

ANALYTICAL REPORT

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

Laboratory Job ID: 240-119557-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.
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Suite 500
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Attn: Kristoffer Hinskey



Authorized for release by:
10/11/2019 2:22:18 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 - E203728

Job ID: 240-119557-1

Qualifiers

GC/MS VOA

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

Glossary

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

Case Narrative

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

Job ID: 240-119557-1

Job ID: 240-119557-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-119557-1

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 9/27/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-29_092519 (240-119557-1), MW-114_092519 (240-119557-2), MW-113_092519 (240-119557-3), MW-26_092519 (240-119557-4), MW-58_092519 (240-119557-5) and TRIP BLANK (240-119557-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/08/2019 and 10/09/2019.

Method(s) 8260B: NO MS/MSD in batch 404629 due to an incorrect dilution.

MW-113_092519 (240-119557-3) and MW-58_092519 (240-119557-5)

Method(s) 8260B: No MS/MSD in batch 404841 due to an instrument failure.

MW-26_092519 (240-119557-4)

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

Case Narrative

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

Job ID: 240-119557-1

Job ID: 240-119557-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-29_092519 (240-119557-1), MW-114_092519 (240-119557-2), MW-113_092519 (240-119557-3), MW-26_092519 (240-119557-4) and MW-58_092519 (240-119557-5) 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.

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Method Summary

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

Job ID: 240-119557-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

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

Job ID: 240-119557-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-119557-1	MW-29_092519	Water	09/25/19 10:04	09/27/19 08:40	
240-119557-2	MW-114_092519	Water	09/25/19 11:56	09/27/19 08:40	
240-119557-3	MW-113_092519	Water	09/25/19 13:10	09/27/19 08:40	
240-119557-4	MW-26_092519	Water	09/25/19 15:08	09/27/19 08:40	
240-119557-5	MW-58_092519	Water	09/25/19 17:17	09/27/19 08:40	
240-119557-6	TRIP BLANK	Water	09/25/19 00:00	09/27/19 08:40	

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Detection Summary

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

Job ID: 240-119557-1

Client Sample ID: MW-29_092519

Lab Sample ID: 240-119557-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.92	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-114_092519

Lab Sample ID: 240-119557-2

No Detections.

Client Sample ID: MW-113_092519

Lab Sample ID: 240-119557-3

No Detections.

Client Sample ID: MW-26_092519

Lab Sample ID: 240-119557-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.87	J	1.0	0.19	ug/L	1		8260B	Total/NA

Client Sample ID: MW-58_092519

Lab Sample ID: 240-119557-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	8.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119557-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: MW-29_092519

Lab Sample ID: 240-119557-1

Date Collected: 09/25/19 10:04

Matrix: Water

Date Received: 09/27/19 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.92	J	2.0	0.86	ug/L			10/02/19 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		63 - 125		10/02/19 20:09	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			10/08/19 21:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 21:05	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 21:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 21:05	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 21:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 21:05	1

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: MW-114_092519

Lab Sample ID: 240-119557-2

Date Collected: 09/25/19 11:56

Matrix: Water

Date Received: 09/27/19 08:40

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 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		63 - 125		10/02/19 20:34	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			10/08/19 21:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 21:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 21:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 21:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 21:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 21:29	1

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: MW-113_092519

Lab Sample ID: 240-119557-3

Date Collected: 09/25/19 13:10

Matrix: Water

Date Received: 09/27/19 08:40

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 20:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		63 - 125		10/02/19 20:59	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			10/08/19 15:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 15:53	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 15:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 15:53	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 15:53	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 15:53	1

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: MW-26_092519

Lab Sample ID: 240-119557-4

Date Collected: 09/25/19 15:08

Matrix: Water

Date Received: 09/27/19 08:40

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 21:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		63 - 125		10/02/19 21:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.87	J	1.0	0.19	ug/L			10/09/19 13:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/09/19 13:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/09/19 13:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/09/19 13:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/09/19 13:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/09/19 13:45	1

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: MW-58_092519

Lab Sample ID: 240-119557-5

Date Collected: 09/25/19 17:17

Matrix: Water

Date Received: 09/27/19 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.6		2.0	0.86	ug/L			10/02/19 21:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		63 - 125		10/02/19 21:50	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	0.19	ug/L			10/08/19 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 16:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 16:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 16:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 16:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 16:41	1

Client Sample Results

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

Job ID: 240-119557-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119557-6

Date Collected: 09/25/19 00:00

Matrix: Water

Date Received: 09/27/19 08:40

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			10/08/19 16:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 16:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 16:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 16:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 16:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 16:40	1

Surrogate Summary

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

Job ID: 240-119557-1

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)	DBFM (75-128)	TOL (70-123)
240-119479-C-5 MS	Matrix Spike	110	96	93	95
240-119479-C-5 MSD	Matrix Spike Duplicate	114	103	96	102
240-119697-D-6 MS	Matrix Spike	83	103	101	101
240-119697-F-6 MSD	Matrix Spike Duplicate	80	97	97	96
LCS 240-404626/4	Lab Control Sample	115	100	93	99
LCS 240-404629/4	Lab Control Sample	74	98	89	100
LCS 240-404671/4	Lab Control Sample	86	95	98	101
LCS 240-404841/4	Lab Control Sample	70	101	89	98
MB 240-404626/6	Method Blank	116	101	90	102
MB 240-404629/6	Method Blank	92	70	105	86
MB 240-404671/7	Method Blank	90	76	110	93
MB 240-404841/6	Method Blank	89	66	105	85

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (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)
240-119520-F-2 MS	Matrix Spike	77
240-119520-F-2 MSD	Matrix Spike Duplicate	76
240-119557-1	MW-29_092519	77
240-119557-2	MW-114_092519	78
240-119557-3	MW-113_092519	75
240-119557-4	MW-26_092519	77
240-119557-5	MW-58_092519	75
LCS 240-403698/4	Lab Control Sample	75
MB 240-403698/5	Method Blank	75

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: MB 240-404626/6
Matrix: Water
Analysis Batch: 404626

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			10/08/19 12:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 12:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 12:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 12:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 12:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 12:12	1

Lab Sample ID: LCS 240-404626/4
Matrix: Water
Analysis Batch: 404626

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	69 - 134
1,1,2,2-Tetrachloroethane	10.0	12.0		ug/L		120	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.13		ug/L		81	50 - 156
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	78 - 133
1,1-Dichloroethane	10.0	11.0		ug/L		110	75 - 133
1,1-Dichloroethene	10.0	9.74		ug/L		97	65 - 139
1,2,4-Trichlorobenzene	10.0	8.58		ug/L		86	42 - 133
1,2,4-Trimethylbenzene	10.0	11.1		ug/L		111	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	7.84		ug/L		78	46 - 132
1,2-Dibromoethane	10.0	10.2		ug/L		102	77 - 123
1,2-Dichlorobenzene	10.0	9.77		ug/L		98	78 - 120
1,2-Dichloroethane	10.0	11.5		ug/L		115	71 - 135
1,2-Dichloropropane	10.0	11.0		ug/L		110	78 - 133
1,3,5-Trimethylbenzene	10.0	10.9		ug/L		109	75 - 121
1,3-Dichlorobenzene	10.0	9.71		ug/L		97	78 - 120
1,4-Dichlorobenzene	10.0	9.47		ug/L		95	78 - 120
2-Butanone (MEK)	20.0	23.6		ug/L		118	39 - 163
2-Hexanone	20.0	22.9		ug/L		115	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	22.6		ug/L		113	49 - 143
Acetone	20.0	26.2		ug/L		131	21 - 162
Benzene	10.0	10.3		ug/L		103	80 - 123
Bromodichloromethane	10.0	10.3		ug/L		103	77 - 125
Bromoform	10.0	7.24		ug/L		72	49 - 141
Bromomethane	10.0	6.68		ug/L		67	41 - 175
Carbon disulfide	10.0	8.82		ug/L		88	60 - 138
Carbon tetrachloride	10.0	10.0		ug/L		100	63 - 140
Chlorobenzene	10.0	9.82		ug/L		98	80 - 121
Chloroethane	10.0	8.50		ug/L		85	33 - 173
Chloroform	10.0	10.7		ug/L		107	79 - 127
Chloromethane	10.0	8.29		ug/L		83	54 - 143
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	76 - 128
cis-1,3-Dichloropropene	10.0	9.90		ug/L		99	64 - 132
Cyclohexane	10.0	10.9		ug/L		109	58 - 145
Dibromochloromethane	10.0	9.00		ug/L		90	70 - 132
Dichlorodifluoromethane	10.0	5.74		ug/L		57	29 - 148
Diethyl ether	10.0	11.2		ug/L		112	70 - 146

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: LCS 240-404626/4
Matrix: Water
Analysis Batch: 404626

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
Isopropylbenzene	10.0	10.0		ug/L		100	74 - 120
Methyl acetate	20.0	24.2		ug/L		121	52 - 145
Methyl tert-butyl ether	10.0	10.8		ug/L		108	51 - 133
Methylcyclohexane	10.0	10.1		ug/L		101	60 - 125
Methylene Chloride	10.0	10.8		ug/L		108	70 - 134
Styrene	10.0	9.64		ug/L		96	79 - 120
Tetrachloroethene	10.0	9.50		ug/L		95	74 - 130
Toluene	10.0	10.5		ug/L		105	78 - 129
trans-1,2-Dichloroethene	10.0	9.94		ug/L		99	78 - 133
trans-1,3-Dichloropropene	10.0	9.46		ug/L		95	55 - 128
Trichloroethene	10.0	8.79		ug/L		88	76 - 125
Trichlorofluoromethane	10.0	7.86		ug/L		79	51 - 164
Vinyl chloride	10.0	7.39		ug/L		74	58 - 143
Xylenes, Total	20.0	19.6		ug/L		98	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	115		70 - 121
4-Bromofluorobenzene (Surr)	100		59 - 120
Dibromofluoromethane (Surr)	93		75 - 128
Toluene-d8 (Surr)	99		70 - 123

Lab Sample ID: 240-119479-C-5 MS
Matrix: Water
Analysis Batch: 404626

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
1,1,2,2-Tetrachloroethane	10	U	100	109		ug/L		109	60 - 137
1,1,2-Trichloroethane	10	U	100	97.8		ug/L		98	76 - 132
1,1-Dichloroethane	7.4	J	100	110		ug/L		103	63 - 136
1,2-Dichloroethane	10	U	100	117		ug/L		117	65 - 135
Benzene	210		100	294		ug/L		88	71 - 122
Carbon tetrachloride	10	U	100	77.5		ug/L		78	41 - 143
Chlorobenzene	57		100	144		ug/L		88	70 - 123
Chloroform	10	U	100	98.0		ug/L		98	68 - 130
Tetrachloroethene	10	U	100	73.4		ug/L		73	51 - 136
Trichloroethene	10	U	100	75.2		ug/L		75	55 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 121
4-Bromofluorobenzene (Surr)	96		59 - 120
Dibromofluoromethane (Surr)	93		75 - 128
Toluene-d8 (Surr)	95		70 - 123

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: 240-119479-C-5 MSD

Matrix: Water

Analysis Batch: 404626

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
1,1,2,2-Tetrachloroethane	10	U	100	121		ug/L		121	60 - 137	10	31
1,1,2-Trichloroethane	10	U	100	102		ug/L		102	76 - 132	4	25
1,1-Dichloroethane	7.4	J	100	110		ug/L		103	63 - 136	0	23
1,2-Dichloroethane	10	U	100	124		ug/L		124	65 - 135	6	24
Benzene	210		100	294		ug/L		87	71 - 122	0	22
Carbon tetrachloride	10	U	100	87.7		ug/L		88	41 - 143	12	30
Chlorobenzene	57		100	143		ug/L		86	70 - 123	1	23
Chloroform	10	U	100	104		ug/L		104	68 - 130	6	23
Tetrachloroethene	10	U	100	78.1		ug/L		78	51 - 136	6	23
Trichloroethene	10	U	100	80.4		ug/L		80	55 - 131	7	23

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 121
4-Bromofluorobenzene (Surr)	103		59 - 120
Dibromofluoromethane (Surr)	96		75 - 128
Toluene-d8 (Surr)	102		70 - 123

Lab Sample ID: MB 240-404629/6

Matrix: Water

Analysis Batch: 404629

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			10/08/19 13:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 13:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 13:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 13:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 13:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 13:04	1

Lab Sample ID: LCS 240-404629/4

Matrix: Water

Analysis Batch: 404629

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.90		ug/L		99	69 - 134
1,1,2,2-Tetrachloroethane	10.0	7.40		ug/L		74	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.2		ug/L		102	50 - 156
1,1,2-Trichloroethane	10.0	8.81		ug/L		88	78 - 133
1,1-Dichloroethane	10.0	9.19		ug/L		92	75 - 133
1,1-Dichloroethene	10.0	9.84		ug/L		98	65 - 139
1,2,4-Trichlorobenzene	10.0	5.14		ug/L		51	42 - 133
1,2,4-Trimethylbenzene	10.0	8.67		ug/L		87	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	4.82		ug/L		48	46 - 132
1,2-Dibromoethane	10.0	8.23		ug/L		82	77 - 123
1,2-Dichlorobenzene	10.0	8.47		ug/L		85	78 - 120
1,2-Dichloroethane	10.0	7.93		ug/L		79	71 - 135
1,2-Dichloropropane	10.0	9.97		ug/L		100	78 - 133
1,3,5-Trimethylbenzene	10.0	8.60		ug/L		86	75 - 121

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: LCS 240-404629/4

Matrix: Water

Analysis Batch: 404629

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	10.0	9.16		ug/L		92	78 - 120
1,4-Dichlorobenzene	10.0	9.12		ug/L		91	78 - 120
2-Butanone (MEK)	20.0	13.5		ug/L		67	39 - 163
2-Hexanone	20.0	13.5		ug/L		67	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	13.9		ug/L		70	49 - 143
Acetone	20.0	13.3		ug/L		67	21 - 162
Benzene	10.0	9.28		ug/L		93	80 - 123
Bromodichloromethane	10.0	8.81		ug/L		88	77 - 125
Bromoform	10.0	6.81		ug/L		68	49 - 141
Bromomethane	10.0	7.06		ug/L		71	41 - 175
Carbon disulfide	10.0	8.61		ug/L		86	60 - 138
Carbon tetrachloride	10.0	11.1		ug/L		111	63 - 140
Chlorobenzene	10.0	9.77		ug/L		98	80 - 121
Chloroethane	10.0	7.50		ug/L		75	33 - 173
Chloroform	10.0	8.82		ug/L		88	79 - 127
Chloromethane	10.0	8.16		ug/L		82	54 - 143
cis-1,2-Dichloroethene	10.0	9.13		ug/L		91	76 - 128
cis-1,3-Dichloropropene	10.0	9.04		ug/L		90	64 - 132
Cyclohexane	10.0	9.36		ug/L		94	58 - 145
Dibromochloromethane	10.0	8.75		ug/L		87	70 - 132
Dichlorodifluoromethane	10.0	7.38		ug/L		74	29 - 148
Diethyl ether	10.0	8.85		ug/L		89	70 - 146
Ethylbenzene	10.0	10.6		ug/L		106	80 - 120
Isopropylbenzene	10.0	8.22		ug/L		82	74 - 120
Methyl acetate	20.0	12.8		ug/L		64	52 - 145
Methyl tert-butyl ether	10.0	7.02		ug/L		70	51 - 133
Methylcyclohexane	10.0	8.64		ug/L		86	60 - 125
Methylene Chloride	10.0	8.79		ug/L		88	70 - 134
Styrene	10.0	9.44		ug/L		94	79 - 120
Tetrachloroethene	10.0	10.1		ug/L		101	74 - 130
Toluene	10.0	10.1		ug/L		101	78 - 129
trans-1,2-Dichloroethene	10.0	9.36		ug/L		94	78 - 133
trans-1,3-Dichloropropene	10.0	8.12		ug/L		81	55 - 128
Trichloroethene	10.0	9.03		ug/L		90	76 - 125
Trichlorofluoromethane	10.0	10.6		ug/L		106	51 - 164
Vinyl chloride	10.0	8.87		ug/L		89	58 - 143
Xylenes, Total	20.0	18.8		ug/L		94	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	74		70 - 121
4-Bromofluorobenzene (Surr)	98		59 - 120
Dibromofluoromethane (Surr)	89		75 - 128
Toluene-d8 (Surr)	100		70 - 123

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: MB 240-404671/7
Matrix: Water
Analysis Batch: 404671

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			10/08/19 16:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/08/19 16:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/08/19 16:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/08/19 16:19	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/08/19 16:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/08/19 16:19	1

Lab Sample ID: LCS 240-404671/4
Matrix: Water
Analysis Batch: 404671

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	10.0	9.90		ug/L		99	69 - 134
1,1,2,2-Tetrachloroethane	10.0	9.20		ug/L		92	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.7		ug/L		117	50 - 156
1,1,2-Trichloroethane	10.0	9.87		ug/L		99	78 - 133
1,1-Dichloroethane	10.0	9.21		ug/L		92	75 - 133
1,1-Dichloroethene	10.0	9.72		ug/L		97	65 - 139
1,2,4-Trichlorobenzene	10.0	9.38		ug/L		94	42 - 133
1,2,4-Trimethylbenzene	10.0	8.79		ug/L		88	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	10.2		ug/L		102	46 - 132
1,2-Dibromoethane	10.0	10.1		ug/L		101	77 - 123
1,2-Dichlorobenzene	10.0	9.66		ug/L		97	78 - 120
1,2-Dichloroethane	10.0	8.74		ug/L		87	71 - 135
1,2-Dichloropropane	10.0	9.76		ug/L		98	78 - 133
1,3,5-Trimethylbenzene	10.0	8.80		ug/L		88	75 - 121
1,3-Dichlorobenzene	10.0	9.73		ug/L		97	78 - 120
1,4-Dichlorobenzene	10.0	9.47		ug/L		95	78 - 120
2-Butanone (MEK)	20.0	19.0		ug/L		95	39 - 163
2-Hexanone	20.0	17.1		ug/L		86	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	20.0		ug/L		100	49 - 143
Acetone	20.0	17.7		ug/L		88	21 - 162
Benzene	10.0	9.92		ug/L		99	80 - 123
Bromodichloromethane	10.0	9.99		ug/L		100	77 - 125
Bromoform	10.0	11.3		ug/L		113	49 - 141
Bromomethane	10.0	6.05		ug/L		61	41 - 175
Carbon disulfide	10.0	10.0		ug/L		100	60 - 138
Carbon tetrachloride	10.0	10.9		ug/L		109	63 - 140
Chlorobenzene	10.0	10.2		ug/L		102	80 - 121
Chloroethane	10.0	5.18		ug/L		52	33 - 173
Chloroform	10.0	9.13		ug/L		91	79 - 127
Chloromethane	10.0	6.10		ug/L		61	54 - 143
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	76 - 128
cis-1,3-Dichloropropene	10.0	10.4		ug/L		104	64 - 132
Cyclohexane	10.0	9.76		ug/L		98	58 - 145
Dibromochloromethane	10.0	10.2		ug/L		102	70 - 132
Dichlorodifluoromethane	10.0	6.43		ug/L		64	29 - 148
Diethyl ether	10.0	9.50		ug/L		95	70 - 146

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: LCS 240-404671/4
Matrix: Water
Analysis Batch: 404671

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
Isopropylbenzene	10.0	10.4		ug/L		104	74 - 120
Methyl acetate	20.0	17.4		ug/L		87	52 - 145
Methyl tert-butyl ether	10.0	9.28		ug/L		93	51 - 133
Methylcyclohexane	10.0	9.94		ug/L		99	60 - 125
Methylene Chloride	10.0	10.9		ug/L		109	70 - 134
Styrene	10.0	10.6		ug/L		106	79 - 120
Tetrachloroethene	10.0	10.4		ug/L		104	74 - 130
Toluene	10.0	9.95		ug/L		100	78 - 129
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	78 - 133
trans-1,3-Dichloropropene	10.0	8.64		ug/L		86	55 - 128
Trichloroethene	10.0	11.2		ug/L		112	76 - 125
Trichlorofluoromethane	10.0	8.31		ug/L		83	51 - 164
Vinyl chloride	10.0	6.13		ug/L		61	58 - 143
Xylenes, Total	20.0	21.4		ug/L		107	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 121
4-Bromofluorobenzene (Surr)	95		59 - 120
Dibromofluoromethane (Surr)	98		75 - 128
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-119697-D-6 MS
Matrix: Water
Analysis Batch: 404671

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
1,1,1-Trichloroethane	1.0	U	10.0	9.81		ug/L		98	51 - 138
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.22		ug/L		92	60 - 137
1,1,2-Trichloroethane	1.0	U	10.0	10.4		ug/L		104	76 - 132
1,1-Dichloroethane	1.0	U	10.0	9.07		ug/L		91	63 - 136
1,1-Dichloroethene	0.65	J	10.0	10.7		ug/L		100	53 - 140
1,2,4-Trichlorobenzene	1.0	U	10.0	8.55		ug/L		86	30 - 126
1,2,4-Trimethylbenzene	1.0	U	10.0	8.24		ug/L		82	62 - 120
1,2-Dibromoethane	1.0	U	10.0	10.5		ug/L		105	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	9.39		ug/L		94	64 - 120
1,2-Dichloroethane	1.0	U	10.0	8.76		ug/L		88	65 - 135
1,2-Dichloropropane	1.0	U	10.0	9.21		ug/L		92	70 - 132
1,3,5-Trimethylbenzene	1.0	U	10.0	8.06		ug/L		81	64 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.28		ug/L		93	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.14		ug/L		91	63 - 120
Benzene	1.0	U	10.0	9.45		ug/L		94	71 - 122
Bromodichloromethane	1.0	U	10.0	9.50		ug/L		95	64 - 125
Bromoform	1.0	U	10.0	12.3		ug/L		123	44 - 129
Bromomethane	1.0	U	10.0	6.07		ug/L		61	19 - 187
Carbon tetrachloride	1.0	U	10.0	10.8		ug/L		108	41 - 143
Chlorobenzene	1.0	U	10.0	10.2		ug/L		102	70 - 123
Chloroethane	1.0	U	10.0	6.12		ug/L		61	11 - 189

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: 240-119697-D-6 MS

Matrix: Water

Analysis Batch: 404671

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Chloroform	1.0	U	10.0	9.08		ug/L		91	68 - 130	
Chloromethane	1.0	U	10.0	6.65		ug/L		66	31 - 154	
cis-1,2-Dichloroethene	1.3		10.0	11.0		ug/L		97	64 - 130	
cis-1,3-Dichloropropene	1.0	U	10.0	9.03		ug/L		90	48 - 127	
Dibromochloromethane	1.0	U	10.0	10.7		ug/L		107	60 - 129	
Dichlorodifluoromethane	1.0	U	10.0	5.24		ug/L		52	28 - 136	
Ethylbenzene	1.0	U	10.0	10.8		ug/L		108	66 - 120	
Isopropylbenzene	1.0	U	10.0	10.2		ug/L		102	59 - 120	
Methylene Chloride	5.0	U	10.0	10.3		ug/L		103	61 - 130	
Styrene	1.0	U	10.0	10.9		ug/L		109	68 - 120	
Tetrachloroethene	0.20	J	10.0	11.0		ug/L		108	51 - 136	
Toluene	1.0	U	10.0	10.4		ug/L		104	62 - 132	
trans-1,2-Dichloroethene	1.0	U	10.0	10.8		ug/L		108	68 - 133	
trans-1,3-Dichloropropene	1.0	U	10.0	8.93		ug/L		89	40 - 125	
Trichloroethene	9.9		10.0	19.5		ug/L		96	55 - 131	
Trichlorofluoromethane	7.3		10.0	14.0		ug/L		67	37 - 174	
Vinyl chloride	0.25	J	10.0	6.36		ug/L		61	43 - 154	
Xylenes, Total	2.0	U	20.0	21.3		ug/L		107	67 - 120	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	83		70 - 121
4-Bromofluorobenzene (Surr)	103		59 - 120
Dibromofluoromethane (Surr)	101		75 - 128
Toluene-d8 (Surr)	101		70 - 123

Lab Sample ID: 240-119697-F-6 MSD

Matrix: Water

Analysis Batch: 404671

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
1,1,1-Trichloroethane	1.0	U	10.0	10.3		ug/L		103	51 - 138	5	27	
1,1,2,2-Tetrachloroethane	1.0	U	10.0	8.72		ug/L		87	60 - 137	6	31	
1,1,2-Trichloroethane	1.0	U	10.0	10.2		ug/L		102	76 - 132	2	25	
1,1-Dichloroethane	1.0	U	10.0	9.18		ug/L		92	63 - 136	1	23	
1,1-Dichloroethene	0.65	J	10.0	10.5		ug/L		98	53 - 140	2	35	
1,2,4-Trichlorobenzene	1.0	U	10.0	8.55		ug/L		85	30 - 126	0	35	
1,2,4-Trimethylbenzene	1.0	U	10.0	8.15		ug/L		82	62 - 120	1	27	
1,2-Dibromoethane	1.0	U	10.0	10.2		ug/L		102	71 - 123	4	27	
1,2-Dichlorobenzene	1.0	U	10.0	8.91		ug/L		89	64 - 120	5	30	
1,2-Dichloroethane	1.0	U	10.0	8.83		ug/L		88	65 - 135	1	24	
1,2-Dichloropropane	1.0	U	10.0	9.20		ug/L		92	70 - 132	0	26	
1,3,5-Trimethylbenzene	1.0	U	10.0	8.21		ug/L		82	64 - 120	2	23	
1,3-Dichlorobenzene	1.0	U	10.0	9.19		ug/L		92	62 - 120	1	31	
1,4-Dichlorobenzene	1.0	U	10.0	9.04		ug/L		90	63 - 120	1	28	
Benzene	1.0	U	10.0	9.57		ug/L		96	71 - 122	1	22	
Bromodichloromethane	1.0	U	10.0	9.78		ug/L		98	64 - 125	3	27	
Bromoform	1.0	U	10.0	11.5		ug/L		115	44 - 129	7	28	
Bromomethane	1.0	U	10.0	5.91		ug/L		59	19 - 187	3	35	

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: 240-119697-F-6 MSD

Matrix: Water

Analysis Batch: 404671

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
Carbon tetrachloride	1.0	U	10.0	10.7		ug/L		107	41 - 143	1	30
Chlorobenzene	1.0	U	10.0	9.89		ug/L		99	70 - 123	3	23
Chloroethane	1.0	U	10.0	5.69		ug/L		57	11 - 189	7	35
Chloroform	1.0	U	10.0	9.12		ug/L		91	68 - 130	0	23
Chloromethane	1.0	U	10.0	6.56		ug/L		66	31 - 154	1	35
cis-1,2-Dichloroethene	1.3		10.0	11.0		ug/L		98	64 - 130	0	21
cis-1,3-Dichloropropene	1.0	U	10.0	9.18		ug/L		92	48 - 127	2	30
Dibromochloromethane	1.0	U	10.0	10.4		ug/L		104	60 - 129	3	26
Dichlorodifluoromethane	1.0	U	10.0	5.88		ug/L		59	28 - 136	11	35
Ethylbenzene	1.0	U	10.0	10.5		ug/L		105	66 - 120	3	24
Isopropylbenzene	1.0	U	10.0	9.84		ug/L		98	59 - 120	4	31
Methylene Chloride	5.0	U	10.0	9.88		ug/L		99	61 - 130	4	29
Styrene	1.0	U	10.0	10.3		ug/L		103	68 - 120	6	26
Tetrachloroethene	0.20	J	10.0	10.6		ug/L		104	51 - 136	4	23
Toluene	1.0	U	10.0	9.99		ug/L		100	62 - 132	4	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.6		ug/L		106	68 - 133	2	24
trans-1,3-Dichloropropene	1.0	U	10.0	8.73		ug/L		87	40 - 125	2	27
Trichloroethene	9.9		10.0	19.5		ug/L		96	55 - 131	0	23
Trichlorofluoromethane	7.3		10.0	14.3		ug/L		70	37 - 174	2	35
Vinyl chloride	0.25	J	10.0	6.18		ug/L		59	43 - 154	3	29
Xylenes, Total	2.0	U	20.0	20.9		ug/L		105	67 - 120	2	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 121
4-Bromofluorobenzene (Surr)	97		59 - 120
Dibromofluoromethane (Surr)	97		75 - 128
Toluene-d8 (Surr)	96		70 - 123

Lab Sample ID: MB 240-404841/6

Matrix: Water

Analysis Batch: 404841

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			10/09/19 12:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/09/19 12:33	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/09/19 12:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/09/19 12:33	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/09/19 12:33	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/09/19 12:33	1

Lab Sample ID: LCS 240-404841/4

Matrix: Water

Analysis Batch: 404841

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	69 - 134
1,1,2,2-Tetrachloroethane	10.0	7.08		ug/L		71	65 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.2		ug/L		102	50 - 156

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: LCS 240-404841/4
Matrix: Water
Analysis Batch: 404841

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	10.0	8.71		ug/L		87	78 - 133
1,1-Dichloroethane	10.0	9.42		ug/L		94	75 - 133
1,1-Dichloroethene	10.0	9.97		ug/L		100	65 - 139
1,2,4-Trichlorobenzene	10.0	4.98		ug/L		50	42 - 133
1,2,4-Trimethylbenzene	10.0	8.83		ug/L		88	74 - 120
1,2-Dibromo-3-Chloropropane	10.0	4.89		ug/L		49	46 - 132
1,2-Dibromoethane	10.0	8.39		ug/L		84	77 - 123
1,2-Dichlorobenzene	10.0	8.59		ug/L		86	78 - 120
1,2-Dichloroethane	10.0	7.82		ug/L		78	71 - 135
1,2-Dichloropropane	10.0	9.89		ug/L		99	78 - 133
1,3,5-Trimethylbenzene	10.0	8.76		ug/L		88	75 - 121
1,3-Dichlorobenzene	10.0	9.27		ug/L		93	78 - 120
1,4-Dichlorobenzene	10.0	9.25		ug/L		93	78 - 120
2-Butanone (MEK)	20.0	12.8		ug/L		64	39 - 163
2-Hexanone	20.0	13.6		ug/L		68	43 - 148
4-Methyl-2-pentanone (MIBK)	20.0	13.4		ug/L		67	49 - 143
Acetone	20.0	12.3		ug/L		62	21 - 162
Benzene	10.0	9.42		ug/L		94	80 - 123
Bromodichloromethane	10.0	8.95		ug/L		89	77 - 125
Bromoform	10.0	6.99		ug/L		70	49 - 141
Bromomethane	10.0	7.43		ug/L		74	41 - 175
Carbon disulfide	10.0	9.34		ug/L		93	60 - 138
Carbon tetrachloride	10.0	11.5		ug/L		115	63 - 140
Chlorobenzene	10.0	10.3		ug/L		103	80 - 121
Chloroethane	10.0	8.04		ug/L		80	33 - 173
Chloroform	10.0	9.04		ug/L		90	79 - 127
Chloromethane	10.0	9.02		ug/L		90	54 - 143
cis-1,2-Dichloroethene	10.0	9.22		ug/L		92	76 - 128
cis-1,3-Dichloropropene	10.0	8.93		ug/L		89	64 - 132
Cyclohexane	10.0	9.34		ug/L		93	58 - 145
Dibromochloromethane	10.0	8.92		ug/L		89	70 - 132
Dichlorodifluoromethane	10.0	7.72		ug/L		77	29 - 148
Diethyl ether	10.0	8.74		ug/L		87	70 - 146
Ethylbenzene	10.0	10.9		ug/L		109	80 - 120
Isopropylbenzene	10.0	8.64		ug/L		86	74 - 120
Methyl acetate	20.0	12.5		ug/L		62	52 - 145
Methyl tert-butyl ether	10.0	7.12		ug/L		71	51 - 133
Methylcyclohexane	10.0	8.41		ug/L		84	60 - 125
Methylene Chloride	10.0	9.45		ug/L		94	70 - 134
Styrene	10.0	9.96		ug/L		100	79 - 120
Tetrachloroethene	10.0	10.0		ug/L		100	74 - 130
Toluene	10.0	10.4		ug/L		104	78 - 129
trans-1,2-Dichloroethene	10.0	9.79		ug/L		98	78 - 133
trans-1,3-Dichloropropene	10.0	8.06		ug/L		81	55 - 128
Trichloroethene	10.0	9.03		ug/L		90	76 - 125
Trichlorofluoromethane	10.0	10.9		ug/L		109	51 - 164
Vinyl chloride	10.0	9.29		ug/L		93	58 - 143
Xylenes, Total	20.0	19.8		ug/L		99	80 - 120

QC Sample Results

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

Job ID: 240-119557-1

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

Lab Sample ID: LCS 240-404841/4
Matrix: Water
Analysis Batch: 404841

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	70		70 - 121
4-Bromofluorobenzene (Surr)	101		59 - 120
Dibromofluoromethane (Surr)	89		75 - 128
Toluene-d8 (Surr)	98		70 - 123

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

Lab Sample ID: MB 240-403698/5
Matrix: Water
Analysis Batch: 403698

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			10/02/19 13:50	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	75		63 - 125		10/02/19 13:50	1

Lab Sample ID: LCS 240-403698/4
Matrix: Water
Analysis Batch: 403698

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	11.8		ug/L		118	59 - 131

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	75		63 - 125

Lab Sample ID: 240-119520-F-2 MS
Matrix: Water
Analysis Batch: 403698

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	0.93	J	10.0	11.7		ug/L		108	52 - 129

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	77		63 - 125

Lab Sample ID: 240-119520-F-2 MSD
Matrix: Water
Analysis Batch: 403698

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	0.93	J	10.0	11.7		ug/L		108	52 - 129	0	13

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	76		63 - 125

Eurofins TestAmerica, Canton

QC Association Summary

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

Job ID: 240-119557-1

GC/MS VOA

Analysis Batch: 403698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119557-1	MW-29_092519	Total/NA	Water	8260B SIM	
240-119557-2	MW-114_092519	Total/NA	Water	8260B SIM	
240-119557-3	MW-113_092519	Total/NA	Water	8260B SIM	
240-119557-4	MW-26_092519	Total/NA	Water	8260B SIM	
240-119557-5	MW-58_092519	Total/NA	Water	8260B SIM	
MB 240-403698/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-403698/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-119520-F-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-119520-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 404626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119557-6	TRIP BLANK	Total/NA	Water	8260B	
MB 240-404626/6	Method Blank	Total/NA	Water	8260B	
LCS 240-404626/4	Lab Control Sample	Total/NA	Water	8260B	
240-119479-C-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-119479-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 404629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119557-3	MW-113_092519	Total/NA	Water	8260B	
240-119557-5	MW-58_092519	Total/NA	Water	8260B	
MB 240-404629/6	Method Blank	Total/NA	Water	8260B	
LCS 240-404629/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 404671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119557-1	MW-29_092519	Total/NA	Water	8260B	
240-119557-2	MW-114_092519	Total/NA	Water	8260B	
MB 240-404671/7	Method Blank	Total/NA	Water	8260B	
LCS 240-404671/4	Lab Control Sample	Total/NA	Water	8260B	
240-119697-D-6 MS	Matrix Spike	Total/NA	Water	8260B	
240-119697-F-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 404841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-119557-4	MW-26_092519	Total/NA	Water	8260B	
MB 240-404841/6	Method Blank	Total/NA	Water	8260B	
LCS 240-404841/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-119557-1

Client Sample ID: MW-29_092519

Lab Sample ID: 240-119557-1

Date Collected: 09/25/19 10:04

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404671	10/08/19 21:05	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 20:09	SAM	TAL CAN

Client Sample ID: MW-114_092519

Lab Sample ID: 240-119557-2

Date Collected: 09/25/19 11:56

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404671	10/08/19 21:29	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 20:34	SAM	TAL CAN

Client Sample ID: MW-113_092519

Lab Sample ID: 240-119557-3

Date Collected: 09/25/19 13:10

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404629	10/08/19 15:53	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 20:59	SAM	TAL CAN

Client Sample ID: MW-26_092519

Lab Sample ID: 240-119557-4

Date Collected: 09/25/19 15:08

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404841	10/09/19 13:45	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 21:25	SAM	TAL CAN

Client Sample ID: MW-58_092519

Lab Sample ID: 240-119557-5

Date Collected: 09/25/19 17:17

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404629	10/08/19 16:41	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	403698	10/02/19 21:50	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-119557-6

Date Collected: 09/25/19 00:00

Matrix: Water

Date Received: 09/27/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	404626	10/08/19 16:40	LEE	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Eurofins TestAmerica, Canton

Accreditation/Certification Summary

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

Job ID: 240-119557-1

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

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

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		Lab Contact: Mike DeMontco Telephone: 330-497-9396	
Project Name: Ford LTP Project Number: M1001454.0004.0001B PO # M1001454.0004.0001B		TestAmerica Laboratories, Inc. COC No: _____ of COCs	
Method of Shipment/Carrier: Shipping/Tracking No: _____		For lab use only Walk-in client Lab sampling Job/SDG No: _____	
Analysis Turnaround Time TAT (if different from below) 10 day <input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <input type="checkbox"/>		Analyses	
Containers & Preservatives H2SO4 <input type="checkbox"/> HNO3 <input type="checkbox"/> HCl <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH <input type="checkbox"/> Other: _____		Composite (C / Grab-C) <input type="checkbox"/> Filtered Sample (Y / N)	
Matrix Air <input type="checkbox"/> Sediment <input type="checkbox"/> Solid <input type="checkbox"/> Other: _____		VOCs 8260B <input type="checkbox"/> 1,4-Dioxane 8260B SIM <input type="checkbox"/>	
Sample Identification Sample Date Sample Time Matrix		Sample Specific Notes / Special Instructions:	
MW-29-092519 9/25/19 1004 X		6 VOAS	
MW-114-092519 1156 X		6 VOAS	
MW-113-092519 1310 X		6 VOAS	
MW-26-092519 1508 X		6 VOAS	
MW-58-092519 1717 X		6 VOAS	
1 trip blank		6 VOAS	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Volatile <input type="checkbox"/> Other: _____		Return to Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Submit all results through Cadena at jim.tomalia@cadenalabs.com. Cadena #E203728			
Relinquished by: <i>[Signature]</i> Date/Time: 9/25/19 1900 Company: Arcadis			
Relinquished by: <i>[Signature]</i> Date/Time: 9/26/19 13:30 Company: Arcadis			
Relinquished by: <i>[Signature]</i> Date/Time: 9/26/19 1449 Company: Arcadis-MI			



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Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 119557

Client Arcaadis Site Name _____ Cooler unpacked by: _____
 Cooler Received on 9-27-19 Opened on 9-27-19
 FedEx: 1st ~~Ord~~ Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # TA 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 _____

- Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 3.7 °C Corrected Cooler Temp. 4.4 °C
 IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
- Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes ~~No~~
 -Were tamper/custody seals intact and uncompromised? Yes No NA
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Was/were the person(s) who collected the samples clearly identified on the COC? Yes ~~No~~
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels be reconciled with the COC? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Are these work share samples? Yes ~~No~~
 If yes, Questions 12-16 have been checked at the originating laboratory.
- Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC991818
- Were VOAs on the COC? Yes ~~No~~
- Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes ~~No~~ NA
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 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: GB

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: _____

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