/14/20 12:55

Matrix: Water

Date Received: 08/19/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448467	08/25/20 07:25	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	448707	08/26/20 10:41	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: 240-135187-1

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.



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

Client Contact		Regulatory program:		Site Contact: Julia McClafferty		Lab Contact: Mike DeMomico									
Company Name: Arcadis		DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other <input type="checkbox"/>		Telephone: 734-644-5131		Telephone: 330-497-9396									
Address: 28550 Cabot Drive, Suite 500		Email: kristoffer-hinskey@arcadis.com		Analysis Turnaround Time		Analyses									
City/State/Zip: Novi, MI, 48377		Sampler Name: Patrick Labadie		TAT if different from below		1,4-Dioxane 8260B SIM									
Phone: 248-994-2240		Method of Shipment/Carrier:		10 day		Vinyl Chloride 8260B									
Project Name: Ford LTP On-Site		Shipping/Tracking No:		Containers & Preservatives		TCE 8260B									
Project Number: 30050315-401.03				Matrix		PCE 8260B									
PO # 30050315.401.03				Other: <input type="checkbox"/> HCl <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4		Trans-1,2-DCE 8260B									
Sample Identification	Sample Date	Sample Time	Matrix					Filtered Sample (Y/N)	Composite=C / Grab=B	1,1-DCE 8260B <th rowspan="2">1,2-DCE 8260B <th rowspan="2">TCE 8260B <th rowspan="2">Vinyl Chloride 8260B <th rowspan="2">1,4-Dioxane 8260B SIM <th rowspan="2">COC No:</th> </th></th></th></th>	1,2-DCE 8260B <th rowspan="2">TCE 8260B <th rowspan="2">Vinyl Chloride 8260B <th rowspan="2">1,4-Dioxane 8260B SIM <th rowspan="2">COC No:</th> </th></th></th>	TCE 8260B <th rowspan="2">Vinyl Chloride 8260B <th rowspan="2">1,4-Dioxane 8260B SIM <th rowspan="2">COC No:</th> </th></th>	Vinyl Chloride 8260B <th rowspan="2">1,4-Dioxane 8260B SIM <th rowspan="2">COC No:</th> </th>	1,4-Dioxane 8260B SIM <th rowspan="2">COC No:</th>	COC No:
			Air	Aqueous	Sediment	Solid	Other:								
TRIP BLANK															
MW-33-081420	8-14-20	9:50	X				X								1 - Trip blank
MW-33-MS-081420															3 WMS for 8260B
MW-33-MSD-081420															3 WMS for 8260B SIM
MW-38-081420		11:25													
MW-37-081420		12:55													



240-135187 Chain of Custody

Possible Hazard Identification		Sample Disposal (A fee may be charged)	
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Return to Client

Special Instructions/QC Requirements & Comments:
Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
<i>Patrick Labadie</i>	Arcadis	8-14-20/14:15	NOVI Cold Storage	ARCADIS	8-14-20/14:15
<i>Julia McClafferty</i>	Arcadis	8/18/20 10:15	<i>John Hee</i>	ETA	8/18/20 12:00
<i>John Hee</i>	ETA	8/19/20 12:26	<i>John Hee</i>	ETA	8-19-20 9:30

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative				Login # : <u>135187</u>	
Canton Facility					
Client <u>Arcadis</u>		Site Name _____		Cooler unpacked by: <u>Garry Page</u>	
Cooler Received on <u>8-19-20</u>		Opened on <u>8-19-20</u>			
FedEx: 1 st <input checked="" type="radio"/> Grd <input type="radio"/> Exp <input type="radio"/> UPS <input type="radio"/> FAS <input type="radio"/> Clipper <input type="radio"/> Client Drop Off <input type="radio"/> TestAmerica Courier <input type="radio"/> Other _____					
Receipt After-hours: Drop-off Date/Time				Storage Location	
TestAmerica Cooler # <u>TA</u>		Foam Box <input type="checkbox"/> Client Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____			
Packing material used: <input checked="" type="checkbox"/> Bubble Wrap <input type="checkbox"/> Foam <input checked="" type="checkbox"/> Plastic Bag <input type="checkbox"/> None <input type="checkbox"/> Other _____					
COOLANT: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Water <input type="checkbox"/> None					
1. Cooler temperature upon receipt		<input 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. <u>14</u> °C Corrected Cooler Temp. <u>23</u> °C					
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>		<input checked="" type="radio"/> Yes <input type="radio"/> No			
-Were the seals on the outside of the cooler(s) signed & dated?		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA			
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA			
-Were tamper/custody seals intact and uncompromised?		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA			
3. Shippers' packing slip attached to the cooler(s)?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
4. Did custody papers accompany the sample(s)?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
5. Were the custody papers relinquished & signed in the appropriate place?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
6. Was/were the person(s) who collected the samples clearly identified on the COC?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
7. Did all bottles arrive in good condition (Unbroken)?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
8. Could all bottle labels be reconciled with the COC?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
9. Were correct bottle(s) used for the test(s) indicated?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
10. Sufficient quantity received to perform indicated analyses?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
11. Are these work share samples?		<input checked="" type="radio"/> Yes <input type="radio"/> 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?		<input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> NA pH Strip Lot# <u>HC911298</u>			
13. Were VOAs on the COC?		<input checked="" type="radio"/> Yes <input type="radio"/> No			
14. Were air bubbles >6 mm in any VOA vials? Larger than this.		<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA			
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____		<input checked="" type="radio"/> Yes <input type="radio"/> No			
16. Was a LL Hg or Me Hg trip blank present? _____		<input checked="" type="radio"/> Yes <input type="radio"/> No			
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: _____		