

ANALYTICAL REPORT

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Laboratory Job ID: 240-119514-1
Client Project/Site: Ford LTP Livonia MI - E203631

For:
ARCADIS U.S., Inc.
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Authorized for release by:
10/10/2019 2:34:11 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 Livonia MI - E203631

Job ID: 240-119514-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD 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.
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
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 - E203631

Job ID: 240-119514-1

Job ID: 240-119514-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-119514-1

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 9/26/2019 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-73SR_092419 (240-119514-1), MW-73D_092419 (240-119514-2) and TRIP BLANK (240-119514-3) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/03/2019.

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-73SR_092419 (240-119514-1) and MW-73D_092419 (240-119514-2) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 10/02/2019.

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 Livonia MI - E203631

Job ID: 240-119514-1

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 - E203631

Job ID: 240-119514-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-119514-1	MW-73SR_092419	Water	09/24/19 10:14	09/26/19 09:50	
240-119514-2	MW-73D_092419	Water	09/24/19 11:49	09/26/19 09:50	
240-119514-3	TRIP BLANK	Water	09/24/19 00:00	09/26/19 09:50	

- 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 Livonia MI - E203631

Job ID: 240-119514-1

Client Sample ID: MW-73SR_092419

Lab Sample ID: 240-119514-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.0		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.35	J	1.0	0.19	ug/L	1		8260B	Total/NA
Trichloroethene	0.34	J	1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	1.3		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-73D_092419

Lab Sample ID: 240-119514-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.48	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119514-3

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 - E203631

Job ID: 240-119514-1

Client Sample ID: MW-73SR_092419

Lab Sample ID: 240-119514-1

Date Collected: 09/24/19 10:14

Matrix: Water

Date Received: 09/26/19 09:50

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	-		10/02/19 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125		10/02/19 19:51	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	-		10/03/19 19:22	1
cis-1,2-Dichloroethene	3.0		1.0	0.16	ug/L			10/03/19 19:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		10/03/19 19:22	1
trans-1,2-Dichloroethene	0.35	J	1.0	0.19	ug/L			10/03/19 19:22	1
Trichloroethene	0.34	J	1.0	0.10	ug/L			10/03/19 19:22	1
Vinyl chloride	1.3		1.0	0.20	ug/L			10/03/19 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 121		10/03/19 19:22	1
4-Bromofluorobenzene (Surr)	73		59 - 120		10/03/19 19:22	1
Toluene-d8 (Surr)	89		70 - 123		10/03/19 19:22	1
Dibromofluoromethane (Surr)	113		75 - 128		10/03/19 19:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

Client Sample ID: MW-73D_092419

Lab Sample ID: 240-119514-2

Date Collected: 09/24/19 11:49

Matrix: Water

Date Received: 09/26/19 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.8		2.0	0.86	ug/L			10/02/19 20:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125		10/02/19 20:16	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	0.19	ug/L			10/03/19 19:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/03/19 19:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/03/19 19:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/03/19 19:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/03/19 19:46	1
Vinyl chloride	0.48	J	1.0	0.20	ug/L			10/03/19 19:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 121		10/03/19 19:46	1
4-Bromofluorobenzene (Surr)	74		59 - 120		10/03/19 19:46	1
Toluene-d8 (Surr)	91		70 - 123		10/03/19 19:46	1
Dibromofluoromethane (Surr)	112		75 - 128		10/03/19 19:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119514-3

Date Collected: 09/24/19 00:00

Matrix: Water

Date Received: 09/26/19 09:50

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			10/03/19 20:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/03/19 20:09	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/03/19 20:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/03/19 20:09	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/03/19 20:09	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/03/19 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 121		10/03/19 20:09	1
4-Bromofluorobenzene (Surr)	74		59 - 120		10/03/19 20:09	1
Toluene-d8 (Surr)	88		70 - 123		10/03/19 20:09	1
Dibromofluoromethane (Surr)	115		75 - 128		10/03/19 20:09	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

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)
240-119514-1	MW-73SR_092419	96	73	89	113
240-119514-2	MW-73D_092419	97	74	91	112
240-119514-3	TRIP BLANK	95	74	88	115
240-119518-E-3 MS	Matrix Spike	82	93	99	97
240-119518-F-3 MSD	Matrix Spike Duplicate	86	93	100	99
LCS 240-403913/4	Lab Control Sample	81	98	101	102
MB 240-403913/7	Method Blank	92	74	90	111

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)
240-119514-1	MW-73SR_092419	102
240-119514-2	MW-73D_092419	101
240-119521-C-5 MS	Matrix Spike	84
240-119521-C-5 MSD	Matrix Spike Duplicate	92
LCS 240-403637/4	Lab Control Sample	99
MB 240-403637/5	Method Blank	99

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

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

Lab Sample ID: MB 240-403913/7
Matrix: Water
Analysis Batch: 403913

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			10/03/19 14:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/03/19 14:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/03/19 14:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/03/19 14:35	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/03/19 14:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/03/19 14:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 121		10/03/19 14:35	1
4-Bromofluorobenzene (Surr)	74		59 - 120		10/03/19 14:35	1
Toluene-d8 (Surr)	90		70 - 123		10/03/19 14:35	1
Dibromofluoromethane (Surr)	111		75 - 128		10/03/19 14:35	1

Lab Sample ID: LCS 240-403913/4
Matrix: Water
Analysis Batch: 403913

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	9.72		ug/L		97	65 - 139
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	76 - 128
Tetrachloroethene	10.0	10.6		ug/L		106	74 - 130
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	78 - 133
Trichloroethene	10.0	10.7		ug/L		107	76 - 125
Vinyl chloride	10.0	5.99		ug/L		60	58 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		70 - 121
4-Bromofluorobenzene (Surr)	98		59 - 120
Toluene-d8 (Surr)	101		70 - 123
Dibromofluoromethane (Surr)	102		75 - 128

Lab Sample ID: 240-119518-E-3 MS
Matrix: Water
Analysis Batch: 403913

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	9.30		ug/L		93	53 - 140
cis-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	64 - 130
Tetrachloroethene	1.0	U	10.0	8.00		ug/L		80	51 - 136
trans-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	68 - 133
Trichloroethene	0.17	J	10.0	9.53		ug/L		94	55 - 131
Vinyl chloride	1.0	U	10.0	6.05		ug/L		60	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 121
4-Bromofluorobenzene (Surr)	93		59 - 120
Toluene-d8 (Surr)	99		70 - 123

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

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

Lab Sample ID: 240-119518-E-3 MS
Matrix: Water
Analysis Batch: 403913

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	97		75 - 128

Lab Sample ID: 240-119518-F-3 MSD
Matrix: Water
Analysis Batch: 403913

Client Sample ID: Matrix Spike Duplicate
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	8.56		ug/L		86	53 - 140	8	35	
cis-1,2-Dichloroethene	1.0	U	10.0	9.55		ug/L		96	64 - 130	5	21	
Tetrachloroethene	1.0	U	10.0	6.98		ug/L		70	51 - 136	14	23	
trans-1,2-Dichloroethene	1.0	U	10.0	9.10		ug/L		91	68 - 133	10	24	
Trichloroethene	0.17	J	10.0	8.47		ug/L		83	55 - 131	12	23	
Vinyl chloride	1.0	U	10.0	5.65		ug/L		57	43 - 154	7	29	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		70 - 121
4-Bromofluorobenzene (Surr)	93		59 - 120
Toluene-d8 (Surr)	100		70 - 123
Dibromofluoromethane (Surr)	99		75 - 128

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

Lab Sample ID: MB 240-403637/5
Matrix: Water
Analysis Batch: 403637

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			10/02/19 11:53	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	99		63 - 125		10/02/19 11:53	1

Lab Sample ID: LCS 240-403637/4
Matrix: Water
Analysis Batch: 403637

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

Analyte	Spike	LCS LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
1,4-Dioxane	10.0	10.4		ug/L		104	59 - 131

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

Lab Sample ID: 240-119521-C-5 MS
Matrix: Water
Analysis Batch: 403637

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

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				
1,4-Dioxane	2.0	U * F1 F2	10.0	4.73	F1 *	ug/L		47	52 - 129

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

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)	84		63 - 125

Lab Sample ID: 240-119521-C-5 MSD
 Matrix: Water
 Analysis Batch: 403637

Client Sample ID: Matrix Spike Duplicate
 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 * F1 F2	10.0	5.43	F2 *	ug/L		54	52 - 129	14	13

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	92		63 - 125

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

GC/MS VOA

Analysis Batch: 403637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119514-1	MW-73SR_092419	Total/NA	Water	8260B SIM	
240-119514-2	MW-73D_092419	Total/NA	Water	8260B SIM	
MB 240-403637/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-403637/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-119521-C-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-119521-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 403913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119514-1	MW-73SR_092419	Total/NA	Water	8260B	
240-119514-2	MW-73D_092419	Total/NA	Water	8260B	
240-119514-3	TRIP BLANK	Total/NA	Water	8260B	
MB 240-403913/7	Method Blank	Total/NA	Water	8260B	
LCS 240-403913/4	Lab Control Sample	Total/NA	Water	8260B	
240-119518-E-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-119518-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203631

Job ID: 240-119514-1

Client Sample ID: MW-73SR_092419

Lab Sample ID: 240-119514-1

Date Collected: 09/24/19 10:14

Matrix: Water

Date Received: 09/26/19 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	403913	10/03/19 19:22	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403637	10/02/19 19:51	SAM	TAL CAN

Client Sample ID: MW-73D_092419

Lab Sample ID: 240-119514-2

Date Collected: 09/24/19 11:49

Matrix: Water

Date Received: 09/26/19 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	403913	10/03/19 19:46	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403637	10/02/19 20:16	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119514-3

Date Collected: 09/24/19 00:00

Matrix: Water

Date Received: 09/26/19 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	403913	10/03/19 20:09	LRW	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 Livonia MI - E203631

Job ID: 240-119514-1

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	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
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	01-12-20
West Virginia DEP	State	210	12-31-19

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING

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

Client Contact			Regulatory program:			TestAmerica Laboratories, Inc.					
Company Name: Arcadis			<input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other			COC No: _____ of COCs					
Address: 28550 Cabot Drive, Suite 500			Site Contact: Rachel Bielak			Lab Contact: Mike DelMonico					
City/State/Zip: Novi, MI, 48377			Telephone: 248-994-6331			Telephone: 330-497-9396					
Phone: 248-994-2240			Email: kristoffer.hinskey@arcadis.com			Walk-in client					
Project Name: Ford LTP			Analysis Turnaround Time			Lab sampling					
Project Number: M1001454.0004.0002B			TAT if different from below			Job/SDG No: _____					
PO # M1001454.0004.0002B			10 day			Sample Specific Notes / Special Instructions:					
Method of Shipment/Carrier:			Containers & Preservatives								
Shipping/Tracking No:			Matrix								
			Air								
			Aqueous								
			Sediment								
			Solid								
			Other:								
			H2SO4								
			HNO3								
			HCl								
			NaOH								
			KAc								
			NaOH								
			U/Pres								
			Other:								
Sample Identification	Sample Date	Sample Time	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
MW-73SR-092419	9/24/19	1014	NG	X	X	X	X	X	X	X	6 bottles
MW-73D-092419	9/24/19	1149	NG	X	X	X	X	X	X	X	6 bottles
Trip Blank											



Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jim.tomalia@cadena.com. Cadena #E203631
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>Keln</i>	Arcadis	9/24/19 1546	<i>Julia Malley</i>	Arcadis	9/24/19 1546
<i>Julia Malley</i>	Arcadis	9/24/19 1620	<i>Novi Cold Storage</i>	Arcadis	9/24/19 1620
<i>Richard See</i>	Arcadis	09/25/19 11:37	<i>Holly Hanson</i>	ATAL-MI	9/25/19 1137
<i>Relinquished</i>	ATAL-MI	9/25/19 1250	<i>Holly Hanson</i>	ATAL-MI	7-26-19 950



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility


Login # : 119514

Client Arcadis Site Name _____
 Cooler Received on 9-26-19 Opened on 9-26-19
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Cooler unpacked by: [Signature]

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

TestAmerica Cooler # 11 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. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 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
 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# HC991818
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 # _____ 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: Martin

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: _____

Login #: 119514

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
TA	Client	Box	Other	IR-10 IR-11	4.3	5.0	Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11	3.2	3.9	Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								
TA	Client	Box	Other	IR-10 IR-11			Wet Ice	Blue Ice	Dry Ice
Water	None								

See Temperature Excursion Form

1
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This Job