

ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-114329-1
Client Project/Site: Ford LTP Livonia MI - E203728

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



Authorized for release by:
6/27/2019 10:28:00 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 Livonia MI - E203728

Job ID: 240-114329-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Job ID: 240-114329-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-114329-1

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 6/13/2019 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.5° C, 2.7° C and 4.1° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-57_06112019 (240-114329-1), MW-39_06112019 (240-114329-2), MW-32_06112019 (240-114329-3), MW-33_06112019 (240-114329-4), MW-38_06112019 (240-114329-5) and TRIP BLANK (240-114329-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/22/2019.

No MS/MSD in batch 387698 due to incorrect dilution: MW-57_06112019 (240-114329-1), MW-39_06112019 (240-114329-2), MW-32_06112019 (240-114329-3), MW-33_06112019 (240-114329-4), MW-38_06112019 (240-114329-5) and TRIP BLANK (240-114329-6).

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-57_06112019 (240-114329-1), MW-39_06112019 (240-114329-2), MW-32_06112019 (240-114329-3), MW-33_06112019 (240-114329-4) and MW-38_06112019 (240-114329-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 06/17/2019.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Job ID: 240-114329-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

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

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Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

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 Livonia MI - E203728

Job ID: 240-114329-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-114329-1	MW-57_06112019	Water	06/11/19 10:00	06/13/19 08:30	
240-114329-2	MW-39_06112019	Water	06/11/19 14:00	06/13/19 08:30	
240-114329-3	MW-32_06112019	Water	06/11/19 12:00	06/13/19 08:30	
240-114329-4	MW-33_06112019	Water	06/11/19 16:10	06/13/19 08:30	
240-114329-5	MW-38_06112019	Water	06/11/19 17:45	06/13/19 08:30	
240-114329-6	TRIP BLANK	Water	06/11/19 00:00	06/13/19 08:30	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-57_06112019

Lab Sample ID: 240-114329-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.6		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-39_06112019

Lab Sample ID: 240-114329-2

No Detections.

Client Sample ID: MW-32_06112019

Lab Sample ID: 240-114329-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.43	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.35	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-33_061112019

Lab Sample ID: 240-114329-4

No Detections.

Client Sample ID: MW-38_06112019

Lab Sample ID: 240-114329-5

No Detections.

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-114329-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-57_06112019

Lab Sample ID: 240-114329-1

Date Collected: 06/11/19 10:00

Matrix: Water

Date Received: 06/13/19 08:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.6		2.0	0.86	ug/L			06/17/19 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125		06/17/19 14:23	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			06/22/19 20:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 20:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 20:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 20:44	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 20:44	1
Vinyl chloride	0.77	J	1.0	0.20	ug/L			06/22/19 20:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 121		06/22/19 20:44	1
4-Bromofluorobenzene (Surr)	67		59 - 120		06/22/19 20:44	1
Toluene-d8 (Surr)	81		70 - 123		06/22/19 20:44	1
Dibromofluoromethane (Surr)	98		75 - 128		06/22/19 20:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-39_06112019

Lab Sample ID: 240-114329-2

Date Collected: 06/11/19 14:00

Matrix: Water

Date Received: 06/13/19 08:30

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			06/17/19 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125		06/17/19 14:47	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			06/22/19 21:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 21:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 21:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 21:05	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 21:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/22/19 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 121		06/22/19 21:05	1
4-Bromofluorobenzene (Surr)	65		59 - 120		06/22/19 21:05	1
Toluene-d8 (Surr)	80		70 - 123		06/22/19 21:05	1
Dibromofluoromethane (Surr)	96		75 - 128		06/22/19 21:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-32_06112019

Lab Sample ID: 240-114329-3

Date Collected: 06/11/19 12:00

Matrix: Water

Date Received: 06/13/19 08:30

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			06/17/19 15:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		63 - 125		06/17/19 15:13	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			06/22/19 21:27	1
cis-1,2-Dichloroethene	0.43	J	1.0	0.16	ug/L			06/22/19 21:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 21:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 21:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 21:27	1
Vinyl chloride	0.35	J	1.0	0.20	ug/L			06/22/19 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 121		06/22/19 21:27	1
4-Bromofluorobenzene (Surr)	64		59 - 120		06/22/19 21:27	1
Toluene-d8 (Surr)	82		70 - 123		06/22/19 21:27	1
Dibromofluoromethane (Surr)	97		75 - 128		06/22/19 21:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-33_061112019

Lab Sample ID: 240-114329-4

Date Collected: 06/11/19 16:10

Matrix: Water

Date Received: 06/13/19 08:30

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			06/17/19 15:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		63 - 125		06/17/19 15:38	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			06/22/19 21:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 21:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 21:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 21:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 21:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/22/19 21:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 121		06/22/19 21:49	1
4-Bromofluorobenzene (Surr)	64		59 - 120		06/22/19 21:49	1
Toluene-d8 (Surr)	79		70 - 123		06/22/19 21:49	1
Dibromofluoromethane (Surr)	97		75 - 128		06/22/19 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-38_06112019

Lab Sample ID: 240-114329-5

Date Collected: 06/11/19 17:45

Matrix: Water

Date Received: 06/13/19 08:30

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			06/17/19 16:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125		06/17/19 16:03	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			06/22/19 22:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 22:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 22:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 22:11	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 22:11	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/22/19 22:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 121		06/22/19 22:11	1
4-Bromofluorobenzene (Surr)	66		59 - 120		06/22/19 22:11	1
Toluene-d8 (Surr)	83		70 - 123		06/22/19 22:11	1
Dibromofluoromethane (Surr)	99		75 - 128		06/22/19 22:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-114329-6

Date Collected: 06/11/19 00:00

Matrix: Water

Date Received: 06/13/19 08:30

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	0.19	ug/L			06/22/19 22:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 22:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 22:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 22:33	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 22:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/22/19 22:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 121		06/22/19 22:33	1
4-Bromofluorobenzene (Surr)	66		59 - 120		06/22/19 22:33	1
Toluene-d8 (Surr)	81		70 - 123		06/22/19 22:33	1
Dibromofluoromethane (Surr)	98		75 - 128		06/22/19 22:33	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

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 (70-121)	BFB (59-120)	TOL (70-123)	DBFM (75-128)
240-114329-1	MW-57_06112019	105	67	81	98
240-114329-2	MW-39_06112019	102	65	80	96
240-114329-3	MW-32_06112019	101	64	82	97
240-114329-4	MW-33_061112019	101	64	79	97
240-114329-5	MW-38_06112019	104	66	83	99
240-114329-6	TRIP BLANK	101	66	81	98
LCS 240-387698/4	Lab Control Sample	81	90	89	80
MB 240-387698/6	Method Blank	96	74	82	96

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
		(63-125)
240-114329-1	MW-57_06112019	108
240-114329-2	MW-39_06112019	108
240-114329-3	MW-32_06112019	111
240-114329-4	MW-33_061112019	113
240-114329-5	MW-38_06112019	108
LCS 240-386517/4	Lab Control Sample	99
MB 240-386517/5	Method Blank	105

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

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

Lab Sample ID: MB 240-387698/6
Matrix: Water
Analysis Batch: 387698

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			06/22/19 15:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/22/19 15:59	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/22/19 15:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/22/19 15:59	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/22/19 15:59	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/22/19 15:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 121		06/22/19 15:59	1
4-Bromofluorobenzene (Surr)	74		59 - 120		06/22/19 15:59	1
Toluene-d8 (Surr)	82		70 - 123		06/22/19 15:59	1
Dibromofluoromethane (Surr)	96		75 - 128		06/22/19 15:59	1

Lab Sample ID: LCS 240-387698/4
Matrix: Water
Analysis Batch: 387698

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	8.27		ug/L		83	65 - 139
cis-1,2-Dichloroethene	10.0	8.49		ug/L		85	76 - 128
Tetrachloroethene	10.0	8.76		ug/L		88	74 - 130
trans-1,2-Dichloroethene	10.0	8.88		ug/L		89	78 - 133
Trichloroethene	10.0	8.54		ug/L		85	76 - 125
Vinyl chloride	10.0	8.35		ug/L		83	58 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		70 - 121
4-Bromofluorobenzene (Surr)	90		59 - 120
Toluene-d8 (Surr)	89		70 - 123
Dibromofluoromethane (Surr)	80		75 - 128

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

Lab Sample ID: MB 240-386517/5
Matrix: Water
Analysis Batch: 386517

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			06/17/19 11:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125		06/17/19 11:27	1

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

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

Lab Sample ID: LCS 240-386517/4
Matrix: Water
Analysis Batch: 386517

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	59 - 131
Surrogate							
	LCS	LCS					
	%Recovery	Qualifier					Limits
1,2-Dichloroethane-d4 (Surr)	99						63 - 125

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QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

GC/MS VOA

Analysis Batch: 386517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-114329-1	MW-57_06112019	Total/NA	Water	8260B SIM	
240-114329-2	MW-39_06112019	Total/NA	Water	8260B SIM	
240-114329-3	MW-32_06112019	Total/NA	Water	8260B SIM	
240-114329-4	MW-33_06112019	Total/NA	Water	8260B SIM	
240-114329-5	MW-38_06112019	Total/NA	Water	8260B SIM	
MB 240-386517/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-386517/4	Lab Control Sample	Total/NA	Water	8260B SIM	

Analysis Batch: 387698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-114329-1	MW-57_06112019	Total/NA	Water	8260B	
240-114329-2	MW-39_06112019	Total/NA	Water	8260B	
240-114329-3	MW-32_06112019	Total/NA	Water	8260B	
240-114329-4	MW-33_06112019	Total/NA	Water	8260B	
240-114329-5	MW-38_06112019	Total/NA	Water	8260B	
240-114329-6	TRIP BLANK	Total/NA	Water	8260B	
MB 240-387698/6	Method Blank	Total/NA	Water	8260B	
LCS 240-387698/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

Job ID: 240-114329-1

Client Sample ID: MW-57_06112019

Lab Sample ID: 240-114329-1

Date Collected: 06/11/19 10:00

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 20:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	386517	06/17/19 14:23	SAM	TAL CAN

Client Sample ID: MW-39_06112019

Lab Sample ID: 240-114329-2

Date Collected: 06/11/19 14:00

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 21:05	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	386517	06/17/19 14:47	SAM	TAL CAN

Client Sample ID: MW-32_06112019

Lab Sample ID: 240-114329-3

Date Collected: 06/11/19 12:00

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 21:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	386517	06/17/19 15:13	SAM	TAL CAN

Client Sample ID: MW-33_061112019

Lab Sample ID: 240-114329-4

Date Collected: 06/11/19 16:10

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 21:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	386517	06/17/19 15:38	SAM	TAL CAN

Client Sample ID: MW-38_06112019

Lab Sample ID: 240-114329-5

Date Collected: 06/11/19 17:45

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 22:11	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	386517	06/17/19 16:03	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-114329-6

Date Collected: 06/11/19 00:00

Matrix: Water

Date Received: 06/13/19 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387698	06/22/19 22:33	LEE	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 Livonia MI - E203728

Job ID: 240-114329-1

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State		2927	02-23-20
California	State Program	9	2927	02-23-20
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19 *
Florida	NELAP		E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19 *
Illinois	NELAP		004498	07-31-19
Iowa	State Program	7	421	06-01-21
Kansas	NELAP	7	E-10336	04-30-20
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19 *
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19 *
New Jersey	NELAP		OH001	06-30-19
New York	NELAP	2	10975	03-31-20
New York	NELAP		10975	03-31-20
Ohio VAP	State Program	5	CL0024	06-05-21
Oregon	NELAP	10	4062	02-23-20
Oregon	NELAP		4062	02-23-20
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Pennsylvania	NELAP		68-00340	08-31-19
Texas	NELAP	6	T104704517-18-10	08-31-19 *
Texas	NELAP		T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19 *
Virginia	NELAP		010101	09-14-19
Washington	State		C971	01-12-20
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

Client Information		Sampler: Emma Witherspoon		Lab PM: DelMonico, Michael		Carrier Tracking No(s):		COC No: 240-61361-26116.1	
Client Contact: Caitlin O'Neill		Phone: 586 9409754		E-Mail: michael.delmonico@testamericainc.com				Page: Page 1 of 10	
Company: ARCADIS U.S. Inc		Address: 28550 Cabot Drive Suite 500		Due Date Requested:				Job #:	
City: Novi		State: MI, Zip: 48377		TAT Requested (days):				Preservation Codes:	
Phone:		PO #: M1001454-0001B		10 day / standard				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Email: Caitlin.O'Neill@arcadis.com		WO #: Cadena #: E203664-720						Other:	
Project Name: Ford LTP Livonia MI - E203664-720		SSOW#:						Total Number of containers	
Site: LTP								Special Instructions/Note:	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastliq, B=BIOTISSUE, A=Air)	Field Filtered Sample (Yes or No)	Performance MS/MSD (Yes or No)	8260B - VOCs (Short List)	8260B - VOCs SIM
MW-57-061119	6/11/19	1000	G	Water	N	N	3	3	
MW-39-061119	6/11/19	1400	G	Water	N	N	3	3	
MW-32-061119	6/11/19	1200	G	Water	N	N	3	3	
MW-33-061119	6/11/19	1610	G	Water	N	N	3	3	
MW-38-061119	6/11/19	1745	G	Water	N	N	3	3	
Trip Blank	6/11/19	-	-	Water	-	-	-	-	
				Water					
				Water					
				Water					
				Water					
				Water					
<p>240-114329 Chain of Custody</p>									
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months									
Special Instructions/QC Requirements:									
Empty Kit Relinquished by: _____ Date: _____									
Relinquished by: Emma Witherspoon (Witherspoon) 6/11/19 1830 Company: Arcadis Relinquished by: RACHEL BIELAK Phil Pulak 6/12/19 1020 Company: ARCADIS Relinquished by: [Signature] 6/22-19 1340 Company: ETA Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks:									

Client ARCADIS Site Name _____ Cooler unpacked by: Asant

Cooler Received on 6/13/19 Opened on 6/14/19
 FedEx: 1st Ground Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # CANTON 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-8 (CF +0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF +0.6 °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 ea 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 NA
 -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
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC984738
 If yes, Questions 12-16 have been checked at the originating laboratory.
13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials? Yes No NA ● ← Larger than this.
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B904401NB 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: AMM

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: _____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Part # 159483-434 INT2 EXP 02/20

FROM: (810) 229-2763
SHIPPING DEPARTMENT
TESTAMERICA
10448 CITATION DRIVE
SUITE 200
BRIGHTON MI 48116
US

SHIP DATE: 12 JUN 19
ACT WGT: 41.15 LB
CAD: 0183192/CAFE3211

BILL RECIPIENT

TO **ATTN: SAMPLE RECEIVING**
TEST AMERICA NORTH CANTON
4101 SHUFFEL DRIVE NW

NORTH CANTON OH 44720

(US)

(330) 497-9396

REF:

DEPT:



FedEx
Ground



J181118056501uv

2 of 3

MPS# **4506 9510 3493**

Metr# **4506 9510 3482**

44720

9622 0422 1 (000 000 0000) 0 00 4506 9510 3493

