

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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Laboratory Job ID: 240-126007-1
Client Project/Site: Ford LTP On Site

For:
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Attn: Kristoffer Hinskey



Authorized for release by:
2/13/2020 4:08:26 PM

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



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Definitions/Glossary

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

Job ID: 240-126007-1

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.
▫	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 On Site

Job ID: 240-126007-1

Job ID: 240-126007-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP On Site

Report Number: 240-126007-1

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 2/8/2020 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-126007-1), MW-222S_020620 (240-126007-2), MW-219S_020620 (240-126007-3) and DUP-01 (240-126007-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/11/2020 and 02/12/2020.

No MS/MSD in batch 422314 due to an incorrect dilution: TRIP BLANK (240-126007-1).

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-222S_020620 (240-126007-2), MW-219S_020620 (240-126007-3) and DUP-01 (240-126007-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/10/2020.

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: 240-126007-1

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

Protocol References:

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

Laboratory References:

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



Sample Summary

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

Job ID: 240-126007-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126007-1	TRIP BLANK	Water	02/06/20 00:00	02/08/20 09:35	
240-126007-2	MW-222S_020620	Water	02/06/20 11:40	02/08/20 09:35	
240-126007-3	MW-219S_020620	Water	02/06/20 13:35	02/08/20 09:35	
240-126007-4	DUP-01	Water	02/06/20 00:00	02/08/20 09:35	

- 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: 240-126007-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126007-1

No Detections.

Client Sample ID: MW-222S_020620

Lab Sample ID: 240-126007-2

No Detections.

Client Sample ID: MW-219S_020620

Lab Sample ID: 240-126007-3

No Detections.

Client Sample ID: DUP-01

Lab Sample ID: 240-126007-4

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: 240-126007-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126007-1

Date Collected: 02/06/20 00:00

Matrix: Water

Date Received: 02/08/20 09:35

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	0.19	ug/L			02/11/20 20:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/11/20 20:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/11/20 20:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/11/20 20:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/11/20 20:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/11/20 20:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 130		02/11/20 20:42	1
4-Bromofluorobenzene (Surr)	99		47 - 134		02/11/20 20:42	1
Toluene-d8 (Surr)	94		69 - 122		02/11/20 20:42	1
Dibromofluoromethane (Surr)	97		78 - 129		02/11/20 20:42	1

Client Sample Results

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

Job ID: 240-126007-1

Client Sample ID: MW-222S_020620

Lab Sample ID: 240-126007-2

Date Collected: 02/06/20 11:40

Matrix: Water

Date Received: 02/08/20 09:35

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			02/10/20 13:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 133		02/10/20 13:49	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	0.19	ug/L			02/12/20 12:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/12/20 12:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/12/20 12:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/12/20 12:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/12/20 12:26	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/12/20 12:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 130		02/12/20 12:26	1
4-Bromofluorobenzene (Surr)	67		47 - 134		02/12/20 12:26	1
Toluene-d8 (Surr)	80		69 - 122		02/12/20 12:26	1
Dibromofluoromethane (Surr)	81		78 - 129		02/12/20 12:26	1

Client Sample Results

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

Job ID: 240-126007-1

Client Sample ID: MW-219S_020620

Lab Sample ID: 240-126007-3

Date Collected: 02/06/20 13:35

Matrix: Water

Date Received: 02/08/20 09:35

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	-		02/10/20 14:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 133		02/10/20 14:14	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	0.19	ug/L	-		02/12/20 12:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		02/12/20 12:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		02/12/20 12:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		02/12/20 12:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		02/12/20 12:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L	-		02/12/20 12:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 130		02/12/20 12:48	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/12/20 12:48	1
Toluene-d8 (Surr)	83		69 - 122		02/12/20 12:48	1
Dibromofluoromethane (Surr)	87		78 - 129		02/12/20 12:48	1

Client Sample Results

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

Job ID: 240-126007-1

Client Sample ID: DUP-01

Lab Sample ID: 240-126007-4

Date Collected: 02/06/20 00:00

Matrix: Water

Date Received: 02/08/20 09:35

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			02/10/20 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 133		02/10/20 14:41	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	0.19	ug/L			02/12/20 13:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/12/20 13:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/12/20 13:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/12/20 13:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/12/20 13:10	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/12/20 13:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/12/20 13:10	1
4-Bromofluorobenzene (Surr)	68		47 - 134		02/12/20 13:10	1
Toluene-d8 (Surr)	80		69 - 122		02/12/20 13:10	1
Dibromofluoromethane (Surr)	84		78 - 129		02/12/20 13:10	1

Surrogate Summary

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

Job ID: 240-126007-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-125946-A-3 MSD	Matrix Spike Duplicate	82	75	80	89
240-125946-C-3 MS	Matrix Spike	85	75	82	89
240-126007-1	TRIP BLANK	107	99	94	97
240-126007-2	MW-222S_020620	87	67	80	81
240-126007-3	MW-219S_020620	92	68	83	87
240-126007-4	DUP-01	90	68	80	84
LCS 240-422314/4	Lab Control Sample	105	99	91	99
LCS 240-422496/4	Lab Control Sample	83	76	82	89
MB 240-422314/6	Method Blank	106	97	91	102
MB 240-422496/7	Method Blank	89	69	81	84

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)
240-125897-G-3 MS	Matrix Spike	99
240-125897-G-3 MSD	Matrix Spike Duplicate	101
240-126007-2	MW-222S_020620	95
240-126007-3	MW-219S_020620	95
240-126007-4	DUP-01	96
LCS 240-422139/4	Lab Control Sample	96
MB 240-422139/5	Method Blank	98

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-126007-1

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

Lab Sample ID: MB 240-422314/6
Matrix: Water
Analysis Batch: 422314

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	0.19	ug/L			02/11/20 12:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/11/20 12:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/11/20 12:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/11/20 12:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/11/20 12:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/11/20 12:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		02/11/20 12:32	1
4-Bromofluorobenzene (Surr)	97		47 - 134		02/11/20 12:32	1
Toluene-d8 (Surr)	91		69 - 122		02/11/20 12:32	1
Dibromofluoromethane (Surr)	102		78 - 129		02/11/20 12:32	1

Lab Sample ID: LCS 240-422314/4
Matrix: Water
Analysis Batch: 422314

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	10.0		ug/L		100	73 - 129
cis-1,2-Dichloroethene	10.0	9.90		ug/L		99	75 - 124
Tetrachloroethene	10.0	10.1		ug/L		101	70 - 125
trans-1,2-Dichloroethene	10.0	9.62		ug/L		96	74 - 130
Trichloroethene	10.0	8.91		ug/L		89	71 - 121
Vinyl chloride	10.0	7.01		ug/L		70	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		75 - 130
4-Bromofluorobenzene (Surr)	99		47 - 134
Toluene-d8 (Surr)	91		69 - 122
Dibromofluoromethane (Surr)	99		78 - 129

Lab Sample ID: MB 240-422496/7
Matrix: Water
Analysis Batch: 422496

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	0.19	ug/L			02/12/20 11:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/12/20 11:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/12/20 11:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/12/20 11:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/12/20 11:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/12/20 11:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 130		02/12/20 11:42	1
4-Bromofluorobenzene (Surr)	69		47 - 134		02/12/20 11:42	1
Toluene-d8 (Surr)	81		69 - 122		02/12/20 11:42	1

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QC Sample Results

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

Job ID: 240-126007-1

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

Lab Sample ID: MB 240-422496/7
Matrix: Water
Analysis Batch: 422496

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	84		78 - 129		02/12/20 11:42	1

Lab Sample ID: LCS 240-422496/4
Matrix: Water
Analysis Batch: 422496

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
1,1-Dichloroethene	10.0	12.1		ug/L		121	73 - 129	
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	75 - 124	
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 125	
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	74 - 130	
Trichloroethene	10.0	11.4		ug/L		114	71 - 121	
Vinyl chloride	10.0	8.73		ug/L		87	61 - 134	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	76		47 - 134
Toluene-d8 (Surr)	82		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-125946-A-3 MSD
Matrix: Water
Analysis Batch: 422496

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.71		ug/L		97	64 - 132	9	35	
cis-1,2-Dichloroethene	0.21	J	10.0	9.32		ug/L		91	68 - 121	2	35	
Tetrachloroethene	1.0	U	10.0	8.42		ug/L		84	52 - 129	1	35	
Trichloroethene	1.0	U	10.0	8.76		ug/L		88	56 - 124	2	35	
Vinyl chloride	1.0	U	10.0	7.93		ug/L		79	49 - 136	5	35	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	75		47 - 134
Toluene-d8 (Surr)	80		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: 240-125946-C-3 MS
Matrix: Water
Analysis Batch: 422496

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
1,1-Dichloroethene	1.0	U	10.0	8.84		ug/L		88	64 - 132	
cis-1,2-Dichloroethene	0.21	J	10.0	9.53		ug/L		93	68 - 121	
Tetrachloroethene	1.0	U	10.0	8.33		ug/L		83	52 - 129	
Trichloroethene	1.0	U	10.0	8.92		ug/L		89	56 - 124	
Vinyl chloride	1.0	U	10.0	7.55		ug/L		75	49 - 136	

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-126007-1

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

Lab Sample ID: 240-125946-C-3 MS
Matrix: Water
Analysis Batch: 422496

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	75		47 - 134
Toluene-d8 (Surr)	82		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

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

Lab Sample ID: MB 240-422139/5
Matrix: Water
Analysis Batch: 422139

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			02/10/20 12:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 133		02/10/20 12:33	1

Lab Sample ID: LCS 240-422139/4
Matrix: Water
Analysis Batch: 422139

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	9.74		ug/L		97	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 133

Lab Sample ID: 240-125897-G-3 MS
Matrix: Water
Analysis Batch: 422139

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	10.3		ug/L		103	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 133

Lab Sample ID: 240-125897-G-3 MSD
Matrix: Water
Analysis Batch: 422139

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	10.2		ug/L		102	46 - 170	0	26

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 133

Eurofins TestAmerica, Canton

QC Association Summary

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

Job ID: 240-126007-1

GC/MS VOA

Analysis Batch: 422139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126007-2	MW-222S_020620	Total/NA	Water	8260B SIM	
240-126007-3	MW-219S_020620	Total/NA	Water	8260B SIM	
240-126007-4	DUP-01	Total/NA	Water	8260B SIM	
MB 240-422139/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-422139/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-125897-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-125897-G-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 422314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126007-1	TRIP BLANK	Total/NA	Water	8260B	
MB 240-422314/6	Method Blank	Total/NA	Water	8260B	
LCS 240-422314/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 422496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126007-2	MW-222S_020620	Total/NA	Water	8260B	
240-126007-3	MW-219S_020620	Total/NA	Water	8260B	
240-126007-4	DUP-01	Total/NA	Water	8260B	
MB 240-422496/7	Method Blank	Total/NA	Water	8260B	
LCS 240-422496/4	Lab Control Sample	Total/NA	Water	8260B	
240-125946-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-125946-C-3 MS	Matrix Spike	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-126007-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126007-1

Date Collected: 02/06/20 00:00

Matrix: Water

Date Received: 02/08/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422314	02/11/20 20:42	LEE	TAL CAN

Client Sample ID: MW-222S_020620

Lab Sample ID: 240-126007-2

Date Collected: 02/06/20 11:40

Matrix: Water

Date Received: 02/08/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422496	02/12/20 12:26	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	422139	02/10/20 13:49	SAM	TAL CAN

Client Sample ID: MW-219S_020620

Lab Sample ID: 240-126007-3

Date Collected: 02/06/20 13:35

Matrix: Water

Date Received: 02/08/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422496	02/12/20 12:48	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	422139	02/10/20 14:14	SAM	TAL CAN

Client Sample ID: DUP-01

Lab Sample ID: 240-126007-4

Date Collected: 02/06/20 00:00

Matrix: Water

Date Received: 02/08/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422496	02/12/20 13:10	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	422139	02/10/20 14:41	SAM	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: 240-126007-1

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	02-23-20 *
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	06-01-21
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
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	01-12-21
West Virginia DEP	State	210	12-31-20

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

Eurofins TestAmerica, Canton

TestAmerica Michigan
 10448 Citation Drive
 Suite 200
 Brighton, MI 48116-6561
 phone 810.229.2763 fax

Chain of Custody Record

MICHIGAN TestAmerica
 190

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other:

Client Contact: **Kris Hinskey** Tel/Fax: 248-994-2240
 Lab Contact: **Julia McClafferty** Date: 2-6-20
 Lab Contact: **Mike DeMonico** Carrier:
 Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
 TAT if different from Below: 3 Day
 2 weeks
 1 week
 2 days
 1 day
 Project Name: Ford LTP On-Site
 Site: Ford LTP
 P O # 30042006.0401.02

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Vinyl Chloride 8260B	TCE 8260B	cis-1,2-DCE 8260B	trans-1,2-DCE 8260B	1,1-DCE 8260B	PCE 8260B	1,4-Dioxane 8260B SIM
TRIP BLANK	2/6/20	11:40	G	W	1	N	X	X	X	X	X	X	X
MW-2225-020620	2/6/20	13:35	G	W	6	N	X	X	X	X	X	X	X
MW-2195-020620	2/6/20	-	G	W	6	N	X	X	X	X	X	X	X
DUP-01	2/6/20	-	G	W	6	N	X	X	X	X	X	X	X

Sample Specific Notes: 3 Vials for 8260B
3 Vials for 8260B SIM

Perform MS / MSD (Y / N)
 Form MS / MSD (Y / N)
 240-126007 Chain of Custody
 222222

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other
 Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seal No.
 Company: **Accadis** Date/Time: 2/6/20 11:05
 Company: **Accadis** Date/Time: 2/6/20 18:20
 Company: **Accadis** Date/Time: 2/17/20 10:36
 Company: **EVAL-MI** Date/Time: 2-8-20 9:35

Relinquished by: **Melissa Wines** M Woerner
 Relinquished by: **Michelle Johnson**
 Relinquished by: **Julia McClafferty**

Relinquished by: **Melissa Wines**
 Relinquished by: **Melissa Wines**

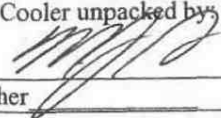
Received by: **Melissa Wines** Company: **Accadis**
 Received by: **Accadis Lab Storage** Company: **Accadis**
 Received in Laboratory by: **Melissa Wines** Company: **EVAL-MI**

Therm ID No.
 Cooler Temp (°C): Obs'd: _____
 Corrid: _____

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 174007

Client Arcadis of Michigan Site Name _____
 Cooler Received on 2-8-20 Opened on 2-8-20
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by:


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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 2.7 °C Corrected Cooler Temp. 3.4 °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 7 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC995364
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 # _____ 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: _____