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ANALYTICAL REPORT

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

Laboratory Job ID: 240-110529-1
Client Project/Site: Ford LTP Livonia MI - E203631

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

Attn: Kristoffer Hinskey

Authorized for release by:
4/18/2019 4:00:36 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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. Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 240-110529-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203631

Report Number: 240-110529-1

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 4/5/2019 8:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-110529-10), HPT-214_5-9_040319 (240-110529-11), HPT-214_10-14_040319 (240-110529-12), HPT-214_16-20_040319 (240-110529-13), HPT-213_15-19_040319 (240-110529-14), HPT-213_10-14_040319 (240-110529-15), HPT-213_20-24_040319 (240-110529-16) and HPT-213_5-9_040319 (240-110529-17) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 04/16/2019.

Trichloroethene failed the recovery criteria low for the MS of sample HPT-214_10-14_040319MS (240-110529-12) in batch 240-376652.

Tetrachloroethene and Vinyl chloride exceeded the RPD limit for the MSD of sample HPT-214_10-14_040319MSD (240-110529-12) in batch 240-376652. Refer to the QC report for details.

Samples HPT-214_10-14_040319 (240-110529-12)[5X] and HPT-214_16-20_040319 (240-110529-13)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The pH of the sample was greater than 2. The sample was analyzed within the normal 14 day holding time; however, experimental evidence suggests that some aromatic compounds in wastewater samples, notably, Benzene, Toluene, and Ethylbenzene are

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Laboratory: Eurofins TestAmerica, Canton (Continued)

susceptible to biological degradation if sample is not preserved to a pH of 2: HPT-214_16-20_040319 (240-110529-13).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-375537 and analytical batch 240-375622.

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

VOLATILE ORGANIC COMPOUNDS

Samples HPT-214_26-27_040319 (240-110529-1), HPT-214_2-3_040319 (240-110529-2), HPT-214_1-2_040319 (240-110529-3), DUP-01 (240-110529-4), HPT-214_3-4_040319 (240-110529-5), HPT-214_4-5_040319 (240-110529-6), HPT-213_26-27_040319 (240-110529-7), HPT-213_3-4_040319 (240-110529-8) and HPT-213_4-5_040319 (240-110529-9) were analyzed for volatile organic compounds in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 04/09/2019 and 04/10/2019.

The continuing calibration verification (CCV) associated with batch 240-375622 recovered above the upper control limit for vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: HPT-214_26-27_040319 (240-110529-1), HPT-214_2-3_040319 (240-110529-2), HPT-214_1-2_040319 (240-110529-3), DUP-01 (240-110529-4), HPT-214_3-4_040319 (240-110529-5), HPT-214_4-5_040319 (240-110529-6), HPT-213_26-27_040319 (240-110529-7), HPT-213_3-4_040319 (240-110529-8), HPT-213_4-5_040319 (240-110529-9) and (CCVIS 240-375622/4).

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples HPT-214_5-9_040319 (240-110529-11), HPT-214_10-14_040319 (240-110529-12), HPT-214_16-20_040319 (240-110529-13), HPT-213_15-19_040319 (240-110529-14), HPT-213_10-14_040319 (240-110529-15), HPT-213_20-24_040319 (240-110529-16) and HPT-213_5-9_040319 (240-110529-17) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 04/11/2019.

The pH is greater than 2 for the following samples HPT-214_16-20_040319 (240-110529-13) and HPT-213_15-19_040319 (240-110529-14).

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

PERCENT SOLIDS

Samples HPT-214_26-27_040319 (240-110529-1), HPT-214_2-3_040319 (240-110529-2), HPT-214_1-2_040319 (240-110529-3), DUP-01 (240-110529-4), HPT-214_3-4_040319 (240-110529-5), HPT-214_4-5_040319 (240-110529-6), HPT-213_26-27_040319 (240-110529-7), HPT-213_3-4_040319 (240-110529-8) and HPT-213_4-5_040319 (240-110529-9) were analyzed for percent solids in accordance with ASTM Method D2216-80. The samples were analyzed on 04/08/2019.

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

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

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

Job ID: 240-110529-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-110529-1	HPT-214_26-27_040319	Solid	04/03/19 14:05	04/05/19 08:20
240-110529-2	HPT-214_2-3_040319	Solid	04/03/19 11:40	04/05/19 08:20
240-110529-3	HPT-214_1-2_040319	Solid	04/03/19 11:40	04/05/19 08:20
240-110529-4	DUP-01	Solid	04/03/19 00:00	04/05/19 08:20
240-110529-5	HPT-214_3-4_040319	Solid	04/03/19 11:40	04/05/19 08:20
240-110529-6	HPT-214_4-5_040319	Solid	04/03/19 11:40	04/05/19 08:20
240-110529-7	HPT-213_26-27_040319	Solid	04/03/19 10:00	04/05/19 08:20
240-110529-8	HPT-213_3-4_040319	Solid	04/03/19 08:50	04/05/19 08:20
240-110529-9	HPT-213_4-5_040319	Solid	04/03/19 08:50	04/05/19 08:20
240-110529-10	TRIP BLANK	Water	04/03/19 00:00	04/05/19 08:20
240-110529-11	HPT-214_5-9_040319	Water	04/03/19 14:42	04/05/19 08:20
240-110529-12	HPT-214_10-14_040319	Water	04/03/19 14:24	04/05/19 08:20
240-110529-13	HPT-214_16-20_040319	Water	04/03/19 14:10	04/05/19 08:20
240-110529-14	HPT-213_15-19_040319	Water	04/03/19 10:55	04/05/19 08:20
240-110529-15	HPT-213_10-14_040319	Water	04/03/19 11:10	04/05/19 08:20
240-110529-16	HPT-213_20-24_040319	Water	04/03/19 10:30	04/05/19 08:20
240-110529-17	HPT-213_5-9_040319	Water	04/03/19 11:30	04/05/19 08:20

Detection Summary

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_26-27_040319 — Lab Sample ID: 240-110529-1

No Detections.

Client Sample ID: HPT-214_2-3_040319 — Lab Sample ID: 240-110529-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	170		51	11	ug/Kg	1	☼	8260B MI	Total/NA
Trichloroethene	74		51	14	ug/Kg	1	☼	8260B MI	Total/NA

Client Sample ID: HPT-214_1-2_040319 — Lab Sample ID: 240-110529-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	84		56	13	ug/Kg	1	☼	8260B MI	Total/NA
Trichloroethene	35	J	56	15	ug/Kg	1	☼	8260B MI	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-110529-4

No Detections.

Client Sample ID: HPT-214_3-4_040319 — Lab Sample ID: 240-110529-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	20	J	61	14	ug/Kg	1	☼	8260B MI	Total/NA

Client Sample ID: HPT-214_4-5_040319 — Lab Sample ID: 240-110529-6

No Detections.

Client Sample ID: HPT-213_26-27_040319 — Lab Sample ID: 240-110529-7

No Detections.

Client Sample ID: HPT-213_3-4_040319 — Lab Sample ID: 240-110529-8

No Detections.

Client Sample ID: HPT-213_4-5_040319 — Lab Sample ID: 240-110529-9

No Detections.

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-110529-10

No Detections.

Client Sample ID: HPT-214_5-9_040319 — Lab Sample ID: 240-110529-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	17		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	3.2		1.0	0.19	ug/L	1		8260B	Total/NA
Trichloroethene	37		1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	10		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: HPT-214_10-14_040319 — Lab Sample ID: 240-110529-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	32		5.0	0.80	ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	4.1	J	5.0	0.95	ug/L	5		8260B	Total/NA
Trichloroethene	120	F1	5.0	0.50	ug/L	5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: HPT-214_16-20_040319 — Lab Sample ID: 240-110529-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	200		10	1.6	ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	17		10	1.9	ug/L	10		8260B	Total/NA

Client Sample ID: HPT-213_15-19_040319 — Lab Sample ID: 240-110529-14

No Detections.

Client Sample ID: HPT-213_10-14_040319 — Lab Sample ID: 240-110529-15

No Detections.

Client Sample ID: HPT-213_20-24_040319 — Lab Sample ID: 240-110529-16

No Detections.

Client Sample ID: HPT-213_5-9_040319 — Lab Sample ID: 240-110529-17

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_26-27_040319

Date Collected: 04/03/19 14:05
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-1

Matrix: Solid
Percent Solids: 84.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	62	U	62	25	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
1,4-Dioxane	19000	U	19000	1700	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
cis-1,2-Dichloroethene	62	U	62	14	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
Tetrachloroethene	62	U	62	28	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
trans-1,2-Dichloroethene	62	U	62	16	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
Trichloroethene	62	U	62	17	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1
Vinyl chloride	50	U	50	19	ug/Kg	☼	04/09/19 11:56	04/09/19 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*53 - 155*	*04/09/19 11:56*	*04/09/19 22:29*	*1*
4-Bromofluorobenzene (Surr)	*124*		*48 - 151*	*04/09/19 11:56*	*04/09/19 22:29*	*1*
Dibromofluoromethane (Surr)	*98*		*49 - 138*	*04/09/19 11:56*	*04/09/19 22:29*	*1*
Toluene-d8 (Surr)	*118*		*49 - 147*	*04/09/19 11:56*	*04/09/19 22:29*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.2**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**15.8**		0.1	0.1	%			04/08/19 11:31	1

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: HPT-214_2-3_040319
Lab Sample ID: 240-110529-2
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 88.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	51	U	51	20	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
1,4-Dioxane	16000	U	16000	1400	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
cis-1,2-Dichloroethene	**170**		51	11	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
Tetrachloroethene	51	U	51	23	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
trans-1,2-Dichloroethene	51	U	51	13	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
Trichloroethene	**74**		51	14	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1
Vinyl chloride	41	U	41	15	ug/Kg	☼	04/09/19 11:56	04/09/19 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*53 - 155*	*04/09/19 11:56*	*04/09/19 22:50*	*1*
4-Bromofluorobenzene (Surr)	*133*		*48 - 151*	*04/09/19 11:56*	*04/09/19 22:50*	*1*
Dibromofluoromethane (Surr)	*96*		*49 - 138*	*04/09/19 11:56*	*04/09/19 22:50*	*1*
Toluene-d8 (Surr)	*122*		*49 - 147*	*04/09/19 11:56*	*04/09/19 22:50*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.3**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**11.7**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_1-2_040319

Date Collected: 04/03/19 11:40
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-3

Matrix: Solid
Percent Solids: 90.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	56	U	56	22	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
1,4-Dioxane	17000	U	17000	1500	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
cis-1,2-Dichloroethene	**84**		56	13	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
Tetrachloroethene	56	U	56	25	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
trans-1,2-Dichloroethene	56	U	56	14	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
Trichloroethene	**35**	**J**	56	15	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1
Vinyl chloride	45	U	45	17	ug/Kg	☼	04/09/19 11:56	04/09/19 23:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*53 - 155*	*04/09/19 11:56*	*04/09/19 23:12*	*1*
4-Bromofluorobenzene (Surr)	*127*		*48 - 151*	*04/09/19 11:56*	*04/09/19 23:12*	*1*
Dibromofluoromethane (Surr)	*92*		*49 - 138*	*04/09/19 11:56*	*04/09/19 23:12*	*1*
Toluene-d8 (Surr)	*113*		*49 - 147*	*04/09/19 11:56*	*04/09/19 23:12*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**90.0**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**10**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: DUP-01

Date Collected: 04/03/19 00:00
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-4

Matrix: Solid
Percent Solids: 84.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	57	U	57	23	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
1,4-Dioxane	18000	U	18000	1600	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
cis-1,2-Dichloroethene	57	U	57	13	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
Tetrachloroethene	57	U	57	26	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
trans-1,2-Dichloroethene	57	U	57	14	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
Trichloroethene	57	U	57	16	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/09/19 11:56	04/09/19 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*53 - 155*	*04/09/19 11:56*	*04/09/19 23:34*	*1*
4-Bromofluorobenzene (Surr)	*135*		*48 - 151*	*04/09/19 11:56*	*04/09/19 23:34*	*1*
Dibromofluoromethane (Surr)	*101*		*49 - 138*	*04/09/19 11:56*	*04/09/19 23:34*	*1*
Toluene-d8 (Surr)	*123*		*49 - 147*	*04/09/19 11:56*	*04/09/19 23:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.6**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**15.4**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_3-4_040319

Date Collected: 04/03/19 11:40
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-5

Matrix: Solid
Percent Solids: 81.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	61	U	61	24	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
1,4-Dioxane	19000	U	19000	1700	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
cis-1,2-Dichloroethene	**20**	**J**	61	14	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
Tetrachloroethene	61	U	61	27	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
trans-1,2-Dichloroethene	61	U	61	15	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
Trichloroethene	61	U	61	17	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1
Vinyl chloride	49	U	49	18	ug/Kg	☼	04/09/19 11:56	04/09/19 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*53 - 155*	*04/09/19 11:56*	*04/09/19 23:55*	*1*
4-Bromofluorobenzene (Surr)	*125*		*48 - 151*	*04/09/19 11:56*	*04/09/19 23:55*	*1*
Dibromofluoromethane (Surr)	*100*		*49 - 138*	*04/09/19 11:56*	*04/09/19 23:55*	*1*
Toluene-d8 (Surr)	*119*		*49 - 147*	*04/09/19 11:56*	*04/09/19 23:55*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**81.6**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**18.4**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_4-5_040319

Date Collected: 04/03/19 11:40
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-6

Matrix: Solid
Percent Solids: 89.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	51	U	51	20	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
1,4-Dioxane	16000	U	16000	1400	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
cis-1,2-Dichloroethene	51	U	51	11	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
Tetrachloroethene	51	U	51	23	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
trans-1,2-Dichloroethene	51	U	51	13	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
Trichloroethene	51	U	51	14	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1
Vinyl chloride	41	U	41	15	ug/Kg	☼	04/09/19 11:56	04/10/19 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*53 - 155*	*04/09/19 11:56*	*04/10/19 00:17*	*1*
4-Bromofluorobenzene (Surr)	*104*		*48 - 151*	*04/09/19 11:56*	*04/10/19 00:17*	*1*
Dibromofluoromethane (Surr)	*92*		*49 - 138*	*04/09/19 11:56*	*04/10/19 00:17*	*1*
Toluene-d8 (Surr)	*113*		*49 - 147*	*04/09/19 11:56*	*04/10/19 00:17*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**89.6**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**10.4**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_26-27_040319

Date Collected: 04/03/19 10:00
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-7

Matrix: Solid
Percent Solids: 83.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	59	U	59	23	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
1,4-Dioxane	18000	U	18000	1600	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
cis-1,2-Dichloroethene	59	U	59	13	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
Tetrachloroethene	59	U	59	26	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
trans-1,2-Dichloroethene	59	U	59	15	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
Trichloroethene	59	U	59	16	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1
Vinyl chloride	47	U	47	18	ug/Kg	☼	04/09/19 11:56	04/10/19 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*53 - 155*	*04/09/19 11:56*	*04/10/19 00:38*	*1*
4-Bromofluorobenzene (Surr)	*107*		*48 - 151*	*04/09/19 11:56*	*04/10/19 00:38*	*1*
Dibromofluoromethane (Surr)	*93*		*49 - 138*	*04/09/19 11:56*	*04/10/19 00:38*	*1*
Toluene-d8 (Surr)	*114*		*49 - 147*	*04/09/19 11:56*	*04/10/19 00:38*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.4**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**16.6**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_3-4_040319

Date Collected: 04/03/19 08:50
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-8

Matrix: Solid
Percent Solids: 85.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	54	U	54	21	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
1,4-Dioxane	17000	U	17000	1500	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
cis-1,2-Dichloroethene	54	U	54	12	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
Tetrachloroethene	54	U	54	24	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
trans-1,2-Dichloroethene	54	U	54	13	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
Trichloroethene	54	U	54	15	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1
Vinyl chloride	43	U	43	16	ug/Kg	☼	04/09/19 11:56	04/10/19 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*53 - 155*	*04/09/19 11:56*	*04/10/19 01:00*	*1*
4-Bromofluorobenzene (Surr)	*110*		*48 - 151*	*04/09/19 11:56*	*04/10/19 01:00*	*1*
Dibromofluoromethane (Surr)	*96*		*49 - 138*	*04/09/19 11:56*	*04/10/19 01:00*	*1*
Toluene-d8 (Surr)	*118*		*49 - 147*	*04/09/19 11:56*	*04/10/19 01:00*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**85.6**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**14.4**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_4-5_040319

Date Collected: 04/03/19 08:50
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-9

Matrix: Solid
Percent Solids: 91.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	55	U	55	22	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
1,4-Dioxane	17000	U	17000	1500	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
cis-1,2-Dichloroethene	55	U	55	12	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
Tetrachloroethene	55	U	55	25	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
trans-1,2-Dichloroethene	55	U	55	14	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
Trichloroethene	55	U	55	15	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1
Vinyl chloride	44	U	44	16	ug/Kg	☼	04/09/19 11:56	04/10/19 01:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*53 - 155*	*04/09/19 11:56*	*04/10/19 01:22*	*1*
4-Bromofluorobenzene (Surr)	*94*		*48 - 151*	*04/09/19 11:56*	*04/10/19 01:22*	*1*
Dibromofluoromethane (Surr)	*82*		*49 - 138*	*04/09/19 11:56*	*04/10/19 01:22*	*1*
Toluene-d8 (Surr)	*102*		*49 - 147*	*04/09/19 11:56*	*04/10/19 01:22*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.4**		0.1	0.1	%			04/08/19 11:31	1
Percent Moisture	**8.6**		0.1	0.1	%			04/08/19 11:31	1

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

Job ID: 240-110529-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-110529-10

Date Collected: 04/03/19 00:00

Matrix: Water

Date Received: 04/05/19 08:20

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	0.19	ug/L			04/16/19 11:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 11:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 11:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 11:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 11:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 11:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 121*		*04/16/19 11:34*	*1*
4-Bromofluorobenzene (Surr)	*75*		*59 - 120*		*04/16/19 11:34*	*1*
Toluene-d8 (Surr)	*93*		*70 - 123*		*04/16/19 11:34*	*1*
Dibromofluoromethane (Surr)	*92*		*75 - 128*		*04/16/19 11:34*	*1*

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

Job ID: 240-110529-1

Client Sample ID: HPT-214_5-9_040319
Date Collected: 04/03/19 14:42
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-11
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			04/11/19 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 125*		*04/11/19 18:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 11:56	1
cis-1,2-Dichloroethene	**17**		1.0	0.16	ug/L			04/16/19 11:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 11:56	1
trans-1,2-Dichloroethene	**3.2**		1.0	0.19	ug/L			04/16/19 11:56	1
Trichloroethene	**37**		1.0	0.10	ug/L			04/16/19 11:56	1
Vinyl chloride	**10**		1.0	0.20	ug/L			04/16/19 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 121*		*04/16/19 11:56*	*1*
4-Bromofluorobenzene (Surr)	*80*		*59 - 120*		*04/16/19 11:56*	*1*
Toluene-d8 (Surr)	*98*		*70 - 123*		*04/16/19 11:56*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 128*		*04/16/19 11:56*	*1*

Client Sample ID: HPT-214_10-14_040319
Lab Sample ID: 240-110529-12

Date Collected: 04/03/19 14:24
Matrix: Water
Date Received: 04/05/19 08:20

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			04/11/19 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*63 - 125*		*04/11/19 19:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	5.0	U	5.0	0.95	ug/L			04/16/19 12:18	5
cis-1,2-Dichloroethene	**32**		5.0	0.80	ug/L			04/16/19 12:18	5
Tetrachloroethene	5.0	U F2	5.0	0.75	ug/L			04/16/19 12:18	5
trans-1,2-Dichloroethene	**4.1**	**J**	5.0	0.95	ug/L			04/16/19 12:18	5
Trichloroethene	**120**	**F1**	5.0	0.50	ug/L			04/16/19 12:18	5
Vinyl chloride	5.0	U F2	5.0	1.0	ug/L			04/16/19 12:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 121*		*04/16/19 12:18*	*5*
4-Bromofluorobenzene (Surr)	*80*		*59 - 120*		*04/16/19 12:18*	*5*
Toluene-d8 (Surr)	*99*		*70 - 123*		*04/16/19 12:18*	*5*
Dibromofluoromethane (Surr)	*97*		*75 - 128*		*04/16/19 12:18*	*5*

Client Sample ID: HPT-214_16-20_040319
Lab Sample ID: 240-110529-13

Date Collected: 04/03/19 14:10
Matrix: Water
Date Received: 04/05/19 08:20

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			04/11/19 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 125*		*04/11/19 19:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	10	U	10	1.9	ug/L			04/16/19 19:43	10
cis-1,2-Dichloroethene	**200**		10	1.6	ug/L			04/16/19 19:43	10
Tetrachloroethene	10	U	10	1.5	ug/L			04/16/19 19:43	10
trans-1,2-Dichloroethene	**17**		10	1.9	ug/L			04/16/19 19:43	10
Trichloroethene	10	U	10	1.0	ug/L			04/16/19 19:43	10
Vinyl chloride	10	U	10	2.0	ug/L			04/16/19 19:43	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 121*		*04/16/19 19:43*	*10*
4-Bromofluorobenzene (Surr)	*80*		*59 - 120*		*04/16/19 19:43*	*10*
Toluene-d8 (Surr)	*98*		*70 - 123*		*04/16/19 19:43*	*10*
Dibromofluoromethane (Surr)	*94*		*75 - 128*		*04/16/19 19:43*	*10*

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_15-19_040319

Lab Sample ID: 240-110529-14

Date Collected: 04/03/19 10:55

Matrix: Water

Date Received: 04/05/19 08:20

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			04/11/19 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*04/11/19 19:55*	*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			04/16/19 13:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 13:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 13:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 13:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 13:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 121*		*04/16/19 13:03*	*1*
4-Bromofluorobenzene (Surr)	*80*		*59 - 120*		*04/16/19 13:03*	*1*
Toluene-d8 (Surr)	*100*		*70 - 123*		*04/16/19 13:03*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 128*		*04/16/19 13:03*	*1*

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_10-14_040319
Date Collected: 04/03/19 11:10
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-15
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			04/11/19 20:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 125*		*04/11/19 20:21*	*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			04/16/19 13:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 13:26	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 13:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 13:26	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 13:26	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 121*		*04/16/19 13:26*	*1*
4-Bromofluorobenzene (Surr)	*79*		*59 - 120*		*04/16/19 13:26*	*1*
Toluene-d8 (Surr)	*98*		*70 - 123*		*04/16/19 13:26*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 128*		*04/16/19 13:26*	*1*

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_20-24_040319
Date Collected: 04/03/19 10:30
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-16
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			04/11/19 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*04/11/19 20:47*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 13:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 13:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 13:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 13:48	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 13:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*		*04/16/19 13:48*	*1*
4-Bromofluorobenzene (Surr)	*76*		*59 - 120*		*04/16/19 13:48*	*1*
Toluene-d8 (Surr)	*102*		*70 - 123*		*04/16/19 13:48*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 128*		*04/16/19 13:48*	*1*

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_5-9_040319
Date Collected: 04/03/19 11:30
Date Received: 04/05/19 08:20

Lab Sample ID: 240-110529-17
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			04/11/19 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*		*04/11/19 21:13*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 14:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 14:10	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 14:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 14:10	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 14:10	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 121*		*04/16/19 14:10*	*1*
4-Bromofluorobenzene (Surr)	*71*		*59 - 120*		*04/16/19 14:10*	*1*
Toluene-d8 (Surr)	*94*		*70 - 123*		*04/16/19 14:10*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 128*		*04/16/19 14:10*	*1*

Surrogate Summary

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

Job ID: 240-110529-1

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(70-121)	(59-120)	(70-123)	(75-128)
240-110529-10	TRIP BLANK	84	75	93	92
240-110529-11	HPT-214_5-9_040319	85	80	98	94
240-110529-12	HPT-214_10-14_040319	85	80	99	97
240-110529-12 MS	HPT-214_10-14_040319	88	94	111	94
240-110529-12 MSD	HPT-214_10-14_040319	82	88	101	94
240-110529-13	HPT-214_16-20_040319	85	80	98	94
240-110529-14	HPT-213_15-19_040319	88	80	100	98
240-110529-15	HPT-213_10-14_040319	89	79	98	97
240-110529-16	HPT-213_20-24_040319	87	76	102	99
240-110529-17	HPT-213_5-9_040319	85	71	94	93
LCS 240-376652/4	Lab Control Sample	83	95	105	94
MB 240-376652/6	Method Blank	89	84	107	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(53-155)	(48-151)	(49-138)	(49-147)
240-110529-1	HPT-214_26-27_040319	101	124	98	118
240-110529-2	HPT-214_2-3_040319	99	133	96	122
240-110529-3	HPT-214_1-2_040319	95	127	92	113
240-110529-4	DUP-01	106	135	101	123
240-110529-5	HPT-214_3-4_040319	107	125	100	119
240-110529-6	HPT-214_4-5_040319	96	104	92	113
240-110529-7	HPT-213_26-27_040319	98	107	93	114
240-110529-8	HPT-213_3-4_040319	98	110	96	118
240-110529-9	HPT-213_4-5_040319	88	94	82	102
LCS 240-375537/2-A	Lab Control Sample	76	89	76	91
MB 240-375537/1-A	Method Blank	76	90	74	90

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)
		DCA
Lab Sample ID	Client Sample ID	(63-125)
240-110529-11	HPT-214_5-9_040319	104
240-110529-12	HPT-214_10-14_040319	109

Surrogate Summary

Client: ARCADIS U.S., Inc. Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	DCA (63-125)								
240-110529-13	HPT-214_16-20_040319	98								
240-110529-14	HPT-213_15-19_040319	102								
240-110529-15	HPT-213_10-14_040319	100								
240-110529-16	HPT-213_20-24_040319	106								
240-110529-17	HPT-213_5-9_040319	101								
240-110662-A-3 MS	Matrix Spike	102								
240-110662-A-3 MSD	Matrix Spike Duplicate	101								
LCS 240-376059/4	Lab Control Sample	99								
MB 240-376059/5	Method Blank	101								

Surrogate Legend

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

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

Lab Sample ID: MB 240-376652/6
Matrix: Water
Analysis Batch: 376652

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			04/16/19 10:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/16/19 10:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/16/19 10:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/16/19 10:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/16/19 10:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/16/19 10:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 121*		*04/16/19 10:41*	*1*
4-Bromofluorobenzene (Surr)	*84*		*59 - 120*		*04/16/19 10:41*	*1*
Toluene-d8 (Surr)	*107*		*70 - 123*		*04/16/19 10:41*	*1*
Dibromofluoromethane (Surr)	*102*		*75 - 128*		*04/16/19 10:41*	*1*

Lab Sample ID: LCS 240-376652/4
Matrix: Water
Analysis Batch: 376652

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	9.67		ug/L		97	65 - 139
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	76 - 128
Tetrachloroethene	10.0	8.87		ug/L		89	74 - 130
trans-1,2-Dichloroethene	10.0	9.88		ug/L		99	78 - 133
Trichloroethene	10.0	8.99		ug/L		90	76 - 125
Vinyl chloride	10.0	10.2		ug/L		102	58 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*70 - 121*
4-Bromofluorobenzene (Surr)	*95*		*59 - 120*
Toluene-d8 (Surr)	*105*		*70 - 123*
Dibromofluoromethane (Surr)	*94*		*75 - 128*

Lab Sample ID: 240-110529-12 MS
Matrix: Water
Analysis Batch: 376652

Client Sample ID: HPT-214_10-14_040319
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	5.0	U	50.0	34.9		ug/L		70	53 - 140
cis-1,2-Dichloroethene	32		50.0	67.3		ug/L		71	64 - 130
Tetrachloroethene	5.0	U F2	50.0	32.8		ug/L		66	51 - 136
trans-1,2-Dichloroethene	4.1	J	50.0	41.2		ug/L		74	68 - 133
Trichloroethene	120	F1	50.0	134	F1	ug/L		36	55 - 131
Vinyl chloride	5.0	U F2	50.0	34.7		ug/L		69	43 - 154

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 121*
4-Bromofluorobenzene (Surr)	*94*		*59 - 120*
Toluene-d8 (Surr)	*111*		*70 - 123*

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

Lab Sample ID: 240-110529-12 MS
Matrix: Water
Analysis Batch: 376652

Client Sample ID: HPT-214_10-14_040319
Prep Type: Total/NA

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*75 - 128*

Lab Sample ID: 240-110529-12 MSD
Matrix: Water
Analysis Batch: 376652

Client Sample ID: HPT-214_10-14_040319
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	5.0	U	50.0	49.1		ug/L		98	53 - 140	34	35
cis-1,2-Dichloroethene	32		50.0	77.8		ug/L		92	64 - 130	14	21
Tetrachloroethene	5.0	U F2	50.0	44.2	F2	ug/L		88	51 - 136	30	23
trans-1,2-Dichloroethene	4.1	J	50.0	52.6		ug/L		97	68 - 133	24	24
Trichloroethene	120	F1	50.0	144		ug/L		57	55 - 131	7	23
Vinyl chloride	5.0	U F2	50.0	47.9	F2	ug/L		96	43 - 154	32	29

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*70 - 121*
4-Bromofluorobenzene (Surr)	*88*		*59 - 120*
Toluene-d8 (Surr)	*101*		*70 - 123*
Dibromofluoromethane (Surr)	*94*		*75 - 128*

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

Lab Sample ID: MB 240-375537/1-A
Matrix: Solid
Analysis Batch: 375622

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	40	U	40	16	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
1,4-Dioxane	13000	U	13000	1100	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
cis-1,2-Dichloroethene	40	U	40	9.0	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
Tetrachloroethene	40	U	40	18	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
trans-1,2-Dichloroethene	40	U	40	10	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
Trichloroethene	40	U	40	11	ug/Kg		04/09/19 11:56	04/09/19 18:52	1
Vinyl chloride	32	U	32	12	ug/Kg		04/09/19 11:56	04/09/19 18:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*53 - 155*	*04/09/19 11:56*	*04/09/19 18:52*	*1*
4-Bromofluorobenzene (Surr)	*90*		*48 - 151*	*04/09/19 11:56*	*04/09/19 18:52*	*1*
Dibromofluoromethane (Surr)	*74*		*49 - 138*	*04/09/19 11:56*	*04/09/19 18:52*	*1*
Toluene-d8 (Surr)	*90*		*49 - 147*	*04/09/19 11:56*	*04/09/19 18:52*	*1*

Lab Sample ID: LCS 240-375537/2-A
Matrix: Solid
Analysis Batch: 375622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1000	1030		ug/Kg		103	57 - 139
1,4-Dioxane	20000	19200		ug/Kg		96	51 - 140

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

Lab Sample ID: LCS 240-375537/2-A
Matrix: Solid
Analysis Batch: 375622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	1000	911		ug/Kg		91	74 - 123
Tetrachloroethene	1000	939		ug/Kg		94	76 - 120
trans-1,2-Dichloroethene	1000	1050		ug/Kg		105	71 - 133
Trichloroethene	1000	862		ug/Kg		86	73 - 126
Vinyl chloride	1000	1130		ug/Kg		113	52 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*53 - 155*
4-Bromofluorobenzene (Surr)	*89*		*48 - 151*
Dibromofluoromethane (Surr)	*76*		*49 - 138*
Toluene-d8 (Surr)	*91*		*49 - 147*

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

Lab Sample ID: MB 240-376059/5
Matrix: Water
Analysis Batch: 376059

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			04/11/19 14:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*		*04/11/19 14:21*	*1*

Lab Sample ID: LCS 240-376059/4
Matrix: Water
Analysis Batch: 376059

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	11.5		ug/L		115	59 - 131

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

Lab Sample ID: 240-110662-A-3 MS
Matrix: Water
Analysis Batch: 376059

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	10.0	11.9		ug/L		119	52 - 129

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*

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

Lab Sample ID: 240-110662-A-3 MSD
Matrix: Water
Analysis Batch: 376059

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	10.0	11.8		ug/L		118	52 - 129	1	13

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*

Method: Moisture - Percent Moisture

Lab Sample ID: 240-110529-9 DU
Matrix: Solid
Analysis Batch: 375291

Client Sample ID: HPT-213_4-5_040319
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	91.4			91.3		%				0.1	20
Percent Moisture	8.6			8.7		%				1	20

GC/MS VOA

Prep Batch: 375537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110529-1	HPT-214_26-27_040319	Total/NA	Solid	5030B	
240-110529-2	HPT-214_2-3_040319	Total/NA	Solid	5030B	
240-110529-3	HPT-214_1-2_040319	Total/NA	Solid	5030B	
240-110529-4	DUP-01	Total/NA	Solid	5030B	
240-110529-5	HPT-214_3-4_040319	Total/NA	Solid	5030B	
240-110529-6	HPT-214_4-5_040319	Total/NA	Solid	5030B	
240-110529-7	HPT-213_26-27_040319	Total/NA	Solid	5030B	
240-110529-8	HPT-213_3-4_040319	Total/NA	Solid	5030B	
240-110529-9	HPT-213_4-5_040319	Total/NA	Solid	5030B	
MB 240-375537/1-A	Method Blank	Total/NA	Solid	5030B	
LCS 240-375537/2-A	Lab Control Sample	Total/NA	Solid	5030B	

Analysis Batch: 375622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110529-1	HPT-214_26-27_040319	Total/NA	Solid	8260B MI	375537
240-110529-2	HPT-214_2-3_040319	Total/NA	Solid	8260B MI	375537
240-110529-3	HPT-214_1-2_040319	Total/NA	Solid	8260B MI	375537
240-110529-4	DUP-01	Total/NA	Solid	8260B MI	375537
240-110529-5	HPT-214_3-4_040319	Total/NA	Solid	8260B MI	375537
240-110529-6	HPT-214_4-5_040319	Total/NA	Solid	8260B MI	375537
240-110529-7	HPT-213_26-27_040319	Total/NA	Solid	8260B MI	375537
240-110529-8	HPT-213_3-4_040319	Total/NA	Solid	8260B MI	375537
240-110529-9	HPT-213_4-5_040319	Total/NA	Solid	8260B MI	375537
MB 240-375537/1-A	Method Blank	Total/NA	Solid	8260B MI	375537
LCS 240-375537/2-A	Lab Control Sample	Total/NA	Solid	8260B MI	375537

Analysis Batch: 376059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110529-11	HPT-214_5-9_040319	Total/NA	Water	8260B SIM	
240-110529-12	HPT-214_10-14_040319	Total/NA	Water	8260B SIM	
240-110529-13	HPT-214_16-20_040319	Total/NA	Water	8260B SIM	
240-110529-14	HPT-213_15-19_040319	Total/NA	Water	8260B SIM	
240-110529-15	HPT-213_10-14_040319	Total/NA	Water	8260B SIM	
240-110529-16	HPT-213_20-24_040319	Total/NA	Water	8260B SIM	
240-110529-17	HPT-213_5-9_040319	Total/NA	Water	8260B SIM	
MB 240-376059/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-376059/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-110662-A-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-110662-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 376652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110529-10	TRIP BLANK	Total/NA	Water	8260B	
240-110529-11	HPT-214_5-9_040319	Total/NA	Water	8260B	
240-110529-12	HPT-214_10-14_040319	Total/NA	Water	8260B	
240-110529-13	HPT-214_16-20_040319	Total/NA	Water	8260B	
240-110529-14	HPT-213_15-19_040319	Total/NA	Water	8260B	
240-110529-15	HPT-213_10-14_040319	Total/NA	Water	8260B	
240-110529-16	HPT-213_20-24_040319	Total/NA	Water	8260B	
240-110529-17	HPT-213_5-9_040319	Total/NA	Water	8260B	
MB 240-376652/6	Method Blank	Total/NA	Water	8260B	

GC/MS VOA (Continued)

Analysis Batch: 376652 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-376652/4	Lab Control Sample	Total/NA	Water	8260B	
240-110529-12 MS	HPT-214_10-14_040319	Total/NA	Water	8260B	
240-110529-12 MSD	HPT-214_10-14_040319	Total/NA	Water	8260B	

General Chemistry

Analysis Batch: 375291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110529-1	HPT-214_26-27_040319	Total/NA	Solid	Moisture	
240-110529-2	HPT-214_2-3_040319	Total/NA	Solid	Moisture	
240-110529-3	HPT-214_1-2_040319	Total/NA	Solid	Moisture	
240-110529-4	DUP-01	Total/NA	Solid	Moisture	
240-110529-5	HPT-214_3-4_040319	Total/NA	Solid	Moisture	
240-110529-6	HPT-214_4-5_040319	Total/NA	Solid	Moisture	
240-110529-7	HPT-213_26-27_040319	Total/NA	Solid	Moisture	
240-110529-8	HPT-213_3-4_040319	Total/NA	Solid	Moisture	
240-110529-9	HPT-213_4-5_040319	Total/NA	Solid	Moisture	
240-110529-9 DU	HPT-213_4-5_040319	Total/NA	Solid	Moisture	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: HPT-214_26-27_040319
Lab Sample ID: 240-110529-1
Date Collected: 04/03/19 14:05
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-214_26-27_040319
Lab Sample ID: 240-110529-1
Date Collected: 04/03/19 14:05
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/09/19 22:29	TJL1	TAL CAN

Client Sample ID: HPT-214_2-3_040319
Lab Sample ID: 240-110529-2
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-214_2-3_040319
Lab Sample ID: 240-110529-2
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/09/19 22:50	TJL1	TAL CAN

Client Sample ID: HPT-214_1-2_040319
Lab Sample ID: 240-110529-3
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-214_1-2_040319
Lab Sample ID: 240-110529-3
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 90.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/09/19 23:12	TJL1	TAL CAN

Client Sample ID: DUP-01
Lab Sample ID: 240-110529-4
Date Collected: 04/03/19 00:00
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: DUP-01
Lab Sample ID: 240-110529-4
Date Collected: 04/03/19 00:00
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 84.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/09/19 23:34	TJL1	TAL CAN

Client Sample ID: HPT-214_3-4_040319
Lab Sample ID: 240-110529-5
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-214_3-4_040319
Lab Sample ID: 240-110529-5
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/09/19 23:55	TJL1	TAL CAN

Client Sample ID: HPT-214_4-5_040319
Lab Sample ID: 240-110529-6
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-214_4-5_040319
Lab Sample ID: 240-110529-6
Date Collected: 04/03/19 11:40
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/10/19 00:17	TJL1	TAL CAN

Client Sample ID: HPT-213_26-27_040319
Lab Sample ID: 240-110529-7
Date Collected: 04/03/19 10:00
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Lab Chronicle

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

Job ID: 240-110529-1

Client Sample ID: HPT-213_26-27_040319
Lab Sample ID: 240-110529-7
Date Collected: 04/03/19 10:00
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/10/19 00:38	TJL1	TAL CAN

Client Sample ID: HPT-213_3-4_040319
Lab Sample ID: 240-110529-8
Date Collected: 04/03/19 08:50
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-213_3-4_040319
Lab Sample ID: 240-110529-8
Date Collected: 04/03/19 08:50
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/10/19 01:00	TJL1	TAL CAN

Client Sample ID: HPT-213_4-5_040319
Lab Sample ID: 240-110529-9
Date Collected: 04/03/19 08:50
Matrix: Solid
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	375291	04/08/19 11:31	JMB	TAL CAN

Client Sample ID: HPT-213_4-5_040319
Lab Sample ID: 240-110529-9
Date Collected: 04/03/19 08:50
Matrix: Solid
Date Received: 04/05/19 08:20
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			375537	04/09/19 11:56	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	375622	04/10/19 01:22	TJL1	TAL CAN

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-110529-10
Date Collected: 04/03/19 00:00
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 11:34	LEE	TAL CAN

Client Sample ID: HPT-214_5-9_040319
Lab Sample ID: 240-110529-11
Date Collected: 04/03/19 14:42
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 11:56	LEE	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: HPT-214_5-9_040319
Lab Sample ID: 240-110529-11
Date Collected: 04/03/19 14:42
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 18:38	SAM	TAL CAN

Client Sample ID: HPT-214_10-14_040319
Lab Sample ID: 240-110529-12
Date Collected: 04/03/19 14:24
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	376652	04/16/19 12:18	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 19:04	SAM	TAL CAN

Client Sample ID: HPT-214_16-20_040319
Lab Sample ID: 240-110529-13
Date Collected: 04/03/19 14:10
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	376652	04/16/19 19:43	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 19:30	SAM	TAL CAN

Client Sample ID: HPT-213_15-19_040319
Lab Sample ID: 240-110529-14
Date Collected: 04/03/19 10:55
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 13:03	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 19:55	SAM	TAL CAN

Client Sample ID: HPT-213_10-14_040319
Lab Sample ID: 240-110529-15
Date Collected: 04/03/19 11:10
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 13:26	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 20:21	SAM	TAL CAN

Client Sample ID: HPT-213_20-24_040319
Lab Sample ID: 240-110529-16
Date Collected: 04/03/19 10:30
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 13:48	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 20:47	SAM	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Client Sample ID: HPT-213_5-9_040319
Lab Sample ID: 240-110529-17

Date Collected: 04/03/19 11:30
Matrix: Water
Date Received: 04/05/19 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	376652	04/16/19 14:10	LEE	TAL CAN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 21:13	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	376059	04/11/19 21:13	SAM	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.
Job ID: 240-110529-1
Project/Site: Ford LTP Livonia MI - E203631

Laboratory: Eurofins TestAmerica, Canton

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

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

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

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

MICHIGAN
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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christine Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.13
Client Contact: Caitlin ONeill	Phone: (989)-619-5009	E-Mail: michael.delmonico@testamericainc.com		Page: Page 1 of 2
Company: ARCADIS U.S. Inc				Job #:
Address: 28550 Cabot Drive Suite 500	Due Date Requested:			
City: Novi	TAT Requested (days): 10-DAY (STD.)			
State, Zip: MI, 48377				
Phone: 248-722-2411	PO #: MI001318.0002.00002			
Email: Caitlin.ONeill@arcadis.com	WO #: Cadena #: E203631			
Project Name: Ford LTP Livonia MI - E203631	Project #: 24015353			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

240-110529 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B, 8260B_SIM	8260B_MI - VOCs (Short List)	8260B - VOCs (Short List)	Total	Special Instructions/Note:
			Preservation Code:				A	F	A		
HPT-214_26-27_040319	4/3/19	1405	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-214_2-3_040319	4/3/19	1140	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-214_1-2_040319	4/3/19	1140	G	Solid	N	N	0	1	0	2	Dry sample included
DUP-01	4/3/19	—	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-214_34_040319	4/3/19	1140	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-214_4-5_040319	4/3/19	1140	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-213_26-27_040319	4/3/19	1000	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-213_3-4_040319	4/3/19	0850	G	Solid	N	N	0	1	0	2	Dry sample included
HPT-213_4-5_040319	4/3/19	0850	G	Solid	N	N	0	1	0	2	Dry sample included
Trip Blank	—	—	—	Solid							
				Solid							

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Submit all results through cadena at jimdomalik@cadena.com #E203728

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Christine Weaver	4/3/19 1750	ARCADIS	Novi cold Storage	4/3/19 17:50	ARCADIS
Caitlin ONeill	04/04/19 14:25	ARCADIS		4/4/19 1425	TA
	4/4/19 14:53			4-5-19 820	TA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

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

MICHIGAN 190

Chain of Custody Record

2.0/1.8

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christina Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.2
Client Contact: Caitlin ONeill	Phone: (989)-619-5009	E-Mail: michael.delmonico@testamericainc.com		Page: Page 2 of ~~3~~ 2
Company: ARCADIS U.S. Inc				Job #:
Address: 28550 Cabot Drive Suite 500	Due Date Requested:			
City: Novi	TAT Requested (days): 10-DAY (STD.)			
State, Zip: MI, 48377				
Phone: 248-722-2411	PO #: MI001318.0002.00002			
Email: Caitlin.ONeill@arcadis.com	WO #: Cadena #: E203631			
Project Name: Ford LTP Livonia MI - E203631	Project #: 24015353			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B, 8260B_SIM	8260B_MI - VOCs (Short List)	8260B - VOCs (Short List)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	F	A		
HPT-214_5-9_040319	4/3/19	1442	6	Water	N	N	3	0	3	6	
HPT-214_10-14_040319	4/3/19	1424	6	Water	N	N	3	0	3	6	
HPT-214_16-20_040319	4/3/19	1410	6	Water	N	N	3	0	3	6	
HPT-213_15-19_040319	4/3/19	1055	6	Water	N	N	3	0	3	6	
HPT-213_10-14_040319	4/3/19	1110	6	Water	N	N	3	0	3	6	
HPT-213_20-24_040319	4/3/19	1030	6	Water	N	N	3	0	3	6	
HPT-213_5-9_040319	4/3/19	1130	6	Water	N	N	3	0	3	6	
				Water							
				Water							
				Water							
				Water							

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, (IV) Other (specify)

Special Instructions/QC Requirements: Submit all results though Cadena @ simtoimalics@cadenalab.com E#203738

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/3/19 1750	Arcadis	Novi Cold Storage	4/3/19 17:50	Arcadis
Caitlin ONeill	04/04/19 14:25	Arcadis	[signature]	4/4/19 14:25	TA
[signature]	4/4/19 14:53	TA	[signature]	4-5-19 820	TA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 110529
Canton Facility

Client Freadis Site Name _____ Cooler unpacked by: Ryan Gribler

Cooler Received on 4-5-19 Opened on 4-5-19 820

FedEx: 1st (Grd) 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

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **-0.2** °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 1.8 °C
   IR GUN #36 (CF **+0.7**°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 (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? total (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 be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? Yes (No)
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# **HC861525**
13. Were VOAs on the COC? (Yes) No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes (No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B834001VB (Yes) No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes (No)

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: RC

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: _____