

## ANALYTICAL REPORT

Eurofins Canton  
180 S. Van Buren Avenue  
Barberton, OH 44203  
Tel: (330)497-9396

Laboratory Job ID: 240-162664-1  
Client Project/Site: Ford LTP - Off Site

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
2/26/2022 1:13:34 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 - Off Site

Job ID: 240-162664-1

## 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.
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 - Off Site

Job ID: 240-162664-1

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**Job ID: 240-162664-1**

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**Laboratory: Eurofins Canton**

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**Narrative**

**Job Narrative  
240-162664-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 2/12/2022 10:20 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 1.8° C and 2.4° C.

**GC/MS VOA**

Method 8260B SIM: The matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-518020 were not spiked during prep due to analyst error.

No additional analytical or quality issues were noted, other than those described above or 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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# Method Summary

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

Job ID: 240-162664-1

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 Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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# Sample Summary

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

Job ID: 240-162664-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-162664-1	TRIP BLANK_15	Water	02/10/22 00:00	02/12/22 10:20
240-162664-2	MW-102S_021022	Water	02/10/22 09:30	02/12/22 10:20
240-162664-3	MW-102_021022	Water	02/10/22 10:55	02/12/22 10:20
240-162664-4	MW-72_021022	Water	02/10/22 12:20	02/12/22 10:20
240-162664-5	MW-72S_021022	Water	02/10/22 13:30	02/12/22 10:20
240-162664-6	DUP_08	Water	02/10/22 00:00	02/12/22 10:20

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- 5
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- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Detection Summary

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

Job ID: 240-162664-1

**Client Sample ID: TRIP BLANK\_15**

**Lab Sample ID: 240-162664-1**

No Detections.

**Client Sample ID: MW-102S\_021022**

**Lab Sample ID: 240-162664-2**

No Detections.

**Client Sample ID: MW-102\_021022**

**Lab Sample ID: 240-162664-3**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.3		1.0	0.45	ug/L	1		8260B	Total/NA

**Client Sample ID: MW-72\_021022**

**Lab Sample ID: 240-162664-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.94	J	1.0	0.45	ug/L	1		8260B	Total/NA

**Client Sample ID: MW-72S\_021022**

**Lab Sample ID: 240-162664-5**

No Detections.

**Client Sample ID: DUP\_08**

**Lab Sample ID: 240-162664-6**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.98	J	1.0	0.45	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: TRIP BLANK\_15**

**Lab Sample ID: 240-162664-1**

**Date Collected: 02/10/22 00:00**

**Matrix: Water**

**Date Received: 02/12/22 10:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			02/15/22 12:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 12:56	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 12:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 12:56	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 12:56	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/15/22 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		02/15/22 12:56	1
4-Bromofluorobenzene (Surr)	101		56 - 136		02/15/22 12:56	1
Toluene-d8 (Surr)	105		78 - 122		02/15/22 12:56	1
Dibromofluoromethane (Surr)	103		73 - 120		02/15/22 12:56	1



# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: MW-102S\_021022**

**Lab Sample ID: 240-162664-2**

**Date Collected: 02/10/22 09:30**

**Matrix: Water**

**Date Received: 02/12/22 10:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/18/22 23:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		66 - 120		02/18/22 23:10	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			02/15/22 13:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 13:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 13:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 13:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 13:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/15/22 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		02/15/22 13:44	1
4-Bromofluorobenzene (Surr)	98		56 - 136		02/15/22 13:44	1
Toluene-d8 (Surr)	104		78 - 122		02/15/22 13:44	1
Dibromofluoromethane (Surr)	104		73 - 120		02/15/22 13:44	1

# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: MW-102\_021022**

**Lab Sample ID: 240-162664-3**

**Date Collected: 02/10/22 10:55**

**Matrix: Water**

**Date Received: 02/12/22 10:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/18/22 23:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		66 - 120		02/18/22 23:35	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			02/15/22 14:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 14:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 14:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:07	1
<b>Vinyl chloride</b>	<b>1.3</b>		1.0	0.45	ug/L			02/15/22 14:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		02/15/22 14:07	1
4-Bromofluorobenzene (Surr)	95		56 - 136		02/15/22 14:07	1
Toluene-d8 (Surr)	102		78 - 122		02/15/22 14:07	1
Dibromofluoromethane (Surr)	106		73 - 120		02/15/22 14:07	1

# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: MW-72\_021022**

**Lab Sample ID: 240-162664-4**

Date Collected: 02/10/22 12:20

Matrix: Water

Date Received: 02/12/22 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/19/22 00:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	82		66 - 120					02/19/22 00:00	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			02/15/22 14:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 14:31	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 14:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:31	1
<b>Vinyl chloride</b>	<b>0.94</b>	<b>J</b>	1.0	0.45	ug/L			02/15/22 14:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	94		62 - 137					02/15/22 14:31	1
4-Bromofluorobenzene (Surr)	100		56 - 136					02/15/22 14:31	1
Toluene-d8 (Surr)	103		78 - 122					02/15/22 14:31	1
Dibromofluoromethane (Surr)	103		73 - 120					02/15/22 14:31	1

# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: MW-72S\_021022**

**Lab Sample ID: 240-162664-5**

Date Collected: 02/10/22 13:30

Matrix: Water

Date Received: 02/12/22 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/19/22 00:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		66 - 120					02/19/22 00:25	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			02/15/22 14:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 14:55	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 14:55	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 14:55	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/15/22 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					02/15/22 14:55	1
4-Bromofluorobenzene (Surr)	96		56 - 136					02/15/22 14:55	1
Toluene-d8 (Surr)	100		78 - 122					02/15/22 14:55	1
Dibromofluoromethane (Surr)	103		73 - 120					02/15/22 14:55	1

# Client Sample Results

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

Job ID: 240-162664-1

**Client Sample ID: DUP\_08**  
**Date Collected: 02/10/22 00:00**  
**Date Received: 02/12/22 10:20**

**Lab Sample ID: 240-162664-6**  
**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/19/22 00:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		66 - 120					02/19/22 00:50	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			02/15/22 15:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 15:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 15:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 15:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 15:18	1
<b>Vinyl chloride</b>	<b>0.98</b>	<b>J</b>	1.0	0.45	ug/L			02/15/22 15:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					02/15/22 15:18	1
4-Bromofluorobenzene (Surr)	96		56 - 136					02/15/22 15:18	1
Toluene-d8 (Surr)	103		78 - 122					02/15/22 15:18	1
Dibromofluoromethane (Surr)	104		73 - 120					02/15/22 15:18	1

# Surrogate Summary

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

Job ID: 240-162664-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-162664-1	TRIP BLANK_15	94	101	105	103
240-162664-2	MW-102S_021022	94	98	104	104
240-162664-3	MW-102_021022	98	95	102	106
240-162664-4	MW-72_021022	94	100	103	103
240-162664-5	MW-72S_021022	92	96	100	103
240-162664-6	DUP_08	92	96	103	104
240-162670-B-6 MS	Matrix Spike	90	103	106	104
240-162670-B-6 MSD	Matrix Spike Duplicate	91	102	102	103
LCS 240-518061/5	Lab Control Sample	90	100	105	97
MB 240-518061/7	Method Blank	93	98	103	104

### 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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-162664-2	MW-102S_021022	83
240-162664-3	MW-102_021022	85
240-162664-4	MW-72_021022	82
240-162664-5	MW-72S_021022	81
240-162664-6	DUP_08	83
240-162665-J-3 MS	Matrix Spike	83
240-162665-N-3 MSD	Matrix Spike Duplicate	83
LCS 240-518285/3	Lab Control Sample	83
MB 240-518285/4	Method Blank	82

### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-162664-1

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

**Lab Sample ID: MB 240-518061/7**  
**Matrix: Water**  
**Analysis Batch: 518061**

**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			02/15/22 12:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			02/15/22 12:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 12:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			02/15/22 12:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			02/15/22 12:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			02/15/22 12:32	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		02/15/22 12:32	1
4-Bromofluorobenzene (Surr)	98		56 - 136		02/15/22 12:32	1
Toluene-d8 (Surr)	103		78 - 122		02/15/22 12:32	1
Dibromofluoromethane (Surr)	104		73 - 120		02/15/22 12:32	1

**Lab Sample ID: LCS 240-518061/5**  
**Matrix: Water**  
**Analysis Batch: 518061**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	77 - 123
Tetrachloroethene	25.0	25.5		ug/L		102	76 - 123
trans-1,2-Dichloroethene	25.0	24.6		ug/L		98	75 - 124
Trichloroethene	25.0	24.0		ug/L		96	70 - 122
Vinyl chloride	25.0	22.0		ug/L		88	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

**Lab Sample ID: 240-162670-B-6 MS**  
**Matrix: Water**  
**Analysis Batch: 518061**

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

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier							
1,1-Dichloroethene	40	U	1000	943		ug/L		94	56 - 135
cis-1,2-Dichloroethene	40	U	1000	936		ug/L		94	66 - 128
Tetrachloroethene	40	U	1000	910		ug/L		91	62 - 131
trans-1,2-Dichloroethene	40	U	1000	954		ug/L		95	56 - 136
Trichloroethene	570		1000	1420		ug/L		86	61 - 124
Vinyl chloride	40	U	1000	860		ug/L		86	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	103		56 - 136
Toluene-d8 (Surr)	106		78 - 122

Eurofins Canton

# QC Sample Results

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

Job ID: 240-162664-1

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

**Lab Sample ID: 240-162670-B-6 MS**  
**Matrix: Water**  
**Analysis Batch: 518061**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	104		73 - 120

**Lab Sample ID: 240-162670-B-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 518061**

**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	1030		ug/L		103	56 - 135	9	26
cis-1,2-Dichloroethene	40	U	1000	952		ug/L		95	66 - 128	2	14
Tetrachloroethene	40	U	1000	901		ug/L		90	62 - 131	1	20
trans-1,2-Dichloroethene	40	U	1000	927		ug/L		93	56 - 136	3	15
Trichloroethene	570		1000	1430		ug/L		86	61 - 124	0	15
Vinyl chloride	40	U	1000	874		ug/L		87	43 - 157	2	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

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

**Lab Sample ID: MB 240-518285/4**  
**Matrix: Water**  
**Analysis Batch: 518285**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/18/22 22:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		66 - 120		02/18/22 22:20	1

**Lab Sample ID: LCS 240-518285/3**  
**Matrix: Water**  
**Analysis Batch: 518285**

**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	9.85		ug/L		98	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		66 - 120

**Lab Sample ID: 240-162665-J-3 MS**  
**Matrix: Water**  
**Analysis Batch: 518285**

**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	9.67		ug/L		97	51 - 153

Eurofins Canton



# QC Sample Results

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

Job ID: 240-162664-1

## 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)	83		66 - 120

**Lab Sample ID: 240-162665-N-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 518285**

**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	10.0	9.74		ug/L		97	51 - 153	1	16

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	83		66 - 120

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

# QC Association Summary

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

Job ID: 240-162664-1

## GC/MS VOA

### Analysis Batch: 518061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-162664-1	TRIP BLANK_15	Total/NA	Water	8260B	
240-162664-2	MW-102S_021022	Total/NA	Water	8260B	
240-162664-3	MW-102_021022	Total/NA	Water	8260B	
240-162664-4	MW-72_021022	Total/NA	Water	8260B	
240-162664-5	MW-72S_021022	Total/NA	Water	8260B	
240-162664-6	DUP_08	Total/NA	Water	8260B	
MB 240-518061/7	Method Blank	Total/NA	Water	8260B	
LCS 240-518061/5	Lab Control Sample	Total/NA	Water	8260B	
240-162670-B-6 MS	Matrix Spike	Total/NA	Water	8260B	
240-162670-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 518285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-162664-2	MW-102S_021022	Total/NA	Water	8260B SIM	
240-162664-3	MW-102_021022	Total/NA	Water	8260B SIM	
240-162664-4	MW-72_021022	Total/NA	Water	8260B SIM	
240-162664-5	MW-72S_021022	Total/NA	Water	8260B SIM	
240-162664-6	DUP_08	Total/NA	Water	8260B SIM	
MB 240-518285/4	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-518285/3	Lab Control Sample	Total/NA	Water	8260B SIM	
240-162665-J-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-162665-N-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

# Lab Chronicle

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

Job ID: 240-162664-1

## Client Sample ID: TRIP BLANK\_15

Date Collected: 02/10/22 00:00

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 12:56	SAM	TAL CAN

## Client Sample ID: MW-102S\_021022

Date Collected: 02/10/22 09:30

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 13:44	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	518285	02/18/22 23:10	CS	TAL CAN

## Client Sample ID: MW-102\_021022

Date Collected: 02/10/22 10:55

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 14:07	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	518285	02/18/22 23:35	CS	TAL CAN

## Client Sample ID: MW-72\_021022

Date Collected: 02/10/22 12:20

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 14:31	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	518285	02/19/22 00:00	CS	TAL CAN

## Client Sample ID: MW-72S\_021022

Date Collected: 02/10/22 13:30

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 14:55	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	518285	02/19/22 00:25	CS	TAL CAN

## Client Sample ID: DUP\_08

Date Collected: 02/10/22 00:00

Date Received: 02/12/22 10:20

Lab Sample ID: 240-162664-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	518061	02/15/22 15:18	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	518285	02/19/22 00:50	CS	TAL CAN

### Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Eurofins Canton

# Accreditation/Certification Summary

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

Job ID: 240-162664-1

## Laboratory: Eurofins 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	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	11-06-22
New York	NELAP	10975	03-31-22
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-21-14	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

1718  
23/2-4


# MICHIGAN 190

## Chain of Custody Record

TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING

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

Client Contact				Regulatory program:														
Company Name: Arcadis				<input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other														
Address: 28550 Cabot Drive, Suite 500				<input type="checkbox"/> DW														
City/State/Zip: Novi, MI, 48377				<input type="checkbox"/> NPDES														
Phone: 248-994-2240				<input type="checkbox"/> RCRA														
Project Name: Ford LTP Off-Site				<input type="checkbox"/> Other														
Project Number: 30080642-402.04				Site Contact: Julia McClafferty														
PO # 30080642-402.04				Telephone: 330-497-9396														
Sampling/Tracking No:				Lab Contact: Mike DeMarco														
Sampler Name: <i>Christina Gamble</i>				Telephone: 734-644-5131														
Method of Shipment/Carrier:				Analysis Turnaround Time														
Shipping/Tracking No:				TAT is different from below														
Sample Date				10 day														
Sample Time				<input type="checkbox"/> 3 weeks														
				<input checked="" type="checkbox"/> 2 weeks														
				<input type="checkbox"/> 1 week														
				<input type="checkbox"/> 2 days														
				<input type="checkbox"/> 1 day														
Sample Identification	Matrix		Containers & Preservatives		Filtered Sample (Y/N)	Analyses												
	Air	Aqueous	Solid	Other:		H2SO4	HNO3	HCl	NH4OH	ZnOH	Other:	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
TRIP BLANK_15	X					N	G	X	X	X	X	X	X	X	X	X	X	1 Trip Blank
MW-10A-02-10-22	X					N	G	X	X	X	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-10B-02-10-22	X					N	G	X	X	X	X	X	X	X	X	X	X	
MW-72-02-10-22	X					N	G	X	X	X	X	X	X	X	X	X	X	
MW-725-02-10-22	X					N	G	X	X	X	X	X	X	X	X	X	X	
DUP-CIS	X					N	G	X	X	X	X	X	X	X	X	X	X	



240-162664 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if...)	
	<input type="checkbox"/> Return to Client	<input checked="" type="checkbox"/> Disposal By Lab
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Poison B	<input type="checkbox"/> Archive For [ ] months
<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	
Special Instructions/QC Requirements & Comments: Sample Address: Positec/Belden Row Submit all results through Cadena at jtomala@cadenaco.com. Cadena #E203631		
Relinquished by: <i>Christina Gamble</i>	Date/Time: 2/10/22	Received by: <i>Adam Gamble</i>
Relinquished by: <i>Christina Gamble</i>	Date/Time: 2/11/22	Received by: <i>Adam Gamble</i>
Relinquished by: <i>Christina Gamble</i>	Date/Time: 2/10/22	Received by: <i>Adam Gamble</i>

Company:	Date/Time:	Received by:
Arcadis	2/10/22	MWF Cold Storage
Arcadis	2/11/22	Arcadis
Eurofins	2/10/22	Eurofins

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2/26/2022

**Envirofins TestAmerica Canton Sample Receipt Form/Narrative** Login # : 162064  
**Canton/Facility**

Client Ascendis Site Name \_\_\_\_\_ Cooler unpacked by: \_\_\_\_\_  
Cooler Received on 2-12-22 Opened on 2-12-22  
FedEx: 1<sup>st</sup> Grd  Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other \_\_\_\_\_

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

TestAmerica Cooler # 02A Foam Box Client Cooler Box Other \_\_\_\_\_  
Packing material used: Bubble Wrap Foam Plastic Bag None Other \_\_\_\_\_  
COOLANT: Water 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  
IR GUN #IR-15 (CF +0.2 °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  
-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? Yes ← Larger than this. Yes NO NA  
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 02042019 Yes No  
17. Was a LL Hg or Me Hg trip blank present? Yes NO

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
Concerning \_\_\_\_\_

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

**18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**  additional next page Samples processed by: \_\_\_\_\_

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**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 # : \_\_\_\_\_

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-14 IR-15	1.7	1.8	Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15	2.3	2.4	Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	
TA Client Box Other	IR-14 IR-15			Wet Ice	Blue Ice	Dry Ice
TA Client Box Other	IR-14 IR-15			Water	None	

See Temperature Excursion Form