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ANALYTICAL REPORT

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

Laboratory Job ID: 240-110996-1
Client Project/Site: Ford LTP Livonia MI - E203728

For:
ARCADIS U.S., Inc.
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Novi, Michigan 48377

Attn: Kristoffer Hinskey

Authorized for release by:
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Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance 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: 240-110996-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-110996-1

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 4/16/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.4º C, 1.6º C and 2.0º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples LIFHP-132_17-21_041419 (240-110996-1), LIFHP-132_12-16_041419 (240-110996-2), LIFHP-132_7-11_041419 (240-110996-3), LIFHP-131_16-20_041419 (240-110996-5), LIFHP-131_11-15_041419 (240-110996-6), LIFHP-131_6-10_041419 (240-110996-7), LIFHP-130_16-20_041419 (240-110996-8), LIFHP-130_11-15_041419 (240-110996-9), LIFHP-130_6-10_041419 (240-110996-10), LIFHP-129_15-19_041419 (240-110996-11), LIFHP-129_10-14_041419 (240-110996-34), LIFHP-129_5-9_041419 (240-110996-35), DUP-06 (240-110996-37), TRIP BLANK (240-110996-38) and TRIP BLANK (240-110996-39) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 04/21/2019, 04/22/2019 and 04/23/2019.

Samples LIFHP-131_11-15_041419 (240-110996-6)[2.5X], LIFHP-131_6-10_041419 (240-110996-7)[2.5X], LIFHP-129_15-19_041419 (240-110996-11)[5X], LIFHP-129_10-14_041419 (240-110996-34)[25X], LIFHP-129_5-9_041419 (240-110996-35)[13.33X] and DUP-06 (240-110996-37)[2.5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The pH of the samples LIFHP-131_16-20_041419 (240-110996-5) and LIFHP-130_16-20_041419 (240-110996-8) 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 susceptible to biological degradation if samples

Job ID: 240-110996-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

are not preserved to a pH of 2.

There was an MS/MSD analyzed in batch 240-377606 but could not be reported because the associated sample needed reanalyzed in a different batch: LIFHP-132_17-21_041419 (240-110996-1), LIFHP-132_7-11_041419 (240-110996-3), LIFHP-131_16-20_041419 (240-110996-5), LIFHP-131_11-15_041419 (240-110996-6), LIFHP-131_6-10_041419 (240-110996-7), LIFHP-130_16-20_041419 (240-110996-8), LIFHP-130_11-15_041419 (240-110996-9), LIFHP-130_6-10_041419 (240-110996-10), LIFHP-129_15-19_041419 (240-110996-11), LIFHP-129_10-14_041419 (240-110996-34), LIFHP-129_5-9_041419 (240-110996-35), DUP-06 (240-110996-37) and TRIP BLANK (240-110996-38).

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

VOLATILE ORGANIC COMPOUNDS

Samples LIFHP-131_29-30_041419 (240-110996-12), LIFHP-130_1-2_041419 (240-110996-13), LIFHP-130_2-3_041419 (240-110996-14), LIFHP-130_3-4_041419 (240-110996-15), LIFHP-130_4-5_041419 (240-110996-16), LIFHP-130_5-6_041419 (240-110996-17), LIFHP-130_29-30_041419 (240-110996-18), LIFHP-129_1-2_041419 (240-110996-19), LIFHP-129_2-3_041419 (240-110996-20), LIFHP-129_3-4_041419 (240-110996-21), LIFHP-129_4-5_041419 (240-110996-22), LIFHP-132_1-2_041419 (240-110996-23), LIFHP-132_3-4_041419 (240-110996-24), LIFHP-132_4-5_041419 (240-110996-25), LIFHP-132_5-6_041419 (240-110996-26), LIFHP-132_6-7_041419 (240-110996-27), LIFHP-132_29-30_041419 (240-110996-28), LIFHP-131_1-2_041419 (240-110996-29), LIFHP-131_2-3_041419 (240-110996-30), LIFHP-131_3-4_041419 (240-110996-31), LIFHP-131_4-5_041419 (240-110996-32), LIFHP-131_5-6_041419 (240-110996-33) and LIFHP-129_29-30_041419 (240-110996-36) were analyzed for volatile organic compounds in accordance with EPA SW-846 Method 8260B. The samples were prepared on 04/17/2019 and analyzed on 04/17/2019, 04/18/2019 and 04/19/2019.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples LIFHP-132_17-21_041419 (240-110996-1), LIFHP-132_12-16_041419 (240-110996-2), LIFHP-132_7-11_041419 (240-110996-3), LIFHP-131_16-20_041419 (240-110996-5), LIFHP-131_11-15_041419 (240-110996-6), LIFHP-131_6-10_041419 (240-110996-7), LIFHP-130_16-20_041419 (240-110996-8), LIFHP-130_11-15_041419 (240-110996-9), LIFHP-130_6-10_041419 (240-110996-10), LIFHP-129_15-19_041419 (240-110996-11), LIFHP-129_10-14_041419 (240-110996-34), LIFHP-129_5-9_041419 (240-110996-35) and DUP-06 (240-110996-37) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 04/17/2019 and 04/22/2019.

The pH is greater than 2 for the following samples: LIFHP-132_12-16_041419 (240-110996-2[MSD]), LIFHP-131_16-20_041419 (240-110996-5) and LIFHP-130_16-20_041419 (240-110996-8).

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

PERCENT SOLIDS

Samples LIFHP-131_29-30_041419 (240-110996-12), LIFHP-130_1-2_041419 (240-110996-13), LIFHP-130_2-3_041419 (240-110996-14), LIFHP-130_3-4_041419 (240-110996-15), LIFHP-130_4-5_041419 (240-110996-16), LIFHP-130_5-6_041419 (240-110996-17), LIFHP-130_29-30_041419 (240-110996-18), LIFHP-129_1-2_041419 (240-110996-19), LIFHP-129_2-3_041419 (240-110996-20), LIFHP-129_3-4_041419 (240-110996-21), LIFHP-129_4-5_041419 (240-110996-22), LIFHP-132_1-2_041419 (240-110996-23), LIFHP-132_3-4_041419 (240-110996-24), LIFHP-132_4-5_041419 (240-110996-25), LIFHP-132_5-6_041419 (240-110996-26), LIFHP-132_6-7_041419 (240-110996-27), LIFHP-132_29-30_041419 (240-110996-28), LIFHP-131_1-2_041419 (240-110996-29), LIFHP-131_2-3_041419 (240-110996-30), LIFHP-131_3-4_041419 (240-110996-31), LIFHP-131_4-5_041419 (240-110996-32), LIFHP-131_5-6_041419 (240-110996-33) and LIFHP-129_29-30_041419 (240-110996-36) were analyzed for percent solids in accordance with ASTM Method D2216-80. The samples were analyzed on 04/17/2019.

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: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

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
5035	Closed System 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 - E203728

Job ID: 240-110996-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-110996-1	LIFHP-132_17-21_041419	Water	04/14/19 10:40	04/16/19 10:00
240-110996-2	LIFHP-132_12-16_041419	Water	04/14/19 11:00	04/16/19 10:00
240-110996-3	LIFHP-132_7-11_041419	Water	04/14/19 11:15	04/16/19 10:00
240-110996-5	LIFHP-131_16-20_041419	Water	04/14/19 13:55	04/16/19 10:00
240-110996-6	LIFHP-131_11-15_041419	Water	04/14/19 14:10	04/16/19 10:00
240-110996-7	LIFHP-131_6-10_041419	Water	04/14/19 14:25	04/16/19 10:00
240-110996-8	LIFHP-130_16-20_041419	Water	04/14/19 16:45	04/16/19 10:00
240-110996-9	LIFHP-130_11-15_041419	Water	04/14/19 17:00	04/16/19 10:00
240-110996-10	LIFHP-130_6-10_041419	Water	04/14/19 17:10	04/16/19 10:00
240-110996-11	LIFHP-129_15-19_041419	Water	04/14/19 19:35	04/16/19 10:00
240-110996-12	LIFHP-131_29-30_041419	Solid	04/14/19 13:40	04/16/19 10:00
240-110996-13	LIFHP-130_1-2_041419	Solid	04/14/19 15:15	04/16/19 10:00
240-110996-14	LIFHP-130_2-3_041419	Solid	04/14/19 15:15	04/16/19 10:00
240-110996-15	LIFHP-130_3-4_041419	Solid	04/14/19 15:15	04/16/19 10:00
240-110996-16	LIFHP-130_4-5_041419	Solid	04/14/19 15:15	04/16/19 10:00
240-110996-17	LIFHP-130_5-6_041419	Solid	04/14/19 15:15	04/16/19 10:00
240-110996-18	LIFHP-130_29-30_041419	Solid	04/14/19 16:25	04/16/19 10:00
240-110996-19	LIFHP-129_1-2_041419	Solid	04/14/19 18:00	04/16/19 10:00
240-110996-20	LIFHP-129_2-3_041419	Solid	04/14/19 18:00	04/16/19 10:00
240-110996-21	LIFHP-129_3-4_041419	Solid	04/14/19 18:00	04/16/19 10:00
240-110996-22	LIFHP-129_4-5_041419	Solid	04/14/19 18:00	04/16/19 10:00
240-110996-23	LIFHP-132_1-2_041419	Solid	04/14/19 11:20	04/16/19 10:00
240-110996-24	LIFHP-132_3-4_041419	Solid	04/14/19 11:20	04/16/19 10:00
240-110996-25	LIFHP-132_4-5_041419	Solid	04/14/19 11:20	04/16/19 10:00
240-110996-26	LIFHP-132_5-6_041419	Solid	04/14/19 11:20	04/16/19 10:00
240-110996-27	LIFHP-132_6-7_041419	Solid	04/14/19 11:20	04/16/19 10:00
240-110996-28	LIFHP-132_29-30_041419	Solid	04/14/19 11:10	04/16/19 10:00
240-110996-29	LIFHP-131_1-2_041419	Solid	04/14/19 12:00	04/16/19 10:00
240-110996-30	LIFHP-131_2-3_041419	Solid	04/14/19 12:00	04/16/19 10:00
240-110996-31	LIFHP-131_3-4_041419	Solid	04/14/19 12:00	04/16/19 10:00
240-110996-32	LIFHP-131_4-5_041419	Solid	04/14/19 12:00	04/16/19 10:00
240-110996-33	LIFHP-131_5-6_041419	Solid	04/14/19 12:00	04/16/19 10:00
240-110996-34	LIFHP-129_10-14_041419	Water	04/14/19 19:55	04/16/19 10:00
240-110996-35	LIFHP-129_5-9_041419	Water	04/14/19 20:05	04/16/19 10:00
240-110996-36	LIFHP-129_29-30_041419	Solid	04/14/19 19:05	04/16/19 10:00
240-110996-37	DUP-06	Water	04/14/19 00:00	04/16/19 10:00
240-110996-38	TRIP BLANK	Water	04/14/19 00:00	04/16/19 10:00
240-110996-39	TRIP BLANK	Water	04/14/19 00:00	04/16/19 10:00

Detection Summary

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_17-21_041419 — Lab Sample ID: 240-110996-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.87	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: LIFHP-132_12-16_041419 — Lab Sample ID: 240-110996-2

No Detections.

Client Sample ID: LIFHP-132_7-11_041419 — Lab Sample ID: 240-110996-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: LIFHP-131_16-20_041419 — Lab Sample ID: 240-110996-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.83	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: LIFHP-131_11-15_041419 — Lab Sample ID: 240-110996-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	34		2.5	0.40	ug/L	2.5		8260B	Total/NA
Vinyl chloride	79		2.5	0.50	ug/L	2.5		8260B	Total/NA

Client Sample ID: LIFHP-131_6-10_041419 — Lab Sample ID: 240-110996-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.97	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	37		2.5	0.40	ug/L	2.5		8260B	Total/NA
Vinyl chloride	63		2.5	0.50	ug/L	2.5		8260B	Total/NA

Client Sample ID: LIFHP-130_16-20_041419 — Lab Sample ID: 240-110996-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.5		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: LIFHP-130_11-15_041419 — Lab Sample ID: 240-110996-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.4		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: LIFHP-130_6-10_041419 — Lab Sample ID: 240-110996-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.93	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.55	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: LIFHP-129_15-19_041419 — Lab Sample ID: 240-110996-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	110		5.0	1.0	ug/L	5		8260B	Total/NA

Client Sample ID: LIFHP-131_29-30_041419 — Lab Sample ID: 240-110996-12

No Detections.

Client Sample ID: LIFHP-130_1-2_041419 — Lab Sample ID: 240-110996-13

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Detection Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-130_2-3_041419 — Lab Sample ID: 240-110996-14

No Detections.

Client Sample ID: LIFHP-130_3-4_041419 — Lab Sample ID: 240-110996-15

No Detections.

Client Sample ID: LIFHP-130_4-5_041419 — Lab Sample ID: 240-110996-16

No Detections.

Client Sample ID: LIFHP-130_5-6_041419 — Lab Sample ID: 240-110996-17

No Detections.

Client Sample ID: LIFHP-130_29-30_041419 — Lab Sample ID: 240-110996-18

No Detections.

Client Sample ID: LIFHP-129_1-2_041419 — Lab Sample ID: 240-110996-19

No Detections.

Client Sample ID: LIFHP-129_2-3_041419 — Lab Sample ID: 240-110996-20

No Detections.

Client Sample ID: LIFHP-129_3-4_041419 — Lab Sample ID: 240-110996-21

No Detections.

Client Sample ID: LIFHP-129_4-5_041419 — Lab Sample ID: 240-110996-22

No Detections.

Client Sample ID: LIFHP-132_1-2_041419 — Lab Sample ID: 240-110996-23

No Detections.

Client Sample ID: LIFHP-132_3-4_041419 — Lab Sample ID: 240-110996-24

No Detections.

Client Sample ID: LIFHP-132_4-5_041419 — Lab Sample ID: 240-110996-25

No Detections.

Client Sample ID: LIFHP-132_5-6_041419 — Lab Sample ID: 240-110996-26

No Detections.

Client Sample ID: LIFHP-132_6-7_041419 — Lab Sample ID: 240-110996-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	20	J	52	12	ug/Kg	1	☼	8260B MI	Total/NA

Client Sample ID: LIFHP-132_29-30_041419 — Lab Sample ID: 240-110996-28

No Detections.

Client Sample ID: LIFHP-131_1-2_041419 — Lab Sample ID: 240-110996-29

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Detection Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-131_2-3_041419 — Lab Sample ID: 240-110996-30

No Detections.

Client Sample ID: LIFHP-131_3-4_041419 — Lab Sample ID: 240-110996-31

No Detections.

Client Sample ID: LIFHP-131_4-5_041419 — Lab Sample ID: 240-110996-32

No Detections.

Client Sample ID: LIFHP-131_5-6_041419 — Lab Sample ID: 240-110996-33

No Detections.

Client Sample ID: LIFHP-129_10-14_041419 — Lab Sample ID: 240-110996-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	120		25	4.0	ug/L	25		8260B	Total/NA
Vinyl chloride	610		25	5.0	ug/L	25		8260B	Total/NA

Client Sample ID: LIFHP-129_5-9_041419 — Lab Sample ID: 240-110996-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	94		13	2.1	ug/L	13.33		8260B	Total/NA
Vinyl chloride	320		13	2.7	ug/L	13.33		8260B	Total/NA

Client Sample ID: LIFHP-129_29-30_041419 — Lab Sample ID: 240-110996-36

No Detections.

Client Sample ID: DUP-06 — Lab Sample ID: 240-110996-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	38		2.5	0.40	ug/L	2.5		8260B	Total/NA
Vinyl chloride	80		2.5	0.50	ug/L	2.5		8260B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-110996-38

No Detections.

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-110996-39

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_17-21_041419
Date Collected: 04/14/19 10:40
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.87	J	2.0	0.86	ug/L			04/17/19 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 125*		*04/17/19 17:42*	*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			04/22/19 16:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 16:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 16:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 16:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 16:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/22/19 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 121*		*04/22/19 16:30*	*1*
4-Bromofluorobenzene (Surr)	*95*		*59 - 120*		*04/22/19 16:30*	*1*
Toluene-d8 (Surr)	*92*		*70 - 123*		*04/22/19 16:30*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 128*		*04/22/19 16:30*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_12-16_041419
Date Collected: 04/14/19 11:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-2
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			04/17/19 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*63 - 125*		*04/17/19 18:08*	*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			04/21/19 00:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/21/19 00:30	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/21/19 00:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/21/19 00:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/21/19 00:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/21/19 00:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*70 - 121*		*04/21/19 00:30*	*1*
4-Bromofluorobenzene (Surr)	*75*		*59 - 120*		*04/21/19 00:30*	*1*
Toluene-d8 (Surr)	*90*		*70 - 123*		*04/21/19 00:30*	*1*
Dibromofluoromethane (Surr)	*127*		*75 - 128*		*04/21/19 00:30*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_7-11_041419
Date Collected: 04/14/19 11:15
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-3
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			04/17/19 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*04/17/19 19:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 16:55	1
cis-1,2-Dichloroethene	**1.5**		1.0	0.16	ug/L			04/22/19 16:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 16:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 16:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 16:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/22/19 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*		*04/22/19 16:55*	*1*
4-Bromofluorobenzene (Surr)	*102*		*59 - 120*		*04/22/19 16:55*	*1*
Toluene-d8 (Surr)	*97*		*70 - 123*		*04/22/19 16:55*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 128*		*04/22/19 16:55*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_16-20_041419
Date Collected: 04/14/19 13:55
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-5
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			04/17/19 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*04/17/19 19:50*	*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			04/22/19 17:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 17:20	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 17:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 17:20	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 17:20	1
Vinyl chloride	**0.83**	**J**	1.0	0.20	ug/L			04/22/19 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 121*		*04/22/19 17:20*	*1*
4-Bromofluorobenzene (Surr)	*101*		*59 - 120*		*04/22/19 17:20*	*1*
Toluene-d8 (Surr)	*96*		*70 - 123*		*04/22/19 17:20*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 128*		*04/22/19 17:20*	*1*

Client Sample ID: LIFHP-131_11-15_041419
Lab Sample ID: 240-110996-6
Date Collected: 04/14/19 14:10
Matrix: Water
Date Received: 04/16/19 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			04/17/19 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 125*		*04/17/19 20:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 17:45	2.5
cis-1,2-Dichloroethene	**34**		2.5	0.40	ug/L			04/22/19 17:45	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			04/22/19 17:45	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 17:45	2.5
Trichloroethene	2.5	U	2.5	0.25	ug/L			04/22/19 17:45	2.5
Vinyl chloride	**79**		2.5	0.50	ug/L			04/22/19 17:45	2.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 121*		*04/22/19 17:45*	*2.5*
4-Bromofluorobenzene (Surr)	*104*		*59 - 120*		*04/22/19 17:45*	*2.5*
Toluene-d8 (Surr)	*97*		*70 - 123*		*04/22/19 17:45*	*2.5*
Dibromofluoromethane (Surr)	*89*		*75 - 128*		*04/22/19 17:45*	*2.5*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_6-10_041419
Date Collected: 04/14/19 14:25
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.97**	**J**	2.0	0.86	ug/L			04/17/19 20:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 125*		*04/17/19 20:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 18:10	2.5
cis-1,2-Dichloroethene	**37**		2.5	0.40	ug/L			04/22/19 18:10	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			04/22/19 18:10	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 18:10	2.5
Trichloroethene	2.5	U	2.5	0.25	ug/L			04/22/19 18:10	2.5
Vinyl chloride	**63**		2.5	0.50	ug/L			04/22/19 18:10	2.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 121*		*04/22/19 18:10*	*2.5*
4-Bromofluorobenzene (Surr)	*98*		*59 - 120*		*04/22/19 18:10*	*2.5*
Toluene-d8 (Surr)	*94*		*70 - 123*		*04/22/19 18:10*	*2.5*
Dibromofluoromethane (Surr)	*95*		*75 - 128*		*04/22/19 18:10*	*2.5*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_16-20_041419
Date Collected: 04/14/19 16:45
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-8
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			04/17/19 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 125*		*04/17/19 21:07*	*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			04/22/19 18:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 18:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 18:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 18:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 18:34	1
Vinyl chloride	**1.5**		1.0	0.20	ug/L			04/22/19 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 121*		*04/22/19 18:34*	*1*
4-Bromofluorobenzene (Surr)	*97*		*59 - 120*		*04/22/19 18:34*	*1*
Toluene-d8 (Surr)	*94*		*70 - 123*		*04/22/19 18:34*	*1*
Dibromofluoromethane (Surr)	*88*		*75 - 128*		*04/22/19 18:34*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_11-15_041419
Date Collected: 04/14/19 17:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-9
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			04/17/19 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*04/17/19 21:33*	*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			04/22/19 19:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 19:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 19:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 19:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 19:00	1
Vinyl chloride	**1.4**		1.0	0.20	ug/L			04/22/19 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*		*04/22/19 19:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*59 - 120*		*04/22/19 19:00*	*1*
Toluene-d8 (Surr)	*94*		*70 - 123*		*04/22/19 19:00*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 128*		*04/22/19 19:00*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_6-10_041419
Date Collected: 04/14/19 17:10
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.93**	**J**	2.0	0.86	ug/L			04/17/19 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*63 - 125*		*04/17/19 21:58*	*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			04/22/19 19:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 19:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 19:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 19:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 19:25	1
Vinyl chloride	**0.55**	**J**	1.0	0.20	ug/L			04/22/19 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 121*		*04/22/19 19:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*59 - 120*		*04/22/19 19:25*	*1*
Toluene-d8 (Surr)	*95*		*70 - 123*		*04/22/19 19:25*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 128*		*04/22/19 19:25*	*1*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_15-19_041419
Date Collected: 04/14/19 19:35
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-11
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			04/17/19 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*63 - 125*		*04/17/19 22:24*	*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			04/22/19 19:49	5
cis-1,2-Dichloroethene	5.0	U	5.0	0.80	ug/L			04/22/19 19:49	5
Tetrachloroethene	5.0	U	5.0	0.75	ug/L			04/22/19 19:49	5
trans-1,2-Dichloroethene	5.0	U	5.0	0.95	ug/L			04/22/19 19:49	5
Trichloroethene	5.0	U	5.0	0.50	ug/L			04/22/19 19:49	5
Vinyl chloride	**110**		5.0	1.0	ug/L			04/22/19 19:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 121*		*04/22/19 19:49*	*5*
4-Bromofluorobenzene (Surr)	*101*		*59 - 120*		*04/22/19 19:49*	*5*
Toluene-d8 (Surr)	*97*		*70 - 123*		*04/22/19 19:49*	*5*
Dibromofluoromethane (Surr)	*96*		*75 - 128*		*04/22/19 19:49*	*5*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_29-30_041419
Date Collected: 04/14/19 13:40
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-12
Matrix: Solid
Percent Solids: 82.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	60	U	60	24	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1
cis-1,2-Dichloroethene	60	U	60	14	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1
Tetrachloroethene	60	U	60	27	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1
trans-1,2-Dichloroethene	60	U	60	15	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1
Trichloroethene	60	U	60	17	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1
Vinyl chloride	48	U	48	18	ug/Kg	☼	04/17/19 10:51	04/17/19 22:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*53 - 155*	*04/17/19 10:51*	*04/17/19 22:34*	*1*
4-Bromofluorobenzene (Surr)	*91*		*48 - 151*	*04/17/19 10:51*	*04/17/19 22:34*	*1*
Toluene-d8 (Surr)	*95*		*49 - 147*	*04/17/19 10:51*	*04/17/19 22:34*	*1*
Dibromofluoromethane (Surr)	*80*		*49 - 138*	*04/17/19 10:51*	*04/17/19 22:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**82.7**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**17.3**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_1-2_041419
Date Collected: 04/14/19 15:15
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-13
Matrix: Solid
Percent Solids: 92.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	49	U	49	20	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1
cis-1,2-Dichloroethene	49	U	49	11	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1
Tetrachloroethene	49	U	49	22	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1
trans-1,2-Dichloroethene	49	U	49	12	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1
Trichloroethene	49	U	49	13	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1
Vinyl chloride	39	U	39	15	ug/Kg	☼	04/17/19 10:51	04/17/19 23:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*53 - 155*	*04/17/19 10:51*	*04/17/19 23:39*	*1*
4-Bromofluorobenzene (Surr)	*98*		*48 - 151*	*04/17/19 10:51*	*04/17/19 23:39*	*1*
Toluene-d8 (Surr)	*101*		*49 - 147*	*04/17/19 10:51*	*04/17/19 23:39*	*1*
Dibromofluoromethane (Surr)	*83*		*49 - 138*	*04/17/19 10:51*	*04/17/19 23:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**92.6**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**7.4**		0.1	0.1	%			04/17/19 14:27	1

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-130_2-3_041419
Lab Sample ID: 240-110996-14
Date Collected: 04/14/19 15:15
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 90.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	53	U	53	21	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1
cis-1,2-Dichloroethene	53	U	53	12	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1
Tetrachloroethene	53	U	53	24	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1
trans-1,2-Dichloroethene	53	U	53	13	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1
Trichloroethene	53	U	53	14	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1
Vinyl chloride	42	U	42	16	ug/Kg	☼	04/17/19 10:51	04/18/19 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*53 - 155*	*04/17/19 10:51*	*04/18/19 00:01*	*1*
4-Bromofluorobenzene (Surr)	*108*		*48 - 151*	*04/17/19 10:51*	*04/18/19 00:01*	*1*
Toluene-d8 (Surr)	*108*		*49 - 147*	*04/17/19 10:51*	*04/18/19 00:01*	*1*
Dibromofluoromethane (Surr)	*87*		*49 - 138*	*04/17/19 10:51*	*04/18/19 00:01*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**90.3**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**9.7**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_3-4_041419
Date Collected: 04/14/19 15:15
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-15
Matrix: Solid
Percent Solids: 93.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	44	U	44	18	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1
cis-1,2-Dichloroethene	44	U	44	10	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1
Tetrachloroethene	44	U	44	20	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1
trans-1,2-Dichloroethene	44	U	44	11	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1
Trichloroethene	44	U	44	12	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1
Vinyl chloride	36	U	36	13	ug/Kg	☼	04/17/19 10:51	04/18/19 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*53 - 155*	*04/17/19 10:51*	*04/18/19 00:22*	*1*
4-Bromofluorobenzene (Surr)	*103*		*48 - 151*	*04/17/19 10:51*	*04/18/19 00:22*	*1*
Toluene-d8 (Surr)	*110*		*49 - 147*	*04/17/19 10:51*	*04/18/19 00:22*	*1*
Dibromofluoromethane (Surr)	*88*		*49 - 138*	*04/17/19 10:51*	*04/18/19 00:22*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**93.4**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**6.6**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_4-5_041419
Date Collected: 04/14/19 15:15
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-16
Matrix: Solid
Percent Solids: 91.5

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	☼	04/17/19 10:51	04/18/19 00:44	1
cis-1,2-Dichloroethene	51	U	51	11	ug/Kg	☼	04/17/19 10:51	04/18/19 00:44	1
Tetrachloroethene	51	U	51	23	ug/Kg	☼	04/17/19 10:51	04/18/19 00:44	1
trans-1,2-Dichloroethene	51	U	51	13	ug/Kg	☼	04/17/19 10:51	04/18/19 00:44	1
Trichloroethene	51	U	51	14	ug/Kg	☼	04/17/19 10:51	04/18/19 00:44	1
Vinyl chloride	41	U	41	15	ug/Kg	☼	04/17/19 10:51	04/18/19 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*53 - 155*	*04/17/19 10:51*	*04/18/19 00:44*	*1*
4-Bromofluorobenzene (Surr)	*99*		*48 - 151*	*04/17/19 10:51*	*04/18/19 00:44*	*1*
Toluene-d8 (Surr)	*105*		*49 - 147*	*04/17/19 10:51*	*04/18/19 00:44*	*1*
Dibromofluoromethane (Surr)	*85*		*49 - 138*	*04/17/19 10:51*	*04/18/19 00:44*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.5**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**8.5**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_5-6_041419
Date Collected: 04/14/19 15:15
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-17
Matrix: Solid
Percent Solids: 86.4

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	☼	04/17/19 10:51	04/18/19 01:06	1
cis-1,2-Dichloroethene	57	U	57	13	ug/Kg	☼	04/17/19 10:51	04/18/19 01:06	1
Tetrachloroethene	57	U	57	26	ug/Kg	☼	04/17/19 10:51	04/18/19 01:06	1
trans-1,2-Dichloroethene	57	U	57	14	ug/Kg	☼	04/17/19 10:51	04/18/19 01:06	1
Trichloroethene	57	U	57	16	ug/Kg	☼	04/17/19 10:51	04/18/19 01:06	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/17/19 10:51	04/18/19 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*53 - 155*	*04/17/19 10:51*	*04/18/19 01:06*	*1*
4-Bromofluorobenzene (Surr)	*103*		*48 - 151*	*04/17/19 10:51*	*04/18/19 01:06*	*1*
Toluene-d8 (Surr)	*106*		*49 - 147*	*04/17/19 10:51*	*04/18/19 01:06*	*1*
Dibromofluoromethane (Surr)	*87*		*49 - 138*	*04/17/19 10:51*	*04/18/19 01:06*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**86.4**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**13.6**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-130_29-30_041419
Date Collected: 04/14/19 16:25
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-18
Matrix: Solid
Percent Solids: 84.9

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	☼	04/17/19 12:48	04/19/19 20:38	1
cis-1,2-Dichloroethene	57	U	57	13	ug/Kg	☼	04/17/19 12:48	04/19/19 20:38	1
Tetrachloroethene	57	U	57	26	ug/Kg	☼	04/17/19 12:48	04/19/19 20:38	1
trans-1,2-Dichloroethene	57	U	57	14	ug/Kg	☼	04/17/19 12:48	04/19/19 20:38	1
Trichloroethene	57	U	57	16	ug/Kg	☼	04/17/19 12:48	04/19/19 20:38	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/17/19 12:48	04/19/19 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*53 - 155*	*04/17/19 12:48*	*04/19/19 20:38*	*1*
4-Bromofluorobenzene (Surr)	*87*		*48 - 151*	*04/17/19 12:48*	*04/19/19 20:38*	*1*
Toluene-d8 (Surr)	*86*		*49 - 147*	*04/17/19 12:48*	*04/19/19 20:38*	*1*
Dibromofluoromethane (Surr)	*77*		*49 - 138*	*04/17/19 12:48*	*04/19/19 20:38*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.9**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**15.1**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_1-2_041419

Lab Sample ID: 240-110996-19

Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 88.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	50	U	50	20	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1
cis-1,2-Dichloroethene	50	U	50	11	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1
Tetrachloroethene	50	U	50	22	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1
trans-1,2-Dichloroethene	50	U	50	12	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1
Trichloroethene	50	U	50	14	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1
Vinyl chloride	40	U	40	15	ug/Kg	☼	04/17/19 10:51	04/18/19 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*53 - 155*	*04/17/19 10:51*	*04/18/19 01:27*	*1*
4-Bromofluorobenzene (Surr)	*94*		*48 - 151*	*04/17/19 10:51*	*04/18/19 01:27*	*1*
Toluene-d8 (Surr)	*99*		*49 - 147*	*04/17/19 10:51*	*04/18/19 01:27*	*1*
Dibromofluoromethane (Surr)	*80*		*49 - 138*	*04/17/19 10:51*	*04/18/19 01:27*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.8**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**11.2**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_2-3_041419
Date Collected: 04/14/19 18:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-20
Matrix: Solid
Percent Solids: 95.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	43	U	43	17	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1
cis-1,2-Dichloroethene	43	U	43	9.8	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1
Tetrachloroethene	43	U	43	20	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1
trans-1,2-Dichloroethene	43	U	43	11	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1
Trichloroethene	43	U	43	12	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1
Vinyl chloride	35	U	35	13	ug/Kg	☼	04/17/19 10:51	04/18/19 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*53 - 155*	*04/17/19 10:51*	*04/18/19 01:49*	*1*
4-Bromofluorobenzene (Surr)	*91*		*48 - 151*	*04/17/19 10:51*	*04/18/19 01:49*	*1*
Toluene-d8 (Surr)	*92*		*49 - 147*	*04/17/19 10:51*	*04/18/19 01:49*	*1*
Dibromofluoromethane (Surr)	*77*		*49 - 138*	*04/17/19 10:51*	*04/18/19 01:49*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**95.7**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**4.3**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_3-4_041419

Lab Sample ID: 240-110996-21

Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 88.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	64	U	64	25	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1
cis-1,2-Dichloroethene	64	U	64	14	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1
Tetrachloroethene	64	U	64	29	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1
trans-1,2-Dichloroethene	64	U	64	16	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1
Trichloroethene	64	U	64	17	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1
Vinyl chloride	51	U	51	19	ug/Kg	☼	04/17/19 10:51	04/18/19 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*53 - 155*	*04/17/19 10:51*	*04/18/19 02:11*	*1*
4-Bromofluorobenzene (Surr)	*125*		*48 - 151*	*04/17/19 10:51*	*04/18/19 02:11*	*1*
Toluene-d8 (Surr)	*127*		*49 - 147*	*04/17/19 10:51*	*04/18/19 02:11*	*1*
Dibromofluoromethane (Surr)	*107*		*49 - 138*	*04/17/19 10:51*	*04/18/19 02:11*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.4**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**11.6**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_4-5_041419
Date Collected: 04/14/19 18:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-22
Matrix: Solid
Percent Solids: 83.5

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	25	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1
cis-1,2-Dichloroethene	61	U	61	14	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1
Tetrachloroethene	61	U	61	28	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1
trans-1,2-Dichloroethene	61	U	61	15	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1
Trichloroethene	61	U	61	17	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1
Vinyl chloride	49	U	49	18	ug/Kg	☼	04/17/19 10:51	04/18/19 02:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*53 - 155*	*04/17/19 10:51*	*04/18/19 02:33*	*1*
4-Bromofluorobenzene (Surr)	*103*		*48 - 151*	*04/17/19 10:51*	*04/18/19 02:33*	*1*
Toluene-d8 (Surr)	*109*		*49 - 147*	*04/17/19 10:51*	*04/18/19 02:33*	*1*
Dibromofluoromethane (Surr)	*91*		*49 - 138*	*04/17/19 10:51*	*04/18/19 02:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.5**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**16.5**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_1-2_041419
Date Collected: 04/14/19 11:20
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-23
Matrix: Solid
Percent Solids: 89.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	53	U	53	21	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1
cis-1,2-Dichloroethene	53	U	53	12	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1
Tetrachloroethene	53	U	53	24	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1
trans-1,2-Dichloroethene	53	U	53	13	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1
Trichloroethene	53	U	53	15	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1
Vinyl chloride	43	U	43	16	ug/Kg	☼	04/17/19 10:51	04/18/19 02:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*53 - 155*	*04/17/19 10:51*	*04/18/19 02:55*	*1*
4-Bromofluorobenzene (Surr)	*90*		*48 - 151*	*04/17/19 10:51*	*04/18/19 02:55*	*1*
Toluene-d8 (Surr)	*96*		*49 - 147*	*04/17/19 10:51*	*04/18/19 02:55*	*1*
Dibromofluoromethane (Surr)	*70*		*49 - 138*	*04/17/19 10:51*	*04/18/19 02:55*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**89.1**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**10.9**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_3-4_041419
Date Collected: 04/14/19 11:20
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-24
Matrix: Solid
Percent Solids: 91.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	48	U	48	19	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1
cis-1,2-Dichloroethene	48	U	48	11	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1
Tetrachloroethene	48	U	48	22	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1
trans-1,2-Dichloroethene	48	U	48	12	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1
Trichloroethene	48	U	48	13	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1
Vinyl chloride	38	U	38	14	ug/Kg	☼	04/17/19 10:51	04/18/19 03:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*53 - 155*	*04/17/19 10:51*	*04/18/19 03:17*	*1*
4-Bromofluorobenzene (Surr)	*106*		*48 - 151*	*04/17/19 10:51*	*04/18/19 03:17*	*1*
Toluene-d8 (Surr)	*114*		*49 - 147*	*04/17/19 10:51*	*04/18/19 03:17*	*1*
Dibromofluoromethane (Surr)	*92*		*49 - 138*	*04/17/19 10:51*	*04/18/19 03:17*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.0**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**9.0**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_4-5_041419
Date Collected: 04/14/19 11:20
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-25
Matrix: Solid
Percent Solids: 87.2

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	☼	04/17/19 10:51	04/18/19 03:39	1
cis-1,2-Dichloroethene	55	U	55	12	ug/Kg	☼	04/17/19 10:51	04/18/19 03:39	1
Tetrachloroethene	55	U	55	25	ug/Kg	☼	04/17/19 10:51	04/18/19 03:39	1
trans-1,2-Dichloroethene	55	U	55	14	ug/Kg	☼	04/17/19 10:51	04/18/19 03:39	1
Trichloroethene	55	U	55	15	ug/Kg	☼	04/17/19 10:51	04/18/19 03:39	1
Vinyl chloride	44	U	44	17	ug/Kg	☼	04/17/19 10:51	04/18/19 03:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*53 - 155*	*04/17/19 10:51*	*04/18/19 03:39*	*1*
4-Bromofluorobenzene (Surr)	*87*		*48 - 151*	*04/17/19 10:51*	*04/18/19 03:39*	*1*
Toluene-d8 (Surr)	*93*		*49 - 147*	*04/17/19 10:51*	*04/18/19 03:39*	*1*
Dibromofluoromethane (Surr)	*79*		*49 - 138*	*04/17/19 10:51*	*04/18/19 03:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**87.2**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**12.8**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_5-6_041419
Date Collected: 04/14/19 11:20
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-26
Matrix: Solid
Percent Solids: 87.3

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	22	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1
cis-1,2-Dichloroethene	54	U	54	12	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1
Tetrachloroethene	54	U	54	24	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1
trans-1,2-Dichloroethene	54	U	54	14	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1
Trichloroethene	54	U	54	15	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1
Vinyl chloride	43	U	43	16	ug/Kg	☼	04/17/19 10:51	04/18/19 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*53 - 155*	*04/17/19 10:51*	*04/18/19 04:00*	*1*
4-Bromofluorobenzene (Surr)	*92*		*48 - 151*	*04/17/19 10:51*	*04/18/19 04:00*	*1*
Toluene-d8 (Surr)	*101*		*49 - 147*	*04/17/19 10:51*	*04/18/19 04:00*	*1*
Dibromofluoromethane (Surr)	*83*		*49 - 138*	*04/17/19 10:51*	*04/18/19 04:00*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**87.3**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**12.7**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_6-7_041419
Date Collected: 04/14/19 11:20
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-27
Matrix: Solid
Percent Solids: 92.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	52	U	52	21	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1
cis-1,2-Dichloroethene	**20**	**J**	52	12	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1
Tetrachloroethene	52	U	52	23	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1
trans-1,2-Dichloroethene	52	U	52	13	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1
Trichloroethene	52	U	52	14	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1
Vinyl chloride	41	U	41	16	ug/Kg	☼	04/17/19 10:51	04/18/19 04:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*53 - 155*	*04/17/19 10:51*	*04/18/19 04:22*	*1*
4-Bromofluorobenzene (Surr)	*94*		*48 - 151*	*04/17/19 10:51*	*04/18/19 04:22*	*1*
Toluene-d8 (Surr)	*102*		*49 - 147*	*04/17/19 10:51*	*04/18/19 04:22*	*1*
Dibromofluoromethane (Surr)	*83*		*49 - 138*	*04/17/19 10:51*	*04/18/19 04:22*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**92.3**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**7.7**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-132_29-30_041419
Date Collected: 04/14/19 11:10
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-28
Matrix: Solid
Percent Solids: 85.0

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	☼	04/17/19 10:51	04/18/19 04:43	1
cis-1,2-Dichloroethene	57	U	57	13	ug/Kg	☼	04/17/19 10:51	04/18/19 04:43	1
Tetrachloroethene	57	U	57	26	ug/Kg	☼	04/17/19 10:51	04/18/19 04:43	1
trans-1,2-Dichloroethene	57	U	57	14	ug/Kg	☼	04/17/19 10:51	04/18/19 04:43	1
Trichloroethene	57	U	57	16	ug/Kg	☼	04/17/19 10:51	04/18/19 04:43	1
Vinyl chloride	45	U	45	17	ug/Kg	☼	04/17/19 10:51	04/18/19 04:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*53 - 155*	*04/17/19 10:51*	*04/18/19 04:43*	*1*
4-Bromofluorobenzene (Surr)	*101*		*48 - 151*	*04/17/19 10:51*	*04/18/19 04:43*	*1*
Toluene-d8 (Surr)	*105*		*49 - 147*	*04/17/19 10:51*	*04/18/19 04:43*	*1*
Dibromofluoromethane (Surr)	*85*		*49 - 138*	*04/17/19 10:51*	*04/18/19 04:43*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**85.0**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**15.0**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_1-2_041419
Date Collected: 04/14/19 12:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-29
Matrix: Solid
Percent Solids: 87.8

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	22	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1
cis-1,2-Dichloroethene	54	U	54	12	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1
Tetrachloroethene	54	U	54	24	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1
trans-1,2-Dichloroethene	54	U	54	14	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1
Trichloroethene	54	U	54	15	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1
Vinyl chloride	43	U	43	16	ug/Kg	☼	04/17/19 10:51	04/18/19 05:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*53 - 155*	*04/17/19 10:51*	*04/18/19 05:05*	*1*
4-Bromofluorobenzene (Surr)	*104*		*48 - 151*	*04/17/19 10:51*	*04/18/19 05:05*	*1*
Toluene-d8 (Surr)	*105*		*49 - 147*	*04/17/19 10:51*	*04/18/19 05:05*	*1*
Dibromofluoromethane (Surr)	*79*		*49 - 138*	*04/17/19 10:51*	*04/18/19 05:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**87.8**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**12.2**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_2-3_041419
Date Collected: 04/14/19 12:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-30
Matrix: Solid
Percent Solids: 84.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	58	U	58	23	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1
cis-1,2-Dichloroethene	58	U	58	13	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1
Tetrachloroethene	58	U	58	26	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1
trans-1,2-Dichloroethene	58	U	58	15	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1
Trichloroethene	58	U	58	16	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/17/19 10:51	04/18/19 05:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*53 - 155*	*04/17/19 10:51*	*04/18/19 05:27*	*1*
4-Bromofluorobenzene (Surr)	*107*		*48 - 151*	*04/17/19 10:51*	*04/18/19 05:27*	*1*
Toluene-d8 (Surr)	*110*		*49 - 147*	*04/17/19 10:51*	*04/18/19 05:27*	*1*
Dibromofluoromethane (Surr)	*88*		*49 - 138*	*04/17/19 10:51*	*04/18/19 05:27*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.4**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**15.6**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_3-4_041419
Date Collected: 04/14/19 12:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-31
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	50	U	50	20	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1
cis-1,2-Dichloroethene	50	U	50	11	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1
Tetrachloroethene	50	U	50	23	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1
trans-1,2-Dichloroethene	50	U	50	13	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1
Trichloroethene	50	U	50	14	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1
Vinyl chloride	40	U	40	15	ug/Kg	☼	04/17/19 12:48	04/19/19 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*53 - 155*	*04/17/19 12:48*	*04/19/19 21:43*	*1*
4-Bromofluorobenzene (Surr)	*88*		*48 - 151*	*04/17/19 12:48*	*04/19/19 21:43*	*1*
Toluene-d8 (Surr)	*87*		*49 - 147*	*04/17/19 12:48*	*04/19/19 21:43*	*1*
Dibromofluoromethane (Surr)	*73*		*49 - 138*	*04/17/19 12:48*	*04/19/19 21:43*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.4**		0.1	0.1	%			04/17/19 14:27	1
Percent Moisture	**8.6**		0.1	0.1	%			04/17/19 14:27	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_4-5_041419
Date Collected: 04/14/19 12:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-32
Matrix: Solid
Percent Solids: 85.4

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	☼	04/17/19 12:48	04/19/19 22:05	1
cis-1,2-Dichloroethene	57	U	57	13	ug/Kg	☼	04/17/19 12:48	04/19/19 22:05	1
Tetrachloroethene	57	U	57	26	ug/Kg	☼	04/17/19 12:48	04/19/19 22:05	1
trans-1,2-Dichloroethene	57	U	57	14	ug/Kg	☼	04/17/19 12:48	04/19/19 22:05	1
Trichloroethene	57	U	57	16	ug/Kg	☼	04/17/19 12:48	04/19/19 22:05	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/17/19 12:48	04/19/19 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*53 - 155*	*04/17/19 12:48*	*04/19/19 22:05*	*1*
4-Bromofluorobenzene (Surr)	*94*		*48 - 151*	*04/17/19 12:48*	*04/19/19 22:05*	*1*
Toluene-d8 (Surr)	*94*		*49 - 147*	*04/17/19 12:48*	*04/19/19 22:05*	*1*
Dibromofluoromethane (Surr)	*81*		*49 - 138*	*04/17/19 12:48*	*04/19/19 22:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**85.4**		0.1	0.1	%			04/17/19 14:35	1
Percent Moisture	**14.6**		0.1	0.1	%			04/17/19 14:35	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-131_5-6_041419
Date Collected: 04/14/19 12:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-33
Matrix: Solid
Percent Solids: 84.1

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	☼	04/17/19 12:48	04/19/19 22:26	1
cis-1,2-Dichloroethene	56	U	56	13	ug/Kg	☼	04/17/19 12:48	04/19/19 22:26	1
Tetrachloroethene	56	U	56	25	ug/Kg	☼	04/17/19 12:48	04/19/19 22:26	1
trans-1,2-Dichloroethene	56	U	56	14	ug/Kg	☼	04/17/19 12:48	04/19/19 22:26	1
Trichloroethene	56	U	56	15	ug/Kg	☼	04/17/19 12:48	04/19/19 22:26	1
Vinyl chloride	45	U	45	17	ug/Kg	☼	04/17/19 12:48	04/19/19 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*53 - 155*	*04/17/19 12:48*	*04/19/19 22:26*	*1*
4-Bromofluorobenzene (Surr)	*97*		*48 - 151*	*04/17/19 12:48*	*04/19/19 22:26*	*1*
Toluene-d8 (Surr)	*100*		*49 - 147*	*04/17/19 12:48*	*04/19/19 22:26*	*1*
Dibromofluoromethane (Surr)	*84*		*49 - 138*	*04/17/19 12:48*	*04/19/19 22:26*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.1**		0.1	0.1	%			04/17/19 14:35	1
Percent Moisture	**15.9**		0.1	0.1	%			04/17/19 14:35	1

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_10-14_041419
Date Collected: 04/14/19 19:55
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-34
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			04/17/19 22:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*04/17/19 22:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	25	U	25	4.8	ug/L			04/22/19 20:14	25
cis-1,2-Dichloroethene	**120**		25	4.0	ug/L			04/22/19 20:14	25
Tetrachloroethene	25	U	25	3.8	ug/L			04/22/19 20:14	25
trans-1,2-Dichloroethene	25	U	25	4.8	ug/L			04/22/19 20:14	25
Trichloroethene	25	U	25	2.5	ug/L			04/22/19 20:14	25
Vinyl chloride	**610**		25	5.0	ug/L			04/22/19 20:14	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*		*04/22/19 20:14*	*25*
4-Bromofluorobenzene (Surr)	*99*		*59 - 120*		*04/22/19 20:14*	*25*
Toluene-d8 (Surr)	*93*		*70 - 123*		*04/22/19 20:14*	*25*
Dibromofluoromethane (Surr)	*97*		*75 - 128*		*04/22/19 20:14*	*25*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_5-9_041419
Date Collected: 04/14/19 20:05
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-35
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			04/22/19 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*04/22/19 13:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	13	U	13	2.5	ug/L			04/22/19 20:39	13.33
cis-1,2-Dichloroethene	**94**		13	2.1	ug/L			04/22/19 20:39	13.33
Tetrachloroethene	13	U	13	2.0	ug/L			04/22/19 20:39	13.33
trans-1,2-Dichloroethene	13	U	13	2.5	ug/L			04/22/19 20:39	13.33
Trichloroethene	13	U	13	1.3	ug/L			04/22/19 20:39	13.33
Vinyl chloride	**320**		13	2.7	ug/L			04/22/19 20:39	13.33

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 121*		*04/22/19 20:39*	*13.33*
4-Bromofluorobenzene (Surr)	*102*		*59 - 120*		*04/22/19 20:39*	*13.33*
Toluene-d8 (Surr)	*94*		*70 - 123*		*04/22/19 20:39*	*13.33*
Dibromofluoromethane (Surr)	*99*		*75 - 128*		*04/22/19 20:39*	*13.33*

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

Job ID: 240-110996-1

Client Sample ID: LIFHP-129_29-30_041419
Date Collected: 04/14/19 19:05
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-36
Matrix: Solid
Percent Solids: 83.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	58	U	58	23	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1
cis-1,2-Dichloroethene	58	U	58	13	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1
Tetrachloroethene	58	U	58	26	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1
trans-1,2-Dichloroethene	58	U	58	14	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1
Trichloroethene	58	U	58	16	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1
Vinyl chloride	46	U	46	17	ug/Kg	☼	04/17/19 12:48	04/19/19 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*53 - 155*	*04/17/19 12:48*	*04/19/19 22:48*	*1*
4-Bromofluorobenzene (Surr)	*87*		*48 - 151*	*04/17/19 12:48*	*04/19/19 22:48*	*1*
Toluene-d8 (Surr)	*93*		*49 - 147*	*04/17/19 12:48*	*04/19/19 22:48*	*1*
Dibromofluoromethane (Surr)	*80*		*49 - 138*	*04/17/19 12:48*	*04/19/19 22:48*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.1**		0.1	0.1	%			04/17/19 14:35	1
Percent Moisture	**16.9**		0.1	0.1	%			04/17/19 14:35	1

Client Sample ID: DUP-06
Lab Sample ID: 240-110996-37

Date Collected: 04/14/19 00:00
Matrix: Water
Date Received: 04/16/19 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			04/22/19 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*		*04/22/19 14:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 21:04	2.5
cis-1,2-Dichloroethene	**38**		2.5	0.40	ug/L			04/22/19 21:04	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			04/22/19 21:04	2.5
trans-1,2-Dichloroethene	2.5	U	2.5	0.48	ug/L			04/22/19 21:04	2.5
Trichloroethene	2.5	U	2.5	0.25	ug/L			04/22/19 21:04	2.5
Vinyl chloride	**80**		2.5	0.50	ug/L			04/22/19 21:04	2.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*		*04/22/19 21:04*	*2.5*
4-Bromofluorobenzene (Surr)	*107*		*59 - 120*		*04/22/19 21:04*	*2.5*
Toluene-d8 (Surr)	*97*		*70 - 123*		*04/22/19 21:04*	*2.5*
Dibromofluoromethane (Surr)	*100*		*75 - 128*		*04/22/19 21:04*	*2.5*

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

Job ID: 240-110996-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-110996-38

Date Collected: 04/14/19 00:00

Matrix: Water

Date Received: 04/16/19 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 21:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 21:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 21:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 21:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 21:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/22/19 21:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*		*04/22/19 21:28*	*1*
4-Bromofluorobenzene (Surr)	*103*		*59 - 120*		*04/22/19 21:28*	*1*
Toluene-d8 (Surr)	*96*		*70 - 123*		*04/22/19 21:28*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 128*		*04/22/19 21:28*	*1*

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

Job ID: 240-110996-1

Client Sample ID: TRIP BLANK
Date Collected: 04/14/19 00:00
Date Received: 04/16/19 10:00

Lab Sample ID: 240-110996-39
Matrix: Water

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			04/23/19 13:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/23/19 13:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/23/19 13:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/23/19 13:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/23/19 13:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/23/19 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 121*		*04/23/19 13:37*	*1*
4-Bromofluorobenzene (Surr)	*99*		*59 - 120*		*04/23/19 13:37*	*1*
Toluene-d8 (Surr)	*97*		*70 - 123*		*04/23/19 13:37*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 128*		*04/23/19 13:37*	*1*

Surrogate Summary

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

Job ID: 240-110996-1

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)
240-110996-1	LIFHP-132_17-21_041419	92	95	92	96
240-110996-2	LIFHP-132_12-16_041419	116	75	90	127
240-110996-2 MS	LIFHP-132_12-16_041419	95	108	104	102
240-110996-2 MSD	LIFHP-132_12-16_041419	94	105	103	100
240-110996-3	LIFHP-132_7-11_041419	93	102	97	96
240-110996-5	LIFHP-131_16-20_041419	88	101	96	93
240-110996-6	LIFHP-131_11-15_041419	91	104	97	89
240-110996-7	LIFHP-131_6-10_041419	90	98	94	95
240-110996-8	LIFHP-130_16-20_041419	85	97	94	88
240-110996-9	LIFHP-130_11-15_041419	87	102	94	96
240-110996-10	LIFHP-130_6-10_041419	88	99	95	97
240-110996-11	LIFHP-129_15-19_041419	96	101	97	96
240-110996-34	LIFHP-129_10-14_041419	87	99	93	97
240-110996-35	LIFHP-129_5-9_041419	91	102	94	99
240-110996-37	DUP-06	93	107	97	100
240-110996-38	TRIP BLANK	93	103	96	94
240-110996-39	TRIP BLANK	96	99	97	98
LCS 240-377477/4	Lab Control Sample	96	104	100	100
LCS 240-377606/4	Lab Control Sample	86	100	92	101
LCS 240-377778/4	Lab Control Sample	87	95	93	95
MB 240-377477/7	Method Blank	110	76	89	119
MB 240-377606/6	Method Blank	87	102	95	91
MB 240-377778/6	Method Blank	84	97	95	99

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	TOL	DBFM
Lab Sample ID	Client Sample ID	(53-155)	(48-151)	(49-147)	(49-138)
240-110996-12	LIFHP-131_29-30_041419	83	91	95	80
240-110996-12 MS	LIFHP-131_29-30_041419	78	91	94	77
240-110996-12 MSD	LIFHP-131_29-30_041419	83	91	99	81
240-110996-13	LIFHP-130_1-2_041419	89	98	101	83
240-110996-14	LIFHP-130_2-3_041419	94	108	108	87
240-110996-15	LIFHP-130_3-4_041419	92	103	110	88
240-110996-16	LIFHP-130_4-5_041419	88	99	105	85
240-110996-17	LIFHP-130_5-6_041419	93	103	106	87
240-110996-18	LIFHP-130_29-30_041419	83	87	86	77
240-110996-18 MS	LIFHP-130_29-30_041419	86	94	98	84
240-110996-18 MSD	LIFHP-130_29-30_041419	78	85	91	77
240-110996-19	LIFHP-129_1-2_041419	86	94	99	80
240-110996-20	LIFHP-129_2-3_041419	82	91	92	77
240-110996-21	LIFHP-129_3-4_041419	116	125	127	107

Surrogate Summary

Client: ARCADIS U.S., Inc. Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(53-155)	(48-151)	(49-147)	(49-138)
240-110996-22	LIFHP-129_4-5_041419	96	103	109	91
240-110996-23	LIFHP-132_1-2_041419	85	90	96	70
240-110996-24	LIFHP-132_3-4_041419	100	106	114	92
240-110996-25	LIFHP-132_4-5_041419	84	87	93	79
240-110996-26	LIFHP-132_5-6_041419	87	92	101	83
240-110996-27	LIFHP-132_6-7_041419	88	94	102	83
240-110996-28	LIFHP-132_29-30_041419	91	101	105	85
240-110996-29	LIFHP-131_1-2_041419	94	104	105	79
240-110996-30	LIFHP-131_2-3_041419	97	107	110	88
240-110996-31	LIFHP-131_3-4_041419	76	88	87	73
240-110996-32	LIFHP-131_4-5_041419	85	94	94	81
240-110996-33	LIFHP-131_5-6_041419	90	97	100	84
240-110996-36	LIFHP-129_29-30_041419	84	87	93	80
240-110996-36 MS	LIFHP-129_29-30_041419	84	86	96	82
240-110996-36 MSD	LIFHP-129_29-30_041419	86	85	95	84
LCS 240-376916/2-A	Lab Control Sample	92	95	99	87
LCS 240-376973/2-A	Lab Control Sample	83	92	95	80
MB 240-376916/1-A	Method Blank	101	108	110	96
MB 240-376973/1-A	Method Blank	76	86	83	70

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	TOL	DBFM
Lab Sample ID	Client Sample ID	(10-150)	(10-150)	(10-150)	(10-150)
MRL 240-377029/6	Lab Control Sample	89	97	97	87

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(63-125)
240-110996-1	LIFHP-132_17-21_041419	100
240-110996-2	LIFHP-132_12-16_041419	103
240-110996-2 MS	LIFHP-132_12-16_041419	107
240-110996-2 MSD	LIFHP-132_12-16_041419	103
240-110996-3	LIFHP-132_7-11_041419	102
240-110996-5	LIFHP-131_16-20_041419	106

Surrogate Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

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

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
		DCA						
Lab Sample ID	Client Sample ID	(63-125)						
240-110996-6	LIFHP-131_11-15_041419	104						
240-110996-7	LIFHP-131_6-10_041419	104						
240-110996-8	LIFHP-130_16-20_041419	104						
240-110996-9	LIFHP-130_11-15_041419	106						
240-110996-10	LIFHP-130_6-10_041419	105						
240-110996-11	LIFHP-129_15-19_041419	104						
240-110996-34	LIFHP-129_10-14_041419	102						
240-110996-35	LIFHP-129_5-9_041419	102						
240-110996-37	DUP-06	101						
240-111040-D-3 MS	Matrix Spike	103						
240-111040-D-3 MSD	Matrix Spike Duplicate	105						
LCS 240-376915/4	Lab Control Sample	99						
LCS 240-377588/4	Lab Control Sample	95						
MB 240-376915/5	Method Blank	101						
MB 240-377588/5	Method Blank	99						

Surrogate Legend

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

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

Lab Sample ID: MB 240-377477/7
Matrix: Water
Analysis Batch: 377477

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			04/20/19 16:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/20/19 16:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/20/19 16:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/20/19 16:40	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/20/19 16:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/20/19 16:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 121*		*04/20/19 16:40*	*1*
4-Bromofluorobenzene (Surr)	*76*		*59 - 120*		*04/20/19 16:40*	*1*
Toluene-d8 (Surr)	*89*		*70 - 123*		*04/20/19 16:40*	*1*
Dibromofluoromethane (Surr)	*119*		*75 - 128*		*04/20/19 16:40*	*1*

Lab Sample ID: LCS 240-377477/4
Matrix: Water
Analysis Batch: 377477

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	9.92		ug/L		99	65 - 139
cis-1,2-Dichloroethene	10.0	9.56		ug/L		96	76 - 128
Tetrachloroethene	10.0	10.5		ug/L		105	74 - 130
trans-1,2-Dichloroethene	10.0	9.92		ug/L		99	78 - 133
Trichloroethene	10.0	9.63		ug/L		96	76 - 125
Vinyl chloride	10.0	8.30		ug/L		83	58 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 121*
4-Bromofluorobenzene (Surr)	*104*		*59 - 120*
Toluene-d8 (Surr)	*100*		*70 - 123*
Dibromofluoromethane (Surr)	*100*		*75 - 128*

Lab Sample ID: 240-110996-2 MS
Matrix: Water
Analysis Batch: 377477

Client Sample ID: LIFHP-132_12-16_041419
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	9.93		ug/L		99	53 - 140
cis-1,2-Dichloroethene	1.0	U	10.0	9.39		ug/L		94	64 - 130
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	51 - 136
trans-1,2-Dichloroethene	1.0	U	10.0	9.82		ug/L		98	68 - 133
Trichloroethene	1.0	U	10.0	9.00		ug/L		90	55 - 131
Vinyl chloride	1.0	U	10.0	7.95		ug/L		80	43 - 154

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 121*
4-Bromofluorobenzene (Surr)	*108*		*59 - 120*
Toluene-d8 (Surr)	*104*		*70 - 123*

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

Lab Sample ID: 240-110996-2 MS
Matrix: Water
Analysis Batch: 377477

Client Sample ID: LIFHP-132_12-16_041419
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*102*		*75 - 128*

Lab Sample ID: 240-110996-2 MSD
Matrix: Water
Analysis Batch: 377477

Client Sample ID: LIFHP-132_12-16_041419
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	1.0	U	10.0	10.1		ug/L		101	53 - 140	2	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.55		ug/L		95	64 - 130	2	21
Tetrachloroethene	1.0	U	10.0	10.5		ug/L		105	51 - 136	3	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	68 - 133	3	24
Trichloroethene	1.0	U	10.0	9.39		ug/L		94	55 - 131	4	23
Vinyl chloride	1.0	U	10.0	8.61		ug/L		86	43 - 154	8	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 121*
4-Bromofluorobenzene (Surr)	*105*		*59 - 120*
Toluene-d8 (Surr)	*103*		*70 - 123*
Dibromofluoromethane (Surr)	*100*		*75 - 128*

Lab Sample ID: MB 240-377606/6
Matrix: Water
Analysis Batch: 377606

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			04/22/19 13:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/22/19 13:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/22/19 13:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/22/19 13:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/22/19 13:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/22/19 13:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*		*04/22/19 13:12*	*1*
4-Bromofluorobenzene (Surr)	*102*		*59 - 120*		*04/22/19 13:12*	*1*
Toluene-d8 (Surr)	*95*		*70 - 123*		*04/22/19 13:12*	*1*
Dibromofluoromethane (Surr)	*91*		*75 - 128*		*04/22/19 13:12*	*1*

Lab Sample ID: LCS 240-377606/4
Matrix: Water
Analysis Batch: 377606

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	10.1		ug/L		101	65 - 139
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	76 - 128
Tetrachloroethene	10.0	10.1		ug/L		101	74 - 130
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	78 - 133
Trichloroethene	10.0	9.69		ug/L		97	76 - 125

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

Lab Sample ID: LCS 240-377606/4
Matrix: Water
Analysis Batch: 377606

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			10.0	11.0		ug/L		110	58 - 143		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 121*
4-Bromofluorobenzene (Surr)	*100*		*59 - 120*
Toluene-d8 (Surr)	*92*		*70 - 123*
Dibromofluoromethane (Surr)	*101*		*75 - 128*

Lab Sample ID: MB 240-377778/6
Matrix: Water
Analysis Batch: 377778

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			04/23/19 13:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			04/23/19 13:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			04/23/19 13:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			04/23/19 13:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			04/23/19 13:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			04/23/19 13:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 121*		*04/23/19 13:12*	*1*
4-Bromofluorobenzene (Surr)	*97*		*59 - 120*		*04/23/19 13:12*	*1*
Toluene-d8 (Surr)	*95*		*70 - 123*		*04/23/19 13:12*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 128*		*04/23/19 13:12*	*1*

Lab Sample ID: LCS 240-377778/4
Matrix: Water
Analysis Batch: 377778

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	10.1		ug/L		101	65 - 139		
cis-1,2-Dichloroethene			10.0	10.0		ug/L		100	76 - 128		
Tetrachloroethene			10.0	9.38		ug/L		94	74 - 130		
trans-1,2-Dichloroethene			10.0	10.3		ug/L		103	78 - 133		
Trichloroethene			10.0	9.82		ug/L		98	76 - 125		
Vinyl chloride			10.0	10.1		ug/L		101	58 - 143		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*
4-Bromofluorobenzene (Surr)	*95*		*59 - 120*
Toluene-d8 (Surr)	*93*		*70 - 123*
Dibromofluoromethane (Surr)	*95*		*75 - 128*

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

Lab Sample ID: MB 240-376916/1-A
Matrix: Solid
Analysis Batch: 377029

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 376916

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	40	U	40	16	ug/Kg		04/17/19 10:51	04/17/19 21:29	1
cis-1,2-Dichloroethene	40	U	40	9.0	ug/Kg		04/17/19 10:51	04/17/19 21:29	1
Tetrachloroethene	40	U	40	18	ug/Kg		04/17/19 10:51	04/17/19 21:29	1
trans-1,2-Dichloroethene	40	U	40	10	ug/Kg		04/17/19 10:51	04/17/19 21:29	1
Trichloroethene	40	U	40	11	ug/Kg		04/17/19 10:51	04/17/19 21:29	1
Vinyl chloride	32	U	32	12	ug/Kg		04/17/19 10:51	04/17/19 21:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*53 - 155*	*04/17/19 10:51*	*04/17/19 21:29*	*1*
4-Bromofluorobenzene (Surr)	*108*		*48 - 151*	*04/17/19 10:51*	*04/17/19 21:29*	*1*
Toluene-d8 (Surr)	*110*		*49 - 147*	*04/17/19 10:51*	*04/17/19 21:29*	*1*
Dibromofluoromethane (Surr)	*96*		*49 - 138*	*04/17/19 10:51*	*04/17/19 21:29*	*1*

Lab Sample ID: LCS 240-376916/2-A
Matrix: Solid
Analysis Batch: 377029

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 376916

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1000	1120		ug/Kg		112	57 - 139
cis-1,2-Dichloroethene	1000	1030		ug/Kg		103	74 - 123
Tetrachloroethene	1000	998		ug/Kg		100	76 - 120
trans-1,2-Dichloroethene	1000	1150		ug/Kg		115	71 - 133
Trichloroethene	1000	965		ug/Kg		97	73 - 126
Vinyl chloride	1000	1240		ug/Kg		124	52 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*53 - 155*
4-Bromofluorobenzene (Surr)	*95*		*48 - 151*
Toluene-d8 (Surr)	*99*		*49 - 147*
Dibromofluoromethane (Surr)	*87*		*49 - 138*

Lab Sample ID: 240-110996-12 MS
Matrix: Solid
Analysis Batch: 377029

Client Sample ID: LIFHP-131_29-30_041419
Prep Type: Total/NA
Prep Batch: 376916

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	60	U	1310	1390		ug/Kg	☼	106	36 - 150
cis-1,2-Dichloroethene	60	U	1310	1210		ug/Kg	☼	93	50 - 128
Tetrachloroethene	60	U	1310	1250		ug/Kg	☼	96	20 - 151
trans-1,2-Dichloroethene	60	U	1310	1410		ug/Kg	☼	108	44 - 141
Trichloroethene	60	U	1310	1150		ug/Kg	☼	88	25 - 148
Vinyl chloride	48	U	1310	1610		ug/Kg	☼	123	31 - 148

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*78*		*53 - 155*
4-Bromofluorobenzene (Surr)	*91*		*48 - 151*
Toluene-d8 (Surr)	*94*		*49 - 147*

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

Lab Sample ID: 240-110996-12 MS
Matrix: Solid
Analysis Batch: 377029

Client Sample ID: LIFHP-131_29-30_041419
Prep Type: Total/NA
Prep Batch: 376916

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	77		49 - 138

Lab Sample ID: 240-110996-12 MSD
Matrix: Solid
Analysis Batch: 377029

Client Sample ID: LIFHP-131_29-30_041419
Prep Type: Total/NA
Prep Batch: 376916

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	60	U	1330	1500		ug/Kg	☼	113	36 - 150	7	40
cis-1,2-Dichloroethene	60	U	1330	1330		ug/Kg	☼	100	50 - 128	9	40
Tetrachloroethene	60	U	1330	1370		ug/Kg	☼	104	20 - 151	9	40
trans-1,2-Dichloroethene	60	U	1330	1530		ug/Kg	☼	115	44 - 141	8	40
Trichloroethene	60	U	1330	1280		ug/Kg	☼	96	25 - 148	11	40
Vinyl chloride	48	U	1330	1680		ug/Kg	☼	127	31 - 148	5	37

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		53 - 155
4-Bromofluorobenzene (Surr)	91		48 - 151
Toluene-d8 (Surr)	99		49 - 147
Dibromofluoromethane (Surr)	81		49 - 138

Lab Sample ID: MB 240-376973/1-A
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 376973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	40	U	40	16	ug/Kg		04/17/19 12:48	04/19/19 19:53	1
cis-1,2-Dichloroethene	40	U	40	9.0	ug/Kg		04/17/19 12:48	04/19/19 19:53	1
Tetrachloroethene	40	U	40	18	ug/Kg		04/17/19 12:48	04/19/19 19:53	1
trans-1,2-Dichloroethene	40	U	40	10	ug/Kg		04/17/19 12:48	04/19/19 19:53	1
Trichloroethene	40	U	40	11	ug/Kg		04/17/19 12:48	04/19/19 19:53	1
Vinyl chloride	32	U	32	12	ug/Kg		04/17/19 12:48	04/19/19 19:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	76		53 - 155	04/17/19 12:48	04/19/19 19:53	1
4-Bromofluorobenzene (Surr)	86		48 - 151	04/17/19 12:48	04/19/19 19:53	1
Toluene-d8 (Surr)	83		49 - 147	04/17/19 12:48	04/19/19 19:53	1
Dibromofluoromethane (Surr)	70		49 - 138	04/17/19 12:48	04/19/19 19:53	1

Lab Sample ID: LCS 240-376973/2-A
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 376973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1000	1120		ug/Kg		112	57 - 139
cis-1,2-Dichloroethene	1000	947		ug/Kg		95	74 - 123
Tetrachloroethene	1000	991		ug/Kg		99	76 - 120
trans-1,2-Dichloroethene	1000	1100		ug/Kg		110	71 - 133
Trichloroethene	1000	910		ug/Kg		91	73 - 126

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

Lab Sample ID: LCS 240-376973/2-A
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 376973

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			1000	1220		ug/Kg		122	52 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*53 - 155*
4-Bromofluorobenzene (Surr)	*92*		*48 - 151*
Toluene-d8 (Surr)	*95*		*49 - 147*
Dibromofluoromethane (Surr)	*80*		*49 - 138*

Lab Sample ID: 240-110996-18 MS
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: LIFHP-130_29-30_041419
Prep Type: Total/NA
Prep Batch: 376973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1-Dichloroethene	57	U	1320	1430		ug/Kg	☼	109	36 - 150		
cis-1,2-Dichloroethene	57	U	1320	1300		ug/Kg	☼	99	50 - 128		
Tetrachloroethene	57	U	1320	1300		ug/Kg	☼	98	20 - 151		
trans-1,2-Dichloroethene	57	U	1320	1490		ug/Kg	☼	113	44 - 141		
Trichloroethene	57	U	1320	1260		ug/Kg	☼	96	25 - 148		
Vinyl chloride	46	U	1320	1720		ug/Kg	☼	130	31 - 148		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*53 - 155*
4-Bromofluorobenzene (Surr)	*94*		*48 - 151*
Toluene-d8 (Surr)	*98*		*49 - 147*
Dibromofluoromethane (Surr)	*84*		*49 - 138*

Lab Sample ID: 240-110996-18 MSD
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: LIFHP-130_29-30_041419
Prep Type: Total/NA
Prep Batch: 376973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	57	U	1250	1320		ug/Kg	☼	105	36 - 150	8	40
cis-1,2-Dichloroethene	57	U	1250	1160		ug/Kg	☼	93	50 - 128	12	40
Tetrachloroethene	57	U	1250	1170		ug/Kg	☼	94	20 - 151	10	40
trans-1,2-Dichloroethene	57	U	1250	1370		ug/Kg	☼	109	44 - 141	9	40
Trichloroethene	57	U	1250	1140		ug/Kg	☼	91	25 - 148	10	40
Vinyl chloride	46	U	1250	1540		ug/Kg	☼	123	31 - 148	11	37

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*78*		*53 - 155*
4-Bromofluorobenzene (Surr)	*85*		*48 - 151*
Toluene-d8 (Surr)	*91*		*49 - 147*
Dibromofluoromethane (Surr)	*77*		*49 - 138*

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

Lab Sample ID: 240-110996-36 MS
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: LIFHP-129_29-30_041419
Prep Type: Total/NA
Prep Batch: 376973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	58	U	1320	1450		ug/Kg	☼	110	36 - 150
cis-1,2-Dichloroethene	58	U	1320	1290		ug/Kg	☼	98	50 - 128
Tetrachloroethene	58	U	1320	1250		ug/Kg	☼	95	20 - 151
trans-1,2-Dichloroethene	58	U	1320	1470		ug/Kg	☼	111	44 - 141
Trichloroethene	58	U	1320	1200		ug/Kg	☼	91	25 - 148
Vinyl chloride	46	U	1320	1590		ug/Kg	☼	120	31 - 148

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*53 - 155*
4-Bromofluorobenzene (Surr)	*86*		*48 - 151*
Toluene-d8 (Surr)	*96*		*49 - 147*
Dibromofluoromethane (Surr)	*82*		*49 - 138*

Lab Sample ID: 240-110996-36 MSD
Matrix: Solid
Analysis Batch: 377415

Client Sample ID: LIFHP-129_29-30_041419
Prep Type: Total/NA
Prep Batch: 376973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	58	U	1270	1480		ug/Kg	☼	117	36 - 150	2	40
cis-1,2-Dichloroethene	58	U	1270	1280		ug/Kg	☼	101	50 - 128	1	40
Tetrachloroethene	58	U	1270	1200		ug/Kg	☼	94	20 - 151	5	40
trans-1,2-Dichloroethene	58	U	1270	1430		ug/Kg	☼	113	44 - 141	2	40
Trichloroethene	58	U	1270	1170		ug/Kg	☼	92	25 - 148	2	40
Vinyl chloride	46	U	1270	1640		ug/Kg	☼	130	31 - 148	4	37

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*53 - 155*
4-Bromofluorobenzene (Surr)	*85*		*48 - 151*
Toluene-d8 (Surr)	*95*		*49 - 147*
Dibromofluoromethane (Surr)	*84*		*49 - 138*

Lab Sample ID: MRL 240-377029/6
Matrix: Solid
Analysis Batch: 377029

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene			0.00100	0.00136		ng/uL		136	10 - 150
cis-1,2-Dichloroethene			0.00100	0.00125		ng/uL		125	10 - 150
Tetrachloroethene			0.00100	0.00125		ng/uL		125	10 - 150
trans-1,2-Dichloroethene			0.00100	0.00137		ng/uL		137	10 - 150
Trichloroethene			0.00100	0.00110		ng/uL		110	10 - 150
Vinyl chloride			0.00100	0.00160	^	ng/uL		160	10 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*10 - 150*
4-Bromofluorobenzene (Surr)	*97*		*10 - 150*
Toluene-d8 (Surr)	*97*		*10 - 150*

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

Lab Sample ID: MRL 240-377029/6
Matrix: Solid
Analysis Batch: 377029

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

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Dibromofluoromethane (Surr)	87		10 - 150

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

Lab Sample ID: MB 240-376915/5
Matrix: Water
Analysis Batch: 376915

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			04/17/19 12:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125		04/17/19 12:59	1

Lab Sample ID: LCS 240-376915/4
Matrix: Water
Analysis Batch: 376915

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	10.5		ug/L		105	59 - 131		

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

Lab Sample ID: 240-110996-2 MS
Matrix: Water
Analysis Batch: 376915

Client Sample ID: LIFHP-132_12-16_041419
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	10.8		ug/L		108	52 - 129		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		63 - 125

Lab Sample ID: 240-110996-2 MSD
Matrix: Water
Analysis Batch: 376915

Client Sample ID: LIFHP-132_12-16_041419
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	11.1		ug/L		111	52 - 129	4	13

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		63 - 125

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

Lab Sample ID: MB 240-377588/5
Matrix: Water
Analysis Batch: 377588

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			04/22/19 11:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*63 - 125*		*04/22/19 11:51*	*1*

Lab Sample ID: LCS 240-377588/4
Matrix: Water
Analysis Batch: 377588

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	10.5		ug/L		105	59 - 131		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 125*

Lab Sample ID: 240-111040-D-3 MS
Matrix: Water
Analysis Batch: 377588

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	11.2		ug/L		112	52 - 129		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*63 - 125*

Lab Sample ID: 240-111040-D-3 MSD
Matrix: Water
Analysis Batch: 377588

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	11.2		ug/L		112	52 - 129	1	13

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*63 - 125*

Method: Moisture - Percent Moisture

Lab Sample ID: 240-110996-12 DU
Matrix: Solid
Analysis Batch: 376947

Client Sample ID: LIFHP-131_29-30_041419
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	82.7			82.0		%				0.9	20
Percent Moisture	17.3			18.0		%				4	20

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 240-110996-18 DU
Client Sample ID: LIFHP-130_29-30_041419
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 376947

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	84.9			86.2		%				1	20
Percent Moisture	15.1			13.8		%				9	20

Lab Sample ID: 240-110996-28 DU
Client Sample ID: LIFHP-132_29-30_041419
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 376947

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	85.0			82.3		%				3	20
Percent Moisture	15.0			17.7		%				16	20

Lab Sample ID: 240-110996-36 DU
Client Sample ID: LIFHP-129_29-30_041419
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 376947

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	83.1			80.0		%				4	20
Percent Moisture	16.9			20.0		%				17	20

GC/MS VOA

Analysis Batch: 376915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-1	LIFHP-132_17-21_041419	Total/NA	Water	8260B SIM	
240-110996-2	LIFHP-132_12-16_041419	Total/NA	Water	8260B SIM	
240-110996-3	LIFHP-132_7-11_041419	Total/NA	Water	8260B SIM	
240-110996-5	LIFHP-131_16-20_041419	Total/NA	Water	8260B SIM	
240-110996-6	LIFHP-131_11-15_041419	Total/NA	Water	8260B SIM	
240-110996-7	LIFHP-131_6-10_041419	Total/NA	Water	8260B SIM	
240-110996-8	LIFHP-130_16-20_041419	Total/NA	Water	8260B SIM	
240-110996-9	LIFHP-130_11-15_041419	Total/NA	Water	8260B SIM	
240-110996-10	LIFHP-130_6-10_041419	Total/NA	Water	8260B SIM	
240-110996-11	LIFHP-129_15-19_041419	Total/NA	Water	8260B SIM	
240-110996-34	LIFHP-129_10-14_041419	Total/NA	Water	8260B SIM	
MB 240-376915/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-376915/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-110996-2 MS	LIFHP-132_12-16_041419	Total/NA	Water	8260B SIM	
240-110996-2 MSD	LIFHP-132_12-16_041419	Total/NA	Water	8260B SIM	

Prep Batch: 376916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-12	LIFHP-131_29-30_041419	Total/NA	Solid	5035	
240-110996-13	LIFHP-130_1-2_041419	Total/NA	Solid	5035	
240-110996-14	LIFHP-130_2-3_041419	Total/NA	Solid	5035	
240-110996-15	LIFHP-130_3-4_041419	Total/NA	Solid	5035	
240-110996-16	LIFHP-130_4-5_041419	Total/NA	Solid	5035	
240-110996-17	LIFHP-130_5-6_041419	Total/NA	Solid	5035	
240-110996-19	LIFHP-129_1-2_041419	Total/NA	Solid	5035	
240-110996-20	LIFHP-129_2-3_041419	Total/NA	Solid	5035	
240-110996-21	LIFHP-129_3-4_041419	Total/NA	Solid	5035	
240-110996-22	LIFHP-129_4-5_041419	Total/NA	Solid	5035	
240-110996-23	LIFHP-132_1-2_041419	Total/NA	Solid	5035	
240-110996-24	LIFHP-132_3-4_041419	Total/NA	Solid	5035	
240-110996-25	LIFHP-132_4-5_041419	Total/NA	Solid	5035	
240-110996-26	LIFHP-132_5-6_041419	Total/NA	Solid	5035	
240-110996-27	LIFHP-132_6-7_041419	Total/NA	Solid	5035	
240-110996-28	LIFHP-132_29-30_041419	Total/NA	Solid	5035	
240-110996-29	LIFHP-131_1-2_041419	Total/NA	Solid	5035	
240-110996-30	LIFHP-131_2-3_041419	Total/NA	Solid	5035	
MB 240-376916/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-376916/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-110996-12 MS	LIFHP-131_29-30_041419	Total/NA	Solid	5035	
240-110996-12 MSD	LIFHP-131_29-30_041419	Total/NA	Solid	5035	

Prep Batch: 376973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-18	LIFHP-130_29-30_041419	Total/NA	Solid	5035	
240-110996-31	LIFHP-131_3-4_041419	Total/NA	Solid	5035	
240-110996-32	LIFHP-131_4-5_041419	Total/NA	Solid	5035	
240-110996-33	LIFHP-131_5-6_041419	Total/NA	Solid	5035	
240-110996-36	LIFHP-129_29-30_041419	Total/NA	Solid	5035	
MB 240-376973/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-376973/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-110996-18 MS	LIFHP-130_29-30_041419	Total/NA	Solid	5035	

GC/MS VOA (Continued)

Prep Batch: 376973 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-18 MSD	LIFHP-130_29-30_041419	Total/NA	Solid	5035	
240-110996-36 MS	LIFHP-129_29-30_041419	Total/NA	Solid	5035	
240-110996-36 MSD	LIFHP-129_29-30_041419	Total/NA	Solid	5035	

Analysis Batch: 377029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-12	LIFHP-131_29-30_041419	Total/NA	Solid	8260B MI	376916
240-110996-13	LIFHP-130_1-2_041419	Total/NA	Solid	8260B MI	376916
240-110996-14	LIFHP-130_2-3_041419	Total/NA	Solid	8260B MI	376916
240-110996-15	LIFHP-130_3-4_041419	Total/NA	Solid	8260B MI	376916
240-110996-16	LIFHP-130_4-5_041419	Total/NA	Solid	8260B MI	376916
240-110996-17	LIFHP-130_5-6_041419	Total/NA	Solid	8260B MI	376916
240-110996-19	LIFHP-129_1-2_041419	Total/NA	Solid	8260B MI	376916
240-110996-20	LIFHP-129_2-3_041419	Total/NA	Solid	8260B MI	376916
240-110996-21	LIFHP-129_3-4_041419	Total/NA	Solid	8260B MI	376916
240-110996-22	LIFHP-129_4-5_041419	Total/NA	Solid	8260B MI	376916
240-110996-23	LIFHP-132_1-2_041419	Total/NA	Solid	8260B MI	376916
240-110996-24	LIFHP-132_3-4_041419	Total/NA	Solid	8260B MI	376916
240-110996-25	LIFHP-132_4-5_041419	Total/NA	Solid	8260B MI	376916
240-110996-26	LIFHP-132_5-6_041419	Total/NA	Solid	8260B MI	376916
240-110996-27	LIFHP-132_6-7_041419	Total/NA	Solid	8260B MI	376916
240-110996-28	LIFHP-132_29-30_041419	Total/NA	Solid	8260B MI	376916
240-110996-29	LIFHP-131_1-2_041419	Total/NA	Solid	8260B MI	376916
240-110996-30	LIFHP-131_2-3_041419	Total/NA	Solid	8260B MI	376916
MB 240-376916/1-A	Method Blank	Total/NA	Solid	8260B MI	376916
LCS 240-376916/2-A	Lab Control Sample	Total/NA	Solid	8260B MI	376916
MRL 240-377029/6	Lab Control Sample	Total/NA	Solid	8260B MI	
240-110996-12 MS	LIFHP-131_29-30_041419	Total/NA	Solid	8260B MI	376916
240-110996-12 MSD	LIFHP-131_29-30_041419	Total/NA	Solid	8260B MI	376916

Analysis Batch: 377415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-18	LIFHP-130_29-30_041419	Total/NA	Solid	8260B MI	376973
240-110996-31	LIFHP-131_3-4_041419	Total/NA	Solid	8260B MI	376973
240-110996-32	LIFHP-131_4-5_041419	Total/NA	Solid	8260B MI	376973
240-110996-33	LIFHP-131_5-6_041419	Total/NA	Solid	8260B MI	376973
240-110996-36	LIFHP-129_29-30_041419	Total/NA	Solid	8260B MI	376973
MB 240-376973/1-A	Method Blank	Total/NA	Solid	8260B MI	376973
LCS 240-376973/2-A	Lab Control Sample	Total/NA	Solid	8260B MI	376973
240-110996-18 MS	LIFHP-130_29-30_041419	Total/NA	Solid	8260B MI	376973
240-110996-18 MSD	LIFHP-130_29-30_041419	Total/NA	Solid	8260B MI	376973
240-110996-36 MS	LIFHP-129_29-30_041419	Total/NA	Solid	8260B MI	376973
240-110996-36 MSD	LIFHP-129_29-30_041419	Total/NA	Solid	8260B MI	376973

Analysis Batch: 377477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-2	LIFHP-132_12-16_041419	Total/NA	Water	8260B	
MB 240-377477/7	Method Blank	Total/NA	Water	8260B	
LCS 240-377477/4	Lab Control Sample	Total/NA	Water	8260B	
240-110996-2 MS	LIFHP-132_12-16_041419	Total/NA	Water	8260B	
240-110996-2 MSD	LIFHP-132_12-16_041419	Total/NA	Water	8260B	

GC/MS VOA

Analysis Batch: 377588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-35	LIFHP-129_5-9_041419	Total/NA	Water	8260B SIM	
240-110996-37	DUP-06	Total/NA	Water	8260B SIM	
MB 240-377588/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-377588/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-111040-D-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-111040-D-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 377606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-1	LIFHP-132_17-21_041419	Total/NA	Water	8260B	
240-110996-3	LIFHP-132_7-11_041419	Total/NA	Water	8260B	
240-110996-5	LIFHP-131_16-20_041419	Total/NA	Water	8260B	
240-110996-6	LIFHP-131_11-15_041419	Total/NA	Water	8260B	
240-110996-7	LIFHP-131_6-10_041419	Total/NA	Water	8260B	
240-110996-8	LIFHP-130_16-20_041419	Total/NA	Water	8260B	
240-110996-9	LIFHP-130_11-15_041419	Total/NA	Water	8260B	
240-110996-10	LIFHP-130_6-10_041419	Total/NA	Water	8260B	
240-110996-11	LIFHP-129_15-19_041419	Total/NA	Water	8260B	
240-110996-34	LIFHP-129_10-14_041419	Total/NA	Water	8260B	
240-110996-35	LIFHP-129_5-9_041419	Total/NA	Water	8260B	
240-110996-37	DUP-06	Total/NA	Water	8260B	
240-110996-38	TRIP BLANK	Total/NA	Water	8260B	
MB 240-377606/6	Method Blank	Total/NA	Water	8260B	
LCS 240-377606/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 377778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-39	TRIP BLANK	Total/NA	Water	8260B	
MB 240-377778/6	Method Blank	Total/NA	Water	8260B	
LCS 240-377778/4	Lab Control Sample	Total/NA	Water	8260B	

General Chemistry

Analysis Batch: 376947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-12	LIFHP-131_29-30_041419	Total/NA	Solid	Moisture	
240-110996-13	LIFHP-130_1-2_041419	Total/NA	Solid	Moisture	
240-110996-14	LIFHP-130_2-3_041419	Total/NA	Solid	Moisture	
240-110996-15	LIFHP-130_3-4_041419	Total/NA	Solid	Moisture	
240-110996-16	LIFHP-130_4-5_041419	Total/NA	Solid	Moisture	
240-110996-17	LIFHP-130_5-6_041419	Total/NA	Solid	Moisture	
240-110996-18	LIFHP-130_29-30_041419	Total/NA	Solid	Moisture	
240-110996-19	LIFHP-129_1-2_041419	Total/NA	Solid	Moisture	
240-110996-20	LIFHP-129_2-3_041419	Total/NA	Solid	Moisture	
240-110996-21	LIFHP-129_3-4_041419	Total/NA	Solid	Moisture	
240-110996-22	LIFHP-129_4-5_041419	Total/NA	Solid	Moisture	
240-110996-23	LIFHP-132_1-2_041419	Total/NA	Solid	Moisture	
240-110996-24	LIFHP-132_3-4_041419	Total/NA	Solid	Moisture	
240-110996-25	LIFHP-132_4-5_041419	Total/NA	Solid	Moisture	
240-110996-26	LIFHP-132_5-6_041419	Total/NA	Solid	Moisture	
240-110996-27	LIFHP-132_6-7_041419	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 376947 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-110996-28	LIFHP-132_29-30_041419	Total/NA	Solid	Moisture	
240-110996-29	LIFHP-131_1-2_041419	Total/NA	Solid	Moisture	
240-110996-30	LIFHP-131_2-3_041419	Total/NA	Solid	Moisture	
240-110996-31	LIFHP-131_3-4_041419	Total/NA	Solid	Moisture	
240-110996-32	LIFHP-131_4-5_041419	Total/NA	Solid	Moisture	
240-110996-33	LIFHP-131_5-6_041419	Total/NA	Solid	Moisture	
240-110996-36	LIFHP-129_29-30_041419	Total/NA	Solid	Moisture	
240-110996-12 DU	LIFHP-131_29-30_041419	Total/NA	Solid	Moisture	
240-110996-18 DU	LIFHP-130_29-30_041419	Total/NA	Solid	Moisture	
240-110996-28 DU	LIFHP-132_29-30_041419	Total/NA	Solid	Moisture	
240-110996-36 DU	LIFHP-129_29-30_041419	Total/NA	Solid	Moisture	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-132_17-21_041419
Lab Sample ID: 240-110996-1
Date Collected: 04/14/19 10:40
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 16:30	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 17:42	SAM	TAL CAN

Client Sample ID: LIFHP-132_12-16_041419
Lab Sample ID: 240-110996-2
Date Collected: 04/14/19 11:00
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377477	04/21/19 00:30	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 18:08	SAM	TAL CAN

Client Sample ID: LIFHP-132_7-11_041419
Lab Sample ID: 240-110996-3
Date Collected: 04/14/19 11:15
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 16:55	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 19:25	SAM	TAL CAN

Client Sample ID: LIFHP-131_16-20_041419
Lab Sample ID: 240-110996-5
Date Collected: 04/14/19 13:55
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 17:20	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 19:50	SAM	TAL CAN

Client Sample ID: LIFHP-131_11-15_041419
Lab Sample ID: 240-110996-6
Date Collected: 04/14/19 14:10
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	377606	04/22/19 17:45	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 20:16	SAM	TAL CAN

Client Sample ID: LIFHP-131_6-10_041419
Lab Sample ID: 240-110996-7
Date Collected: 04/14/19 14:25
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	377606	04/22/19 18:10	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 20:42	SAM	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-130_16-20_041419
Lab Sample ID: 240-110996-8
Date Collected: 04/14/19 16:45
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 18:34	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 21:07	SAM	TAL CAN

Client Sample ID: LIFHP-130_11-15_041419
Lab Sample ID: 240-110996-9
Date Collected: 04/14/19 17:00
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 19:00	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 21:33	SAM	TAL CAN

Client Sample ID: LIFHP-130_6-10_041419
Lab Sample ID: 240-110996-10
Date Collected: 04/14/19 17:10
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 19:25	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 21:58	SAM	TAL CAN

Client Sample ID: LIFHP-129_15-19_041419
Lab Sample ID: 240-110996-11
Date Collected: 04/14/19 19:35
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	377606	04/22/19 19:49	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 22:24	SAM	TAL CAN

Client Sample ID: LIFHP-131_29-30_041419
Lab Sample ID: 240-110996-12
Date Collected: 04/14/19 13:40
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-131_29-30_041419
Lab Sample ID: 240-110996-12
Date Collected: 04/14/19 13:40
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/17/19 22:34	TJL1	TAL CAN

Client Sample ID: LIFHP-130_1-2_041419 — **Lab Sample ID: 240-110996-13**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-130_1-2_041419 — **Lab Sample ID: 240-110996-13**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00 — **Percent Solids: 92.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/17/19 23:39	TJL1	TAL CAN

Client Sample ID: LIFHP-130_2-3_041419 — **Lab Sample ID: 240-110996-14**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-130_2-3_041419 — **Lab Sample ID: 240-110996-14**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00 — **Percent Solids: 90.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 00:01	TJL1	TAL CAN

Client Sample ID: LIFHP-130_3-4_041419 — **Lab Sample ID: 240-110996-15**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-130_3-4_041419 — **Lab Sample ID: 240-110996-15**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00 — **Percent Solids: 93.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 00:22	TJL1	TAL CAN

Client Sample ID: LIFHP-130_4-5_041419 — **Lab Sample ID: 240-110996-16**
Date Collected: 04/14/19 15:15 — **Matrix: Solid**
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-130_4-5_041419
Lab Sample ID: 240-110996-16
Date Collected: 04/14/19 15:15
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 91.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 00:44	TJL1	TAL CAN

Client Sample ID: LIFHP-130_5-6_041419
Lab Sample ID: 240-110996-17
Date Collected: 04/14/19 15:15
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-130_5-6_041419
Lab Sample ID: 240-110996-17
Date Collected: 04/14/19 15:15
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 01:06	TJL1	TAL CAN

Client Sample ID: LIFHP-130_29-30_041419
Lab Sample ID: 240-110996-18
Date Collected: 04/14/19 16:25
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-130_29-30_041419
Lab Sample ID: 240-110996-18
Date Collected: 04/14/19 16:25
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 84.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376973	04/17/19 12:48	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377415	04/19/19 20:38	TJL1	TAL CAN

Client Sample ID: LIFHP-129_1-2_041419
Lab Sample ID: 240-110996-19
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-129_1-2_041419
Lab Sample ID: 240-110996-19
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 01:27	TJL1	TAL CAN

Client Sample ID: LIFHP-129_2-3_041419
Lab Sample ID: 240-110996-20
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-129_2-3_041419
Lab Sample ID: 240-110996-20
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 01:49	TJL1	TAL CAN

Client Sample ID: LIFHP-129_3-4_041419
Lab Sample ID: 240-110996-21
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-129_3-4_041419
Lab Sample ID: 240-110996-21
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 02:11	TJL1	TAL CAN

Client Sample ID: LIFHP-129_4-5_041419
Lab Sample ID: 240-110996-22
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-129_4-5_041419
Lab Sample ID: 240-110996-22
Date Collected: 04/14/19 18:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 83.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 02:33	TJL1	TAL CAN

Client Sample ID: LIFHP-132_1-2_041419
Lab Sample ID: 240-110996-23
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-132_1-2_041419
Lab Sample ID: 240-110996-23
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 89.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 02:55	TJL1	TAL CAN

Client Sample ID: LIFHP-132_3-4_041419
Lab Sample ID: 240-110996-24
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-132_3-4_041419
Lab Sample ID: 240-110996-24
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 03:17	TJL1	TAL CAN

Client Sample ID: LIFHP-132_4-5_041419
Lab Sample ID: 240-110996-25
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-132_4-5_041419
Lab Sample ID: 240-110996-25
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 87.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 03:39	TJL1	TAL CAN

Client Sample ID: LIFHP-132_5-6_041419
Lab Sample ID: 240-110996-26
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-132_5-6_041419
Lab Sample ID: 240-110996-26
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 04:00	TJL1	TAL CAN

Client Sample ID: LIFHP-132_6-7_041419
Lab Sample ID: 240-110996-27
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-132_6-7_041419
Lab Sample ID: 240-110996-27
Date Collected: 04/14/19 11:20
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 04:22	TJL1	TAL CAN

Client Sample ID: LIFHP-132_29-30_041419
Lab Sample ID: 240-110996-28
Date Collected: 04/14/19 11:10
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-132_29-30_041419
Lab Sample ID: 240-110996-28
Date Collected: 04/14/19 11:10
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 04:43	TJL1	TAL CAN

Client Sample ID: LIFHP-131_1-2_041419
Lab Sample ID: 240-110996-29
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-131_1-2_041419
Lab Sample ID: 240-110996-29
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 87.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 05:05	TJL1	TAL CAN

Client Sample ID: LIFHP-131_2-3_041419
Lab Sample ID: 240-110996-30
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Client Sample ID: LIFHP-131_2-3_041419
Lab Sample ID: 240-110996-30
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 84.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376916	04/17/19 10:51	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377029	04/18/19 05:27	TJL1	TAL CAN

Client Sample ID: LIFHP-131_3-4_041419
Lab Sample ID: 240-110996-31
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:27	JMB	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-131_3-4_041419
Lab Sample ID: 240-110996-31
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376973	04/17/19 12:48	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377415	04/19/19 21:43	TJL1	TAL CAN

Client Sample ID: LIFHP-131_4-5_041419
Lab Sample ID: 240-110996-32
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:35	JMB	TAL CAN

Client Sample ID: LIFHP-131_4-5_041419
Lab Sample ID: 240-110996-32
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 85.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376973	04/17/19 12:48	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377415	04/19/19 22:05	TJL1	TAL CAN

Client Sample ID: LIFHP-131_5-6_041419
Lab Sample ID: 240-110996-33
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:35	JMB	TAL CAN

Client Sample ID: LIFHP-131_5-6_041419
Lab Sample ID: 240-110996-33
Date Collected: 04/14/19 12:00
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376973	04/17/19 12:48	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377415	04/19/19 22:26	TJL1	TAL CAN

Client Sample ID: LIFHP-129_10-14_041419
Lab Sample ID: 240-110996-34
Date Collected: 04/14/19 19:55
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	377606	04/22/19 20:14	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	376915	04/17/19 22:49	SAM	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

Client Sample ID: LIFHP-129_5-9_041419
Lab Sample ID: 240-110996-35
Date Collected: 04/14/19 20:05
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		13.33	377606	04/22/19 20:39	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	377588	04/22/19 13:59	SAM	TAL CAN

Client Sample ID: LIFHP-129_29-30_041419
Lab Sample ID: 240-110996-36
Date Collected: 04/14/19 19:05
Matrix: Solid
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	376947	04/17/19 14:35	JMB	TAL CAN

Client Sample ID: LIFHP-129_29-30_041419
Lab Sample ID: 240-110996-36
Date Collected: 04/14/19 19:05
Matrix: Solid
Date Received: 04/16/19 10:00
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			376973	04/17/19 12:48	LAM	TAL CAN
Total/NA	Analysis	8260B MI		1	377415	04/19/19 22:48	TJL1	TAL CAN

Client Sample ID: DUP-06
Lab Sample ID: 240-110996-37
Date Collected: 04/14/19 00:00
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	377606	04/22/19 21:04	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	377588	04/22/19 14:25	SAM	TAL CAN

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-110996-38
Date Collected: 04/14/19 00:00
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377606	04/22/19 21:28	LRW	TAL CAN

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-110996-39
Date Collected: 04/14/19 00:00
Matrix: Water
Date Received: 04/16/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	377778	04/23/19 13:37	LRW	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 240-110996-1
Project/Site: Ford LTP Livonia MI - E203728

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

Chain of Custody Record

MICHCAN 190

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christina Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.9
Client Contact: Caitlin ONeill	Phone: (989) 619-5009	E-Mail: michael.delmonico@testamericainc.com		Page: 1 of 4
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#:			

240-110996 Chain of Custody

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											
LIFHP-132_17-21_041419	4/14/19	1040	6	Water	N	N	3	0	3										6	
LIFHP-132_12-16_041419	4/14/19	1100	6	Water	N	Y	3	0	3		MS/MSD								6	Preformed MS/MSD *
LIFHP-132_7-11_041419	4/14/19	1115	6	~~Soil~~ Water	N	N	3	0	3										6	
LIFHP-129_29-30_041419	4/14/19	1905	6	Water	N	Y	0	3	0										6	Dry weight included
LIFHP-131_16-20_041419	4/14/19	1355	6	Water	N	N	3	0	3										6	
LIFHP-131_11-15_041419	4/14/19	1410	6	Water	N	N	3	0	3										6	
LIFHP-131_6-10_041419	4/14/19	1425	6	Water	N	N	3	0	3										6	
LIFHP-130_16-20_041419	4/14/19	1645	6	Water	N	N	3	0	3										6	
LIFHP-130_11-15_041419	4/14/19	1700	6	Water	N	N	3	0	3										6	
LIFHP-130_6-10_041419	4/14/19	1710	6	Water	N	N	3	0	3										6	
LIFHP-129_15-19_041419	4/14/19	1935	6	Water	N	N	3	0	3										6	

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 jim.tomalia@arcadis.com #E203728

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Christina Weaver	4/14/19 2200	Arcadis	Yourcold Storage	4/14/19 2200	Arcadis
Caitlin ONeill	04/15/19 0900	Arcadis	Jeri Harlin	4-15-19 9:10	TA
Jeri Harlin	4-15-19 9:50	E-TAL		4/16/19 1000	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

Chain of Custody Record

MICHIGAN 190

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christina Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.10
Client Contact: Caitlin ONeill	Phone: (989)-619-5009	E-Mail: michael.delmonico@testamericainc.com		Page: 2 4 Page 10 of 16
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	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, 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													
LIFHP-131_29-30_041419	4/14/19	1340	6	Solid	N	Y	0	3	0												6	Dry weight included
LIFHP-130_1-2_041419	4/14/19	1515	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-130_2-3_041419	4/14/19	1515	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-130_3-4_041419	4/14/19	1515	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-130_4-5_041419	4/14/19	1515	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-130_5-6_041419	4/14/19	1515	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-130_29-30_041419	4/14/19	1625	6	Solid	N	Y	0	3	0	MS/MSD											6	Dry weight included
LIFHP-129_1-2_041419	4/14/19	1800	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-129_2-3_041419	4/14/19	1800	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-129_3-4_041419	4/14/19	1800	6	Solid	N	N	0	1	0												2	Dry weight included
LIFHP-129_4-5_041419	4/14/19	1800	6	Solid	N	N	0	1	0												2	Dry weight included

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 jimtomalia@cadena.com ref E203728

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Christina Weaver	4/14/19 2200	Arcadis	Novi cold Storage	4/14/19 2200	Arcadis
Caitlin ONeill	04/15/19 0900	Arcadis	[illegible]	4-15-19 9:10	Tst
[illegible]	4-15-19 950	E-TAL	[illegible]	4/16/19 1000	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

Chain of Custody Record

MICHIGAN 190

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christina Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.12
Client Contact: Caitlin ONeill	Phone: (989)-619-5009	E-Mail: michael.delmonico@testamericainc.com		Page: Page 3 of 4
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		
LIFHP-132_1-2_041419	4/14/19	1120	G	Solid	N	N	0	1	0	2	Dry sample included
LIFHP-132_3-4_041419	4/14/19	1120	G	Solid	N	N	0	1	0	2	Dry weight Sample incl.
LIFHP-132_4-5_041419	4/14/19	1120	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-132_5-6_041419	4/14/19	1120	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-132_6-7_041419	4/14/19	1120	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-132_29-30_041419	4/14/19	1120	G	Solid	N	Y	0	3	0	6	Dry weight included MS/MSD
LIFHP-131_1-2_041419	4/14/19	1200	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-131_2-3_041419	4/14/19	1200	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-131_3-4_041419	4/14/19	1200	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-131_4-5_041419	4/14/19	1200	G	Solid	N	N	0	1	0	2	Dry weight included
LIFHP-131_5-6_041419	4/14/19	1200	G	Solid	N	N	0	1	0	2	Dry weight included

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 jim.tomalia@cadenas.com #E203726

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Christina Weaver	4/14/19 2200	Arcadis	Novi cold storage	4/14/19 2200	Arcadis
2	Caitlin ONeill	04/15/19 0900	Arcadis	Jeri Hale	4-15-19 9:10	TA
3	Jeri Hale	4-15-19 9:50	E-TAL		4/16/19 0900	TA

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

1.8|1.6 2.2|2.0 1.6|1.4

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

Chain of Custody Record

MICHIGAN 190

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Christina Weaver	Lab PM: DelMonico, Michael	Carrier Tracking No(s):	COC No: 240-59392-25341.16
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	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	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		
LIFHP-129_10-14_041419	4/14/19	1955	6	Water	N	N	3	0	3	6	
LIFHP-129_5-9_041419	4/14/19	2005	6	Water	N	N	3	0	3	6	
LIFHP-129_29-30_041419	4/14/19	1905	6	~~Water~~ Solid	N	N	3	0	3	6	MS/MSD; dry weight included; MS/MSD
DUP-06	4/14/19	—	6	Water	N	N	3	0	3		
Trip Blank	4/14/19										
Trip Blank	4/14/19										

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 jim.tomelia@cadena.com #E203728

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Christina Weaver	4/14/19 2200	Arcadis	Novi Cold Storage	4/14/19 2200	Arcadis
Caitlin ONeill	04/15/19 0900	Arcadis	Jeff Hall	4-15-19 9:10	TA
Jeff Hall	4-15-19 950	E-TAC		4/16/19 1000	TA

Custody Seals Intact: △ Yes △ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

4/29/2019

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 110996**
Canton Facility

Client Accedis Site Name

Cooler Received on 4/16/19 Opened on 4/16/19

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

Cooler unpacked by:

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

TestAmerica Cooler # 3 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. 1.8 °C Corrected Cooler Temp. 1.6 °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? — 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# **HC984738**
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 # N/A — Yes No
16. Was a LL Hg or Me Hg trip blank present? ____ — Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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

Concerning ____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: Martin

LIFHP-132_29-30_041419 - did not receive MS/MSD volume - will not log MS/MSD.

18. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.
Sample(s) ____ were received in a broken container.
Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in the laboratory.
Time preserved: ____ Preservative(s) added/Lot number(s): ____

VOA Sample Preservation - Date/Time VOAs Frozen: ____

Login # : 110996

TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	**IR-8** #36	1.8	1.6	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-8** #36	2.2	2.0	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-8** #36	1.6	1.4	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
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TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
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TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-8 #36			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

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