

ANALYTICAL REPORT

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

Laboratory Job ID: 240-159642-1
Client Project/Site: Ford LTP - On-Site

For:
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
11/23/2021 10:44:44 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: 240-159642-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

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

Job ID: 240-159642-1

Job ID: 240-159642-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-159642-1

Comments

No additional comments.

Receipt

The samples were received on 11/9/2021 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.7° C and 3.8° C.

GC/MS VOA

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

VOA Prep

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

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- 12
- 13
- 14

Method Summary

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

Job ID: 240-159642-1

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: 240-159642-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-159642-1	TRIP BLANK_39	Water	11/06/21 00:00	11/09/21 10:00
240-159642-2	MW-40_110621	Water	11/06/21 09:27	11/09/21 10:00
240-159642-3	MW-31_110621	Water	11/06/21 10:37	11/09/21 10:00
240-159642-4	MW-208S_110621	Water	11/06/21 12:17	11/09/21 10:00

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- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-159642-1

Client Sample ID: TRIP BLANK_39

Lab Sample ID: 240-159642-1

No Detections.

Client Sample ID: MW-40_110621

Lab Sample ID: 240-159642-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.2		1.0	0.46	ug/L			1	8260B	Total/NA
Vinyl chloride	1.7		1.0	0.45	ug/L			1	8260B	Total/NA

Client Sample ID: MW-31_110621

Lab Sample ID: 240-159642-3

No Detections.

Client Sample ID: MW-208S_110621

Lab Sample ID: 240-159642-4

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 - On-Site

Job ID: 240-159642-1

Client Sample ID: TRIP BLANK_39

Lab Sample ID: 240-159642-1

Date Collected: 11/06/21 00:00

Matrix: Water

Date Received: 11/09/21 10:00

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	0.49	ug/L			11/17/21 05:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/21 05:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 05:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/21 05:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 05:18	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/21 05:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		11/17/21 05:18	1
4-Bromofluorobenzene (Surr)	82		56 - 136		11/17/21 05:18	1
Toluene-d8 (Surr)	111		78 - 122		11/17/21 05:18	1
Dibromofluoromethane (Surr)	101		73 - 120		11/17/21 05:18	1

Client Sample Results

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

Job ID: 240-159642-1

Client Sample ID: MW-40_110621

Lab Sample ID: 240-159642-2

Date Collected: 11/06/21 09:27

Matrix: Water

Date Received: 11/09/21 10:00

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			11/17/21 23:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120		11/17/21 23:03	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	0.49	ug/L			11/17/21 05:41	1
cis-1,2-Dichloroethene	3.2		1.0	0.46	ug/L			11/17/21 05:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 05:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/21 05:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 05:41	1
Vinyl chloride	1.7		1.0	0.45	ug/L			11/17/21 05:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		11/17/21 05:41	1
4-Bromofluorobenzene (Surr)	83		56 - 136		11/17/21 05:41	1
Toluene-d8 (Surr)	110		78 - 122		11/17/21 05:41	1
Dibromofluoromethane (Surr)	98		73 - 120		11/17/21 05:41	1

Client Sample Results

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

Job ID: 240-159642-1

Client Sample ID: MW-31_110621

Lab Sample ID: 240-159642-3

Date Collected: 11/06/21 10:37

Matrix: Water

Date Received: 11/09/21 10:00

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 F1	2.0	0.86	ug/L			11/17/21 20:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		66 - 120					11/17/21 20:46	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	0.49	ug/L			11/17/21 06:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/21 06:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 06:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/21 06:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 06:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/21 06:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137					11/17/21 06:03	1
4-Bromofluorobenzene (Surr)	80		56 - 136					11/17/21 06:03	1
Toluene-d8 (Surr)	104		78 - 122					11/17/21 06:03	1
Dibromofluoromethane (Surr)	98		73 - 120					11/17/21 06:03	1

Client Sample Results

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

Job ID: 240-159642-1

Client Sample ID: MW-208S_110621

Lab Sample ID: 240-159642-4

Date Collected: 11/06/21 12:17

Matrix: Water

Date Received: 11/09/21 10:00

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			11/17/21 23:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120					11/17/21 23:28	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	0.49	ug/L			11/17/21 21:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/21 21:20	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 21:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/21 21:20	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 21:20	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/21 21:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137					11/17/21 21:20	1
4-Bromofluorobenzene (Surr)	88		56 - 136					11/17/21 21:20	1
Toluene-d8 (Surr)	94		78 - 122					11/17/21 21:20	1
Dibromofluoromethane (Surr)	109		73 - 120					11/17/21 21:20	1

Surrogate Summary

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

Job ID: 240-159642-1

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 (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-159642-1	TRIP BLANK_39	101	82	111	101
240-159642-2	MW-40_110621	100	83	110	98
240-159642-3	MW-31_110621	96	80	104	98
240-159642-3 MS	MW-31-MS_110621	93	86	109	94
240-159642-3 MSD	MW-31-MSD_110621	93	89	108	93
240-159642-4	MW-208S_110621	101	88	94	109
240-160104-A-1 MS	Matrix Spike	89	90	100	100
240-160104-A-1 MSD	Matrix Spike Duplicate	86	91	101	99
LCS 240-513243/4	Lab Control Sample	88	82	102	89
LCS 240-513357/12	Lab Control Sample	93	92	100	104
MB 240-513243/6	Method Blank	91	80	107	95
MB 240-513357/8	Method Blank	101	91	99	115

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
		(66-120)
240-159636-H-2 MS	Matrix Spike	77
240-159636-N-2 MSD	Matrix Spike Duplicate	77
240-159642-2	MW-40_110621	77
240-159642-3	MW-31_110621	86
240-159642-3 MS	MW-31-MS_110621	87
240-159642-3 MSD	MW-31-MSD_110621	87
240-159642-4	MW-208S_110621	77
LCS 240-513479/4	Lab Control Sample	78
LCS 240-513480/3	Lab Control Sample	84
MB 240-513479/5	Method Blank	77
MB 240-513480/4	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-159642-1

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

Lab Sample ID: MB 240-513243/6
Matrix: Water
Analysis Batch: 513243

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/16/21 23:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/16/21 23:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/16/21 23:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/16/21 23:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/16/21 23:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/16/21 23:44	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/16/21 23:44	1
4-Bromofluorobenzene (Surr)	80		56 - 136		11/16/21 23:44	1
Toluene-d8 (Surr)	107		78 - 122		11/16/21 23:44	1
Dibromofluoromethane (Surr)	95		73 - 120		11/16/21 23:44	1

Lab Sample ID: LCS 240-513243/4
Matrix: Water
Analysis Batch: 513243

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	10.2		ug/L		102	63 - 134
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	77 - 123
Tetrachloroethene	10.0	9.78		ug/L		98	76 - 123
trans-1,2-Dichloroethene	10.0	9.89		ug/L		99	75 - 124
Trichloroethene	10.0	8.60		ug/L		86	70 - 122
Vinyl chloride	10.0	8.42		ug/L		84	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	82		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: 240-159642-3 MS
Matrix: Water
Analysis Batch: 513243

Client Sample ID: MW-31-MS_110621
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	8.98		ug/L		90	56 - 135
cis-1,2-Dichloroethene	1.0	U	10.0	9.84		ug/L		98	66 - 128
Tetrachloroethene	1.0	U	10.0	8.36		ug/L		84	62 - 131
trans-1,2-Dichloroethene	1.0	U	10.0	9.16		ug/L		92	56 - 136
Trichloroethene	1.0	U	10.0	7.35		ug/L		73	61 - 124
Vinyl chloride	1.0	U	10.0	8.00		ug/L		80	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	109		78 - 122

QC Sample Results

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

Job ID: 240-159642-1

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

Lab Sample ID: 240-159642-3 MS
Matrix: Water
Analysis Batch: 513243

Client Sample ID: MW-31-MS_110621
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	94		73 - 120

Lab Sample ID: 240-159642-3 MSD
Matrix: Water
Analysis Batch: 513243

Client Sample ID: MW-31-MSD_110621
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>
1,1-Dichloroethene	1.0	U	10.0	9.15		ug/L		92	56 - 135	2	26
cis-1,2-Dichloroethene	1.0	U	10.0	9.13		ug/L		91	66 - 128	7	14
Tetrachloroethene	1.0	U	10.0	8.06		ug/L		81	62 - 131	4	20
trans-1,2-Dichloroethene	1.0	U	10.0	8.69		ug/L		87	56 - 136	5	15
Trichloroethene	1.0	U	10.0	7.38		ug/L		74	61 - 124	0	15
Vinyl chloride	1.0	U	10.0	9.11		ug/L		91	43 - 157	13	24

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		62 - 137
<i>4-Bromofluorobenzene (Surr)</i>	89		56 - 136
<i>Toluene-d8 (Surr)</i>	108		78 - 122
<i>Dibromofluoromethane (Surr)</i>	93		73 - 120

Lab Sample ID: MB 240-513357/8
Matrix: Water
Analysis Batch: 513357

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/17/21 14:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/21 14:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 14:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/21 14:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/21 14:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/21 14:12	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		62 - 137		11/17/21 14:12	1
<i>4-Bromofluorobenzene (Surr)</i>	91		56 - 136		11/17/21 14:12	1
<i>Toluene-d8 (Surr)</i>	99		78 - 122		11/17/21 14:12	1
<i>Dibromofluoromethane (Surr)</i>	115		73 - 120		11/17/21 14:12	1

Lab Sample ID: LCS 240-513357/12
Matrix: Water
Analysis Batch: 513357

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,1-Dichloroethene	25.0	29.1		ug/L		116	63 - 134
cis-1,2-Dichloroethene	25.0	28.2		ug/L		113	77 - 123
Tetrachloroethene	25.0	30.5		ug/L		122	76 - 123
trans-1,2-Dichloroethene	25.0	28.7		ug/L		115	75 - 124
Trichloroethene	25.0	29.7		ug/L		119	70 - 122

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-159642-1

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

Lab Sample ID: LCS 240-513357/12

Matrix: Water

Analysis Batch: 513357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	25.0	25.2		ug/L		101	60 - 144
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	93		62 - 137				
4-Bromofluorobenzene (Surr)	92		56 - 136				
Toluene-d8 (Surr)	100		78 - 122				
Dibromofluoromethane (Surr)	104		73 - 120				

Lab Sample ID: 240-160104-A-1 MS

Matrix: Water

Analysis Batch: 513357

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	40	U	1000	1170		ug/L		117	56 - 135
cis-1,2-Dichloroethene	40	U	1000	1100		ug/L		110	66 - 128
Tetrachloroethene	40	U	1000	1220		ug/L		122	62 - 131
trans-1,2-Dichloroethene	40	U	1000	1110		ug/L		111	56 - 136
Trichloroethene	40	U	1000	1140		ug/L		114	61 - 124
Vinyl chloride	110		1000	1070		ug/L		96	43 - 157
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	89		62 - 137						
4-Bromofluorobenzene (Surr)	90		56 - 136						
Toluene-d8 (Surr)	100		78 - 122						
Dibromofluoromethane (Surr)	100		73 - 120						

Lab Sample ID: 240-160104-A-1 MSD

Matrix: Water

Analysis Batch: 513357

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	40	U	1000	1170		ug/L		117	56 - 135	1	26
cis-1,2-Dichloroethene	40	U	1000	1080		ug/L		108	66 - 128	2	14
Tetrachloroethene	40	U	1000	1240		ug/L		124	62 - 131	2	20
trans-1,2-Dichloroethene	40	U	1000	1100		ug/L		110	56 - 136	1	15
Trichloroethene	40	U	1000	1130		ug/L		113	61 - 124	1	15
Vinyl chloride	110		1000	1080		ug/L		97	43 - 157	1	24
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	86		62 - 137								
4-Bromofluorobenzene (Surr)	91		56 - 136								
Toluene-d8 (Surr)	101		78 - 122								
Dibromofluoromethane (Surr)	99		73 - 120								

QC Sample Results

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

Job ID: 240-159642-1

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

Lab Sample ID: MB 240-513479/5
Matrix: Water
Analysis Batch: 513479

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			11/17/21 17:41	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120					11/17/21 17:41	1

Lab Sample ID: LCS 240-513479/4
Matrix: Water
Analysis Batch: 513479

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	11.9		ug/L		119	80 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	78		66 - 120				

Lab Sample ID: 240-159636-H-2 MS
Matrix: Water
Analysis Batch: 513479

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 F1	10.0	10.6		ug/L		106	51 - 153
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	77		66 - 120						

Lab Sample ID: 240-159636-N-2 MSD
Matrix: Water
Analysis Batch: 513479

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 F1	10.0	10.6		ug/L		106	51 - 153	0	16
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	77		66 - 120								

Lab Sample ID: MB 240-513480/4
Matrix: Water
Analysis Batch: 513480

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			11/17/21 19:58	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		66 - 120					11/17/21 19:58	1

QC Sample Results

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

Job ID: 240-159642-1

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

Lab Sample ID: LCS 240-513480/3
Matrix: Water
Analysis Batch: 513480

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	9.37		ug/L		94	80 - 122
Surrogate							
	%Recovery	LCS Qualifier	LCS Limits				
1,2-Dichloroethane-d4 (Surr)	84		66 - 120				

Lab Sample ID: 240-159642-3 MS
Matrix: Water
Analysis Batch: 513480

Client Sample ID: MW-31-MS_110621
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 F1	10.0	10.3		ug/L		103	51 - 153
Surrogate									
	%Recovery	MS Qualifier	MS Limits						
1,2-Dichloroethane-d4 (Surr)	87		66 - 120						

Lab Sample ID: 240-159642-3 MSD
Matrix: Water
Analysis Batch: 513480

Client Sample ID: MW-31-MSD_110621
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 F1	10.0	9.57		ug/L		96	51 - 153	7	16
Surrogate											
	%Recovery	MSD Qualifier	MSD Limits								
1,2-Dichloroethane-d4 (Surr)	87		66 - 120								

QC Association Summary

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

Job ID: 240-159642-1

GC/MS VOA

Analysis Batch: 513243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159642-1	TRIP BLANK_39	Total/NA	Water	8260B	
240-159642-2	MW-40_110621	Total/NA	Water	8260B	
240-159642-3	MW-31_110621	Total/NA	Water	8260B	
MB 240-513243/6	Method Blank	Total/NA	Water	8260B	
LCS 240-513243/4	Lab Control Sample	Total/NA	Water	8260B	
240-159642-3 MS	MW-31-MS_110621	Total/NA	Water	8260B	
240-159642-3 MSD	MW-31-MSD_110621	Total/NA	Water	8260B	

Analysis Batch: 513357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159642-4	MW-208S_110621	Total/NA	Water	8260B	
MB 240-513357/8	Method Blank	Total/NA	Water	8260B	
LCS 240-513357/12	Lab Control Sample	Total/NA	Water	8260B	
240-160104-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-160104-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 513479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159642-2	MW-40_110621	Total/NA	Water	8260B SIM	
240-159642-4	MW-208S_110621	Total/NA	Water	8260B SIM	
MB 240-513479/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-513479/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159636-H-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-159636-N-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 513480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-159642-3	MW-31_110621	Total/NA	Water	8260B SIM	
MB 240-513480/4	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-513480/3	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159642-3 MS	MW-31-MS_110621	Total/NA	Water	8260B SIM	
240-159642-3 MSD	MW-31-MSD_110621	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-159642-1

Client Sample ID: TRIP BLANK_39

Lab Sample ID: 240-159642-1

Date Collected: 11/06/21 00:00

Matrix: Water

Date Received: 11/09/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513243	11/17/21 05:18	LEE	TAL CAN

Client Sample ID: MW-40_110621

Lab Sample ID: 240-159642-2

Date Collected: 11/06/21 09:27

Matrix: Water

Date Received: 11/09/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513243	11/17/21 05:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	513479	11/17/21 23:03	CS	TAL CAN

Client Sample ID: MW-31_110621

Lab Sample ID: 240-159642-3

Date Collected: 11/06/21 10:37

Matrix: Water

Date Received: 11/09/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513243	11/17/21 06:03	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	513480	11/17/21 20:46	CS	TAL CAN

Client Sample ID: MW-208S_110621

Lab Sample ID: 240-159642-4

Date Collected: 11/06/21 12:17

Matrix: Water

Date Received: 11/09/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	513357	11/17/21 21:20	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	513479	11/17/21 23:28	CS	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: 240-159642-1

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Chain of Custody Record

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

Regulatory program: DW NPDES RCRA Other

Client Contact
Company Name: Arcadis

Address: 28550 Cabot Drive, Suite 500

City/State/Zip: Novi, MI, 48377

Phone: 248-994-2240

Project Name: Ford LTP On-Site

Project Number: 30080642.401.03

PO # 30080642.401.03

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Site Contact: Julia McClafferty
Telephone: 734-644-5131
Email: kristoffer.hinskey@arcadis.com
Sampler Name: Kara! Gantner
Method of Shipment/Carrier:
Shipping/Tracking No:
TAT if different from below
10 day
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Lab Contact: Mike DeMonico
Telephone: 330-497-9396
TestAmerica Laboratories, Inc.
COC No: 1 of 1 COCs
For lab use only
Walk-in client
Lab sampling
Job/SDG No:
Sample Specific Notes / Special Instructions:
1 Trip Blank
3 VOAs for 8260B
3 VOAs for 8260B SIM

Sample Identification	Sample Date	Sample Time	Matrix							Containers & Preservatives							Filtered Sample (Y/N)	Composite=C/Crab=G	1,1-DCE 8260B	CS-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Analyses															
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	NaAc	Clapra	Other:																											
TRIP BLANK_39	---	---	X																																						
MW-40-110621	11/6/21	0927	X																																						
MW-31-110621		1037	X																																						
MW-31-MS-110621		1037	X																																						
MW-31-MSD-110621		1037	X																																						
MW-20BS-110621		1217	X																																						



240-159642 Chain of Custody

Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
Sample Disposal (A fee may be assessed if samples):
 Return to Client Disposal By Lab

Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203728
Level IV Reporting requested

Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 11/6/21 1405	Received by: Novi Cold Storage	Company: Arcadis	Date/Time: 11/6/21/1405
Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 11/8/21/1200	Received by: <i>[Signature]</i>	Company: ETA	Date/Time: 11/8/21/1200
Relinquished by: <i>[Signature]</i>	Company: ETA	Date/Time: 11/8/21	Received in Laboratory by: <i>[Signature]</i>	Company: ETA	Date/Time: 11-9-21 1000



Eurofins TestAmerica Canton Sample Receipt Form/Narrative

Login # : 159642

Canton Facility

Client ARCADIS Site Name

Cooler unpacked by: Nancy Payer

Cooler Received on 11-9-21 Opened on 11-9-21

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After hours Drop-off Date/Time Storage Location

TestAmerica Cooler # IA 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-14 (CF +0.1 °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 (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# HC157842

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 60358 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

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

The TB is not logged for SIM due to insufficient volume. per corrected COC. 11/11/21

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:

Login #: 159642

Eurolins 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-14 IR-15	3-6	3-7	Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15	3-7	3-8	Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	Blue Ice	Dry Ice

See Temperature Excursion Form

W1-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

