

ANALYTICAL REPORT

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

Laboratory Job ID: 240-139465-1
Client Project/Site: Ford LTP - On Site

For:
ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
11/18/2020 11:34:28 AM

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



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Definitions/Glossary

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

Job ID: 240-139465-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

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 - On Site

Job ID: 240-139465-1

Job ID: 240-139465-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP - On Site

Report Number: 240-139465-1

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 11/4/2020 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 3.9° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-139465-1), MW-62_110220 (240-139465-2), MW-50_110220 (240-139465-3), MW-63_110220 (240-139465-4) and MW-67_110220 (240-139465-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/12/2020.

Samples MW-50_110220 (240-139465-3)[3.33X] and MW-67_110220 (240-139465-5)[2.5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-62_110220 (240-139465-2), MW-50_110220 (240-139465-3), MW-63_110220 (240-139465-4) and MW-67_110220 (240-139465-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/09/2020.

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

Method Summary

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

Job ID: 240-139465-1

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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- 14

Sample Summary

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

Job ID: 240-139465-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-139465-1	TRIP BLANK	Water	11/02/20 00:00	11/04/20 09:20	
240-139465-2	MW-62_110220	Water	11/02/20 09:26	11/04/20 09:20	
240-139465-3	MW-50_110220	Water	11/02/20 11:01	11/04/20 09:20	
240-139465-4	MW-63_110220	Water	11/02/20 12:45	11/04/20 09:20	
240-139465-5	MW-67_110220	Water	11/02/20 14:05	11/04/20 09:20	

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Detection Summary

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

Job ID: 240-139465-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-139465-1

No Detections.

Client Sample ID: MW-62_110220

Lab Sample ID: 240-139465-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.2		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.77	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-50_110220

Lab Sample ID: 240-139465-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	2.3	J	3.3	0.53	ug/L	3.33		8260B	Total/NA
Vinyl chloride	57		3.3	0.67	ug/L	3.33		8260B	Total/NA

Client Sample ID: MW-63_110220

Lab Sample ID: 240-139465-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.59	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-67_110220

Lab Sample ID: 240-139465-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.5		2.5	0.40	ug/L	2.5		8260B	Total/NA
trans-1,2-Dichloroethene	1.2	J	2.5	0.48	ug/L	2.5		8260B	Total/NA
Trichloroethene	67		2.5	0.25	ug/L	2.5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-139465-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-139465-1

Date Collected: 11/02/20 00:00

Matrix: Water

Date Received: 11/04/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/20 13:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/20 13:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/20 13:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/20 13:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/20 13:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/20 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		11/12/20 13:42	1
4-Bromofluorobenzene (Surr)	104		47 - 134		11/12/20 13:42	1
Toluene-d8 (Surr)	94		69 - 122		11/12/20 13:42	1
Dibromofluoromethane (Surr)	107		78 - 129		11/12/20 13:42	1

Client Sample Results

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

Job ID: 240-139465-1

Client Sample ID: MW-62_110220

Lab Sample ID: 240-139465-2

Date Collected: 11/02/20 09:26

Matrix: Water

Date Received: 11/04/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.2		2.0	0.86	ug/L			11/09/20 19:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 133					11/09/20 19:47	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			11/12/20 14:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/20 14:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/20 14:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/20 14:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/20 14:04	1
Vinyl chloride	0.77	J	1.0	0.20	ug/L			11/12/20 14:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 130					11/12/20 14:04	1
4-Bromofluorobenzene (Surr)	97		47 - 134					11/12/20 14:04	1
Toluene-d8 (Surr)	88		69 - 122					11/12/20 14:04	1
Dibromofluoromethane (Surr)	102		78 - 129					11/12/20 14:04	1

Client Sample Results

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

Job ID: 240-139465-1

Client Sample ID: MW-50_110220

Lab Sample ID: 240-139465-3

Date Collected: 11/02/20 11:01

Matrix: Water

Date Received: 11/04/20 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	J	2.0	0.86	ug/L			11/09/20 20:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 133					11/09/20 20:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	3.3	U	3.3	0.63	ug/L			11/12/20 14:27	3.33
cis-1,2-Dichloroethene	2.3	J	3.3	0.53	ug/L			11/12/20 14:27	3.33
Tetrachloroethene	3.3	U	3.3	0.50	ug/L			11/12/20 14:27	3.33
trans-1,2-Dichloroethene	3.3	U	3.3	0.63	ug/L			11/12/20 14:27	3.33
Trichloroethene	3.3	U	3.3	0.33	ug/L			11/12/20 14:27	3.33
Vinyl chloride	57		3.3	0.67	ug/L			11/12/20 14:27	3.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130					11/12/20 14:27	3.33
4-Bromofluorobenzene (Surr)	94		47 - 134					11/12/20 14:27	3.33
Toluene-d8 (Surr)	88		69 - 122					11/12/20 14:27	3.33
Dibromofluoromethane (Surr)	100		78 - 129					11/12/20 14:27	3.33

Client Sample Results

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

Job ID: 240-139465-1

Client Sample ID: MW-63_110220

Lab Sample ID: 240-139465-4

Date Collected: 11/02/20 12:45

Matrix: Water

Date Received: 11/04/20 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			11/09/20 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 133		11/09/20 20:36	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			11/12/20 14:49	1
cis-1,2-Dichloroethene	0.59	J	1.0	0.16	ug/L			11/12/20 14:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/20 14:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/20 14:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/20 14:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/20 14:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		11/12/20 14:49	1
4-Bromofluorobenzene (Surr)	96		47 - 134		11/12/20 14:49	1
Toluene-d8 (Surr)	89		69 - 122		11/12/20 14:49	1
Dibromofluoromethane (Surr)	102		78 - 129		11/12/20 14:49	1

Client Sample Results

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

Job ID: 240-139465-1

Client Sample ID: MW-67_110220

Lab Sample ID: 240-139465-5

Date Collected: 11/02/20 14:05

Matrix: Water

Date Received: 11/04/20 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			11/09/20 21:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 133		11/09/20 21:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			11/12/20 15:12	2.5
cis-1,2-Dichloroethene	8.5		2.5	0.40	ug/L			11/12/20 15:12	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			11/12/20 15:12	2.5
trans-1,2-Dichloroethene	1.2	J	2.5	0.48	ug/L			11/12/20 15:12	2.5
Trichloroethene	67		2.5	0.25	ug/L			11/12/20 15:12	2.5
Vinyl chloride	2.5	U	2.5	0.50	ug/L			11/12/20 15:12	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		11/12/20 15:12	2.5
4-Bromofluorobenzene (Surr)	98		47 - 134		11/12/20 15:12	2.5
Toluene-d8 (Surr)	90		69 - 122		11/12/20 15:12	2.5
Dibromofluoromethane (Surr)	102		78 - 129		11/12/20 15:12	2.5

Surrogate Summary

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

Job ID: 240-139465-1

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)
240-139407-B-5 MS	Matrix Spike	104	103	93	110
240-139407-B-5 MSD	Matrix Spike Duplicate	104	105	94	115
240-139465-1	TRIP BLANK	102	104	94	107
240-139465-2	MW-62_110220	99	97	88	102
240-139465-3	MW-50_110220	97	94	88	100
240-139465-4	MW-63_110220	97	96	89	102
240-139465-5	MW-67_110220	102	98	90	102
LCS 240-460588/5	Lab Control Sample	101	103	95	113
MB 240-460588/8	Method Blank	102	103	94	106

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)
240-139465-2	MW-62_110220	101
240-139465-3	MW-50_110220	102
240-139465-4	MW-63_110220	104
240-139465-5	MW-67_110220	107
240-139466-C-5 MS	Matrix Spike	104
240-139466-C-5 MSD	Matrix Spike Duplicate	106
LCS 240-459934/4	Lab Control Sample	100
MB 240-459934/5	Method Blank	99

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-139465-1

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

Lab Sample ID: MB 240-460588/8
Matrix: Water
Analysis Batch: 460588

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			11/12/20 10:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/20 10:57	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/20 10:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/20 10:57	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/20 10:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/20 10:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130		11/12/20 10:57	1
4-Bromofluorobenzene (Surr)	103		47 - 134		11/12/20 10:57	1
Toluene-d8 (Surr)	94		69 - 122		11/12/20 10:57	1
Dibromofluoromethane (Surr)	106		78 - 129		11/12/20 10:57	1

Lab Sample ID: LCS 240-460588/5
Matrix: Water
Analysis Batch: 460588

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	19.5		ug/L		98	73 - 129
cis-1,2-Dichloroethene	20.0	20.7		ug/L		104	75 - 124
Tetrachloroethene	20.0	21.1		ug/L		105	70 - 125
trans-1,2-Dichloroethene	20.0	18.5		ug/L		93	74 - 130
Trichloroethene	20.0	23.0		ug/L		115	71 - 121
Vinyl chloride	20.0	18.6		ug/L		93	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	95		69 - 122
Dibromofluoromethane (Surr)	113		78 - 129

Lab Sample ID: 240-139407-B-5 MS
Matrix: Water
Analysis Batch: 460588

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25	J	800	826		ug/L		100	68 - 121
trans-1,2-Dichloroethene	46		800	777		ug/L		91	69 - 126
Trichloroethene	1100	F1	800	1930		ug/L		104	56 - 124
Vinyl chloride	40	U	800	669		ug/L		84	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	103		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	110		78 - 129

QC Sample Results

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

Job ID: 240-139465-1

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

Lab Sample ID: 240-139407-B-5 MSD
Matrix: Water
Analysis Batch: 460588

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	25	J	800	914		ug/L		111	68 - 121	10	35
trans-1,2-Dichloroethene	46		800	843		ug/L		100	69 - 126	8	35
Trichloroethene	1100	F1	800	2120	F1	ug/L		128	56 - 124	9	35
Vinyl chloride	40	U	800	707		ug/L		88	49 - 136	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 130
4-Bromofluorobenzene (Surr)	105		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	115		78 - 129

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

Lab Sample ID: MB 240-459934/5
Matrix: Water
Analysis Batch: 459934

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			11/09/20 13:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 133		11/09/20 13:39	1

Lab Sample ID: LCS 240-459934/4
Matrix: Water
Analysis Batch: 459934

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	10.9		ug/L		109	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 133

Lab Sample ID: 240-139466-C-5 MS
Matrix: Water
Analysis Batch: 459934

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	44		10.0	54.7	4	ug/L		104	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 133

QC Sample Results

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

Job ID: 240-139465-1

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

Lab Sample ID: 240-139466-C-5 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 459934

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	44		10.0	57.9	4	ug/L		136	46 - 170	6	26
Surrogate	<i>MSD</i> %Recovery	<i>MSD</i> Qualifier	<i>MSD</i> Limits								
1,2-Dichloroethane-d4 (Surr)	106		70 - 133								

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

QC Association Summary

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

Job ID: 240-139465-1

GC/MS VOA

Analysis Batch: 459934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139465-2	MW-62_110220	Total/NA	Water	8260B SIM	
240-139465-3	MW-50_110220	Total/NA	Water	8260B SIM	
240-139465-4	MW-63_110220	Total/NA	Water	8260B SIM	
240-139465-5	MW-67_110220	Total/NA	Water	8260B SIM	
MB 240-459934/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-459934/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-139466-C-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-139466-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 460588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139465-1	TRIP BLANK	Total/NA	Water	8260B	
240-139465-2	MW-62_110220	Total/NA	Water	8260B	
240-139465-3	MW-50_110220	Total/NA	Water	8260B	
240-139465-4	MW-63_110220	Total/NA	Water	8260B	
240-139465-5	MW-67_110220	Total/NA	Water	8260B	
MB 240-460588/8	Method Blank	Total/NA	Water	8260B	
LCS 240-460588/5	Lab Control Sample	Total/NA	Water	8260B	
240-139407-B-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-139407-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-139465-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-139465-1

Date Collected: 11/02/20 00:00

Matrix: Water

Date Received: 11/04/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	460588	11/12/20 13:42	HMB	TAL CAN

Client Sample ID: MW-62_110220

Lab Sample ID: 240-139465-2

Date Collected: 11/02/20 09:26

Matrix: Water

Date Received: 11/04/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	460588	11/12/20 14:04	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	459934	11/09/20 19:47	SAM	TAL CAN

Client Sample ID: MW-50_110220

Lab Sample ID: 240-139465-3

Date Collected: 11/02/20 11:01

Matrix: Water

Date Received: 11/04/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		3.33	460588	11/12/20 14:27	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	459934	11/09/20 20:12	SAM	TAL CAN

Client Sample ID: MW-63_110220

Lab Sample ID: 240-139465-4

Date Collected: 11/02/20 12:45

Matrix: Water

Date Received: 11/04/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	460588	11/12/20 14:49	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	459934	11/09/20 20:36	SAM	TAL CAN

Client Sample ID: MW-67_110220

Lab Sample ID: 240-139465-5

Date Collected: 11/02/20 14:05

Matrix: Water

Date Received: 11/04/20 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	460588	11/12/20 15:12	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	459934	11/09/20 21:01	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: 240-139465-1

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	07-31-21
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	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20



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

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
Address: 28550 Cahot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kristoffer.hinskey@arcadis.com

Site Contact: Julia McClafferty
Telephone: 330-497-9396

Lab Contact: Mike DeMontico
Telephone: 330-497-9396

Project Name: Ford JTP One-Site
Project Number: 30050315-401.03
Shipping/Tracking No:

Sampler Name: Xenia Chan
Method of Shipment/Carrier:
Analysis Turnaround Time:
10 day 3 weeks
1 week 2 weeks
2 days 1 day

Containers & Preservatives:
HCl NaOH ZnAc
Other:

Matrix:
Aqueous Solid
Other:

Sample Identification	Sample Date	Sample Time	H2SO4	HNO3	HCl	NaOH	ZnAc	Other	Filtered Sample (Y/N)	Composite C/Grab-C	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK					1				NG		X	X	X	X	X	X		1 TRIP BLANK
MW-62-110220	11/2/20	926		6					NG		X	X	X	X	X	X		3 Vials for 8260B 3 Vials for 8260B SIM
MW-50-110220	11/2/20	1101		6					NG		X	X	X	X	X	X		3 Vials for 8260B 3 Vials for 8260B SIM
MW-63-110220	11/2/20	1245		6					NG		X	X	X	X	X	X		3 Vials for 8260B 3 Vials for 8260B SIM
MW-67-110220	11/2/20	1405		6					NG		X	X	X	X	X	X		3 Vials for 8260B 3 Vials for 8260B SIM



Possible Hazard Identification: Non-Hazard Irritant 4th Irritant Poison B Unknown

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

Relinquished by: *Julia McClafferty*
Relinquished by: *Julia McClafferty*
Relinquished by: *Xenia Chan*

Company	Date/Time	Received by
Arcadis	11/2/2020 1510	<i>Novy Cady Storage</i>
Arcadis	11/3/2020 1345	<i>Julia McClafferty</i>
ETA	11/3/20 1700	<i>Xenia Chan</i>

Company	Date/Time	Received in Laboratory
Arcadis	11/2/2020 1510	<i>Novy Cady Storage</i>
Arcadis	11/3/2020 1345	<i>Julia McClafferty</i>
ETA	11/3/20 1700	<i>Xenia Chan</i>

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : 139465
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: _____
Cooler Received on 11-17-20 Opened on 11-17-20
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # 114 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-11 (CF +0.9 °C) Observed Cooler Temp. 3.0 °C Corrected Cooler Temp. 3.9 °C
IR GUN #IR-12 (CF +0.5°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC907861
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # NA Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

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

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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. 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)

20. 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: _____