Analytical Report 640850

for

Enviroclean-Altamira

Project Manager: David Lehmann

Longfellow Energy

LFECM 1901/ 1000

30-OCT-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-OCT-19

Project Manager: **David Lehmann**
Enviroclean-Altamira
2405 ECR 123
Midland, TX 79706

Reference: XENCO Report No(s): **640850**
Longfellow Energy
Project Address: State 20B

David Lehmann:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 640850. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 640850 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 640850

Enviroclean-Altamira, Midland, TX

Longfellow Energy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-LS20-04, 2-3	S	10-22-19 10:11	2 - 3 ft	640850-001
SB-LS20-04, 3-4	S	10-22-19 10:13	3 - 4 ft	640850-002
SB-LS20-04, 5-6	S	10-22-19 10:15	5 - 6 ft	640850-004
SB-LS20-04, 6-7	S	10-22-19 10:17	6 - 7 ft	640850-005
Trip Blank	W	10-22-19 00:00		640850-009
SB-LP17-05, 1-2	S	10-22-19 09:32	1 - 2 ft	640850-010
SB-LS20-05, 2-3	S	10-22-19 09:33	2 - 3 ft	640850-011
SB-LS20-05, 3-4	S	10-22-19 09:33	3 - 4 ft	640850-012
Trip Blank	W	10-23-19 13:36		640850-019
SB-LS20-04, 4-5	S	10-22-19 00:00	4 - 5 ft	Not Analyzed
SB-LS20-04, 7-8	S	10-22-19 10:19	7 - 8 ft	Not Analyzed
SB-LS20-04, 8-9	S	10-22-19 10:23	8 - 9 ft	Not Analyzed
SB-LS20-04, 9-10	S	10-22-19 10:24	9 - 10 ft	Not Analyzed
SB-LS20-05, 4-5	S	10-22-19 09:33	4 - 5 ft	Not Analyzed
SB-LS20-05, 5-6	S	10-22-19 09:33	5 - 6 ft	Not Analyzed
SB-LS20-05, 6-7	S	10-22-19 09:33	6 - 7 ft	Not Analyzed
SB-LS20-05, 7-8	S	10-22-19 09:33	7 - 8 ft	Not Analyzed
SB-LS20-05, 8-9	S	10-22-19 09:33	8 - 9 ft	Not Analyzed
SB-LS20-05, 9-10	S	10-22-19 09:33	9 - 10 ft	Not Analyzed

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105453 BTEX by SW 8260C

Surrogate Dibromofluoromethane recovered above QC limits. This surrogate is not associated with target compounds. Samples affected are: 7688917-1-BKS,7688917-1-BSD.

CCV surrogate Dibromofluoromethane recovered above QC limits. This surrogate is not associated with target compounds.

Certificate of Analysis Summary 640850

Enviroclean-Altamira, Midland, TX

Project Name: Longfellow Energy

Project Id: LFECM 1901/ 1000
Contact: David Lehmann
Project Location: State 20B

Date Received in Lab: Wed Oct-23-19 01:36 pm
Report Date: 30-OCT-19
Project Manager: Jessica Kramer

Analysis Requested																							
	Lab Id:	640850-001				640850-002				640850-004				640850-005				640850-009				640850-010			
	Field Id:	SB-LS20-04, 2-3				SB-LS20-04, 3-4				SB-LS20-04, 5-6				SB-LS20-04, 6-7				Trip Blank				SB-LP17-05, 1-2			
	Depth:	2-3 ft				3-4 ft				5-6 ft				6-7 ft								1-2 ft			
	Matrix:	SOIL				SOIL				SOIL				SOIL				WATER				SOIL			
	Sampled:	Oct-22-19 10:11				Oct-22-19 10:13				Oct-22-19 10:15				Oct-22-19 10:17				Oct-22-19 00:00				Oct-22-19 09:32			
BTEX by SW 8260C SUB: T104704215-19-30	***Extracted:***	Oct-25-19 12:20				Oct-25-19 12:20				Oct-28-19 16:30				Oct-28-19 16:30				Oct-25-19 14:15				Oct-25-19 12:20			
	Analyzed:	Oct-25-19 19:45				Oct-25-19 20:49				Oct-29-19 02:49				Oct-29-19 03:10				Oct-25-19 15:03				Oct-25-19 20:06			
	Units/RL:	mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/L		RL		mg/kg		RL	
Benzene		ND		0.00100		0.0470		0.0250		ND		0.00100		ND		0.000992		ND		0.00100		ND		0.000992	
Toluene		ND		0.00500		ND		0.125		ND		0.00501		ND		0.00496		ND		0.00100		ND		0.00496	
Ethylbenzene		ND		0.00100		4.84 D		0.0500		ND		0.00100		ND		0.000992		ND		0.00100		0.00600		0.000992	
m,p-Xylenes		ND		0.00200		6.70		0.0500		ND		0.00200		ND		0.00198		ND		0.0100		0.00725		0.00198	
o-Xylene		ND		0.00100		2.95		0.0250		ND		0.00100		ND		0.000992		ND		0.00100		0.0289		0.000992	
Total Xylenes		ND		0.00100		9.65		0.0250		ND		0.00100		ND		0.000992		ND		0.00100		0.0362		0.000992	
Total BTEX		ND		0.00100		14.5		0.0250		ND		0.00100		ND		0.000992		ND		0.00100		0.0422		0.000992	
Inorganic Anions by EPA 300 SUB: T104704400-19-19	***Extracted:***	Oct-25-19 15:45				Oct-25-19 15:45				Oct-28-19 16:00				Oct-29-19 13:30								Oct-25-19 15:45			
	Analyzed:	Oct-25-19 19:16				Oct-25-19 19:22				Oct-28-19 22:32				Oct-29-19 16:55								Oct-25-19 19:29			
	Units/RL:	mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg		RL						mg/kg		RL	
Chloride		631		4.95		2580		25.2		1230		5.05		1060		5.00						3510		24.9	
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-25-19 17:00				Oct-25-19 17:00				Oct-29-19 17:00				Oct-29-19 17:00								Oct-25-19 17:00			
	Analyzed:	Oct-26-19 02:25				Oct-26-19 08:48				Oct-30-19 01:50				Oct-30-19 02:11								Oct-26-19 03:07			
	Units/RL:	mg/kg		RL		mg/kg		RL		mg/kg		RL		mg/kg		RL						mg/kg		RL	
Gasoline Range Hydrocarbons (GRO)		ND		50.0		354		49.9		ND		50.0		ND		49.9						ND		500	
Diesel Range Organics (DRO)		73.3		50.0		2090		49.9		916		50.0		104		49.9						15700		500	
Motor Oil Range Hydrocarbons (MRO)		ND		50.0		219		49.9		154		50.0		ND		49.9						2220		500	
Total TPH		73.3		50.0		2660		49.9		1070		50.0		104		49.9						17900		500	

Certificate of Analysis Summary 640850

Enviroclean-Altamira, Midland, TX

Project Name: Longfellow Energy

Project Id: LFECM 1901/ 1000
Contact: David Lehmann
Project Location: State 20B

Date Received in Lab: Wed Oct-23-19 01:36 pm
Report Date: 30-OCT-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	640850-011		640850-012		640850-019					
	Field Id:	SB-LS20-05, 2-3		SB-LS20-05, 3-4		Trip Blank					
	Depth:	2-3 ft		3-4 ft							
	Matrix:	SOIL		SOIL		WATER					
	Sampled:	Oct-22-19 09:33		Oct-22-19 09:33		Oct-23-19 13:36					
BTEX by SW 8260C SUB: T104704215-19-30	***Extracted:***	Oct-25-19 12:20		Oct-28-19 16:30		Oct-25-19 14:15					
	Analyzed:	Oct-25-19 20:28		Oct-29-19 03:32		Oct-25-19 14:45					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/L	RL				
Benzene		ND	0.00100	ND	0.00101	ND	0.00100				
Toluene		ND	0.00502	ND	0.00503	ND	0.00100				
Ethylbenzene		ND	0.00100	ND	0.00101	ND	0.00100				
m,p-Xylenes		ND	0.00201	0.00280	0.00201	ND	0.0100				
o-Xylene		ND	0.00100	0.00126	0.00101	ND	0.00100				
Total Xylenes		ND	0.00100	0.00406	0.00101	ND	0.00100				
Total BTEX		ND	0.00100	0.00406	0.00101	ND	0.00100				
Inorganic Anions by EPA 300 SUB: T104704400-19-19	***Extracted:***	Oct-25-19 17:00		Oct-28-19 16:00							
	Analyzed:	Oct-25-19 19:20		Oct-28-19 22:37							
	Units/RL:	mg/kg	RL	mg/kg	RL						
Chloride		3460	25.0	4780	25.3						
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-25-19 17:00		Oct-29-19 17:00							
	Analyzed:	Oct-26-19 09:09		Oct-30-19 02:32							
	Units/RL:	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		ND	50.0	ND	49.8						
Diesel Range Organics (DRO)		342	50.0	92.7	49.8						
Motor Oil Range Hydrocarbons (MRO)		108	50.0	ND	49.8						
Total TPH		450	50.0	92.7	49.8						

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105453 **Sample:** 640850-019 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 14:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0606	0.0500	121	75-131	
1,2-Dichloroethane-D4	0.0446	0.0500	89	63-144	
Toluene-D8	0.0559	0.0500	112	80-117	

Lab Batch #: 3105453 **Sample:** 640850-009 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 15:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0618	0.0500	124	75-131	
1,2-Dichloroethane-D4	0.0451	0.0500	90	63-144	
Toluene-D8	0.0511	0.0500	102	80-117	

Lab Batch #: 3105437 **Sample:** 640850-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 19:45

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	53-142	
1,2-Dichloroethane-D4	0.0524	0.0500	105	53-150	
Toluene-D8	0.0512	0.0500	102	70-130	

Lab Batch #: 3105437 **Sample:** 640850-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 20:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0471	0.0500	94	53-142	
1,2-Dichloroethane-D4	0.0507	0.0500	101	53-150	
Toluene-D8	0.0615	0.0500	123	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105437 **Sample:** 640850-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 20:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0479	0.0500	96	53-142	
1,2-Dichloroethane-D4	0.0500	0.0500	100	53-150	
Toluene-D8	0.0534	0.0500	107	70-130	

Lab Batch #: 3105437 **Sample:** 640850-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 20:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0463	0.0500	93	53-142	
1,2-Dichloroethane-D4	0.0518	0.0500	104	53-150	
Toluene-D8	0.0594	0.0500	119	70-130	

Lab Batch #: 3105437 **Sample:** 640850-002 / DL **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 21:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0431	0.0500	86	53-142	
1,2-Dichloroethane-D4	0.0449	0.0500	90	53-150	
Toluene-D8	0.0586	0.0500	117	70-130	

Lab Batch #: 3105552 **Sample:** 640850-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/26/19 02:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.7	99.9	82	70-135	
o-Terphenyl	43.2	50.0	86	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105552 **Sample:** 640850-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/26/19 03:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	100	92	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 3105552 **Sample:** 640850-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/26/19 08:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.1	99.8	99	70-135	
o-Terphenyl	53.6	49.9	107	70-135	

Lab Batch #: 3105552 **Sample:** 640850-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/26/19 09:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.9	88	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3105726 **Sample:** 640850-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 02:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	53-142	
1,2-Dichloroethane-D4	0.0515	0.0500	103	53-150	
Toluene-D8	0.0552	0.0500	110	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105726 **Sample:** 640850-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 03:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	53-142	
1,2-Dichloroethane-D4	0.0508	0.0500	102	53-150	
Toluene-D8	0.0509	0.0500	102	70-130	

Lab Batch #: 3105726 **Sample:** 640850-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 03:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0564	0.0500	113	53-142	
1,2-Dichloroethane-D4	0.0554	0.0500	111	53-150	
Toluene-D8	0.0580	0.0500	116	70-130	

Lab Batch #: 3105836 **Sample:** 640850-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/30/19 01:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.9	93	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 3105836 **Sample:** 640850-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/30/19 02:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.7	97	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105836 **Sample:** 640850-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/30/19 02:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	99.6	94	70-135	
o-Terphenyl	48.7	49.8	98	70-135	

Lab Batch #: 3105453 **Sample:** 7688917-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 12:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0639	0.0500	128	75-131	
1,2-Dichloroethane-D4	0.0469	0.0500	94	63-144	
Toluene-D8	0.0531	0.0500	106	80-117	

Lab Batch #: 3105437 **Sample:** 7688910-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 13:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	53-142	
1,2-Dichloroethane-D4	0.0496	0.0500	99	53-150	
Toluene-D8	0.0509	0.0500	102	70-130	

Lab Batch #: 3105552 **Sample:** 7688965-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 20:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.7	100	86	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105726 **Sample:** 7689128-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/29/19 02:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	53-142	
1,2-Dichloroethane-D4	0.0514	0.0500	103	53-150	
Toluene-D8	0.0525	0.0500	105	70-130	

Lab Batch #: 3105836 **Sample:** 7689180-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/29/19 21:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	100	92	70-135	
o-Terphenyl	49.1	50.0	98	70-135	

Lab Batch #: 3105453 **Sample:** 7688917-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 10:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0689	0.0500	138	75-131	**
1,2-Dichloroethane-D4	0.0555	0.0500	111	63-144	
Toluene-D8	0.0458	0.0500	92	80-117	

Lab Batch #: 3105437 **Sample:** 7688910-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 12:12

SURROGATE RECOVERY STUDY

BTEX by SW 8260C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0485	0.0500	97	53-142	
1,2-Dichloroethane-D4	0.0500	0.0500	100	53-150	
Toluene-D8	0.0528	0.0500	106	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105552 **Sample:** 7688965-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 20:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	100	87	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 3105726 **Sample:** 7689128-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/28/19 23:38

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0479	0.0500	96	53-142	
1,2-Dichloroethane-D4	0.0484	0.0500	97	53-150	
Toluene-D8	0.0507	0.0500	101	70-130	

Lab Batch #: 3105836 **Sample:** 7689180-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/29/19 22:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.7	100	86	70-135	
o-Terphenyl	43.2	50.0	86	70-135	

Lab Batch #: 3105453 **Sample:** 7688917-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 11:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0671	0.0500	134	75-131	**
1,2-Dichloroethane-D4	0.0485	0.0500	97	63-144	
Toluene-D8	0.0467	0.0500	93	80-117	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105437 **Sample:** 7688910-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 12:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	53-142	
1,2-Dichloroethane-D4	0.0495	0.0500	99	53-150	
Toluene-D8	0.0533	0.0500	107	70-130	

Lab Batch #: 3105552 **Sample:** 7688965-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/19 20:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

Lab Batch #: 3105726 **Sample:** 7689128-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/28/19 23:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0487	0.0500	97	53-142	
1,2-Dichloroethane-D4	0.0493	0.0500	99	53-150	
Toluene-D8	0.0500	0.0500	100	70-130	

Lab Batch #: 3105836 **Sample:** 7689180-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/29/19 22:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	100	85	70-135	
o-Terphenyl	43.1	50.0	86	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105453 **Sample:** 640980-001 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 10/25/19 11:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0622	0.0500	124	75-131	
1,2-Dichloroethane-D4	0.0552	0.0500	110	63-144	
Toluene-D8	0.0459	0.0500	92	80-117	

Lab Batch #: 3105437 **Sample:** 640840-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 15:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	53-142	
1,2-Dichloroethane-D4	0.0480	0.0500	96	53-150	
Toluene-D8	0.0545	0.0500	109	70-130	

Lab Batch #: 3105552 **Sample:** 640878-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 21:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.7	90	70-135	
o-Terphenyl	51.0	49.9	102	70-135	

Lab Batch #: 3105726 **Sample:** 640878-053 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 00:21

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0496	0.0500	99	53-142	
1,2-Dichloroethane-D4	0.0502	0.0500	100	53-150	
Toluene-D8	0.0506	0.0500	101	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850,

Project ID: LFECM 1901/ 1000

Lab Batch #: 3105836 **Sample:** 641244-022 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 23:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.9	90	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 3105437 **Sample:** 640840-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 15:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	53-142	
1,2-Dichloroethane-D4	0.0495	0.0500	99	53-150	
Toluene-D8	0.0538	0.0500	108	70-130	

Lab Batch #: 3105552 **Sample:** 640878-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/19 21:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	99.6	96	70-135	
o-Terphenyl	52.6	49.8	106	70-135	

Lab Batch #: 3105726 **Sample:** 640878-053 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 10:23

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0481	0.0500	96	53-142	
1,2-Dichloroethane-D4	0.0494	0.0500	99	53-150	
Toluene-D8	0.0505	0.0500	101	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Longfellow Energy

Work Orders : 640850, **Project ID:** LFECM 1901/ 1000

Lab Batch #: 3105836 **Sample:** 641244-022 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/29/19 23:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.5	100	92	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Longfellow Energy

Work Order #: 640850 **Project ID:** LFECM 1901/ 1000

Analyst: CRL **Date Prepared:** 10/25/2019 **Date Analyzed:** 10/25/2019

Lab Batch ID: 3105437 **Sample:** 7688910-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.0500	0.0348	70	0.0500	0.0443	89	24	62-132	25	
Toluene	<0.00500	0.0500	0.0360	72	0.0500	0.0463	93	25	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0367	73	0.0500	0.0470	94	25	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.0731	73	0.100	0.0937	94	25	69-128	25	
o-Xylene	<0.00100	0.0500	0.0374	75	0.0500	0.0479	96	25	72-131	25	

Analyst: SAD **Date Prepared:** 10/28/2019 **Date Analyzed:** 10/28/2019

Lab Batch ID: 3105726 **Sample:** 7689128-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.0500	0.0421	84	0.0500	0.0427	85	1	62-132	25	
Toluene	<0.00500	0.0500	0.0429	86	0.0500	0.0421	84	2	66-124	25	
Ethylbenzene	<0.00100	0.0500	0.0435	87	0.0500	0.0424	85	3	71-134	25	
m,p-Xylenes	<0.00200	0.100	0.0878	88	0.100	0.0851	85	3	69-128	25	
o-Xylene	<0.00100	0.0500	0.0454	91	0.0500	0.0448	90	1	72-131	25	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Longfellow Energy

Work Order #: 640850 **Project ID:** LFECM 1901/ 1000

Analyst: KRP **Date Prepared:** 10/25/2019 **Date Analyzed:** 10/25/2019

Lab Batch ID: 3105453 **Sample:** 7688917-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.0500	0.0503	101	0.0500	0.0463	93	8	66-142	20	
Toluene	<0.00100	0.0500	0.0393	79	0.0500	0.0371	74	6	59-139	20	
Ethylbenzene	<0.00100	0.0500	0.0446	89	0.0500	0.0409	82	9	75-125	20	
m,p-Xylenes	<0.0100	0.100	0.0814	81	0.100	0.0765	77	6	75-125	20	
o-Xylene	<0.00100	0.0500	0.0432	86	0.0500	0.0400	80	8	75-125	20	

Analyst: CHE **Date Prepared:** 10/25/2019 **Date Analyzed:** 10/25/2019

Lab Batch ID: 3105523 **Sample:** 7688928-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	256	102	250	256	102	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Longfellow Energy

Work Order #: 640850 **Project ID:** LFECM 1901/ 1000

Analyst: CHE **Date Prepared:** 10/25/2019 **Date Analyzed:** 10/25/2019

Lab Batch ID: 3105527 **Sample:** 7688957-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	261	104	250	263	105	1	90-110	20	

Analyst: CHE **Date Prepared:** 10/28/2019 **Date Analyzed:** 10/28/2019

Lab Batch ID: 3105667 **Sample:** 7689058-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	265	106	250	266	106	0	90-110	20	

Analyst: SPC **Date Prepared:** 10/29/2019 **Date Analyzed:** 10/29/2019

Lab Batch ID: 3105847 **Sample:** 7689138-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	244	98	250	244	98	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Longfellow Energy

Work Order #: 640850 **Project ID:** LFECM 1901/ 1000

Analyst: ARM **Date Prepared:** 10/25/2019 **Date Analyzed:** 10/25/2019

Lab Batch ID: 3105552 **Sample:** 7688965-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	840	84	1000	826	83	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	864	86	1000	862	86	0	70-135	20	

Analyst: ARM **Date Prepared:** 10/29/2019 **Date Analyzed:** 10/29/2019

Lab Batch ID: 3105836 **Sample:** 7689180-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	885	89	1000	857	86	3	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	948	95	1000	910	91	4	70-135	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS Recoveries

Project Name: Longfellow Energy

Work Order #: 640850

Lab Batch #: 3105453 **Project ID:** LFECM 1901/ 1000

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** KRP

QC- Sample ID: 640980-001 S **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

BTEX by SW 8260C	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	0.000850	0.0500	0.0495	97	66-142	
Toluene	<0.000500	0.0500	0.0375	75	59-139	
Ethylbenzene	<0.00100	0.0500	0.0431	86	75-125	
m,p-Xylenes	<0.0100	0.100	0.0799	80	75-125	
o-Xylene	<0.00100	0.0500	0.0433	87	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Longfellow Energy

Work Order # : 640850 **Project ID:** LFECM 1901/ 1000

Lab Batch ID: 3105437 **QC- Sample ID:** 640840-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** CRL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0518	4.28	3.70	85	4.28	3.86	89	4	62-132	25	
Toluene	<0.0856	4.28	3.83	89	4.28	4.01	94	5	66-124	25	
Ethylbenzene	6.68	4.28	10.0	78	4.28	10.2	82	2	71-134	25	
m,p-Xylenes	0.115	8.56	7.73	89	8.56	7.94	91	3	69-128	25	
o-Xylene	<0.0856	4.28	3.91	91	4.28	4.06	95	4	72-131	25	

Lab Batch ID: 3105726 **QC- Sample ID:** 640878-053 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/29/2019 **Date Prepared:** 10/28/2019 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00101	0.0503	0.0416	83	0.0505	0.0473	94	13	62-132	25	
Toluene	<0.00503	0.0503	0.0412	82	0.0505	0.0481	95	15	66-124	25	
Ethylbenzene	<0.000338	0.0503	0.0414	82	0.0505	0.0485	96	16	71-134	25	
m,p-Xylenes	<0.000439	0.101	0.0828	82	0.101	0.0972	96	16	69-128	25	
o-Xylene	<0.000991	0.0503	0.0425	84	0.0505	0.0493	98	15	72-131	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Longfellow Energy

Work Order # : 640850 **Project ID:** LFECM 1901/ 1000

Lab Batch ID: 3105523 **QC- Sample ID:** 640965-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	74.2	252	353	111	252	348	109	1	90-110	20	X

Lab Batch ID: 3105523 **QC- Sample ID:** 640971-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	170	253	433	104	253	435	105	0	90-110	20	

Lab Batch ID: 3105527 **QC- Sample ID:** 641073-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1200	202	1410	104	202	1410	104	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Longfellow Energy

Work Order # : 640850 **Project ID:** LFECM 1901/ 1000

Lab Batch ID: 3105527 **QC- Sample ID:** 641083-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	17.7	248	285	108	248	286	108	0	90-110	20	

Lab Batch ID: 3105667 **QC- Sample ID:** 640597-035 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/28/2019 **Date Prepared:** 10/28/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	67.6	249	312	98	249	313	99	0	90-110	20	

Lab Batch ID: 3105667 **QC- Sample ID:** 641232-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/28/2019 **Date Prepared:** 10/28/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2.12	199	203	101	199	203	101	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Longfellow Energy

Work Order # : 640850 **Project ID:** LFECM 1901/ 1000

Lab Batch ID: 3105847 **QC- Sample ID:** 640749-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/29/2019 **Date Prepared:** 10/29/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	302	252	550	98	252	552	99	0	90-110	20	

Lab Batch ID: 3105847 **QC- Sample ID:** 640878-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/29/2019 **Date Prepared:** 10/29/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	128	249	374	99	249	375	99	0	90-110	20	

Lab Batch ID: 3105552 **QC- Sample ID:** 640878-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2019 **Date Prepared:** 10/25/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	18.8	997	851	83	996	850	83	0	70-135	20	
Diesel Range Organics (DRO)	975	997	2140	117	996	2130	116	0	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Longfellow Energy

Work Order # : 640850 **Project ID:** LFECM 1901/ 1000

Lab Batch ID: 3105836 **QC- Sample ID:** 641244-022 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/29/2019 **Date Prepared:** 10/29/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	936	94	1000	974	97	4	70-135	20	
Diesel Range Organics (DRO)	161	999	1190	103	1000	1220	106	2	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Chain of Custody

Work Order No: 640850

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

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Project Manager:	David Lehman	Bill to: (if different)	Heather Tiffany
Company Name:	Altamira	Company Name:	Altamira
Address:	2405 E. County Road 123	Address:	3700 W. Robinson St. Suite 200
City, State ZIP:	Midland, TX 79706	City, State ZIP:	Norman, Ok 73072
Phone:	405-618-2021	Email:	David.Lehmann@Altamira-us.com; Heather.Tiffany@Altamira-us.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Longfellow Energy	Turn Around	
Project Number:	LFECM1901 / 1000	Routine:	☐
Project Location	State 20B	Rush:	■
Sampler's Name:	Jordan Powell	Due Date:	
PO #:			

SAMPLE RECEIPT			
Temperature (°C):	0.8	Temp Blank:	(Yes) No
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes No (N/A)	Thermometer ID	T-NM-007
Sample Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
		Total Containers:	81 ~~17~~ on 10/23/19 +5

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers/Preservative Code	Chloride (300)	TPH (8015)	BTEX (8260B)
SB-LS20-04, 2-3	Solid	10/22/19	10:11 am	2-3		x	x	x
SB-LS20-04, 3-4	Solid	10/22/19	10:13 am	3-4		x	x	x
SB-LS20-04, 4-5	Solid	10/22/19	—	4-5		x	x	x
SB-LS20-04, 5-6	Solid	10/22/19	10:15 am	5-6		x	x	x
SB-LS20-04, 6-7	Solid	10/22/19	10:17 am	6-7		x	x	x
SB-LS20-04, 7-8	Solid	10/22/19	10:19 am	7-8		x	x	x
SB-LS20-04, 8-9	Solid	10/22/19	10:23 am	8-9		x	x	x
SB-LS20-04, 9-10	Solid	10/22/19	10:24 am	9-10		x	x	x
Trip Blank	Water			---				x

ANALYSIS REQUEST — 5 day | 5 day | 5 day

Preservative Codes

HNO3: HN
H2S04: H2
HCL: HL
None: NO
NaOH: Na
MeOH: Me
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments
5 Day TAT
5 Day TAT
5 Day TAT
HOLD
HOLD
HOLD
HOLD
HOLD

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Jordan Powell		10/23/19 13:34	2		
3			4		
5			6		

Revised Date101419 Rev. 2019.1

Chain of Custody

Work Order No: 640850

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

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Project Manager:	David Lehman	Bill to: (if different)	Heather Tiffany
Company Name:	Altamira	Company Name:	Altamira
Address:	2405 E. County Road 123	Address:	3700 W. Robinson St. Suite 200
City, State ZIP:	Midland, TX 79706	City, State ZIP:	Norman, Ok 73072
Phone:	405-618-2021	Email:	David.Lehmann@Altamira-us.com; Heather.Tiffany@Altamira-us.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Longfellow Energy	Turn Around	
Project Number:	LFECM1901 / 1000	Routine:	☐
Project Location	State 20B	Rush:	■
Sampler's Name:	Jordan Powell	Due Date:	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Temperature (°C):		Thermometer ID		
Received Intact:	Yes No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers/Preservative Code	5 day Chloride (300)	5 day TPH (8015)	5 day BTEX (8260B)	Sample Comments
SB-LP17-05, 1-2	Solid	10/22/19	9:32 am	1-2		x	x	x	5 Day TAT
SB-LS20-05, 2-3	Solid	10/22/19	9:33 am	2-3		x	x	x	5 Day TAT
SB-LS20-05, 3-4	Solid	10/22/19	9:34 am	3-4		x	x	x	HOLD
SB-LS20-05, 4-5	Solid	10/22/19	—	4-5		x	x	x	HOLD
SB-LS20-05, 5-6	Solid	10/22/19	—	5-6		x	x	x	HOLD
SB-LS20-05, 6-7	Solid	10/22/19	—	6-7		x	x	x	HOLD
SB-LS20-05, 7-8	Solid	10/22/19	9:45 am	7-8		x	x	x	HOLD
SB-LS20-05, 8-9	Solid	10/22/19	9:47 am	8-9		x	x	x	HOLD
SB-LS20-05, 9-10	Solid	10/22/19	9:48 am	9-10		x	x	x	HOLD
Trip Blank				—				X	

ANALYSIS REQUEST

Preservative Codes

HNO3: HN
H2S04: H2
HCL: HL
None: NO
NaOH: Na
MeOH: Me
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:30pm

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U 1631 / 245.1 / 7470 / 7471 : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Jordan Powell		10/23/19 13:36	2		
3				4		
5				6		

Revised Date 101419 Rev. 2019.1

Final 1.001

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Inter-Office Shipment

IOS Number **50797**

Date/Time: 10/24/19 14:24
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

Lab# From: **Carlsbad**
Delivery Priority:
Address: 1089 N Canal Street

Lab# To: **Midland**
Air Bill No.: 776810437200
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
640850-001	S	SB-LS20-04, 2-3	10/22/19 10:11	E300	Inorganic Anions by EPA 300	10/29/19	11/19/19	JKR	CL	
640850-001	S	SB-LS20-04, 2-3	10/22/19 10:11	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-002	S	SB-LS20-04, 3-4	10/22/19 10:13	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-002	S	SB-LS20-04, 3-4	10/22/19 10:13	E300	Inorganic Anions by EPA 300	10/29/19	11/19/19	JKR	CL	
640850-003	S	SB-LS20-04, 4-5	10/22/19 00:00	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-003	S	SB-LS20-04, 4-5	10/22/19 00:00	E300	Inorganic Anions by EPA 300	11/01/19	11/19/19	JKR	CL	
640850-004	S	SB-LS20-04, 5-6	10/22/19 10:15	E300	Inorganic Anions by EPA 300	11/01/19	11/19/19	JKR	CL	
640850-004	S	SB-LS20-04, 5-6	10/22/19 10:15	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-005	S	SB-LS20-04, 6-7	10/22/19 10:17	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-005	S	SB-LS20-04, 6-7	10/22/19 10:17	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-006	S	SB-LS20-04, 7-8	10/22/19 10:19	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-006	S	SB-LS20-04, 7-8	10/22/19 10:19	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-007	S	SB-LS20-04, 8-9	10/22/19 10:23	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-007	S	SB-LS20-04, 8-9	10/22/19 10:23	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-008	S	SB-LS20-04, 9-10	10/22/19 10:24	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-008	S	SB-LS20-04, 9-10	10/22/19 10:24	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-010	S	SB-LP17-05, 1-2	10/22/19 09:32	E300	Inorganic Anions by EPA 300	10/29/19	11/19/19	JKR	CL	
640850-010	S	SB-LP17-05, 1-2	10/22/19 09:32	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-011	S	SB-LS20-05, 2-3	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-011	S	SB-LS20-05, 2-3	10/22/19 09:33	E300	Inorganic Anions by EPA 300	10/29/19	11/19/19	JKR	CL	
640850-012	S	SB-LS20-05, 3-4	10/22/19 09:33	E300	Inorganic Anions by EPA 300	11/01/19	11/19/19	JKR	CL	
640850-012	S	SB-LS20-05, 3-4	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	10/29/19	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-013	S	SB-LS20-05, 4-5	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-013	S	SB-LS20-05, 4-5	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-014	S	SB-LS20-05, 5-6	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	

Inter-Office Shipment

IOS Number **50797**

Date/Time: 10/24/19 14:24
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776810437200

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
640850-014	S	SB-LS20-05, 5-6	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-015	S	SB-LS20-05, 6-7	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-015	S	SB-LS20-05, 6-7	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-016	S	SB-LS20-05, 7-8	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-016	S	SB-LS20-05, 7-8	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-017	S	SB-LS20-05, 8-9	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-017	S	SB-LS20-05, 8-9	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	
640850-018	S	SB-LS20-05, 9-10	10/22/19 09:33	SW8015MOD_NM	TPH by SW8015 Mod	HOLD	11/05/19	JKR	PHCC10C28 PHCC28C35	
640850-018	S	SB-LS20-05, 9-10	10/22/19 09:33	E300	Inorganic Anions by EPA 300	HOLD	11/19/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Jessica Kramer
Jessica Kramer

Date Relinquished: 10/24/2019

Received By: Jessica Kramer
Jessica Kramer

Date Received: 10/25/2019 11:36

Cooler Temperature: 0.1

Inter-Office Shipment

IOS Number **50798**

Date/Time: 10/24/19 14:24
Lab# From: **Carlsbad**
Lab# To: **Houston**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 776810071558

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
640850-001	S	SB-LS20-04, 2-3	10/22/19 10:11	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-002	S	SB-LS20-04, 3-4	10/22/19 10:13	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-003	S	SB-LS20-04, 4-5	10/22/19 00:00	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-004	S	SB-LS20-04, 5-6	10/22/19 10:15	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-005	S	SB-LS20-04, 6-7	10/22/19 10:17	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-006	S	SB-LS20-04, 7-8	10/22/19 10:19	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-007	S	SB-LS20-04, 8-9	10/22/19 10:23	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-008	S	SB-LS20-04, 9-10	10/22/19 10:24	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-009	W	Trip Blank	10/22/19 00:00	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-010	S	SB-LP17-05, 1-2	10/22/19 09:32	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-011	S	SB-LS20-05, 2-3	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-012	S	SB-LS20-05, 3-4	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-013	S	SB-LS20-05, 4-5	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-014	S	SB-LS20-05, 5-6	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-015	S	SB-LS20-05, 6-7	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-016	S	SB-LS20-05, 7-8	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-017	S	SB-LS20-05, 8-9	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-018	S	SB-LS20-05, 9-10	10/22/19 09:33	SW8260CBTEX	BTEX by SW 8260C	HOLD	11/05/19	JKR	BZ BZME EBZ XYLENES	
640850-019	W	Trip Blank	10/23/19 13:36	SW8260CBTEX	BTEX by SW 8260C	10/29/19	11/06/19	JKR	BZ BZME EBZ XYLENES	

Inter Office Shipment or Sample Comments:

Missing samples 13 & 14

Relinquished By: Jessica Kramer
Jessica Kramer

Date Relinquished: 10/24/2019

Received By: Ashly Kowalski

Date Received: 10/25/2019 10:00

Cooler Temperature: 4.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 50797

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 10/24/2019 02:24 PM

Received By: Brianna Teel **Date Received:** 10/25/2019 11:36 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Jessica Kramer Date: 10/25/2019

Jessica Kramer

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 50798

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Elizabeth McClellan **Date Sent:** 10.24.2019 02.24 PM

Received By: Ashly Kowalski **Date Received:** 10.25.2019 10.00 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 10.25.2019
Ashly Kowalski

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Enviroclean-Altamira

Date/ Time Received: 10/23/2019 01:36:00 PM

Work Order #: 640850

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**Yes**	Samples 003,013,014, 015 are missing.
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	BTEX subbed to Houston. TPH and Cl to Midland.
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 10/24/2019

Checklist reviewed by: Jessica Kramer Date: 10/24/2019

Jessica Kramer