Terra Energy Partners Grand Valley Field Background Data	COGCC Table 915-1 Threshold (RSS Level)	Sample Locations																	
		GM 245-1 *Locatoin ID: 324156*	GR 41-20 *Location ID: 335223*			GM 343-32 *Location ID: 335492*	GV 47-35 *Location ID: 334772*	GM 34-33 *Location ID:* 334868			GM 268-3 *Location ID*: 334802			GM 323-28 *Location ID*: 335318			GV 41-34 *Location ID: 334929*		
		11/18/2019	12/10/2018			8/7/2019	3/19/2020	4/24/2019			5/24/2014			7/31/2014			1/23/2014		
		Lab ID: 19111405	Lab ID: 1812606			Lab ID: 19080634	Lab ID: 20031410	Lab ID: 19041741			Lab ID: 14051481			Lab ID: 1408035			Lab ID: 1401965		
		BKGD 1	BKGD 1	BKGD 2	BKGD 3	BKGD 1	BKGD 1	BKGD 1	BKGD 2	BKGD 3	BKGD 1	BKGD 2	BKGD 3	BKGD 1	BKGD 2	BKGD 3	BKGD 1	BKGD 2	BKGD 3
ARSENIC	0.68	9.8	7.3	6.6	6.6	6	5.4	3.8	6.4	4.8	11.0	4.7	5.9	7.1	11.0	7.6	8.5	7.1	8.7
(average)		**9.8**	**6.83**			**6**	**5.40**	**5.00**			**7.20**			**8.57**			**8.10**		
ELECTRICAL CONDUCTIVITY (EC) (mmho/cm)	<4 mmhos/cm or x2 bkgd	0.019	-	-	0.5	0.65	-	0.018	0.030	0.026	0.68	-	-	1.9	-	-	-	-	6.80
pH	6 to 8.3	8.57	-	-	8.51	8.63	-	8.74	8.27	8.63	8.10	-	-	8.00	-	-	-	-	9.2
SODIUM ADSORPTION RATIO (SAR)	6	0.17	-	-	0.51	0.5	-	0.11	0.19	2.5	1.4	-	-	0.45	-	-	-	-	57

All restuls are reported in mg/kg, unless otherwise noted

Peak Arsenic Reading	**11.0**
Peak SAR	**57**
Peak EC	**6.8**
Peak pH	**9.2**

GM 245-1
Background Data

22-Nov-2019

Mike Gardner
Terra Energy Partners, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **GM 245-1-796** Work Order: **19111405**

Dear Mike,

ALS Environmental received 3 samples on 19-Nov-2019 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 22-Nov-19

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Work Order: **19111405**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19111405-01	SP-1: Composite near tank overflow	Soil		11/18/2019 13:00	11/19/2019 10:00	☐
19111405-02	SP-2: Composite from impacted area	Soil		11/18/2019 13:00	11/19/2019 10:00	☐
19111405-03	SP-3: Background	Soil		11/18/2019 13:00	11/19/2019 10:00	☐

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Work Order: 19111405

Case Narrative

Batch 145846, Method ICP_6020_S, Sample 19111405-03A MS/MSD: The MS/MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Batch 145846, Method ICP_6020_S, Sample 19111405-03A MS/MSD: The MS/MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high for this analyte.

Batch 145846, Method ICP_6020_S, Sample 19111405-03A MS: The MS recoveries were outside of the control limits for Copper and Lead. However, the MSD recoveries and the RPDs between the MS and MSD were in control. No qualification is required.

Batch 145846, Method ICP_6020_S, Sample 19111405-03A MSD: The MSD recovery was outside of the control limit for Silver. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required.

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
°C	Degrees Celcius
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

s.u. Standard Units

ALS Group, USA

Date: *22-Nov-19*

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Sample ID: SP-1: Composite near tank overflow
Collection Date: 11/18/2019 01:00 PM

Work Order: 19111405
Lab ID: 19111405-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015M**			Prep: SW3550 / 11/19/19		Analyst: **BCM**
DRO (C10-C28)	**9.5**		**3.2**	**5.7**	**mg/Kg-dry**	1	11/19/2019 19:28
Surr: 4-Terphenyl-d14	*69.4*			*33-111*	*%REC*	1	11/19/2019 19:28
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 11/19/19		Analyst: **BCM**
GRO (C6-C10)	U		2.8	6.8	mg/Kg	1	11/19/2019 22:12
Surr: Toluene-d8	*77.6*			*71-123*	*%REC*	1	11/19/2019 22:12
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 11/20/19		Analyst: **RSH**
Mercury	**0.024**		**0.0020**	**0.020**	**mg/Kg-dry**	1	11/20/2019 14:27
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 11/19/19		Analyst: **STP**
Arsenic	**9.0**		**0.050**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Barium	**470**		**3.8**	**4.1**	**mg/Kg-dry**	10	11/20/2019 16:22
Cadmium	**0.40**		**0.025**	**0.17**	**mg/Kg-dry**	1	11/20/2019 16:01
Chromium	**10**		**0.18**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Copper	**12**		**0.41**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Lead	**13**		**0.20**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Nickel	**13**		**0.21**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Selenium	**0.49**		**0.38**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Silver	**0.055**	J	**0.055**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:01
Zinc	**47**		**0.81**	**0.83**	**mg/Kg-dry**	1	11/20/2019 16:01
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Calcium	**100**		**2.5**	**5.0**	**mg/L**	10	11/21/2019 17:01
Magnesium	**32**		**0.50**	**2.0**	**mg/L**	10	11/21/2019 17:01
Sodium	**970**		**0.45**	**2.0**	**mg/L**	10	11/21/2019 17:01
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Sodium Adsorption Ratio	**21**		**0.010**	**0.010**	**none**	1	11/21/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 11/19/19		Analyst: **EEW**
Acenaphthene	U		0.0014	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Anthracene	U		0.0024	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Benzo(a)anthracene	U		0.0029	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Benzo(a)pyrene	U		0.0019	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Benzo(b)fluoranthene	U		0.0017	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Benzo(k)fluoranthene	U		0.0021	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Chrysene	U		0.0015	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Dibenzo(a,h)anthracene	U		0.0017	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Fluoranthene	U		0.0013	0.0071	mg/Kg-dry	1	11/19/2019 23:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *22-Nov-19*

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Sample ID: SP-1: Composite near tank overflow
Collection Date: 11/18/2019 01:00 PM

Work Order: 19111405
Lab ID: 19111405-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0023	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Indeno(1,2,3-cd)pyrene	U		0.0026	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Naphthalene	**0.0057**	J	**0.0031**	**0.0071**	**mg/Kg-dry**	1	11/19/2019 23:30
Pyrene	U		0.0012	0.0071	mg/Kg-dry	1	11/19/2019 23:30
Surr: 2-Fluorobiphenyl	*80.5*			*20-140*	*%REC*	1	11/19/2019 23:30
Surr: 4-Terphenyl-d14	*25.2*			*22-172*	*%REC*	1	11/19/2019 23:30
Surr: Nitrobenzene-d5	*49.3*			*28-140*	*%REC*	1	11/19/2019 23:30
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 11/19/19		Analyst: **SJB**
Benzene	U		0.0069	0.041	mg/Kg-dry	1	11/20/2019 07:28
Ethylbenzene	**0.0095**	J	**0.0086**	**0.041**	**mg/Kg-dry**	1	11/20/2019 07:28
m,p-Xylene	**0.079**	J	**0.054**	**0.081**	**mg/Kg-dry**	1	11/20/2019 07:28
o-Xylene	**0.026**	J	**0.016**	**0.041**	**mg/Kg-dry**	1	11/20/2019 07:28
Toluene	**0.062**		**0.011**	**0.041**	**mg/Kg-dry**	1	11/20/2019 07:28
Xylenes, Total	**0.10**	J	**0.054**	**0.12**	**mg/Kg-dry**	1	11/20/2019 07:28
Surr: 1,2-Dichloroethane-d4	*101*			*70-130*	*%REC*	1	11/20/2019 07:28
Surr: 4-Bromofluorobenzene	*99.4*			*70-130*	*%REC*	1	11/20/2019 07:28
Surr: Dibromofluoromethane	*87.2*			*70-130*	*%REC*	1	11/20/2019 07:28
Surr: Toluene-d8	*100*			*70-130*	*%REC*	1	11/20/2019 07:28
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 11/21/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.30**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	11/21/2019 12:20
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **MB**
Chromium, Trivalent	**10**		**0.35**	**1.1**	**mg/Kg-dry**	1	11/21/2019 15:00
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 11/20/19		Analyst: **RZM**
Chromium, Hexavalent	U		0.96	1.1	mg/Kg-dry	1	11/20/2019 15:05
MOISTURE		Method:	**SW3550C**				Analyst: **KTP**
Moisture	**12**		**0.10**	**0.10**	**% of sample**	1	11/19/2019 16:07
PH		Method:	**SW9045D**		Prep: EXTRACT / 11/19/19		Analyst: **DNW**
pH	**8.62**		**0.10**	**0.100**	**s.u.**	1	11/19/2019 14:00
Temperature	**21.8**		**0.10**	**0.100**	**°C**	1	11/19/2019 14:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *22-Nov-19*

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Sample ID: SP-2: Composite from impacted area
Collection Date: 11/18/2019 01:00 PM

Work Order: 19111405
Lab ID: 19111405-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015M**			Prep: SW3550 / 11/19/19		Analyst: **BCM**
DRO (C10-C28)	**8.5**		**3.3**	**5.7**	**mg/Kg-dry**	1	11/19/2019 19:57
Surr: 4-Terphenyl-d14	*63.1*			*33-111*	*%REC*	1	11/19/2019 19:57
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 11/19/19		Analyst: **BCM**
GRO (C6-C10)	**34**		**2.9**	**6.9**	**mg/Kg**	1	11/19/2019 22:42
Surr: Toluene-d8	*84.3*			*71-123*	*%REC*	1	11/19/2019 22:42
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 11/20/19		Analyst: **RSH**
Mercury	**0.027**		**0.0021**	**0.021**	**mg/Kg-dry**	1	11/20/2019 14:40
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 11/19/19		Analyst: **STP**
Arsenic	**7.2**		**0.051**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Barium	**400**		**3.9**	**4.2**	**mg/Kg-dry**	10	11/20/2019 16:24
Cadmium	**0.56**		**0.025**	**0.17**	**mg/Kg-dry**	1	11/20/2019 16:03
Chromium	**9.3**		**0.19**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Copper	**12**		**0.42**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Lead	**14**		**0.20**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Nickel	**13**		**0.22**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Selenium	**0.47**		**0.39**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Silver	**0.059**	J	**0.056**	**0.42**	**mg/Kg-dry**	1	11/20/2019 16:03
Zinc	**50**		**0.83**	**0.84**	**mg/Kg-dry**	1	11/20/2019 16:03
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Calcium	**85**		**2.5**	**5.0**	**mg/L**	10	11/21/2019 17:06
Magnesium	**20**		**0.50**	**2.0**	**mg/L**	10	11/21/2019 17:06
Sodium	**720**		**0.45**	**2.0**	**mg/L**	10	11/21/2019 17:06
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Sodium Adsorption Ratio	**18**		**0.010**	**0.010**	**none**	1	11/21/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 11/19/19		Analyst: **EEW**
Acenaphthene	U		0.0014	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Anthracene	U		0.0024	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Benzo(a)anthracene	U		0.0029	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Benzo(a)pyrene	U		0.0019	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Benzo(b)fluoranthene	U		0.0017	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Benzo(k)fluoranthene	U		0.0021	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Chrysene	U		0.0015	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Dibenzo(a,h)anthracene	U		0.0017	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Fluoranthene	U		0.0013	0.0071	mg/Kg-dry	1	11/19/2019 23:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
Project: GM 245-1-796 **Work Order:** 19111405
Sample ID: SP-2: Composite from impacted area **Lab ID:** 19111405-02
Collection Date: 11/18/2019 01:00 PM **Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0023	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Indeno(1,2,3-cd)pyrene	U		0.0025	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Naphthalene	**0.0075**		**0.0031**	**0.0071**	**mg/Kg-dry**	1	11/19/2019 23:45
Pyrene	U		0.0012	0.0071	mg/Kg-dry	1	11/19/2019 23:45
Surr: 2-Fluorobiphenyl	*85.1*			*20-140*	*%REC*	1	11/19/2019 23:45
Surr: 4-Terphenyl-d14	*38.2*			*22-172*	*%REC*	1	11/19/2019 23:45
Surr: Nitrobenzene-d5	*81.8*			*28-140*	*%REC*	1	11/19/2019 23:45
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 11/19/19		Analyst: **SJB**
Benzene	**0.0081**	J	**0.0069**	**0.040**	**mg/Kg-dry**	1	11/20/2019 06:39
Ethylbenzene	**0.0094**	J	**0.0085**	**0.040**	**mg/Kg-dry**	1	11/20/2019 06:39
m,p-Xylene	**0.072**	J	**0.054**	**0.081**	**mg/Kg-dry**	1	11/20/2019 06:39
o-Xylene	**0.022**	J	**0.016**	**0.040**	**mg/Kg-dry**	1	11/20/2019 06:39
Toluene	**0.047**		**0.011**	**0.040**	**mg/Kg-dry**	1	11/20/2019 06:39
Xylenes, Total	**0.094**	J	**0.054**	**0.12**	**mg/Kg-dry**	1	11/20/2019 06:39
Surr: 1,2-Dichloroethane-d4	*103*			*70-130*	*%REC*	1	11/20/2019 06:39
Surr: 4-Bromofluorobenzene	*100*			*70-130*	*%REC*	1	11/20/2019 06:39
Surr: Dibromofluoromethane	*94.9*			*70-130*	*%REC*	1	11/20/2019 06:39
Surr: Toluene-d8	*97.4*			*70-130*	*%REC*	1	11/20/2019 06:39
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 11/21/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.23**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	11/21/2019 12:20
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **MB**
Chromium, Trivalent	**9.3**		**0.35**	**1.1**	**mg/Kg-dry**	1	11/21/2019 15:00
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 11/20/19		Analyst: **RZM**
Chromium, Hexavalent	U		0.97	1.1	mg/Kg-dry	1	11/20/2019 15:05
MOISTURE		Method:	**SW3550C**				Analyst: **KTP**
Moisture	**13**		**0.10**	**0.10**	**% of sample**	1	11/19/2019 16:07
PH		Method:	**SW9045D**		Prep: EXTRACT / 11/19/19		Analyst: **DNW**
pH	**8.63**		**0.10**	**0.100**	**s.u.**	1	11/19/2019 14:00
Temperature	**21.7**		**0.10**	**0.100**	**°C**	1	11/19/2019 14:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *22-Nov-19*

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Sample ID: SP-3: Background
Collection Date: 11/18/2019 01:00 PM

Work Order: 19111405
Lab ID: 19111405-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015M**			Prep: SW3550 / 11/19/19		Analyst: **BCM**
DRO (C10-C28)	**14**		**3.0**	**5.2**	**mg/Kg-dry**	1	11/19/2019 20:26
Surr: 4-Terphenyl-d14	*59.8*			*33-111*	*%REC*	1	11/19/2019 20:26
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 11/19/19		Analyst: **BCM**
GRO (C6-C10)	U		2.2	5.2	mg/Kg	1	11/19/2019 21:14
Surr: Toluene-d8	*109*			*71-123*	*%REC*	1	11/19/2019 21:14
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 11/20/19		Analyst: **RSH**
Mercury	**0.021**		**0.0020**	**0.020**	**mg/Kg-dry**	1	11/20/2019 14:43
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 11/19/19		Analyst: **STP**
Arsenic	**9.8**		**0.050**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:05
Barium	**290**		**3.8**	**4.1**	**mg/Kg-dry**	10	11/20/2019 16:26
Cadmium	**0.49**		**0.025**	**0.17**	**mg/Kg-dry**	1	11/20/2019 16:05
Chromium	**11**		**0.18**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:05
Copper	**12**		**0.41**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:05
Lead	**15**		**0.20**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:05
Nickel	**13**		**0.21**	**0.41**	**mg/Kg-dry**	1	11/20/2019 16:05
Selenium	U		0.38	0.41	mg/Kg-dry	1	11/20/2019 16:05
Silver	U		0.054	0.41	mg/Kg-dry	1	11/20/2019 16:05
Zinc	**44**		**0.81**	**0.83**	**mg/Kg-dry**	1	11/20/2019 16:05
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Calcium	**52**		**2.5**	**5.0**	**mg/L**	10	11/21/2019 17:08
Magnesium	**7.2**		**0.50**	**2.0**	**mg/L**	10	11/21/2019 17:08
Sodium	**4.9**		**0.45**	**2.0**	**mg/L**	10	11/21/2019 17:08
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 11/21/19		Analyst: **STP**
Sodium Adsorption Ratio	**0.17**		**0.010**	**0.010**	**none**	1	11/21/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 11/19/19		Analyst: **EEW**
Acenaphthene	U		0.0012	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Anthracene	U		0.0021	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Benzo(a)anthracene	U		0.0026	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Benzo(a)pyrene	U		0.0017	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Benzo(b)fluoranthene	U		0.0015	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Benzo(k)fluoranthene	U		0.0019	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Chrysene	U		0.0013	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Dibenzo(a,h)anthracene	U		0.0015	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Fluoranthene	U		0.0012	0.0063	mg/Kg-dry	1	11/20/2019 12:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *22-Nov-19*

Client: Terra Energy Partners, LLC
Project: GM 245-1-796
Sample ID: SP-3: Background
Collection Date: 11/18/2019 01:00 PM

Work Order: 19111405
Lab ID: 19111405-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0021	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Indeno(1,2,3-cd)pyrene	U		0.0023	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Naphthalene	U		0.0028	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Pyrene	U		0.0010	0.0063	mg/Kg-dry	1	11/20/2019 12:01
Surr: 2-Fluorobiphenyl	*63.5*			*20-140*	*%REC*	1	11/20/2019 12:01
Surr: 4-Terphenyl-d14	*37.1*			*22-172*	*%REC*	1	11/20/2019 12:01
Surr: Nitrobenzene-d5	*67.1*			*28-140*	*%REC*	1	11/20/2019 12:01
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 11/19/19		Analyst: **SJB**
Benzene	**0.0099**	J	**0.0054**	**0.031**	**mg/Kg-dry**	1	11/20/2019 07:03
Ethylbenzene	**0.0099**	J	**0.0066**	**0.031**	**mg/Kg-dry**	1	11/20/2019 07:03
m,p-Xylene	**0.11**		**0.042**	**0.063**	**mg/Kg-dry**	1	11/20/2019 07:03
o-Xylene	**0.031**	J	**0.012**	**0.031**	**mg/Kg-dry**	1	11/20/2019 07:03
Toluene	**0.072**		**0.0086**	**0.031**	**mg/Kg-dry**	1	11/20/2019 07:03
Xylenes, Total	**0.14**		**0.042**	**0.094**	**mg/Kg-dry**	1	11/20/2019 07:03
Surr: 1,2-Dichloroethane-d4	*104*			*70-130*	*%REC*	1	11/20/2019 07:03
Surr: 4-Bromofluorobenzene	*97.6*			*70-130*	*%REC*	1	11/20/2019 07:03
Surr: Dibromofluoromethane	*91.6*			*70-130*	*%REC*	1	11/20/2019 07:03
Surr: Toluene-d8	*99.5*			*70-130*	*%REC*	1	11/20/2019 07:03
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 11/21/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.019**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	11/21/2019 12:20
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **MB**
Chromium, Trivalent	**11**		**0.32**	**1.0**	**mg/Kg-dry**	1	11/21/2019 15:00
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 11/20/19		Analyst: **RZM**
Chromium, Hexavalent	U		0.88	1.0	mg/Kg-dry	1	11/20/2019 15:05
MOISTURE		Method:	**SW3550C**				Analyst: **KTP**
Moisture	**4.0**		**0.10**	**0.10**	**% of sample**	1	11/19/2019 16:07
PH		Method:	**SW9045D**		Prep: EXTRACT / 11/19/19		Analyst: **DNW**
pH	**8.57**		**0.10**	**0.100**	**s.u.**	1	11/19/2019 14:00
Temperature	**21.9**		**0.10**	**0.100**	**°C**	1	11/19/2019 14:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **145838** Instrument ID **GC8** Method: **SW8015M**

MBLK	Sample ID: **DBLKS1-145838-145838**			Units: **mg/Kg**			Analysis Date: **11/19/2019 05:02 P**			
Client ID:	Run ID: **GC8_191119A**			SeqNo: **6070431**			Prep Date: **11/19/2019**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	*2.371*	0	*3.33*	0	*71.2*	*33-111*	0			

LCS	Sample ID: **DLCSS1-145838-145838**			Units: **mg/Kg**			Analysis Date: **11/19/2019 05:31 P**			
Client ID:	Run ID: **GC8_191119A**			SeqNo: **6070432**			Prep Date: **11/19/2019**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	354.3	5.0	333	0	106	58-111	0			
Surr: 4-Terphenyl-d14	*2.173*	0	*3.33*	0	*65.2*	*33-111*	0			

MS	Sample ID: **19111428-02A MS**			Units: **mg/Kg**			Analysis Date: **11/19/2019 06:00 P**			
Client ID:	Run ID: **GC8_191119A**			SeqNo: **6070433**			Prep Date: **11/19/2019**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	369.5	5.0	332.2	11.57	108	58-111	0			
Surr: 4-Terphenyl-d14	*1.989*	0	*3.322*	0	*59.9*	*33-111*	0			

MSD	Sample ID: **19111428-02A MSD**			Units: **mg/Kg**			Analysis Date: **11/19/2019 06:29 P**			
Client ID:	Run ID: **GC8_191119A**			SeqNo: **6070434**			Prep Date: **11/19/2019**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	352.3	4.9	329.3	11.57	103	58-111	369.5	4.77	30	
Surr: 4-Terphenyl-d14	*1.936*	0	*3.293*	0	*58.8*	*33-111*	1.989	*2.7*	*30*	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145824** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-145824-145824** Units: **µg/Kg-dry** Analysis Date: **11/19/2019 08:16 P**
Client ID: Run ID: **GC9_191119A** SeqNo: **6072397** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	5,000								
Surr: Toluene-d8	*4748*	0	*5000*	0	*95*	*71-123*	0			

LCS Sample ID: **LCS-145824-145824** Units: **µg/Kg-dry** Analysis Date: **11/19/2019 06:48 P**
Client ID: Run ID: **GC9_191119A** SeqNo: **6072396** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	508400	5,000	500000	0	102	71-123	0			
Surr: Toluene-d8	*5739*	0	*5000*	0	*115*	*71-123*	0			

MS Sample ID: **19111365-02A MS** Units: **µg/Kg-dry** Analysis Date: **11/19/2019 11:11 P**
Client ID: Run ID: **GC9_191119A** SeqNo: **6072402** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	925500	7,600	760100	0	122	71-123	0			
Surr: Toluene-d8	*7826*	0	*7601*	0	*103*	*71-123*	0			

MSD Sample ID: **19111365-02A MSD** Units: **µg/Kg-dry** Analysis Date: **11/19/2019 11:40 P**
Client ID: Run ID: **GC9_191119A** SeqNo: **6072403** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	876900	7,000	703000	0	125	71-123	925500	5.39	30	S
Surr: Toluene-d8	*7977*	0	*7030*	0	*113*	*71-123*	7826	*1.91*	*30*	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145877** Instrument ID **HG4** Method: **SW7471B**

MBLK Sample ID: **MBLK-145877-145877** Units: **mg/Kg** Analysis Date: **11/20/2019 02:23 P**
Client ID: Run ID: **HG4_191120A** SeqNo: **6071512** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0035	0.020								J

LCS Sample ID: **LCS-145877-145877** Units: **mg/Kg** Analysis Date: **11/20/2019 02:25 P**
Client ID: Run ID: **HG4_191120A** SeqNo: **6071513** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1836	0.020	0.1665	0	110	80-120	0			

MS Sample ID: **19111405-01AMS** Units: **mg/Kg** Analysis Date: **11/20/2019 02:29 P**
Client ID: **SP-1: Composite near tank overflow** Run ID: **HG4_191120A** SeqNo: **6071515** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1718	0.018	0.1507	0.02086	100	75-125	0			

MSD Sample ID: **19111405-01AMSD** Units: **mg/Kg** Analysis Date: **11/20/2019 02:32 P**
Client ID: **SP-1: Composite near tank overflow** Run ID: **HG4_191120A** SeqNo: **6071516** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1769	0.018	0.1476	0.02086	106	75-125	0.1718	2.92	35	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145846** Instrument ID **ICPMS4** Method: **SW6020A**

MBLK Sample ID: **MBLK-145846-145846** Units: **mg/Kg** Analysis Date: **11/20/2019 03:54 P**
Client ID: Run ID: **ICPMS4_191120A** SeqNo: **6072452** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								
Barium	U	0.25								
Cadmium	U	0.10								
Chromium	U	0.25								
Copper	U	0.25								
Lead	U	0.25								
Nickel	U	0.25								
Selenium	U	0.25								
Silver	U	0.25								
Zinc	U	0.50								

LCS Sample ID: **LCS-145846-145846** Units: **mg/Kg** Analysis Date: **11/20/2019 03:56 P**
Client ID: Run ID: **ICPMS4_191120A** SeqNo: **6072453** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.963	0.25	5	0	99.3	80-120	0			
Barium	4.992	0.25	5	0	99.8	80-120	0			
Cadmium	4.994	0.10	5	0	99.9	80-120	0			
Chromium	5.137	0.25	5	0	103	80-120	0			
Copper	5.062	0.25	5	0	101	80-120	0			
Lead	5.215	0.25	5	0	104	80-120	0			
Nickel	5.059	0.25	5	0	101	80-120	0			
Selenium	5.001	0.25	5	0	100	80-120	0			
Silver	4.952	0.25	5	0	99	80-120	0			
Zinc	5.334	0.50	5	0	107	80-120	0			

MS Sample ID: **19111405-03AMS** Units: **mg/Kg** Analysis Date: **11/20/2019 04:28 P**
Client ID: **SP-3: Background** Run ID: **ICPMS4_191120A** SeqNo: **6072463** Prep Date: **11/19/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	375.9	3.8	7.599	282.7	1230	75-125	0			SO

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145846** Instrument ID **ICPMS4** Method: **SW6020A**

MS Sample ID: **19111405-03AMS** Units: **mg/Kg** Analysis Date: **11/20/2019 04:07 P**

Client ID: **SP-3: Background** Run ID: **ICPMS4_191120A** SeqNo: **6072505** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	16.04	0.38	7.599	9.43	87	75-125	0			
Cadmium	6.449	0.15	7.599	0.4655	78.7	75-125	0			
Chromium	21.47	0.38	7.599	10.58	143	75-125	0			S
Copper	17.21	0.38	7.599	11.62	73.6	75-125	0			S
Lead	23.79	0.38	7.599	14.21	126	75-125	0			S
Nickel	18.56	0.38	7.599	12	86.3	75-125	0			
Selenium	6.209	0.38	7.599	0.3256	77.4	75-125	0			
Silver	5.798	0.38	7.599	0.0519	75.6	75-125	0			
Zinc	52.45	0.76	7.599	42.69	129	75-125	0			SO

MSD Sample ID: **19111405-03AMSD** Units: **mg/Kg** Analysis Date: **11/20/2019 04:29 P**

Client ID: **SP-3: Background** Run ID: **ICPMS4_191120A** SeqNo: **6072464** Prep Date: **11/19/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	292.9	3.8	7.669	282.7	132	75-125	375.9	24.8	20	SRO

MSD Sample ID: **19111405-03AMSD** Units: **mg/Kg** Analysis Date: **11/20/2019 04:09 P**

Client ID: **SP-3: Background** Run ID: **ICPMS4_191120A** SeqNo: **6072506** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.81	0.38	7.669	9.43	83.2	75-125	16.04	1.46	20	
Cadmium	6.409	0.15	7.669	0.4655	77.5	75-125	6.449	0.617	20	
Chromium	21.25	0.38	7.669	10.58	139	75-125	21.47	1.02	20	S
Copper	17.38	0.38	7.669	11.62	75.2	75-125	17.21	1.02	20	
Lead	23.11	0.38	7.669	14.21	116	75-125	23.79	2.9	20	
Nickel	18.78	0.38	7.669	12	88.5	75-125	18.56	1.21	20	
Selenium	6.338	0.38	7.669	0.3256	78.4	75-125	6.209	2.05	20	
Silver	5.775	0.38	7.669	0.0519	74.6	75-125	5.798	0.399	20	S
Zinc	53.26	0.77	7.669	42.69	138	75-125	52.45	1.53	20	SO

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145984** Instrument ID **ICPMS4** Method: **SW6020A**

DUP Sample ID: **19111285-02ADUP** Units: **mg/L** Analysis Date: **11/21/2019 04:55 P**

Client ID: Run ID: **ICPMS4_191121A** SeqNo: **6075867** Prep Date: **11/21/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	490.2	5.0	0	0	0	0-0	577.9	16.4		
Magnesium	330.1	2.0	0	0	0	0-0	417.2	23.3		
Sodium	356.6	2.0	0	0	0	0-0	452.5	23.7		

The following samples were analyzed in this batch: 19111405-01A 19111405-02A 19111405-03A

Batch ID: **145984** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **19111285-02ADUP** Units: **none** Analysis Date: **11/21/2019**

Client ID: Run ID: **SAR_191121A** SeqNo: **6075876** Prep Date: **11/21/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	3.053	0.010	0	0	0		3.502	13.7	50	

The following samples were analyzed in this batch: 19111405-01A 19111405-02A 19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145836** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-145836-145836** Units: **µg/Kg** Analysis Date: **11/19/2019 09:57 P**

Client ID: Run ID: **SVMS6_191119A** SeqNo: **6072105** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	4.2								
Anthracene	U	4.2								
Benzo(a)anthracene	U	4.2								
Benzo(a)pyrene	U	4.2								
Benzo(b)fluoranthene	U	4.2								
Benzo(k)fluoranthene	U	4.2								
Chrysene	U	4.2								
Dibenzo(a,h)anthracene	U	4.2								
Fluoranthene	U	4.2								
Fluorene	U	4.2								
Indeno(1,2,3-cd)pyrene	U	4.2								
Naphthalene	U	4.2								
Pyrene	U	4.2								
Surr: 2-Fluorobiphenyl	*2403*	0	*3333*	0	*72.1*	*20-140*	0			
Surr: 4-Terphenyl-d14	*1477*	0	*3333*	0	*44.3*	*22-172*	0			
Surr: Nitrobenzene-d5	*2539*	0	*3333*	0	*76.2*	*28-140*	0			

LCS Sample ID: **SLCSS1-145836-145836** Units: **µg/Kg** Analysis Date: **11/19/2019 10:12 P**

Client ID: Run ID: **SVMS6_191119A** SeqNo: **6072106** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1169	4.2	1333	0	87.7	40-140	0			
Anthracene	1293	4.2	1333	0	97	40-140	0			
Benzo(a)anthracene	1269	4.2	1333	0	95.2	40-140	0			
Benzo(a)pyrene	1258	4.2	1333	0	94.4	40-140	0			
Benzo(b)fluoranthene	1207	4.2	1333	0	90.5	40-140	0			
Benzo(k)fluoranthene	1178	4.2	1333	0	88.4	40-140	0			
Chrysene	1178	4.2	1333	0	88.4	40-140	0			
Dibenzo(a,h)anthracene	1108	4.2	1333	0	83.1	40-140	0			
Fluoranthene	1404	4.2	1333	0	105	40-140	0			
Fluorene	1225	4.2	1333	0	91.9	40-140	0			
Indeno(1,2,3-cd)pyrene	1263	4.2	1333	0	94.8	40-140	0			
Naphthalene	1246	4.2	1333	0	93.5	40-140	0			
Pyrene	730.5	4.2	1333	0	54.8	40-140	0			
Surr: 2-Fluorobiphenyl	*3108*	0	*3333*	0	*93.2*	*20-140*	0			
Surr: 4-Terphenyl-d14	*1601*	0	*3333*	0	*48*	*22-172*	0			
Surr: Nitrobenzene-d5	*3098*	0	*3333*	0	*93*	*28-140*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145836** Instrument ID **SVMS6** Method: **SW846 8270D**

MS Sample ID: **19110774-23B MS** Units: **µg/Kg** Analysis Date: **11/19/2019 10:28 P**

Client ID: Run ID: **SVMS6_191119A** SeqNo: **6072107** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1166	4.2	1327	2.531	87.7	40-140	0			
Anthracene	1389	4.2	1327	51.94	101	40-140	0			
Benzo(a)anthracene	1571	4.2	1327	285.9	96.8	40-140	0			
Benzo(a)pyrene	1535	4.2	1327	317.7	91.7	40-140	0			
Benzo(b)fluoranthene	1650	4.2	1327	392.6	94.8	40-140	0			
Benzo(k)fluoranthene	1252	4.2	1327	153.5	82.7	40-140	0			
Chrysene	1417	4.2	1327	274.7	86	40-140	0			
Dibenzo(a,h)anthracene	1171	4.2	1327	42.84	85	40-140	0			
Fluoranthene	1843	4.2	1327	442.6	106	40-140	0			
Fluorene	1259	4.2	1327	4.712	94.5	40-140	0			
Indeno(1,2,3-cd)pyrene	1621	4.2	1327	293.1	100	40-140	0			
Naphthalene	1273	4.2	1327	6.094	95.5	40-140	0			
Pyrene	1000	4.2	1327	287	53.7	40-140	0			
Surr: 2-Fluorobiphenyl	*3170*	0	*3319*	0	*95.5*	*20-140*	0			
Surr: 4-Terphenyl-d14	*1583*	0	*3319*	0	*47.7*	*22-172*	0			
Surr: Nitrobenzene-d5	*3109*	0	*3319*	0	*93.7*	*28-140*	0			

MSD Sample ID: **19110774-23B MSD** Units: **µg/Kg** Analysis Date: **11/19/2019 10:43 P**

Client ID: Run ID: **SVMS6_191119A** SeqNo: **6072108** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1134	4.1	1302	2.531	86.9	40-140	1166	2.81	30	
Anthracene	1370	4.1	1302	51.94	101	40-140	1389	1.33	30	
Benzo(a)anthracene	1529	4.1	1302	285.9	95.4	40-140	1571	2.72	30	
Benzo(a)pyrene	1543	4.1	1302	317.7	94	40-140	1535	0.518	30	
Benzo(b)fluoranthene	1700	4.1	1302	392.6	100	40-140	1650	2.97	30	
Benzo(k)fluoranthene	1275	4.1	1302	153.5	86.1	40-140	1252	1.82	30	
Chrysene	1392	4.1	1302	274.7	85.8	40-140	1417	1.78	30	
Dibenzo(a,h)anthracene	1240	4.1	1302	42.84	91.9	40-140	1171	5.76	30	
Fluoranthene	1763	4.1	1302	442.6	101	40-140	1843	4.47	30	
Fluorene	1247	4.1	1302	4.712	95.4	40-140	1259	0.971	30	
Indeno(1,2,3-cd)pyrene	1677	4.1	1302	293.1	106	40-140	1621	3.39	30	
Naphthalene	1242	4.1	1302	6.094	94.9	40-140	1273	2.47	30	
Pyrene	941.6	4.1	1302	287	50.3	40-140	1000	6.03	30	
Surr: 2-Fluorobiphenyl	*2973*	0	*3256*	0	*91.3*	*20-140*	3170	*6.4*	*0*	
Surr: 4-Terphenyl-d14	*1440*	0	*3256*	0	*44.2*	*22-172*	1583	*9.47*	*0*	
Surr: Nitrobenzene-d5	*3046*	0	*3256*	0	*93.5*	*28-140*	3109	*2.04*	*0*	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145856** Instrument ID **VMS6** Method: **SW8260C**

MBLK Sample ID: **MBLK-145856-145856** Units: **µg/Kg-dry** Analysis Date: **11/21/2019 05:07 A**
Client ID: Run ID: **VMS6_191120B** SeqNo: **6078894** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30								
Ethylbenzene	U	30								
m,p-Xylene	U	60								
o-Xylene	U	30								
Toluene	U	30								
Xylenes, Total	U	90								
Surr: 1,2-Dichloroethane-d4	*1026*	0	*1000*	0	*103*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*988*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Dibromofluoromethane	*889.5*	0	*1000*	0	*89*	*70-130*	0			
Surr: Toluene-d8	*990*	0	*1000*	0	*99*	*70-130*	0			

LCS Sample ID: **LCS-145856-145856** Units: **µg/Kg-dry** Analysis Date: **11/21/2019 03:54 A**
Client ID: Run ID: **VMS6_191120B** SeqNo: **6078893** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	930.5	30	1000	0	93	75-125	0			
Ethylbenzene	825.5	30	1000	0	82.6	75-125	0			
m,p-Xylene	1658	60	2000	0	82.9	80-125	0			
o-Xylene	859.5	30	1000	0	86	75-125	0			
Toluene	883.5	30	1000	0	88.4	70-125	0			
Xylenes, Total	2518	90	3000	0	83.9	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1008*	0	*1000*	0	*101*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*988*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Dibromofluoromethane	*993.5*	0	*1000*	0	*99.4*	*70-130*	0			
Surr: Toluene-d8	*1016*	0	*1000*	0	*102*	*70-130*	0			

MS Sample ID: **19111405-01A MS** Units: **µg/Kg-dry** Analysis Date: **11/20/2019 12:42 P**
Client ID: **SP-1: Composite near tank overflow** Run ID: **VMS6_191119A** SeqNo: **6071206** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1085	38	1266	0	85.7	75-125	0			
Ethylbenzene	1065	38	1266	9.471	83.4	75-125	0			
m,p-Xylene	2211	76	2532	79.15	84.2	80-125	0			
o-Xylene	1130	38	1266	25.71	87.2	75-125	0			
Toluene	1063	38	1266	62.24	79	70-125	0			
Xylenes, Total	3341	110	3798	105	85.2	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1276*	0	*1266*	0	*101*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1257*	0	*1266*	0	*99.3*	*70-130*	0			
Surr: Dibromofluoromethane	*1232*	0	*1266*	0	*97.4*	*70-130*	0			
Surr: Toluene-d8	*1238*	0	*1266*	0	*97.8*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145856** Instrument ID **VMS6** Method: **SW8260C**

MSD Sample ID: **19111405-01A MSD** Units: **µg/Kg-dry** Analysis Date: **11/20/2019 01:06 P**

Client ID: **SP-1: Composite near tank overflow** Run ID: **VMS6_191119A** SeqNo: **6071207** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1113	38	1261	0	88.2	75-125	1085	2.52	30	
Ethylbenzene	1126	38	1261	9.471	88.5	75-125	1065	5.53	30	
m,p-Xylene	2397	76	2523	79.15	91.9	80-125	2211	8.07	30	
o-Xylene	1191	38	1261	25.71	92.4	75-125	1130	5.31	30	
Toluene	1135	38	1261	62.24	85.1	70-125	1063	6.6	30	
Xylenes, Total	3588	110	3784	105	92	75-125	3341	7.14	30	
Surr: 1,2-Dichloroethane-d4	*1258*	0	*1261*	0	*99.8*	*70-130*	1276	*1.4*	*30*	
Surr: 4-Bromofluorobenzene	*1308*	0	*1261*	0	*104*	*70-130*	1257	*3.93*	*30*	
Surr: Dibromofluoromethane	*1208*	0	*1261*	0	*95.8*	*70-130*	1232	*2.01*	*30*	
Surr: Toluene-d8	*1229*	0	*1261*	0	*97.4*	*70-130*	1238	*0.713*	*30*	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145853** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-145853-145853** Units: **s.u.** Analysis Date: **11/19/2019 02:00 P**

Client ID: Run ID: **WETCHEM_191119R** SeqNo: **6068026** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.02	0.10	4	0	100	90-110	0			

DUP Sample ID: **19111361-01A DUP** Units: **s.u.** Analysis Date: **11/19/2019 02:00 P**

Client ID: Run ID: **WETCHEM_191119R** SeqNo: **6068028** Prep Date: **11/19/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	12.65	0.10	0	0	0	0-0	12.59	0.475	20	
Temperature	21.8	0.10	0	0	0		21.8	0		

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145914** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-145914-145914** Units: **mg/Kg** Analysis Date: **11/20/2019 03:05 P**
Client ID: Run ID: **WETCHEM_191120K** SeqNo: **6071739** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	U	1.0								

LCS Sample ID: **LCS-145914-145914** Units: **mg/Kg** Analysis Date: **11/20/2019 03:05 P**
Client ID: Run ID: **WETCHEM_191120K** SeqNo: **6071740** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.8	1.0	5	0	96	80-120	0			

MS Sample ID: **19111362-01A MS** Units: **mg/Kg** Analysis Date: **11/20/2019 03:05 P**
Client ID: Run ID: **WETCHEM_191120K** SeqNo: **6071742** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.28	1.0	5	0.68	72	75-125	0			S

MS Sample ID: **19111362-01A MSI** Units: **mg/Kg** Analysis Date: **11/20/2019 03:05 P**
Client ID: Run ID: **WETCHEM_191120K** SeqNo: **6071744** Prep Date: **11/20/2019** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2294	100	2269	0.68	101	75-125	0			

MSD Sample ID: **19111362-01A MSD** Units: **mg/Kg** Analysis Date: **11/20/2019 03:05 P**
Client ID: Run ID: **WETCHEM_191120K** SeqNo: **6071743** Prep Date: **11/20/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	3.64	1.0	5	0.68	59.2	75-125	4.28	16.2	20	S

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **145984** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

MBLK Sample ID: **MB-R275898-145984** Units: **mmhos/cm @25°** Analysis Date: **11/21/2019 12:20 P**
Client ID: Run ID: **WETCHEM_191121K** SeqNo: **6074538** Prep Date: **11/21/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.0006	0.0050								J

DUP Sample ID: **19111285-02A DUP** Units: **mmhos/cm @25°** Analysis Date: **11/21/2019 12:20 P**
Client ID: Run ID: **WETCHEM_191121K** SeqNo: **6074549** Prep Date: **11/21/2019** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.386	0.0050	0	0	0		0.452	15.8	50	

LCS1 Sample ID: **LCS 1-145984** Units: **mmhos/cm @25°** Analysis Date: **11/21/2019 12:20 P**
Client ID: Run ID: **WETCHEM_191121K** SeqNo: **6074539** Prep Date: **11/21/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.01496	0.0050	0.0149	0	100	92-111	0			

LCS2 Sample ID: **LCS 2-145984** Units: **mmhos/cm @25°** Analysis Date: **11/21/2019 12:20 P**
Client ID: Run ID: **WETCHEM_191121K** SeqNo: **6074556** Prep Date: **11/21/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.602	0.0050	0.592	0	102	88-114	0			

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19111405
Project: GM 245-1-796

QC BATCH REPORT

Batch ID: **R275778** Instrument ID **MOIST** Method: **SW3550C**

MBLK	Sample ID: **WBLKS-R275778**				Units: **% of sample**			Analysis Date: **11/19/2019 04:07 P**		
Client ID:	Run ID: **MOIST_191119D**				SeqNo: **6070874**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS	Sample ID: **LCS-R275778**				Units: **% of sample**			Analysis Date: **11/19/2019 04:07 P**		
Client ID:	Run ID: **MOIST_191119D**				SeqNo: **6070873**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP	Sample ID: **19111050-46A DUP**				Units: **% of sample**			Analysis Date: **11/19/2019 04:07 P**		
Client ID:	Run ID: **MOIST_191119D**				SeqNo: **6070858**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	22.92	0.10	0	0	0	0-0	21.71	5.42	10	

DUP	Sample ID: **19111428-02A DUP**				Units: **% of sample**			Analysis Date: **11/19/2019 04:07 P**		
Client ID:	Run ID: **MOIST_191119D**				SeqNo: **6070872**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	31.19	0.10	0	0	0	0-0	31.31	0.384	10	

The following samples were analyzed in this batch:

19111405-01A	19111405-02A	19111405-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 1911405

		SAMPLER	Mike Gardner	DATE	11/18/2019	PAGE 1 of 1
PROJECT NAME	GM 245-1-796 Produced Water Spill	SITE ID	GM 245-1-796	TURNAROUND	Rush	DISPOSAL By Lab or Return to Client
PROJECT No.		EDD FORMAT				
		PURCHASE ORDER				
COMPANY NAME	TEP Rocky Mountain LLC	BILL TO COMPANY	TEP Rocky Mountain LLC			
SEND REPORT TO	Mike Gardner	INVOICE ATTN TO	Mike Gardner, Tammy Gose			
ADDRESS		ADDRESS	1058 Co Rd 215			
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachute, CO 81635			
PHONE		PHONE	970-263-2760			
FAX		FAX				
E-MAIL	mgardner@terraep.com, krowe@hrlcomp.com	E-MAIL	mgardner@terraep.com; tgose@terraep.com			

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	COGCC 910-1 - full list
1	SP-1: Composite near tank overflow	Soil	11/18/2019	1:00 p.m.	1 x 16 oz			X
2	SP-2: Composite from impacted area	Soil	11/18/2019	1:00 p.m.	1 x 16 oz			X
3	SP-3: Background	Soil	11/18/2019	1:00 p.m.	1 x 16 oz			X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

SR2 3.4°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Mike Gardner	11/18/2019	1800
RECEIVED BY			11-18-19	1800
RELINQUISHED BY			11-18-19	1850
RECEIVED BY		Diane E Shea	11/19/19	1000
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **TERRAENERGY** Date/Time Received: **19-Nov-19 10:00**

Work Order: **19111405** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 19-Nov-19 (Date) Reviewed by: Chad Whelton (eSignature) 19-Nov-19 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4/3.4 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	11/19/2019 12:21:22 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

GR 41-20
Background Data

14-Dec-2018

Kris Rowe
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Terra Energy - GR 41-20 Spill** Work Order: **1812606**

Dear Kris,

ALS Environmental received 5 samples on 11-Dec-2018 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 28.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 14-Dec-18

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Work Order: **1812606**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1812606-01	South Wall @ 7'	Soil		12/10/2018 09:41	12/11/2018 10:00	☐
1812606-02	Bottom @ 14'	Soil		12/10/2018 10:02	12/11/2018 10:00	☐
1812606-03	BKGD 1	Soil		12/10/2018 10:18	12/11/2018 10:00	☐
1812606-04	BKGD 2	Soil		12/10/2018 10:26	12/11/2018 10:00	☐
1812606-05	BKGD 3	Soil		12/10/2018 10:40	12/11/2018 10:00	☐

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Work Order: 1812606

Case Narrative

Batch 129251, Method VOC_8260_S, Sample 1812606-02A MS/MSD: The MS/MSD recoveries were below the lower control limits for multiple compounds per the QC report. The corresponding results in the parent sample may be biased low.

Batch 129256, Method SVO_8270_S, Sample 1812606-01A: One or more base/neutral surrogate recoveries were below the lower control limits. The base/neutral sample results may be biased low.

Batch 129256, Method SVO_8270_S, Sample 1812606-02A MSD: The MSD recovery was outside of the control limit for Fluoranthene. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required.

Batch 129263, Method DRO_8015_S, Sample 1812606-02A MSD: The RPD between the MS and MSD was outside the control limit for DRO. The corresponding result in the parent sample should be considered estimated.

Batch 129288, Method ICP_6010_S, Sample 1812606-01A MS/MSD: The MS/MSD recovery was outside of the control limit for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Batch 129288, Method ICP_6010_S, Sample 1812606-01A MS/MSD: The MS/MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high.

Batch 129326, Method CR6_7196_S, Sample 1812606-02A MSD: The RPD between the MS and MSD was outside the control limit for Hexavalent Chromium. The corresponding result in the parent sample should be considered estimated.

ALS Group, USA

Date: 14-Dec-18

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

s.u. Standard Units

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: South Wall @ 7'
Collection Date: 12/10/2018 09:41 AM

Work Order: 1812606
Lab ID: 1812606-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015M**			Prep: SW3546 / 12/12/18		Analyst: **RP**
DRO (C10-C28)	U		3.3	5.9	mg/Kg-dry	1	12/12/2018 13:21
Surr: 4-Terphenyl-d14	*58.3*			*33-111*	*%REC*	1	12/12/2018 13:21
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 12/11/18		Analyst: **RP**
GRO (C6-C10)	**57**		**2.9**	**6.9**	**mg/Kg**	1	12/12/2018 03:18
Surr: Toluene-d8	*112*			*71-123*	*%REC*	1	12/12/2018 03:18
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 12/12/18		Analyst: **RSH**
Mercury	**0.027**		**0.0020**	**0.020**	**mg/Kg-dry**	1	12/12/2018 14:04
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 12/12/18		Analyst: **ABL**
Arsenic	**6.8**		**0.11**	**0.42**	**mg/Kg-dry**	1	12/13/2018 14:34
Barium	**390**		**0.17**	**0.42**	**mg/Kg-dry**	1	12/13/2018 14:34
Cadmium	**0.37**	J	**0.041**	**0.85**	**mg/Kg-dry**	1	12/13/2018 14:34
Chromium	**11**		**0.024**	**0.42**	**mg/Kg-dry**	1	12/13/2018 14:34
Copper	**16**		**0.19**	**0.85**	**mg/Kg-dry**	1	12/13/2018 14:34
Lead	**10**		**0.090**	**0.42**	**mg/Kg-dry**	1	12/13/2018 14:34
Nickel	**16**		**0.17**	**0.42**	**mg/Kg-dry**	1	12/13/2018 14:34
Selenium	**0.63**	J	**0.24**	**0.85**	**mg/Kg-dry**	1	12/13/2018 14:34
Silver	U		0.053	0.42	mg/Kg-dry	1	12/13/2018 14:34
Zinc	**63**		**0.068**	**0.85**	**mg/Kg-dry**	1	12/13/2018 14:34
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Calcium	**49**		**0.86**	**5.0**	**mg/L**	10	12/13/2018 16:02
Magnesium	**20**		**0.068**	**2.0**	**mg/L**	10	12/13/2018 16:02
Sodium	**210**		**0.34**	**2.0**	**mg/L**	10	12/13/2018 16:02
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Sodium Adsorption Ratio	**6.2**		**0.010**	**0.010**	**none**	1	12/13/2018
SEMI-VOLATILE ORGANIC COMPOUNDS		Method: **SW846 8270D**			Prep: SW3546 / 12/11/18		Analyst: **KAW**
Acenaphthene	U		5.7	7.8	µg/Kg-dry	1	12/12/2018 14:46
Anthracene	U		5.5	7.8	µg/Kg-dry	1	12/12/2018 14:46
Benzo(a)anthracene	U		6.8	7.8	µg/Kg-dry	1	12/12/2018 14:46
Benzo(a)pyrene	U		4.8	7.8	µg/Kg-dry	1	12/12/2018 14:46
Benzo(b)fluoranthene	U		5.8	7.8	µg/Kg-dry	1	12/12/2018 14:46
Benzo(k)fluoranthene	U		5.9	7.8	µg/Kg-dry	1	12/12/2018 14:46
Chrysene	U		6.3	7.8	µg/Kg-dry	1	12/12/2018 14:46
Dibenzo(a,h)anthracene	U		4.2	7.8	µg/Kg-dry	1	12/12/2018 14:46
Fluoranthene	U		3.8	7.8	µg/Kg-dry	1	12/12/2018 14:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: South Wall @ 7'
Collection Date: 12/10/2018 09:41 AM

Work Order: 1812606
Lab ID: 1812606-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		5.7	7.8	µg/Kg-dry	1	12/12/2018 14:46
Indeno(1,2,3-cd)pyrene	U		5.4	7.8	µg/Kg-dry	1	12/12/2018 14:46
Naphthalene	**120**		**5.0**	**7.8**	**µg/Kg-dry**	1	12/12/2018 14:46
Pyrene	U		1.4	7.8	µg/Kg-dry	1	12/12/2018 14:46
Surr: 2-Fluorobiphenyl	*44.4*			*44-107*	*%REC*	1	12/12/2018 14:46
Surr: 4-Terphenyl-d14	*50.3*	S		*52-123*	*%REC*	1	12/12/2018 14:46
Surr: Nitrobenzene-d5	*32.1*	S		*41-94*	*%REC*	1	12/12/2018 14:46
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 12/11/18		Analyst: **LSY**
Benzene	**0.068**		**0.0071**	**0.041**	**mg/Kg**	1	12/11/2018 15:14
Ethylbenzene	**0.49**		**0.0087**	**0.041**	**mg/Kg**	1	12/11/2018 15:14
m,p-Xylene	**4.3**		**0.020**	**0.083**	**mg/Kg**	1	12/11/2018 15:14
o-Xylene	U		0.016	0.041	mg/Kg	1	12/11/2018 15:14
Toluene	U		0.011	0.041	mg/Kg	1	12/11/2018 15:14
Xylenes, Total	**4.3**		**0.036**	**0.12**	**mg/Kg**	1	12/11/2018 15:14
Surr: 1,2-Dichloroethane-d4	*98.2*			*70-130*	*%REC*	1	12/11/2018 15:14
Surr: 4-Bromofluorobenzene	*92.4*			*70-130*	*%REC*	1	12/11/2018 15:14
Surr: Dibromofluoromethane	*100*			*70-130*	*%REC*	1	12/11/2018 15:14
Surr: Toluene-d8	*102*			*70-130*	*%REC*	1	12/11/2018 15:14
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 12/13/18		Analyst: **JEB**
Electrical Conductivity @ Saturation	**1.1**		**0.011**	**0.10**	**mmhos/cm @25°**	20	12/13/2018 15:00
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**11**		**0.37**	**1.2**	**mg/Kg-dry**	1	12/13/2018 20:50
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 12/12/18		Analyst: **JEB**
Chromium, Hexavalent	**0.39**	J	**0.36**	**1.2**	**mg/Kg-dry**	1	12/12/2018 16:25
MOISTURE		Method:	**SW3550C**				Analyst: **KTP**
Moisture	**16**		**0.10**	**0.10**	**% of sample**	1	12/11/2018 15:57
PH		Method:	**SW9045D**		Prep: EXTRACT / 12/12/18		Analyst: **RZM**
pH	**8.36**		**0.10**	**0.100**	**s.u.**	1	12/12/2018 11:20
Temperature	**21.9**		**0.10**	**0.100**	**C**	1	12/12/2018 11:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: Bottom @ 14'
Collection Date: 12/10/2018 10:02 AM

Work Order: 1812606
Lab ID: 1812606-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015M**			Prep: SW3546 / 12/12/18		Analyst: **RP**
DRO (C10-C28)	U		3.3	5.7	mg/Kg-dry	1	12/12/2018 13:50
Surr: 4-Terphenyl-d14	*80.8*			*33-111*	*%REC*	1	12/12/2018 13:50
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 12/11/18		Analyst: **RP**
GRO (C6-C10)	U		2.7	6.5	mg/Kg	1	12/12/2018 03:45
Surr: Toluene-d8	*97.2*			*71-123*	*%REC*	1	12/12/2018 03:45
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 12/12/18		Analyst: **RSH**
Mercury	**0.038**		**0.0022**	**0.022**	**mg/Kg-dry**	1	12/12/2018 14:06
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 12/12/18		Analyst: **ABL**
Arsenic	**8.3**		**0.099**	**0.38**	**mg/Kg-dry**	1	12/13/2018 14:52
Barium	**280**		**0.15**	**0.38**	**mg/Kg-dry**	1	12/13/2018 14:52
Cadmium	**0.43**	J	**0.037**	**0.76**	**mg/Kg-dry**	1	12/13/2018 14:52
Chromium	**11**		**0.021**	**0.38**	**mg/Kg-dry**	1	12/13/2018 14:52
Copper	**17**		**0.17**	**0.76**	**mg/Kg-dry**	1	12/13/2018 14:52
Lead	**12**		**0.081**	**0.38**	**mg/Kg-dry**	1	12/13/2018 14:52
Nickel	**15**		**0.15**	**0.38**	**mg/Kg-dry**	1	12/13/2018 14:52
Selenium	**0.31**	J	**0.21**	**0.76**	**mg/Kg-dry**	1	12/13/2018 14:52
Silver	U		0.047	0.38	mg/Kg-dry	1	12/13/2018 14:52
Zinc	**64**		**0.061**	**0.76**	**mg/Kg-dry**	1	12/13/2018 14:52
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Calcium	**19**		**0.86**	**5.0**	**mg/L**	10	12/13/2018 16:08
Magnesium	**6.8**		**0.068**	**2.0**	**mg/L**	10	12/13/2018 16:08
Sodium	**92**		**0.34**	**2.0**	**mg/L**	10	12/13/2018 16:08
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Sodium Adsorption Ratio	**4.6**		**0.010**	**0.010**	**none**	1	12/13/2018
SEMI-VOLATILE ORGANIC COMPOUNDS		Method: **SW846 8270D**			Prep: SW3546 / 12/11/18		Analyst: **KAW**
Acenaphthene	U		5.5	7.6	µg/Kg-dry	1	12/12/2018 15:09
Anthracene	U		5.4	7.6	µg/Kg-dry	1	12/12/2018 15:09
Benzo(a)anthracene	U		6.6	7.6	µg/Kg-dry	1	12/12/2018 15:09
Benzo(a)pyrene	U		4.7	7.6	µg/Kg-dry	1	12/12/2018 15:09
Benzo(b)fluoranthene	U		5.7	7.6	µg/Kg-dry	1	12/12/2018 15:09
Benzo(k)fluoranthene	U		5.8	7.6	µg/Kg-dry	1	12/12/2018 15:09
Chrysene	U		6.2	7.6	µg/Kg-dry	1	12/12/2018 15:09
Dibenzo(a,h)anthracene	U		4.1	7.6	µg/Kg-dry	1	12/12/2018 15:09
Fluoranthene	U		3.7	7.6	µg/Kg-dry	1	12/12/2018 15:09

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: Bottom @ 14'
Collection Date: 12/10/2018 10:02 AM

Work Order: 1812606
Lab ID: 1812606-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		5.5	7.6	µg/Kg-dry	1	12/12/2018 15:09
Indeno(1,2,3-cd)pyrene	U		5.3	7.6	µg/Kg-dry	1	12/12/2018 15:09
Naphthalene	U		4.9	7.6	µg/Kg-dry	1	12/12/2018 15:09
Pyrene	U		1.4	7.6	µg/Kg-dry	1	12/12/2018 15:09
Surr: 2-Fluorobiphenyl	*77.6*			*44-107*	*%REC*	1	12/12/2018 15:09
Surr: 4-Terphenyl-d14	*94.9*			*52-123*	*%REC*	1	12/12/2018 15:09
Surr: Nitrobenzene-d5	*67.3*			*41-94*	*%REC*	1	12/12/2018 15:09
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 12/11/18		Analyst: **LSY**
Benzene	U		0.0067	0.039	mg/Kg	1	12/11/2018 15:29
Ethylbenzene	U		0.0082	0.039	mg/Kg	1	12/11/2018 15:29
m,p-Xylene	U		0.019	0.078	mg/Kg	1	12/11/2018 15:29
o-Xylene	U		0.015	0.039	mg/Kg	1	12/11/2018 15:29
Toluene	U		0.011	0.039	mg/Kg	1	12/11/2018 15:29
Xylenes, Total	U		0.034	0.12	mg/Kg	1	12/11/2018 15:29
Surr: 1,2-Dichloroethane-d4	*98.4*			*70-130*	*%REC*	1	12/11/2018 15:29
Surr: 4-Bromofluorobenzene	*90.6*			*70-130*	*%REC*	1	12/11/2018 15:29
Surr: Dibromofluoromethane	*101*			*70-130*	*%REC*	1	12/11/2018 15:29
Surr: Toluene-d8	*102*			*70-130*	*%REC*	1	12/11/2018 15:29
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 12/13/18		Analyst: **JEB**
Electrical Conductivity @ Saturation	**0.53**		**0.011**	**0.10**	**mmhos/cm @25°**	20	12/13/2018 15:00
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**11**		**0.35**	**1.1**	**mg/Kg-dry**	1	12/13/2018 20:50
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 12/12/18		Analyst: **JEB**
Chromium, Hexavalent	U		0.37	1.2	mg/Kg-dry	1	12/12/2018 16:25
MOISTURE		Method:	**SW3550C**				Analyst: **KTP**
Moisture	**13**		**0.10**	**0.10**	**% of sample**	1	12/11/2018 15:57
PH		Method:	**SW9045D**		Prep: EXTRACT / 12/12/18		Analyst: **RZM**
pH	**8.77**		**0.10**	**0.100**	**s.u.**	1	12/12/2018 11:20
Temperature	**22.0**		**0.10**	**0.100**	**C**	1	12/12/2018 11:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: BKGD 1
Collection Date: 12/10/2018 10:18 AM

Work Order: 1812606
Lab ID: 1812606-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 12/12/18		Analyst: **ABL**
Arsenic	**7.3**		**0.12**	**0.47**	**mg/Kg-dry**	1	12/13/2018 14:58
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**13**		**0.10**	**0.10**	**% of sample**	1	12/11/2018 15:57

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: BKGD 2
Collection Date: 12/10/2018 10:26 AM

Work Order: 1812606
Lab ID: 1812606-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 12/12/18		Analyst: **ABL**
Arsenic	**6.6**		**0.11**	**0.42**	**mg/Kg-dry**	1	12/13/2018 15:03
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**15**		**0.10**	**0.10**	**% of sample**	1	12/11/2018 15:57

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *14-Dec-18*

Client: HRL Compliance Solutions, Inc
Project: Terra Energy - GR 41-20 Spill
Sample ID: BKGD 3
Collection Date: 12/10/2018 10:40 AM

Work Order: 1812606
Lab ID: 1812606-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 12/12/18		Analyst: **ABL**
Arsenic	**6.6**		**0.12**	**0.46**	**mg/Kg-dry**	1	12/13/2018 15:09
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Calcium	**68**		**0.86**	**5.0**	**mg/L**	10	12/13/2018 16:11
Magnesium	**11**		**0.068**	**2.0**	**mg/L**	10	12/13/2018 16:11
Sodium	**17**		**0.34**	**2.0**	**mg/L**	10	12/13/2018 16:11
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 12/13/18		Analyst: **STP**
Sodium Adsorption Ratio	**0.51**		**0.010**	**0.010**	**none**	1	12/13/2018
ELECTRICAL CONDUCTIVITY (SAR)		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 12/13/18		Analyst: **JEB**
Electrical Conductivity @ Saturation	**0.50**		**0.011**	**0.10**	**mmhos/cm @25°**	20	12/13/2018 15:00
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**13**		**0.10**	**0.10**	**% of sample**	1	12/11/2018 15:57
PH		Method: **SW9045D**			Prep: EXTRACT / 12/12/18		Analyst: **RZM**
pH	**8.51**		**0.10**	**0.100**	**s.u.**	1	12/12/2018 11:20
Temperature	**22.1**		**0.10**	**0.100**	**C**	1	12/12/2018 11:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 14-Dec-18

Client: HRL Compliance Solutions, Inc

Work Order: 1812606

Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129263** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-129263-129263** Units: **mg/Kg** Analysis Date: **12/12/2018 02:19 PM**

Client ID: Run ID: **GC8_181212A** SeqNo: **5433658** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	*2.873*	0	*3.33*	0	*86.3*	*33-111*	0			

LCS Sample ID: **DLCSS1-129263-129263** Units: **mg/Kg** Analysis Date: **12/12/2018 02:48 PM**

Client ID: Run ID: **GC8_181212A** SeqNo: **5433660** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	222.4	5.0	333	0	66.8	58-111	0			
Surr: 4-Terphenyl-d14	*2.775*	0	*3.33*	0	*83.3*	*33-111*	0			

MS Sample ID: **1812606-02A MS** Units: **mg/Kg** Analysis Date: **12/12/2018 03:18 PM**

Client ID: **Bottom @ 14'** Run ID: **GC8_181212A** SeqNo: **5433661** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	88.45	5.0	330.9	0	26.7	58-111	0			S
Surr: 4-Terphenyl-d14	*2.335*	0	*3.309*	0	*70.6*	*33-111*	0			

MSD Sample ID: **1812606-02A MSD** Units: **mg/Kg** Analysis Date: **12/12/2018 03:47 PM**

Client ID: **Bottom @ 14'** Run ID: **GC8_181212A** SeqNo: **5433663** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	137.8	4.8	317.5	0	43.4	58-111	88.45	43.6	30	SR
Surr: 4-Terphenyl-d14	*2.103*	0	*3.175*	0	*66.2*	*33-111*	2.335	*10.4*	*30*	

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129252** Instrument ID **GC10** Method: **SW8015D**

MBLK Sample ID: **MBLK-129252-129252** Units: **µg/Kg-dry** Analysis Date: **12/12/2018 02:52 A**
Client ID: Run ID: **GC10_181211B** SeqNo: **5432640** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	5,000	0	0	0		0			
Surr: Toluene-d8	*4878*	0	*5000*	0	*97.6*	*71-123*	0			

LCS Sample ID: **LCS-129252-129252** Units: **µg/Kg-dry** Analysis Date: **12/12/2018 02:00 A**
Client ID: Run ID: **GC10_181211B** SeqNo: **5432639** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	436400	5,000	500000	0	87.3	71-123	0			
Surr: Toluene-d8	*5132*	0	*5000*	0	*103*	*71-123*	0			

MS Sample ID: **1812606-02A MS** Units: **µg/Kg-dry** Analysis Date: **12/12/2018 05:29 A**
Client ID: **Bottom @ 14'** Run ID: **GC10_181211B** SeqNo: **5432646** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	704100	6,500	649400	0	108	71-123	0			
Surr: Toluene-d8	*6190*	0	*6494*	0	*95.3*	*71-123*	0			

MSD Sample ID: **1812606-02A MSD** Units: **µg/Kg-dry** Analysis Date: **12/12/2018 05:56 A**
Client ID: **Bottom @ 14'** Run ID: **GC10_181211B** SeqNo: **5432647** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	716700	6,500	649400	0	110	71-123	704100	1.76	30	
Surr: Toluene-d8	*6618*	0	*6494*	0	*102*	*71-123*	6190	*6.68*	*30*	

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129283** Instrument ID **HG4** Method: **SW7471B**

MBLK Sample ID: **MBLK-129283-129283** Units: **mg/Kg** Analysis Date: **12/12/2018 01:17 PM**
Client ID: Run ID: **HG4_181212A** SeqNo: **5433463** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.020								

LCS Sample ID: **LCS-129283-129283** Units: **mg/Kg** Analysis Date: **12/12/2018 01:19 PM**
Client ID: Run ID: **HG4_181212A** SeqNo: **5433464** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1452	0.020	0.1665	0	87.2	80-120	0			

MS Sample ID: **1812557-03B MS** Units: **mg/Kg** Analysis Date: **12/12/2018 01:56 PM**
Client ID: Run ID: **HG4_181212A** SeqNo: **5433479** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1512	0.017	0.1456	0.003431	101	75-125	0			

MSD Sample ID: **1812557-03B MSD** Units: **mg/Kg** Analysis Date: **12/12/2018 01:59 PM**
Client ID: Run ID: **HG4_181212A** SeqNo: **5433480** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1363	0.018	0.1463	0.003431	90.8	75-125	0.1512	10.3	35	

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129288** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-129288-129288** Units: **mg/Kg** Analysis Date: **12/13/2018 02:15 PM**
Client ID: Run ID: **ICP2_181213A** SeqNo: **5436653** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.24								
Barium	U	0.24								
Cadmium	U	0.49								
Chromium	0.02726	0.24								J
Copper	U	0.49								
Lead	U	0.24								
Nickel	U	0.24								
Selenium	U	0.49								
Silver	U	0.24								
Zinc	0.03992	0.49								J

LCS Sample ID: **LCS-129288-129288** Units: **mg/Kg** Analysis Date: **12/13/2018 02:21 PM**
Client ID: Run ID: **ICP2_181213A** SeqNo: **5436654** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.55	0.23	4.686	0	97.1	80-120	0			
Barium	4.956	0.23	4.686	0	106	80-120	0			
Cadmium	4.799	0.47	4.686	0	102	80-120	0			
Chromium	4.956	0.23	4.686	0	106	80-120	0			
Copper	5.078	0.47	4.686	0	108	80-120	0			
Lead	4.808	0.23	4.686	0	103	80-120	0			
Nickel	4.852	0.23	4.686	0	104	80-120	0			
Selenium	4.564	0.47	4.686	0	97.4	80-120	0			
Silver	4.904	0.23	4.686	0	105	80-120	0			
Zinc	4.749	0.47	4.686	0	101	80-120	0			

MS Sample ID: **1812606-01AMS** Units: **mg/Kg** Analysis Date: **12/13/2018 02:40 PM**
Client ID: **South Wall @ 7'** Run ID: **ICP2_181213A** SeqNo: **5436657** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.32	0.34	6.72	5.709	98.4	75-125	0			
Barium	289.9	0.34	6.72	327.2	-555	75-125	0			SO
Cadmium	6.539	0.67	6.72	0.3128	92.6	75-125	0			
Chromium	18.06	0.34	6.72	9.199	132	75-125	0			S
Copper	21.7	0.67	6.72	13.55	121	75-125	0			
Lead	14.2	0.34	6.72	8.619	83	75-125	0			
Nickel	18.87	0.34	6.72	13.22	84.1	75-125	0			
Selenium	6.317	0.67	6.72	0.5255	86.2	75-125	0			
Silver	7.014	0.34	6.72	-0.1638	107	75-125	0			
Zinc	60.42	0.67	6.72	53.01	110	75-125	0			O

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129288** Instrument ID **ICP2** Method: **SW846 6010C**

MSD Sample ID: **1812606-01AMSD** Units: **mg/Kg** Analysis Date: **12/13/2018 02:46 PM**
Client ID: **South Wall @ 7'** Run ID: **ICP2_181213A** SeqNo: **5436658** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.62	0.35	7.003	5.709	84.4	75-125	12.32	5.86	20	
Barium	312.6	0.35	7.003	327.2	-209	75-125	289.9	7.52	20	SO
Cadmium	6.828	0.70	7.003	0.3128	93	75-125	6.539	4.32	20	
Chromium	19.03	0.35	7.003	9.199	140	75-125	18.06	5.23	20	S
Copper	21.28	0.70	7.003	13.55	110	75-125	21.7	1.96	20	
Lead	15.03	0.35	7.003	8.619	91.5	75-125	14.2	5.7	20	
Nickel	19.95	0.35	7.003	13.22	96.2	75-125	18.87	5.58	20	
Selenium	6.513	0.70	7.003	0.5255	85.5	75-125	6.317	3.05	20	
Silver	7.332	0.35	7.003	-0.1638	107	75-125	7.014	4.44	20	
Zinc	62.93	0.70	7.003	53.01	142	75-125	60.42	4.07	20	SO

The following samples were analyzed in this batch: 1812606-01A 1812606-02A 1812606-03A 1812606-04A 1812606-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129370** Instrument ID **ICPMS3** Method: **SW6020A**

DUP Sample ID: **1812606-02BDup** Units: **mg/L** Analysis Date: **12/13/2018 04:10 PM**
Client ID: **Bottom @ 14'** Run ID: **ICPMS3_181213A** SeqNo: **5436578** Prep Date: **12/13/2018** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	17.57	5.0	0	0	0	0-0	18.66	6		
Magnesium	7.437	2.0	0	0	0	0-0	6.797	8.99		
Sodium	79.47	2.0	0	0	0	0-0	92.13	14.8		

The following samples were analyzed in this batch: 1812606-01B 1812606-02B 1812606-05B

Batch ID: **129370** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **1812606-02BDup** Units: **none** Analysis Date: **12/13/2018**
Client ID: **Bottom @ 14'** Run ID: **SAR_181213A** SeqNo: **5436273** Prep Date: **12/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	4.006	0.010	0	0	0		4.642	14.7	50	

The following samples were analyzed in this batch: 1812606-01B 1812606-02B 1812606-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129256** Instrument ID **SVMS9** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-129256-129256** Units: **µg/Kg** Analysis Date: **12/12/2018 01:04 PM**
Client ID: Run ID: **SVMS9_181212A** SeqNo: **5433077** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	6.7								
Anthracene	U	6.7								
Benzo(a)anthracene	U	6.7								
Benzo(a)pyrene	U	6.7								
Benzo(b)fluoranthene	U	6.7								
Benzo(k)fluoranthene	U	6.7								
Chrysene	U	6.7								
Dibenzo(a,h)anthracene	U	6.7								
Fluoranthene	U	6.7								
Fluorene	U	6.7								
Indeno(1,2,3-cd)pyrene	U	6.7								
Naphthalene	U	6.7								
Pyrene	U	6.7								
Surr: 2-Fluorobiphenyl	*2291*	0	*3333*	0	*68.7*	*44-107*	0			
Surr: 4-Terphenyl-d14	*2816*	0	*3333*	0	*84.5*	*52-123*	0			
Surr: Nitrobenzene-d5	*2062*	0	*3333*	0	*61.9*	*41-94*	0			

LCS Sample ID: **SLCSS1-129256-129256** Units: **µg/Kg** Analysis Date: **12/12/2018 01:27 PM**
Client ID: Run ID: **SVMS9_181212A** SeqNo: **5433078** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1042	6.7	1333	0	78.2	55-101	0			
Anthracene	1091	6.7	1333	0	81.8	67-105	0			
Benzo(a)anthracene	1092	6.7	1333	0	81.9	68-105	0			
Benzo(a)pyrene	1046	6.7	1333	0	78.5	68-110	0			
Benzo(b)fluoranthene	1038	6.7	1333	0	77.9	65-110	0			
Benzo(k)fluoranthene	1095	6.7	1333	0	82.1	66-113	0			
Chrysene	1050	6.7	1333	0	78.8	68-108	0			
Dibenzo(a,h)anthracene	991.3	6.7	1333	0	74.4	62-119	0			
Fluoranthene	1102	6.7	1333	0	82.7	67-106	0			
Fluorene	1118	6.7	1333	0	83.9	59-107	0			
Indeno(1,2,3-cd)pyrene	937.3	6.7	1333	0	70.3	56-120	0			
Naphthalene	913.3	6.7	1333	0	68.5	46-98	0			
Pyrene	1151	6.7	1333	0	86.3	60-119	0			
Surr: 2-Fluorobiphenyl	*2475*	0	*3333*	0	*74.3*	*44-107*	0			
Surr: 4-Terphenyl-d14	*2992*	0	*3333*	0	*89.8*	*52-123*	0			
Surr: Nitrobenzene-d5	*2356*	0	*3333*	0	*70.7*	*41-94*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129256** Instrument ID **SVMS9** Method: **SW846 8270D**

MS Sample ID: **1812606-02A MS** Units: **µg/Kg** Analysis Date: **12/12/2018 05:27 PM**
Client ID: **Bottom @ 14'** Run ID: **SVMS9_181212A** SeqNo: **5434364** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	987.3	6.3	1266	0	78	55-101	0			
Anthracene	1021	6.3	1266	0	80.6	67-105	0			
Benzo(a)anthracene	1079	6.3	1266	0	85.2	68-105	0			
Benzo(a)pyrene	1044	6.3	1266	0	82.5	68-110	0			
Benzo(b)fluoranthene	991.8	6.3	1266	0	78.3	65-110	0			
Benzo(k)fluoranthene	979.1	6.3	1266	0	77.3	66-113	0			
Chrysene	1001	6.3	1266	0	79	68-108	0			
Dibenzo(a,h)anthracene	974	6.3	1266	0	76.9	62-119	0			
Fluoranthene	950.6	6.3	1266	0	75.1	67-106	0			
Fluorene	1006	6.3	1266	0	79.4	59-107	0			
Indeno(1,2,3-cd)pyrene	1020	6.3	1266	0	80.5	56-120	0			
Naphthalene	836	6.3	1266	0	66	46-98	0			
Pyrene	887.9	6.3	1266	0	70.1	60-119	0			
Surr: 2-Fluorobiphenyl	*2490*	0	*3166*	0	*78.6*	*44-107*	0			
Surr: 4-Terphenyl-d14	*2306*	0	*3166*	0	*72.8*	*52-123*	0			
Surr: Nitrobenzene-d5	*2253*	0	*3166*	0	*71.2*	*41-94*	0			

MSD Sample ID: **1812606-02A MSD** Units: **µg/Kg** Analysis Date: **12/12/2018 05:50 PM**
Client ID: **Bottom @ 14'** Run ID: **SVMS9_181212A** SeqNo: **5434366** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	940.9	6.6	1311	0	71.8	55-101	987.3	4.81	30	
Anthracene	990.8	6.6	1311	0	75.6	67-105	1021	3	30	
Benzo(a)anthracene	1036	6.6	1311	0	79	68-105	1079	4.02	30	
Benzo(a)pyrene	984.9	6.6	1311	0	75.1	68-110	1044	5.86	30	
Benzo(b)fluoranthene	912.7	6.6	1311	0	69.6	65-110	991.8	8.3	30	
Benzo(k)fluoranthene	946.8	6.6	1311	0	72.2	66-113	979.1	3.35	30	
Chrysene	960.6	6.6	1311	0	73.3	68-108	1001	4.08	30	
Dibenzo(a,h)anthracene	929.8	6.6	1311	0	70.9	62-119	974	4.65	30	
Fluoranthene	863.5	6.6	1311	0	65.9	67-106	950.6	9.6	30	S
Fluorene	992.7	6.6	1311	0	75.7	59-107	1006	1.3	30	
Indeno(1,2,3-cd)pyrene	959.3	6.6	1311	0	73.2	56-120	1020	6.1	30	
Naphthalene	817	6.6	1311	0	62.3	46-98	836	2.3	30	
Pyrene	1067	6.6	1311	0	81.4	60-119	887.9	18.3	30	
Surr: 2-Fluorobiphenyl	*2239*	0	*3278*	0	*68.3*	*44-107*	2490	*10.6*	*40*	
Surr: 4-Terphenyl-d14	*2654*	0	*3278*	0	*81*	*52-123*	2306	*14*	*40*	
Surr: Nitrobenzene-d5	*2124*	0	*3278*	0	*64.8*	*41-94*	2253	*5.89*	*40*	

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129251** Instrument ID **VMS10** Method: **SW8260C**

MBLK Sample ID: **MBLK-129251-129251** Units: **µg/Kg-dry** Analysis Date: **12/11/2018 01:08 PM**
Client ID: Run ID: **VMS10_181211A** SeqNo: **5432580** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30	0	0	0	0-0	0			
Ethylbenzene	U	30	0	0	0	0-0	0			
m,p-Xylene	U	60	0	0	0	0-0	0			
o-Xylene	U	30	0	0	0	0-0	0			
Toluene	U	30	0	0	0	0-0	0			
Xylenes, Total	U	90	0	0	0	0-0	0			
Surr: 1,2-Dichloroethane-d4	*988*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*870.5*	0	*1000*	0	*87*	*70-130*	0			
Surr: Dibromofluoromethane	*1032*	0	*1000*	0	*103*	*70-130*	0			
Surr: Toluene-d8	*1001*	0	*1000*	0	*100*	*70-130*	0			

LCS Sample ID: **LCS-129251-129251** Units: **µg/Kg-dry** Analysis Date: **12/11/2018 11:50 A**
Client ID: Run ID: **VMS10_181211A** SeqNo: **5432577** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	936	30	1000	0	93.6	75-125	0			
Ethylbenzene	893	30	1000	0	89.3	75-125	0			
m,p-Xylene	1745	60	2000	0	87.2	80-125	0			
o-Xylene	875.5	30	1000	0	87.6	75-125	0			
Toluene	887	30	1000	0	88.7	70-125	0			
Xylenes, Total	2620	90	3000	0	87.4	75-125	0			
Surr: 1,2-Dichloroethane-d4	*946.5*	0	*1000*	0	*94.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*988.5*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Dibromofluoromethane	*1017*	0	*1000*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*979.5*	0	*1000*	0	*98*	*70-130*	0			

MS Sample ID: **1812606-02A MS** Units: **µg/Kg-dry** Analysis Date: **12/11/2018 07:54 PM**
Client ID: **Bottom @ 14'** Run ID: **VMS10_181211A** SeqNo: **5432604** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1221	39	1299	67.67	88.8	75-125	0			
Ethylbenzene	1050	39	1299	490.2	43.1	75-125	0			S
m,p-Xylene	2152	78	2598	4314	-83.2	80-125	0			S
o-Xylene	1075	39	1299	0	82.8	75-125	0			
Toluene	1146	39	1299	0	88.2	70-125	0			
Xylenes, Total	3227	120	3897	4314	-27.9	75-125	0			S
Surr: 1,2-Dichloroethane-d4	*1255*	0	*1299*	0	*96.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1246*	0	*1299*	0	*96*	*70-130*	0			
Surr: Dibromofluoromethane	*1326*	0	*1299*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*1326*	0	*1299*	0	*102*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129251** Instrument ID **VMS10** Method: **SW8260C**

MSD Sample ID: **1812606-02A MSD** Units: **µg/Kg-dry** Analysis Date: **12/11/2018 08:10 PM**
Client ID: **Bottom @ 14'** Run ID: **VMS10_181211A** SeqNo: **5432605** Prep Date: **12/11/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1194	39	1299	67.67	86.7	75-125	1221	2.26	30	
Ethylbenzene	1074	39	1299	490.2	45	75-125	1050	2.26	30	S
m,p-Xylene	2152	78	2598	4314	-83.2	80-125	2152	0.0302	30	S
o-Xylene	1043	39	1299	0	80.3	75-125	1075	3.01	30	
Toluene	1106	39	1299	0	85.2	70-125	1146	3.52	30	
Xylenes, Total	3195	120	3897	4314	-28.7	75-125	3227	1.01	30	S
Surr: 1,2-Dichloroethane-d4	*1235*	0	*1299*	0	*95*	*70-130*	1255	*1.62*	*30*	
Surr: 4-Bromofluorobenzene	*1271*	0	*1299*	0	*97.8*	*70-130*	1246	*1.96*	*30*	
Surr: Dibromofluoromethane	*1298*	0	*1299*	0	*100*	*70-130*	1326	*2.13*	*30*	
Surr: Toluene-d8	*1339*	0	*1299*	0	*103*	*70-130*	1326	*0.975*	*30*	

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129289** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-129289-129289** Units: **s.u.** Analysis Date: **12/12/2018 11:20 A**

Client ID: Run ID: **WETCHEM_181212C** SeqNo: **5432648** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.98	0.10	4	0	99.5	90-110	0			

DUP Sample ID: **1812606-01A DUP** Units: **s.u.** Analysis Date: **12/12/2018 11:20 A**

Client ID: **South Wall @ 7'** Run ID: **WETCHEM_181212C** SeqNo: **5432650** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.36	0.10	0	0	0	0-0	8.36	0	20	
Temperature	21.9	0.10	0	0	0		21.9	0		

The following samples were analyzed in this batch: 1812606-01A 1812606-02A 1812606-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129326** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-129326-129326** Units: **mg/Kg** Analysis Date: **12/12/2018 04:25 PM**
Client ID: Run ID: **WETCHEM_181212P** SeqNo: **5433757** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	U	1.0								

LCS Sample ID: **LCS-129326-129326** Units: **mg/Kg** Analysis Date: **12/12/2018 04:25 PM**
Client ID: Run ID: **WETCHEM_181212P** SeqNo: **5433758** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.23	1.0	5	0	84.6	80-120	0			

MS Sample ID: **1812606-02A MS** Units: **mg/Kg** Analysis Date: **12/12/2018 04:25 PM**
Client ID: **Bottom @ 14'** Run ID: **WETCHEM_181212P** SeqNo: **5433761** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	3.692	0.96	4.808	0.2105	72.4	75-125	0			S

MS Sample ID: **1812606-02A MSI** Units: **mg/Kg** Analysis Date: **12/12/2018 04:25 PM**
Client ID: **Bottom @ 14'** Run ID: **WETCHEM_181212P** SeqNo: **5433763** Prep Date: **12/12/2018** DF: **200**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2831	210	2720	0.2105	104	75-125	0			

MSD Sample ID: **1812606-02A MSD** Units: **mg/Kg** Analysis Date: **12/12/2018 04:25 PM**
Client ID: **Bottom @ 14'** Run ID: **WETCHEM_181212P** SeqNo: **5433762** Prep Date: **12/12/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2.901	0.99	4.95	0.2105	54.3	75-125	3.692	24	20	SR

The following samples were analyzed in this batch: 1812606-01A 1812606-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **129370** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

MBLK Sample ID: **MB-R251320-129370** Units: **mmhos/cm @25°** Analysis Date: **12/13/2018 03:00 PM**
Client ID: Run ID: **WETCHEM_181213L** SeqNo: **5435920** Prep Date: **12/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	U	0.0050	0	0	0		0			

DUP Sample ID: **1812606-01B DUP** Units: **mmhos/cm @25°** Analysis Date: **12/13/2018 03:00 PM**
Client ID: **South Wall @ 7'** Run ID: **WETCHEM_181213L** SeqNo: **5435923** Prep Date: **12/13/2018** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.132	0.10	0	0	0		1.132	0	50	

LCS1 Sample ID: **LCS1-129370** Units: **mmhos/cm @25°** Analysis Date: **12/13/2018 03:00 PM**
Client ID: Run ID: **WETCHEM_181213L** SeqNo: **5435921** Prep Date: **12/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.01602	0.0050	0.0149	0	108	92-111	0			

LCS2 Sample ID: **LCS2-129370** Units: **mmhos/cm @25°** Analysis Date: **12/13/2018 03:00 PM**
Client ID: Run ID: **WETCHEM_181213L** SeqNo: **5435926** Prep Date: **12/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.623	0.0050	0.592	0	105	88-114	0			

The following samples were analyzed in this batch: 1812606-01B 1812606-02B 1812606-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1812606
Project: Terra Energy - GR 41-20 Spill

QC BATCH REPORT

Batch ID: **R251144** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R251144** Units: **% of sample** Analysis Date: **12/11/2018 03:57 PM**
Client ID: Run ID: **MOIST_181211E** SeqNo: **5432632** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS Sample ID: **LCS-R251144** Units: **% of sample** Analysis Date: **12/11/2018 03:57 PM**
Client ID: Run ID: **MOIST_181211E** SeqNo: **5432631** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	99.5-100.5	0			

DUP Sample ID: **1812605-07A DUP** Units: **% of sample** Analysis Date: **12/11/2018 03:57 PM**
Client ID: Run ID: **MOIST_181211E** SeqNo: **5432619** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	12.3	0.10	0	0	0	0-0	12.27	0.244	10	

DUP Sample ID: **1812606-01A DUP** Units: **% of sample** Analysis Date: **12/11/2018 03:57 PM**
Client ID: **South Wall @ 7'** Run ID: **MOIST_181211E** SeqNo: **5432624** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	16.3	0.10	0	0	0	0-0	16.25	0.307	10	

The following samples were analyzed in this batch:

1812606-01A	1812606-02A	1812606-03A
1812606-04A	1812606-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

3352 128th Ave. Holland, MI 49424

TF: (800) 443-1511 PH: (616) 399-6070 FX: (616) 399-6185

Chain-of-Custody

Form 202r8

WORKORDER # 1812606

PAGE 1 of 1

DISPOSAL ~~Return to Lab~~ or Return to Client

PROJECT NAME	Terra Energy - GR 41-20 Spill	SAMPLER	Casey Richardson
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	Terra Energy
SEND REPORT TO	Kris Rowe, Mike Gardner	INVOICE ATTN TO	Mike Gardner
ADDRESS	2385 F 1/2 Road	ADDRESS	1058 County Road 215
CITY / STATE / ZIP	Grand Junction, CO. 81505	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-243-3271	PHONE	970-263-2760
FAX	970-243-3280	FAX	
E-MAIL	krowe@hrlcomp.com, mgardner@terraep.com	E-MAIL	mgardner@terraep.com

DATE 12-10-18

TURNAROUND 24 HR

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO	GRO	BTEX	Metals (COGCC Table 910-1)	Semi-Vols - PAH	SAR	EC	pH	ARSENIC
1	SOUTH WALL @ 7'	SOIL	12-10-18	941	3	8	II	√	√	√	√	√	√	√	√	
2	BOTTOM @ 14'	SOIL	12-10-18	1002	3	8	II	√	√	√	√	√	√	√	√	
3	BKGD 1	SOIL	12-10-18	1018	1	8	II									√
4	BKGD 2	SOIL	12-10-18	1026	1	8	II									√
5	BKGD 3	SOIL	12-10-18	1040	2	8	II						√	√	√	√

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: SRL 4.2°C

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	CR/W	Casey Richardson	12-10-18	1525
RECEIVED BY	MT	MM	12-10-18	1525
RELINQUISHED BY			12-10-18	1830
RECEIVED BY		KEITH WILLIAMS	12/11/18	1000
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **11-Dec-18 10:00**

Work Order: **1812606** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 11-Dec-18 (Date) Reviewed by: Chad Whelton (eSignature) 11-Dec-18 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/11/2018 12:48:43 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

GM 343-32
Background Data

15-Aug-2019

Mike Gardner
Terra Energy Partners, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **GM 343-32 Water Riser Leak** Work Order: **19080634**

Dear Mike,

ALS Environmental received 4 samples on 09-Aug-2019 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 28.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 15-Aug-19

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Work Order: **19080634**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19080634-01	GM 343-32 Riser Leak: Excavation Bottom	Soil		8/7/2019 13:30	8/9/2019 09:00	☐
19080634-02	GM 343-32 Riser Leak: Side Wall Composite	Soil		8/7/2019 13:50	8/9/2019 09:00	☐
19080634-03	GM 343-32 Riser Leak: Flow Path Below Culvert comp	Soil		8/7/2019 14:10	8/9/2019 09:00	☐
19080634-04	GM 343-32 Background	Soil		8/7/2019 14:30	8/9/2019 09:00	☐

ALS Group, USA

Date: 15-Aug-19

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Work Order: 19080634

Case Narrative

Batch 140587, Method GRO_8015_S, Sample 19080634-03A: One or more GRO surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is required.

ALS Group, USA

Date: 15-Aug-19

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
°C	Degrees Celcius
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

s.u. Standard Units

ALS Group, USA

Date: *15-Aug-19*

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Excavation Bottom
Collection Date: 8/7/2019 01:30 PM

Work Order: 19080634
Lab ID: 19080634-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015C**			Prep: SW3546 / 8/9/19		Analyst: **RM**
DRO (C10-C28)	**20**		**3.3**	**5.6**	**mg/Kg-dry**	1	8/9/2019 23:38
Surr: 4-Terphenyl-d14	*45.0*			*34-130*	*%REC*	1	8/9/2019 23:38
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 8/9/19		Analyst: **RM**
GRO (C6-C10)	U		3.1	7.5	mg/Kg	1	8/9/2019 21:07
Surr: Toluene-d8	*102*			*71-123*	*%REC*	1	8/9/2019 21:07
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 8/12/19		Analyst: **RSH**
Mercury	**0.034**		**0.0020**	**0.020**	**mg/Kg-dry**	1	8/12/2019 13:47
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 8/10/19		Analyst: **ABL**
Arsenic	**4.0**		**0.054**	**0.45**	**mg/Kg-dry**	1	8/11/2019 19:52
Barium	**100**		**0.42**	**0.45**	**mg/Kg-dry**	1	8/11/2019 19:52
Cadmium	**0.32**		**0.027**	**0.18**	**mg/Kg-dry**	1	8/11/2019 19:52
Chromium	**11**		**0.20**	**0.45**	**mg/Kg-dry**	1	8/11/2019 19:52
Copper	**16**		**0.45**	**0.45**	**mg/Kg-dry**	1	8/11/2019 19:52
Lead	**18**		**0.22**	**0.45**	**mg/Kg-dry**	1	8/11/2019 19:52
Nickel	**25**		**2.4**	**4.5**	**mg/Kg-dry**	10	8/12/2019 18:58
Selenium	U		0.42	0.45	mg/Kg-dry	1	8/11/2019 19:52
Silver	U		0.060	0.45	mg/Kg-dry	1	8/11/2019 19:52
Zinc	**93**		**8.9**	**9.1**	**mg/Kg-dry**	10	8/12/2019 18:58
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Calcium	**470**		**2.5**	**5.0**	**mg/L**	10	8/14/2019 12:44
Magnesium	**220**		**0.50**	**2.0**	**mg/L**	10	8/14/2019 12:44
Sodium	**1,400**		**0.45**	**2.0**	**mg/L**	10	8/14/2019 12:44
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Sodium Adsorption Ratio	**13**		**0.010**	**0.010**	**none**	1	8/14/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 8/9/19		Analyst: **EEW**
Acenaphthene	U		0.00091	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Anthracene	U		0.0016	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Benzo(a)anthracene	U		0.0019	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Benzo(a)pyrene	U		0.0013	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Benzo(b)fluoranthene	U		0.0011	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Benzo(k)fluoranthene	U		0.0014	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Chrysene	U		0.00097	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Dibenzo(a,h)anthracene	U		0.0011	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Fluoranthene	U		0.00087	0.0047	mg/Kg-dry	1	8/9/2019 16:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Excavation Bottom
Collection Date: 8/7/2019 01:30 PM

Work Order: 19080634
Lab ID: 19080634-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0016	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Indeno(1,2,3-cd)pyrene	U		0.0017	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Naphthalene	U		0.0021	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Pyrene	U		0.00078	0.0047	mg/Kg-dry	1	8/9/2019 16:36
Surr: 2-Fluorobiphenyl	*60.5*			*20-140*	*%REC*	1	8/9/2019 16:36
Surr: 4-Terphenyl-d14	*25.5*			*22-172*	*%REC*	1	8/9/2019 16:36
Surr: Nitrobenzene-d5	*46.5*			*28-140*	*%REC*	1	8/9/2019 16:36
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 8/9/19		Analyst: **CKD**
Benzene	U		0.0055	0.032	mg/Kg-dry	1	8/9/2019 16:41
Ethylbenzene	U		0.0068	0.032	mg/Kg-dry	1	8/9/2019 16:41
m,p-Xylene	U		0.043	0.065	mg/Kg-dry	1	8/9/2019 16:41
o-Xylene	U		0.013	0.032	mg/Kg-dry	1	8/9/2019 16:41
Toluene	U		0.0088	0.032	mg/Kg-dry	1	8/9/2019 16:41
Xylenes, Total	U		0.043	0.097	mg/Kg-dry	1	8/9/2019 16:41
Surr: 1,2-Dichloroethane-d4	*104*			*70-130*	*%REC*	1	8/9/2019 16:41
Surr: 4-Bromofluorobenzene	*100*			*70-130*	*%REC*	1	8/9/2019 16:41
Surr: Dibromofluoromethane	*97.0*			*70-130*	*%REC*	1	8/9/2019 16:41
Surr: Toluene-d8	*99.5*			*70-130*	*%REC*	1	8/9/2019 16:41
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 8/13/19		Analyst: **QTN**
Electrical Conductivity @ Saturation	**11**		**0.011**	**0.10**	**mmhos/cm @25°**	20	8/13/2019 11:23
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**11**		**0.37**	**1.2**	**mg/Kg-dry**	1	8/12/2019 16:15
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 8/9/19		Analyst: **MB**
Chromium, Hexavalent	U		1.0	1.2	mg/Kg-dry	1	8/12/2019 14:30
MOISTURE		Method:	**SW3550C**				Analyst: **MMO**
Moisture	**17**		**0.10**	**0.10**	**% of sample**	1	8/9/2019 16:39
PH		Method:	**SW9045D**		Prep: EXTRACT / 8/9/19		Analyst: **DNW**
pH	**8.98**		**0.10**	**0.100**	**s.u.**	1	8/9/2019 15:00
Temperature	**22.0**		**0.10**	**0.100**	**°C**	1	8/9/2019 15:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Aug-19*

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Side Wall Composite
Collection Date: 8/7/2019 01:50 PM

Work Order: 19080634
Lab ID: 19080634-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015C**			Prep: SW3546 / 8/9/19		Analyst: **RM**
DRO (C10-C28)	**15**		**3.5**	**6.0**	**mg/Kg-dry**	1	8/10/2019 12:07
Surr: 4-Terphenyl-d14	*72.1*			*34-130*	*%REC*	1	8/10/2019 12:07
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 8/9/19		Analyst: **RM**
GRO (C6-C10)	U		3.3	7.8	mg/Kg	1	8/9/2019 22:06
Surr: Toluene-d8	*101*			*71-123*	*%REC*	1	8/9/2019 22:06
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 8/12/19		Analyst: **RSH**
Mercury	**0.033**		**0.0023**	**0.023**	**mg/Kg-dry**	1	8/12/2019 13:56
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 8/10/19		Analyst: **ABL**
Arsenic	**7.3**		**0.057**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Barium	**130**		**0.44**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Cadmium	**0.45**		**0.028**	**0.19**	**mg/Kg-dry**	1	8/11/2019 19:54
Chromium	**7.7**		**0.21**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Copper	**15**		**0.47**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Lead	**16**		**0.23**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Nickel	**14**		**0.25**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Selenium	**0.50**		**0.44**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Silver	**0.081**	J	**0.063**	**0.47**	**mg/Kg-dry**	1	8/11/2019 19:54
Zinc	**76**		**9.3**	**9.5**	**mg/Kg-dry**	10	8/12/2019 19:03
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Calcium	**540**		**25**	**50**	**mg/L**	100	8/14/2019 13:46
Magnesium	**280**		**5.0**	**20**	**mg/L**	100	8/14/2019 13:46
Sodium	**1,400**		**4.5**	**20**	**mg/L**	100	8/14/2019 13:46
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Sodium Adsorption Ratio	**12**		**0.010**	**0.010**	**none**	1	8/14/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 8/9/19		Analyst: **EEW**
Acenaphthene	U		0.00097	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Anthracene	U		0.0017	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Benzo(a)anthracene	U		0.0021	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Benzo(a)pyrene	U		0.0014	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Benzo(b)fluoranthene	U		0.0012	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Benzo(k)fluoranthene	U		0.0015	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Chrysene	U		0.0010	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Dibenzo(a,h)anthracene	U		0.0012	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Fluoranthene	U		0.00092	0.0050	mg/Kg-dry	1	8/9/2019 16:51

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Side Wall Composite
Collection Date: 8/7/2019 01:50 PM

Work Order: 19080634
Lab ID: 19080634-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0017	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Indeno(1,2,3-cd)pyrene	U		0.0018	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Naphthalene	**0.0038**	J	**0.0022**	**0.0050**	**mg/Kg-dry**	1	8/9/2019 16:51
Pyrene	U		0.00083	0.0050	mg/Kg-dry	1	8/9/2019 16:51
Surr: 2-Fluorobiphenyl	*72.3*			*20-140*	*%REC*	1	8/9/2019 16:51
Surr: 4-Terphenyl-d14	*56.9*			*22-172*	*%REC*	1	8/9/2019 16:51
Surr: Nitrobenzene-d5	*82.9*			*28-140*	*%REC*	1	8/9/2019 16:51
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 8/9/19		Analyst: **CKD**
Benzene	U		0.0056	0.033	mg/Kg-dry	1	8/9/2019 16:58
Ethylbenzene	U		0.0069	0.033	mg/Kg-dry	1	8/9/2019 16:58
m,p-Xylene	**0.068**		**0.044**	**0.066**	**mg/Kg-dry**	1	8/9/2019 16:58
o-Xylene	U		0.013	0.033	mg/Kg-dry	1	8/9/2019 16:58
Toluene	**0.011**	J	**0.0090**	**0.033**	**mg/Kg-dry**	1	8/9/2019 16:58
Xylenes, Total	**0.068**	J	**0.044**	**0.099**	**mg/Kg-dry**	1	8/9/2019 16:58
Surr: 1,2-Dichloroethane-d4	*102*			*70-130*	*%REC*	1	8/9/2019 16:58
Surr: 4-Bromofluorobenzene	*104*			*70-130*	*%REC*	1	8/9/2019 16:58
Surr: Dibromofluoromethane	*92.6*			*70-130*	*%REC*	1	8/9/2019 16:58
Surr: Toluene-d8	*100*			*70-130*	*%REC*	1	8/9/2019 16:58
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 8/13/19		Analyst: **QTN**
Electrical Conductivity @ Saturation	**11**		**0.011**	**0.10**	**mmhos/cm @25°**	20	8/13/2019 11:23
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**7.7**		**0.38**	**1.2**	**mg/Kg-dry**	1	8/12/2019 16:15
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 8/9/19		Analyst: **MB**
Chromium, Hexavalent	U		1.0	1.2	mg/Kg-dry	1	8/12/2019 14:30
MOISTURE		Method:	**SW3550C**				Analyst: **MMO**
Moisture	**18**		**0.10**	**0.10**	**% of sample**	1	8/9/2019 16:39
PH		Method:	**SW9045D**		Prep: EXTRACT / 8/9/19		Analyst: **DNW**
pH	**8.28**		**0.10**	**0.100**	**s.u.**	1	8/9/2019 15:00
Temperature	**22.3**		**0.10**	**0.100**	**°C**	1	8/9/2019 15:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Aug-19*

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Flow Path Below Culvert comp
Collection Date: 8/7/2019 02:10 PM

Work Order: 19080634
Lab ID: 19080634-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015C**			Prep: SW3546 / 8/9/19		Analyst: **RM**
DRO (C10-C28)	**11**		**3.4**	**5.8**	**mg/Kg-dry**	1	8/10/2019 12:36
Surr: 4-Terphenyl-d14	*58.1*			*34-130*	*%REC*	1	8/10/2019 12:36
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 8/9/19		Analyst: **RM**
GRO (C6-C10)	U		3.0	7.1	mg/Kg	1	8/9/2019 22:35
Surr: Toluene-d8	*138*	S		*71-123*	*%REC*	1	8/9/2019 22:35
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 8/12/19		Analyst: **RSH**
Mercury	**0.022**		**0.0022**	**0.022**	**mg/Kg-dry**	1	8/12/2019 13:58
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 8/10/19		Analyst: **ABL**
Arsenic	**6.4**		**0.045**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Barium	**160**		**3.5**	**3.8**	**mg/Kg-dry**	10	8/12/2019 19:04
Cadmium	**0.37**		**0.023**	**0.15**	**mg/Kg-dry**	1	8/11/2019 19:55
Chromium	**5.6**		**0.17**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Copper	**10**		**0.38**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Lead	**12**		**0.18**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Nickel	**10**		**0.20**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Selenium	**0.44**		**0.35**	**0.38**	**mg/Kg-dry**	1	8/11/2019 19:55
Silver	U		0.050	0.38	mg/Kg-dry	1	8/11/2019 19:55
Zinc	**65**		**7.4**	**7.6**	**mg/Kg-dry**	10	8/12/2019 19:04
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Calcium	**1,400**		**2.5**	**5.0**	**mg/L**	10	8/14/2019 12:53
Magnesium	**98**		**0.50**	**2.0**	**mg/L**	10	8/14/2019 12:53
Sodium	**1,000**		**0.45**	**2.0**	**mg/L**	10	8/14/2019 12:53
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Sodium Adsorption Ratio	**7.0**		**0.010**	**0.010**	**none**	1	8/14/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 8/9/19		Analyst: **EEW**
Acenaphthene	U		0.00095	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Anthracene	U		0.0016	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Benzo(a)anthracene	U		0.0020	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Benzo(a)pyrene	U		0.0013	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Benzo(b)fluoranthene	U		0.0012	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Benzo(k)fluoranthene	U		0.0014	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Chrysene	U		0.0010	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Dibenzo(a,h)anthracene	U		0.0011	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Fluoranthene	U		0.00090	0.0049	mg/Kg-dry	1	8/9/2019 17:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Riser Leak: Flow Path Below Culvert comp
Collection Date: 8/7/2019 02:10 PM

Work Order: 19080634
Lab ID: 19080634-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0016	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Indeno(1,2,3-cd)pyrene	U		0.0018	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Naphthalene	U		0.0021	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Pyrene	U		0.00081	0.0049	mg/Kg-dry	1	8/9/2019 17:07
Surr: 2-Fluorobiphenyl	*65.2*			*20-140*	*%REC*	1	8/9/2019 17:07
Surr: 4-Terphenyl-d14	*44.8*			*22-172*	*%REC*	1	8/9/2019 17:07
Surr: Nitrobenzene-d5	*70.2*			*28-140*	*%REC*	1	8/9/2019 17:07
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 8/9/19		Analyst: **CKD**
Benzene	U		0.0053	0.031	mg/Kg-dry	1	8/9/2019 20:32
Ethylbenzene	U		0.0065	0.031	mg/Kg-dry	1	8/9/2019 20:32
m,p-Xylene	U		0.041	0.062	mg/Kg-dry	1	8/9/2019 20:32
o-Xylene	U		0.012	0.031	mg/Kg-dry	1	8/9/2019 20:32
Toluene	U		0.0085	0.031	mg/Kg-dry	1	8/9/2019 20:32
Xylenes, Total	U		0.041	0.093	mg/Kg-dry	1	8/9/2019 20:32
Surr: 1,2-Dichloroethane-d4	*108*			*70-130*	*%REC*	1	8/9/2019 20:32
Surr: 4-Bromofluorobenzene	*102*			*70-130*	*%REC*	1	8/9/2019 20:32
Surr: Dibromofluoromethane	*96.2*			*70-130*	*%REC*	1	8/9/2019 20:32
Surr: Toluene-d8	*103*			*70-130*	*%REC*	1	8/9/2019 20:32
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 8/13/19		Analyst: **QTN**
Electrical Conductivity @ Saturation	**13**		**0.011**	**0.10**	**mmhos/cm @25°**	20	8/13/2019 11:23
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**5.6**		**0.37**	**1.2**	**mg/Kg-dry**	1	8/12/2019 16:15
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 8/9/19		Analyst: **MB**
Chromium, Hexavalent	U		1.0	1.2	mg/Kg-dry	1	8/12/2019 14:30
MOISTURE		Method:	**SW3550C**				Analyst: **MMO**
Moisture	**16**		**0.10**	**0.10**	**% of sample**	1	8/9/2019 16:39
PH		Method:	**SW9045D**		Prep: EXTRACT / 8/9/19		Analyst: **DNW**
pH	**8.72**		**0.10**	**0.100**	**s.u.**	1	8/9/2019 15:00
Temperature	**22.3**		**0.10**	**0.100**	**°C**	1	8/9/2019 15:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Aug-19*

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Background
Collection Date: 8/7/2019 02:30 PM

Work Order: 19080634
Lab ID: 19080634-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **SW8015C**			Prep: SW3546 / 8/9/19		Analyst: **RM**
DRO (C10-C28)	U		3.6	6.2	mg/Kg-dry	1	8/10/2019 01:05
Surr: 4-Terphenyl-d14	*94.1*			*34-130*	*%REC*	1	8/10/2019 01:05
GASOLINE RANGE ORGANICS BY GC-FID		Method: **SW8015D**			Prep: SW5035 / 8/9/19		Analyst: **RM**
GRO (C6-C10)	U		3.0	7.1	mg/Kg	1	8/9/2019 23:05
Surr: Toluene-d8	*88.4*			*71-123*	*%REC*	1	8/9/2019 23:05
MERCURY BY CVAA		Method: **SW7471B**			Prep: SW7471 / 8/12/19		Analyst: **RSH**
Mercury	**0.018**	J	**0.0020**	**0.020**	**mg/Kg-dry**	1	8/12/2019 14:01
METALS BY ICP-MS		Method: **SW6020A**			Prep: SW3050B / 8/10/19		Analyst: **ABL**
Arsenic	**6.0**		**0.058**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Barium	**390**		**4.4**	**4.8**	**mg/Kg-dry**	10	8/12/2019 19:06
Cadmium	**0.30**		**0.029**	**0.19**	**mg/Kg-dry**	1	8/11/2019 19:57
Chromium	**6.5**		**0.21**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Copper	**11**		**0.48**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Lead	**12**		**0.23**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Nickel	**10**		**0.25**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Selenium	**0.47**	J	**0.44**	**0.48**	**mg/Kg-dry**	1	8/11/2019 19:57
Silver	U		0.063	0.48	mg/Kg-dry	1	8/11/2019 19:57
Zinc	**52**		**9.4**	**9.6**	**mg/Kg-dry**	10	8/12/2019 19:06
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Calcium	**80**		**2.5**	**5.0**	**mg/L**	10	8/14/2019 18:35
Magnesium	**10**		**0.50**	**2.0**	**mg/L**	10	8/14/2019 18:35
Sodium	**18**		**0.45**	**2.0**	**mg/L**	10	8/14/2019 18:35
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 8/13/19		Analyst: **ABL**
Sodium Adsorption Ratio	**0.50**		**0.010**	**0.010**	**none**	1	8/14/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)		Method: **SW846 8270D**			Prep: SW3546 / 8/9/19		Analyst: **EEW**
Acenaphthene	U		0.0010	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Anthracene	U		0.0017	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Benzo(a)anthracene	U		0.0021	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Benzo(a)pyrene	U		0.0014	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Benzo(b)fluoranthene	U		0.0012	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Benzo(k)fluoranthene	U		0.0015	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Chrysene	U		0.0011	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Dibenzo(a,h)anthracene	U		0.0012	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Fluoranthene	U		0.00096	0.0052	mg/Kg-dry	1	8/9/2019 17:22

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *15-Aug-19*

Client: Terra Energy Partners, LLC
Project: GM 343-32 Water Riser Leak
Sample ID: GM 343-32 Background
Collection Date: 8/7/2019 02:30 PM

Work Order: 19080634
Lab ID: 19080634-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0017	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Indeno(1,2,3-cd)pyrene	U		0.0019	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Naphthalene	U		0.0023	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Pyrene	U		0.00086	0.0052	mg/Kg-dry	1	8/9/2019 17:22
Surr: 2-Fluorobiphenyl	*74.0*			*20-140*	*%REC*	1	8/9/2019 17:22
Surr: 4-Terphenyl-d14	*65.3*			*22-172*	*%REC*	1	8/9/2019 17:22
Surr: Nitrobenzene-d5	*79.4*			*28-140*	*%REC*	1	8/9/2019 17:22
VOLATILE ORGANIC COMPOUNDS		Method:	**SW8260C**		Prep: SW5035 / 8/9/19		Analyst: **CKD**
Benzene	U		0.0047	0.028	mg/Kg-dry	1	8/9/2019 20:49
Ethylbenzene	U		0.0058	0.028	mg/Kg-dry	1	8/9/2019 20:49
m,p-Xylene	U		0.037	0.055	mg/Kg-dry	1	8/9/2019 20:49
o-Xylene	U		0.011	0.028	mg/Kg-dry	1	8/9/2019 20:49
Toluene	U		0.0075	0.028	mg/Kg-dry	1	8/9/2019 20:49
Xylenes, Total	U		0.037	0.083	mg/Kg-dry	1	8/9/2019 20:49
Surr: 1,2-Dichloroethane-d4	*108*			*70-130*	*%REC*	1	8/9/2019 20:49
Surr: 4-Bromofluorobenzene	*102*			*70-130*	*%REC*	1	8/9/2019 20:49
Surr: Dibromofluoromethane	*92.4*			*70-130*	*%REC*	1	8/9/2019 20:49
Surr: Toluene-d8	*102*			*70-130*	*%REC*	1	8/9/2019 20:49
ELECTRICAL CONDUCTIVITY (SAR)		Method:	**USDA H60 METHOD 2**		Prep: USDA Method 20B / 8/13/19		Analyst: **QTN**
Electrical Conductivity @ Saturation	**0.65**		**0.011**	**0.10**	**mmhos/cm @25°**	20	8/13/2019 11:23
CHROMIUM, TRIVALENT		Method:	**CALCULATION**				Analyst: **JB**
Chromium, Trivalent	**6.5**		**0.39**	**1.3**	**mg/Kg-dry**	1	8/12/2019 16:15
CHROMIUM, HEXAVALENT		Method:	**SW7196A**		Prep: SW3060A / 8/9/19		Analyst: **MB**
Chromium, Hexavalent	U		1.1	1.3	mg/Kg-dry	1	8/12/2019 14:30
MOISTURE		Method:	**SW3550C**				Analyst: **MMO**
Moisture	**21**		**0.10**	**0.10**	**% of sample**	1	8/9/2019 16:39
PH		Method:	**SW9045D**		Prep: EXTRACT / 8/9/19		Analyst: **DNW**
pH	**8.63**		**0.10**	**0.100**	**s.u.**	1	8/9/2019 15:00
Temperature	**22.2**		**0.10**	**0.100**	**°C**	1	8/9/2019 15:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **140555** Instrument ID **GC8** Method: **SW8015C**

MBLK Sample ID: **DBLKS1-140555-140555** Units: **mg/Kg** Analysis Date: **8/9/2019 03:51 PM**

Client ID: Run ID: **GC8_190809A** SeqNo: **5839071** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	*3.483*	0	*3.33*	0	*105*	*34-130*	0			

LCS Sample ID: **DLCSS1-140555-140555** Units: **mg/Kg** Analysis Date: **8/9/2019 04:20 PM**

Client ID: Run ID: **GC8_190809A** SeqNo: **5839072** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	381	5.0	333	0	114	65-122	0			
Surr: 4-Terphenyl-d14	*3.333*	0	*3.33*	0	*100*	*34-130*	0			

MS Sample ID: **19080597-01A MS** Units: **mg/Kg** Analysis Date: **8/9/2019 04:49 PM**

Client ID: Run ID: **GC8_190809A** SeqNo: **5839073** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	364.1	4.9	325.6	0	112	65-122	0			
Surr: 4-Terphenyl-d14	*2.966*	0	*3.256*	0	*91.1*	*34-130*	0			

MSD Sample ID: **19080597-01A MSD** Units: **mg/Kg** Analysis Date: **8/9/2019 05:19 PM**

Client ID: Run ID: **GC8_190809A** SeqNo: **5839074** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	291.4	4.8	321	0	90.8	65-122	364.1	22.2	30	
Surr: 4-Terphenyl-d14	*2.474*	0	*3.21*	0	*77.1*	*34-130*	2.966	*18.1*	*30*	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140587** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **DBLKS1-140587-140587** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 06:39 PM**
Client ID: Run ID: **GC9_190809A** SeqNo: **5838951** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	5,000								
Surr: Toluene-d8	*6367*	0	*5000*	0	*127*	*71-123*	0			*S*

LCS Sample ID: **DLCSS1-140587-140587** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 04:41 PM**
Client ID: Run ID: **GC9_190809A** SeqNo: **5838947** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	547800	5,000	500000	0	110	71-123	0			
Surr: Toluene-d8	*4820*	0	*5000*	0	*96.4*	*71-123*	0			

MS Sample ID: **19080633-01A MS** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 05:11 PM**
Client ID: Run ID: **GC9_190809A** SeqNo: **5838948** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1650000	7,700	1536000	0	107	71-123	0			
Surr: Toluene-d8	*8577*	0	*7682*	0	*112*	*71-123*	0			

MSD Sample ID: **19080633-01A MSD** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 05:40 PM**
Client ID: Run ID: **GC9_190809A** SeqNo: **5838949** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1600000	7,700	1532000	0	104	71-123	1650000	3.08	30	
Surr: Toluene-d8	*8954*	0	*7661*	0	*117*	*71-123*	8577	*4.3*	*30*	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140646** Instrument ID **HG4** Method: **SW7471B**

MBLK Sample ID: **MBLK-140646-140646** Units: **mg/Kg** Analysis Date: **8/12/2019 01:29 PM**
Client ID: Run ID: **HG4_190812A** SeqNo: **5838675** Prep Date: **8/12/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.020								

LCS Sample ID: **LCS-140646-140646** Units: **mg/Kg** Analysis Date: **8/12/2019 01:32 PM**
Client ID: Run ID: **HG4_190812A** SeqNo: **5838676** Prep Date: **8/12/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1942	0.020	0.1665	0	117	80-120	0			

MS Sample ID: **19080633-01AMS** Units: **mg/Kg** Analysis Date: **8/12/2019 01:36 PM**
Client ID: Run ID: **HG4_190812A** SeqNo: **5838678** Prep Date: **8/12/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1735	0.018	0.1469	0.01735	106	75-125	0			

MSD Sample ID: **19080633-01AMSD** Units: **mg/Kg** Analysis Date: **8/12/2019 01:38 PM**
Client ID: Run ID: **HG4_190812A** SeqNo: **5838679** Prep Date: **8/12/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1748	0.018	0.1458	0.01735	108	75-125	0.1735	0.782	35	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140618** Instrument ID **ICPMS3** Method: **SW6020A**

MBLK Sample ID: **MBLK-140618-140618** Units: **mg/Kg** Analysis Date: **8/11/2019 07:25 PM**
Client ID: Run ID: **ICPMS3_190811B** SeqNo: **5837307** Prep Date: **8/10/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.24								
Barium	U	0.24								
Cadmium	U	0.096								
Chromium	U	0.24								
Copper	U	0.24								
Lead	U	0.24								
Nickel	U	0.24								
Selenium	U	0.24								
Silver	U	0.24								
Zinc	U	0.48								

LCS Sample ID: **LCS-140618-140618** Units: **mg/Kg** Analysis Date: **8/11/2019 07:27 PM**
Client ID: Run ID: **ICPMS3_190811B** SeqNo: **5837308** Prep Date: **8/10/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.266	0.25	4.902	0	107	80-120	0			
Barium	5.162	0.25	4.902	0	105	80-120	0			
Cadmium	4.986	0.098	4.902	0	102	80-120	0			
Chromium	5.399	0.25	4.902	0	110	80-120	0			
Copper	5.325	0.25	4.902	0	109	80-120	0			
Lead	5.164	0.25	4.902	0	105	80-120	0			
Nickel	5.374	0.25	4.902	0	110	80-120	0			
Selenium	4.902	0.25	4.902	0	100	80-120	0			
Silver	5.238	0.25	4.902	0	107	80-120	0			
Zinc	5.266	0.49	4.902	0	107	80-120	0			

MS Sample ID: **19080640-05AMS** Units: **mg/Kg** Analysis Date: **8/11/2019 08:39 PM**
Client ID: Run ID: **ICPMS3_190811B** SeqNo: **5837374** Prep Date: **8/10/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.66	0.37	7.396	4.794	92.9	75-125	0			
Barium	131.9	0.37	7.396	105	364	75-125	0			SO
Cadmium	5.875	0.15	7.396	0.1023	78	75-125	0			
Chromium	18.72	0.37	7.396	7.723	149	75-125	0			S
Copper	15.08	0.37	7.396	9.734	72.3	75-125	0			S
Lead	21.54	0.37	7.396	14	102	75-125	0			
Nickel	19.37	0.37	7.396	12.22	96.7	75-125	0			
Selenium	6.81	0.37	7.396	0.6673	83	75-125	0			
Silver	5.784	0.37	7.396	0.05259	77.5	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140618** Instrument ID **ICPMS3** Method: **SW6020A**

MS Sample ID: **19080640-05AMS** Units: **mg/Kg** Analysis Date: **8/12/2019 07:16 PM**
Client ID: Run ID: **ICPMS3_190812A** SeqNo: **5840425** Prep Date: **8/10/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	78.2	7.4	7.396	63.65	197	75-125	0			SO

MSD Sample ID: **19080640-05AMSD** Units: **mg/Kg** Analysis Date: **8/11/2019 08:41 PM**
Client ID: Run ID: **ICPMS3_190811B** SeqNo: **5837375** Prep Date: **8/10/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.63	0.37	7.353	4.794	92.9	75-125	11.66	0.294	20	
Barium	123	0.37	7.353	105	245	75-125	131.9	7.01	20	SO
Cadmium	5.907	0.15	7.353	0.1023	78.9	75-125	5.875	0.549	20	
Chromium	18.43	0.37	7.353	7.723	146	75-125	18.72	1.55	20	S
Copper	15.29	0.37	7.353	9.734	75.5	75-125	15.08	1.34	20	
Lead	21.62	0.37	7.353	14	104	75-125	21.54	0.377	20	
Nickel	19.21	0.37	7.353	12.22	95	75-125	19.37	0.861	20	
Selenium	6.903	0.37	7.353	0.6673	84.8	75-125	6.81	1.37	20	
Silver	5.795	0.37	7.353	0.05259	78.1	75-125	5.784	0.187	20	

MSD Sample ID: **19080640-05AMSD** Units: **mg/Kg** Analysis Date: **8/12/2019 07:17 PM**
Client ID: Run ID: **ICPMS3_190812A** SeqNo: **5840426** Prep Date: **8/10/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	72.79	7.4	7.353	63.65	124	75-125	78.2	7.16	20	O

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140731** Instrument ID **ICPMS3** Method: **SW6020A**

DUP Sample ID: **19080634-04ADUP** Units: **mg/L** Analysis Date: **8/14/2019 06:36 PM**
Client ID: **GM 343-32 Background** Run ID: **ICPMS3_190814A** SeqNo: **5845972** Prep Date: **8/13/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	98.32	5.0	0	0	0	0-0	79.79	20.8		
Magnesium	12.64	2.0	0	0	0	0-0	10.28	20.6		
Sodium	23.16	2.0	0	0	0	0-0	18	25.1		

The following samples were analyzed in this batch: 19080634-01A, 19080634-02A, 19080634-03A, 19080634-04A

Batch ID: **140731** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **19080634-04ADUP** Units: **none** Analysis Date: **8/14/2019**
Client ID: **GM 343-32 Background** Run ID: **SAR_190814B** SeqNo: **5848850** Prep Date: **8/13/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.5842	0.010	0	0	0		0.504	14.7	50	

The following samples were analyzed in this batch: 19080634-01A, 19080634-02A, 19080634-03A, 19080634-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140554** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-140554-140554** Units: **µg/Kg** Analysis Date: **8/9/2019 11:55 AM**
Client ID: Run ID: **SVMS6_190809A** SeqNo: **5835992** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	4.2								
Anthracene	U	4.2								
Benzo(a)anthracene	U	4.2								
Benzo(a)pyrene	U	4.2								
Benzo(b)fluoranthene	U	4.2								
Benzo(k)fluoranthene	U	4.2								
Chrysene	U	4.2								
Dibenzo(a,h)anthracene	U	4.2								
Fluoranthene	U	4.2								
Fluorene	U	4.2								
Indeno(1,2,3-cd)pyrene	U	4.2								
Naphthalene	U	4.2								
Pyrene	U	4.2								
Surr: 2-Fluorobiphenyl	*2968*	0	*3333*	0	*89*	*20-140*	0			
Surr: 4-Terphenyl-d14	*2843*	0	*3333*	0	*85.3*	*22-172*	0			
Surr: Nitrobenzene-d5	*3226*	0	*3333*	0	*96.8*	*28-140*	0			

LCS Sample ID: **SLCSS1-140554-140554** Units: **µg/Kg** Analysis Date: **8/9/2019 12:11 PM**
Client ID: Run ID: **SVMS6_190809A** SeqNo: **5835993** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	991.1	4.2	1333	0	74.4	40-140	0			
Anthracene	1097	4.2	1333	0	82.3	40-140	0			
Benzo(a)anthracene	968	4.2	1333	0	72.6	40-140	0			
Benzo(a)pyrene	1105	4.2	1333	0	82.9	40-140	0			
Benzo(b)fluoranthene	1010	4.2	1333	0	75.8	40-140	0			
Benzo(k)fluoranthene	1037	4.2	1333	0	77.8	40-140	0			
Chrysene	1027	4.2	1333	0	77.1	40-140	0			
Dibenzo(a,h)anthracene	1138	4.2	1333	0	85.4	40-140	0			
Fluoranthene	1267	4.2	1333	0	95.1	40-140	0			
Fluorene	1071	4.2	1333	0	80.3	40-140	0			
Indeno(1,2,3-cd)pyrene	1217	4.2	1333	0	91.3	40-140	0			
Naphthalene	1105	4.2	1333	0	82.9	40-140	0			
Pyrene	781.4	4.2	1333	0	58.6	40-140	0			
Surr: 2-Fluorobiphenyl	*2743*	0	*3333*	0	*82.3*	*20-140*	0			
Surr: 4-Terphenyl-d14	*2291*	0	*3333*	0	*68.7*	*22-172*	0			
Surr: Nitrobenzene-d5	*2511*	0	*3333*	0	*75.3*	*28-140*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140554** Instrument ID **SVMS6** Method: **SW846 8270D**

MS Sample ID: **19080597-07A MS** Units: **µg/Kg** Analysis Date: **8/9/2019 12:26 PM**
Client ID: Run ID: **SVMS6_190809A** SeqNo: **5835994** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	960.6	4.0	1294	0	74.3	40-140	0			
Anthracene	1040	4.0	1294	0	80.4	40-140	0			
Benzo(a)anthracene	937.2	4.0	1294	0	72.5	40-140	0			
Benzo(a)pyrene	1032	4.0	1294	0	79.8	40-140	0			
Benzo(b)fluoranthene	915.5	4.0	1294	0	70.8	40-140	0			
Benzo(k)fluoranthene	968.4	4.0	1294	0	74.9	40-140	0			
Chrysene	980.8	4.0	1294	0	75.8	40-140	0			
Dibenzo(a,h)anthracene	1051	4.0	1294	0	81.2	40-140	0			
Fluoranthene	1143	4.0	1294	0	88.4	40-140	0			
Fluorene	1037	4.0	1294	0	80.2	40-140	0			
Indeno(1,2,3-cd)pyrene	1130	4.0	1294	0	87.4	40-140	0			
Naphthalene	1105	4.0	1294	3.971	85.1	40-140	0			
Pyrene	839.3	4.0	1294	0	64.9	40-140	0			
Surr: 2-Fluorobiphenyl	*2620*	0	*3234*	0	*81*	*20-140*	0			
Surr: 4-Terphenyl-d14	*2391*	0	*3234*	0	*73.9*	*22-172*	0			
Surr: Nitrobenzene-d5	*2850*	0	*3234*	0	*88.1*	*28-140*	0			

MSD Sample ID: **19080597-07A MSD** Units: **µg/Kg** Analysis Date: **8/9/2019 12:42 PM**
Client ID: Run ID: **SVMS6_190809A** SeqNo: **5835995** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	988.3	4.0	1269	0	77.9	40-140	960.6	2.85	30	
Anthracene	1058	4.0	1269	0	83.4	40-140	1040	1.75	30	
Benzo(a)anthracene	955.8	4.0	1269	0	75.3	40-140	937.2	1.96	30	
Benzo(a)pyrene	1005	4.0	1269	0	79.2	40-140	1032	2.66	30	
Benzo(b)fluoranthene	870.4	4.0	1269	0	68.6	40-140	915.5	5.06	30	
Benzo(k)fluoranthene	931	4.0	1269	0	73.4	40-140	968.4	3.94	30	
Chrysene	982.6	4.0	1269	0	77.4	40-140	980.8	0.179	30	
Dibenzo(a,h)anthracene	989.4	4.0	1269	0	78	40-140	1051	6.02	30	
Fluoranthene	1187	4.0	1269	0	93.5	40-140	1143	3.73	30	
Fluorene	1038	4.0	1269	0	81.8	40-140	1037	0.084	30	
Indeno(1,2,3-cd)pyrene	1074	4.0	1269	0	84.6	40-140	1130	5.12	30	
Naphthalene	1150	4.0	1269	3.971	90.3	40-140	1105	4.01	30	
Pyrene	941.1	4.0	1269	0	74.2	40-140	839.3	11.4	30	
Surr: 2-Fluorobiphenyl	*2704*	0	*3173*	0	*85.2*	*20-140*	2620	*3.13*	*0*	
Surr: 4-Terphenyl-d14	*2720*	0	*3173*	0	*85.7*	*22-172*	2391	*12.8*	*0*	
Surr: Nitrobenzene-d5	*3071*	0	*3173*	0	*96.8*	*28-140*	2850	*7.43*	*0*	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140586** Instrument ID **VMS10** Method: **SW8260C**

MBLK Sample ID: **MBLK-140586-140586** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 08:02 PM**
Client ID: Run ID: **VMS10_190809B** SeqNo: **5838494** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30								
Ethylbenzene	U	30								
m,p-Xylene	U	60								
o-Xylene	U	30								
Toluene	U	30								
Xylenes, Total	U	90								
Surr: 1,2-Dichloroethane-d4	*1084*	0	*1000*	0	*108*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*988*	0	*1000*	0	*98.8*	*70-130*	0			
Surr: Dibromofluoromethane	*886*	0	*1000*	0	*88.6*	*70-130*	0			
Surr: Toluene-d8	*1002*	0	*1000*	0	*100*	*70-130*	0			

LCS Sample ID: **LCS-140586-140586** Units: **µg/Kg-dry** Analysis Date: **8/9/2019 07:10 PM**
Client ID: Run ID: **VMS10_190809B** SeqNo: **5838493** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1032	30	1000	0	103	75-125	0			
Ethylbenzene	1010	30	1000	0	101	75-125	0			
m,p-Xylene	2008	60	2000	0	100	80-125	0			
o-Xylene	998.5	30	1000	0	99.8	75-125	0			
Toluene	972	30	1000	0	97.2	70-125	0			
Xylenes, Total	3006	90	3000	0	100	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1110*	0	*1000*	0	*111*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*979.5*	0	*1000*	0	*98*	*70-130*	0			
Surr: Dibromofluoromethane	*1045*	0	*1000*	0	*104*	*70-130*	0			
Surr: Toluene-d8	*991*	0	*1000*	0	*99.1*	*70-130*	0			

MS Sample ID: **19080633-01A MS** Units: **µg/Kg-dry** Analysis Date: **8/12/2019 08:31 PM**
Client ID: Run ID: **VMS9_190812A** SeqNo: **5841178** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1160	32	1080	0	107	75-125	0			
Ethylbenzene	1119	32	1080	0	104	75-125	0			
m,p-Xylene	2430	65	2160	0	112	80-125	0			
o-Xylene	1171	32	1080	0	108	75-125	0			
Toluene	1191	32	1080	0	110	70-125	0			
Xylenes, Total	3601	97	3240	0	111	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1063*	0	*1080*	0	*98.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1112*	0	*1080*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*947.1*	0	*1080*	0	*87.7*	*70-130*	0			
Surr: Toluene-d8	*1102*	0	*1080*	0	*102*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140586** Instrument ID **VMS10** Method: **SW8260C**

MSD Sample ID: **19080633-01A MSD** Units: **µg/Kg-dry** Analysis Date: **8/12/2019 08:46 PM**
Client ID: Run ID: **VMS9_190812A** SeqNo: **5841179** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	916	32	1076	0	85.1	75-125	1160	23.5	30	
Ethylbenzene	868.1	32	1076	0	80.6	75-125	1119	25.2	30	
m,p-Xylene	1887	65	2153	0	87.6	80-125	2430	25.1	30	
o-Xylene	919.8	32	1076	0	85.4	75-125	1171	24	30	
Toluene	916	32	1076	0	85.1	70-125	1191	26.1	30	
Xylenes, Total	2807	97	3229	0	86.9	75-125	3601	24.8	30	
Surr: 1,2-Dichloroethane-d4	*1052*	0	*1076*	0	*97.7*	*70-130*	1063	*1.09*	*30*	
Surr: 4-Bromofluorobenzene	*1115*	0	*1076*	0	*104*	*70-130*	1112	*0.306*	*30*	
Surr: Dibromofluoromethane	*939.7*	0	*1076*	0	*87.3*	*70-130*	947.1	*0.781*	*30*	
Surr: Toluene-d8	*1080*	0	*1076*	0	*100*	*70-130*	1102	*2*	*30*	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140593** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-140593-140593** Units: **s.u.** Analysis Date: **8/9/2019 03:00 PM**
Client ID: Run ID: **WETCHEM_190809** SeqNo: **5835398** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.97	0.10	4	0	99.2	90-110	0			

DUP Sample ID: **19080543-01A DUP** Units: **s.u.** Analysis Date: **8/9/2019 03:00 PM**
Client ID: Run ID: **WETCHEM_190809** SeqNo: **5835400** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.24	0.10	0	0	0	0-0	8.02	2.71	20	
Temperature	22	0.10	0	0	0		22	0		

DUP Sample ID: **19080634-01A DUP** Units: **s.u.** Analysis Date: **8/9/2019 03:00 PM**
Client ID: **GM 343-32 Riser Leak: Excavation Bottom** Run ID: **WETCHEM_190809** SeqNo: **5835412** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.94	0.10	0	0	0	0-0	8.98	0.446	20	
Temperature	22	0.10	0	0	0		22	0		

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **140696** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-140696-140696** Units: **mg/Kg** Analysis Date: **8/12/2019 02:30 PM**
Client ID: Run ID: **WETCHEM_190812M** SeqNo: **5838972** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	U	1.0								

LCS Sample ID: **LCS-140696-140696** Units: **mg/Kg** Analysis Date: **8/12/2019 02:30 PM**
Client ID: Run ID: **WETCHEM_190812M** SeqNo: **5838973** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.41	1.0	5	0	88.2	80-120	0			

MS Sample ID: **19080633-01A MS** Units: **mg/Kg** Analysis Date: **8/12/2019 02:30 PM**
Client ID: Run ID: **WETCHEM_190812M** SeqNo: **5838976** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2.74	1.0	5	-0.09	56.6	75-125	0			S

MS Sample ID: **19080633-01A MSI** Units: **mg/Kg** Analysis Date: **8/12/2019 02:30 PM**
Client ID: Run ID: **WETCHEM_190812M** SeqNo: **5838978** Prep Date: **8/9/2019** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2075	100	2172	-0.09	95.5	75-125	0			

MSD Sample ID: **19080633-01A MSD** Units: **mg/Kg** Analysis Date: **8/12/2019 02:30 PM**
Client ID: Run ID: **WETCHEM_190812M** SeqNo: **5838977** Prep Date: **8/9/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	3.099	0.99	4.95	-0.09	64.4	75-125	2.74	12.3	20	S

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 19080634
Project: GM 343-32 Water Riser Leak

QC BATCH REPORT

Batch ID: **R268034** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R268034** Units: **% of sample** Analysis Date: **8/9/2019 04:39 PM**
Client ID: Run ID: **MOIST_190809J** SeqNo: **5838065** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS Sample ID: **LCS-R268034** Units: **% of sample** Analysis Date: **8/9/2019 04:39 PM**
Client ID: Run ID: **MOIST_190809J** SeqNo: **5838064** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP Sample ID: **19080673-01A DUP** Units: **% of sample** Analysis Date: **8/9/2019 04:39 PM**
Client ID: Run ID: **MOIST_190809J** SeqNo: **5838061** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	10.93	0.10	0	0	0	0-0	11.53	5.34	10	

DUP Sample ID: **19080676-01A DUP** Units: **% of sample** Analysis Date: **8/9/2019 04:39 PM**
Client ID: Run ID: **MOIST_190809J** SeqNo: **5838063** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	10.74	0.10	0	0	0	0-0	10.62	1.12	10	

The following samples were analyzed in this batch:

19080634-01A	19080634-02A	19080634-03A
19080634-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER # 1908O634

		SAMPLER	Mike Gardner	DATE	8/7/2019
PROJECT NAME	GM 343-32 Water Riser Leak	SITE ID	GM 343-32 Water Riser Leak	TURNAROUND	RUSH
PROJECT No.		EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	TEP Rocky Mountain LLC	BILL TO COMPANY	TEP Rocky Mountain LLC		
SEND REPORT TO	Mike Gardner	INVOICE ATTN TO	Mike Gardner, Tammy Gose		
ADDRESS		ADDRESS	1058 Co Rd 215		
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachute, CO 81635		
PHONE		PHONE	970-263-2760		
FAX		FAX			
E-MAIL	mgardner@terraep.com, krowe@hrlcomp.com	E-MAIL	mgardner@terraep.com; tgose@terraep.com		

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	COGCC Full 910-1 list
1	GM 343-32 Riser Leak: Excavation Bottom	Soil	8/7/2019	1:30 p.m.	16 oz glass			X
2	GM 343-32 Riser Leak: Side Wall Composite	Soil	8/7/2019	1:50 p.m.	16 oz glass			X
3	GM 343-32 Riser Leak: Flow path below culvert (composite)	Soil	8/7/2019	2:10 p.m.	16 oz glass			X
4	Gm 343-32 Background	Soil	8/7/2019	2:30 p.m.	16 oz glass			X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: SR2 4.4°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Mike Gardner	8/7/2019	
RECEIVED BY			8-7-19	1816
RELINQUISHED BY			8-7-19	1830
RECEIVED BY		Diane F. Sha	8/9/19	0900
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **TERRAENERGY** Date/Time Received: **09-Aug-19 09:00**

Work Order: **19080634** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 09-Aug-19 (Date) Reviewed by: Chad Whitton (eSignature) 09-Aug-19 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.4/4.4 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/9/2019 10:07:07 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

GV 47-35
Background Data

23-Mar-2020

Mike Gardner
Terra Energy Partners, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **GV 47-35-695 Arsenic Background** Work Order: **20031410**

Dear Mike,

ALS Environmental received 1 sample on 20-Mar-2020 10:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 8.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 23-Mar-20

Client: Terra Energy Partners, LLC
Project: GV 47-35-695 Arsenic Background
Work Order: **20031410**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
20031410-01	SL-1: Background	Soil		3/19/2020 10:00	3/20/2020 10:15	☐

Client: Terra Energy Partners, LLC
Project: GV 47-35-695 Arsenic Background
WorkOrder: **20031410**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: *23-Mar-20*

Client: Terra Energy Partners, LLC
Project: GV 47-35-695 Arsenic Background
Sample ID: SL-1: Background
Collection Date: 3/19/2020 10:00 AM

Work Order: 20031410
Lab ID: 20031410-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW6010D**		Prep: SW3050B / 3/23/20			Analyst: **ABL**
Arsenic	**5.4**		**0.12**	**0.48**	**mg/Kg-dry**	1	3/23/2020 14:33
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**20**		**0.10**	**0.10**	**% of sample**	1	3/20/2020 12:50

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Mar-20

Client: Terra Energy Partners, LLC

Work Order: 20031410

Project: GV 47-35-695 Arsenic Background

QC BATCH REPORT

Batch ID: **153632** Instrument ID **ICP2** Method: **SW6010D**

MBLK Sample ID: **MBLK-153632-153632** Units: **mg/Kg** Analysis Date: **3/23/2020 02:22 PM**

Client ID: Run ID: **ICP2_200323A** SeqNo: **6317556** Prep Date: **3/23/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								

LCS Sample ID: **LCS-153632-153632** Units: **mg/Kg** Analysis Date: **3/23/2020 02:28 PM**

Client ID: Run ID: **ICP2_200323A** SeqNo: **6317559** Prep Date: **3/23/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.609	0.25	4.946	0	93.2	80-120	0			

MS Sample ID: **20031410-01AMS** Units: **mg/Kg** Analysis Date: **3/23/2020 02:38 PM**

Client ID: **SL-1: Background** Run ID: **ICP2_200323A** SeqNo: **6317566** Prep Date: **3/23/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.4	0.38	7.634	4.365	92.2	75-125	0			

MSD Sample ID: **20031410-01AMSD** Units: **mg/Kg** Analysis Date: **3/23/2020 02:43 PM**

Client ID: **SL-1: Background** Run ID: **ICP2_200323A** SeqNo: **6317569** Prep Date: **3/23/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.73	0.38	7.657	4.365	96.1	75-125	11.4	2.77	20	

The following samples were analyzed in this batch: 20031410-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Terra Energy Partners, LLC
Work Order: 20031410
Project: GV 47-35-695 Arsenic Background

QC BATCH REPORT

Batch ID: **R285178** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R285178** Units: **% of sample** Analysis Date: **3/20/2020 12:50 PM**
Client ID: Run ID: **MOIST_200320B** SeqNo: **6316436** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS Sample ID: **LCS-R285178** Units: **% of sample** Analysis Date: **3/20/2020 12:50 PM**
Client ID: Run ID: **MOIST_200320B** SeqNo: **6316435** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP Sample ID: **20031184-01B DUP** Units: **% of sample** Analysis Date: **3/20/2020 12:50 PM**
Client ID: Run ID: **MOIST_200320B** SeqNo: **6316425** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.65	0.10	0	0	0	0-0	16.61	5.95	10	

The following samples were analyzed in this batch: 20031410-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #	L0031410
PAGE	1 of 1
DISPOSAL	By Lab or Return to Client

PROJECT NAME	GV 47-35-695 Arsenic Background	SAMPLER	Mike Gardner
PROJECT No.		SITE ID	GV 47-35-695
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	TEP Rocky Mountain LLC	BILL TO COMPANY	TEP Rocky Mountain LLC
SEND REPORT TO	Mike Gardner	INVOICE ATTN TO	Mike Gardner, Tammy Gose
ADDRESS		ADDRESS	1058 Co Rd 215
CITY / STATE / ZIP		CITY / STATE / ZIP	Parachute, CO 81635
PHONE		PHONE	970-263-2760
FAX		FAX	
E-MAIL	mgardner@terraep.com,	E-MAIL	mgardner@terraep.com; tgose@terraep.com

DATE: 3/19/2020

TURNAROUND: RUSH

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	910-1 Arsenic only
	SL-1: Background	Soil	3/19/2020	10:00	1 x 16 oz			X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 3.4°C SRZ

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Mike Gardner	3/19/2020	
RECEIVED BY			3.19.20	1050
RELINQUISHED BY			3.19.20	1830
RECEIVED BY		M. Gaylord	3-20-20	10:15
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **TERRAENERGY** Date/Time Received: **20-Mar-20 10:15**

Work Order: **20031410** Received by: **MJG**

Checklist completed by Matthew Gaylord (eSignature) 20-Mar-20 (Date) Reviewed by: Chad Whelton (eSignature) 20-Mar-20 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4/3.4C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	3/20/2020 11:15:00 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

GM 34-33
Background Data

03-May-2019

Kris Rowe
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **GM 34-33** Work Order: **19041741**

Dear Kris,

ALS Environmental received 3 samples on 26-Apr-2019 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 03-May-19

Client: HRL Compliance Solutions, Inc
Project: GM 34-33
Work Order: **19041741**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19041741-01	BKGD 1	Soil		4/24/2019 14:30	4/26/2019 10:00	☐
19041741-02	BKGD 2	Soil		4/24/2019 14:45	4/26/2019 10:00	☐
19041741-03	BKGD 3	Soil		4/24/2019 15:00	4/26/2019 10:00	☐

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group, USA

Date: *03-May-19*

Client: HRL Compliance Solutions, Inc
Project: GM 34-33
Sample ID: BKGD 1
Collection Date: 4/24/2019 02:30 PM

Work Order: 19041741
Lab ID: 19041741-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 4/30/19		Analyst: **DSC**
Arsenic	**3.8**		**0.11**	**0.44**	**mg/Kg-dry**	1	5/1/2019 01:36
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Calcium	**51**		**0.86**	**5.0**	**mg/L**	10	5/1/2019 13:58
Magnesium	**7.1**		**0.068**	**2.0**	**mg/L**	10	5/1/2019 13:58
Sodium	**3.1**		**0.34**	**2.0**	**mg/L**	10	5/1/2019 13:58
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Sodium Adsorption Ratio	**0.11**		**0.010**	**0.010**	**none**	1	5/1/2019
ELECTRICAL CONDUCTIVITY (SAR)		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.018**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	5/2/2019 16:45
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**7.7**		**0.10**	**0.10**	**% of sample**	1	5/1/2019 13:26
PH		Method: **SW9045D**			Prep: EXTRACT / 4/30/19		Analyst: **RZM**
pH	**8.74**		**0.10**	**0.100**	**s.u.**	1	4/30/2019 14:02
Temperature	**21.5**		**0.10**	**0.100**	**C**	1	4/30/2019 14:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-May-19*

Client: HRL Compliance Solutions, Inc
Project: GM 34-33
Sample ID: BKGD 2
Collection Date: 4/24/2019 02:45 PM

Work Order: 19041741
Lab ID: 19041741-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 4/30/19		Analyst: **DSC**
Arsenic	**6.4**		**0.088**	**0.34**	**mg/Kg-dry**	1	5/1/2019 01:42
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Calcium	**79**		**0.86**	**5.0**	**mg/L**	10	5/1/2019 14:00
Magnesium	**19**		**0.068**	**2.0**	**mg/L**	10	5/1/2019 14:00
Sodium	**7.4**		**0.34**	**2.0**	**mg/L**	10	5/1/2019 14:00
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Sodium Adsorption Ratio	**0.19**		**0.010**	**0.010**	**none**	1	5/1/2019
ELECTRICAL CONDUCTIVITY (SAR)		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.030**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	5/2/2019 16:45
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**3.6**		**0.10**	**0.10**	**% of sample**	1	5/1/2019 13:26
PH		Method: **SW9045D**			Prep: EXTRACT / 5/1/19		Analyst: **RZM**
pH	**8.27**		**0.10**	**0.100**	**s.u.**	1	5/1/2019 18:02
Temperature	**21.4**		**0.10**	**0.100**	**C**	1	5/1/2019 18:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-May-19*

Client: HRL Compliance Solutions, Inc
Project: GM 34-33
Sample ID: BKGD 3
Collection Date: 4/24/2019 03:00 PM

Work Order: 19041741
Lab ID: 19041741-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS ANALYSIS BY ICP		Method: **SW846 6010C**			Prep: SW3050B / 4/30/19		Analyst: **DSC**
Arsenic	**4.8**		**0.11**	**0.40**	**mg/Kg-dry**	1	5/1/2019 01:49
SOLUBLE CATIONS FOR SAR		Method: **SW6020A**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Calcium	**30**		**0.86**	**5.0**	**mg/L**	10	5/1/2019 14:01
Magnesium	**7.1**		**0.068**	**2.0**	**mg/L**	10	5/1/2019 14:01
Sodium	**59**		**0.34**	**2.0**	**mg/L**	10	5/1/2019 14:01
SODIUM ADSORPTION RATIO		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **STP**
Sodium Adsorption Ratio	**2.5**		**0.010**	**0.010**	**none**	1	5/1/2019
ELECTRICAL CONDUCTIVITY (SAR)		Method: **USDA H60 METHOD 2**			Prep: USDA Method 20B / 5/1/19		Analyst: **DVD**
Electrical Conductivity @ Saturation	**0.026**		**0.00055**	**0.0050**	**mmhos/cm @25°**	20	5/2/2019 16:45
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**3.0**		**0.10**	**0.10**	**% of sample**	1	5/1/2019 13:26
PH		Method: **SW9045D**			Prep: EXTRACT / 5/1/19		Analyst: **RZM**
pH	**8.63**		**0.10**	**0.100**	**s.u.**	1	5/1/2019 18:02
Temperature	**21.3**		**0.10**	**0.100**	**C**	1	5/1/2019 18:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 03-May-19

Client: HRL Compliance Solutions, Inc

Work Order: 19041741

Project: GM 34-33

QC BATCH REPORT

Batch ID: **135301** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-135301-135301** Units: **mg/Kg** Analysis Date: **4/30/2019 11:43 PM**

Client ID: Run ID: **ICP2_190430A** SeqNo: **5633710** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.23								

LCS Sample ID: **LCS-135301-135301** Units: **mg/Kg** Analysis Date: **4/30/2019 11:49 PM**

Client ID: Run ID: **ICP2_190430A** SeqNo: **5633711** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.563	0.24	4.753	0	96	80-120	0			

MS Sample ID: **19041733-01AMS** Units: **mg/Kg** Analysis Date: **5/1/2019 12:14 AM**

Client ID: Run ID: **ICP2_190430A** SeqNo: **5633715** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	60.05	0.37	7.429	42.9	231	75-125	0			SO

MSD Sample ID: **19041733-01AMSD** Units: **mg/Kg** Analysis Date: **5/1/2019 12:20 AM**

Client ID: Run ID: **ICP2_190430A** SeqNo: **5633716** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	60.78	0.37	7.396	42.9	242	75-125	60.05	1.21	20	SO

The following samples were analyzed in this batch:

19041741-01A	19041741-02A	19041741-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 19041741
Project: GM 34-33

QC BATCH REPORT

Batch ID: **135381** Instrument ID **ICPMS3** Method: **SW6020A**

DUP Sample ID: **19041740-04A DUP** Units: **mg/L** Analysis Date: **5/1/2019 01:52 PM**
Client ID: Run ID: **ICPMS3_190501A** SeqNo: **5634701** Prep Date: **5/1/2019** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	41.7	5.0	0	0	0	0-0	51.26	20.6		
Magnesium	4.67	2.0	0	0	0	0-0	5.448	15.4		
Sodium	24.92	2.0	0	0	0	0-0	30.14	19		

The following samples were analyzed in this batch: 19041741-01A, 19041741-02A, 19041741-03A

Batch ID: **135381** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **19041740-04A DUP** Units: **none** Analysis Date: **5/1/2019**
Client ID: Run ID: **SAR_190501A** SeqNo: **5634251** Prep Date: **5/1/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.9762	0.010	0	0	0		1.069	9.12	50	

The following samples were analyzed in this batch: 19041741-01A, 19041741-02A, 19041741-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 19041741
Project: GM 34-33

QC BATCH REPORT

Batch ID: **135314** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-135314-135314** Units: **s.u.** Analysis Date: **4/30/2019 02:02 PM**
Client ID: Run ID: **WETCHEM_190430I** SeqNo: **5632707** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.96	0.10	4	0	99	90-110	0			

DUP Sample ID: **19041733-01A DUP** Units: **s.u.** Analysis Date: **4/30/2019 02:02 PM**
Client ID: Run ID: **WETCHEM_190430I** SeqNo: **5632716** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	5.98	0.10	0	0	0	0-0	5.91	1.18	20	H
Temperature	21.2	0.10	0	0	0		21.4	0.939		H

DUP Sample ID: **19041740-01A DUP** Units: **s.u.** Analysis Date: **4/30/2019 02:02 PM**
Client ID: Run ID: **WETCHEM_190430I** SeqNo: **5632722** Prep Date: **4/30/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.79	0.10	0	0	0	0-0	8.74	0.57	20	
Temperature	21.4	0.10	0	0	0		21.4	0		

The following samples were analyzed in this batch: 19041741-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 19041741
Project: GM 34-33

QC BATCH REPORT

Batch ID: **135380** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-135380-135380** Units: **s.u.** Analysis Date: **5/1/2019 06:02 PM**
Client ID: Run ID: **WETCHEM_190501W** SeqNo: **5636406** Prep Date: **5/1/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.97	0.10	4	0	99.2	90-110	0			

DUP Sample ID: **19041741-02A DUP** Units: **s.u.** Analysis Date: **5/1/2019 06:02 PM**
Client ID: **BKGD 2** Run ID: **WETCHEM_190501W** SeqNo: **5636409** Prep Date: **5/1/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.39	0.10	0	0	0	0-0	8.27	1.44	20	
Temperature	21.4	0.10	0	0	0		21.4	0		

DUP Sample ID: **19041824-01A DUP** Units: **s.u.** Analysis Date: **5/1/2019 06:02 PM**
Client ID: Run ID: **WETCHEM_190501W** SeqNo: **5636412** Prep Date: **5/1/2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.6	0.10	0	0	0	0-0	8.59	0.116	20	
Temperature	21.7	0.10	0	0	0		21.8	0.46		

The following samples were analyzed in this batch:

19041741-02A	19041741-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 19041741
Project: GM 34-33

QC BATCH REPORT

Batch ID: **135381** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP Sample ID: **19041740-04A DUP** Units: **mmhos/cm @25°** Analysis Date: **5/2/2019 04:45 PM**

Client ID: Run ID: **WETCHEM_190502O** SeqNo: **5638120** Prep Date: **5/1/2019** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.01899	0.0050	0	0	0		0.0218	13.8	50	

The following samples were analyzed in this batch:

19041741-01A	19041741-02A	19041741-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 19041741
Project: GM 34-33

QC BATCH REPORT

Batch ID: **R259623** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R259623** Units: **% of sample** Analysis Date: **5/1/2019 01:26 PM**
Client ID: Run ID: **MOIST_190501A** SeqNo: **5636046** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS Sample ID: **LCS-R259623** Units: **% of sample** Analysis Date: **5/1/2019 01:26 PM**
Client ID: Run ID: **MOIST_190501A** SeqNo: **5636045** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP Sample ID: **19041738-01A DUP** Units: **% of sample** Analysis Date: **5/1/2019 01:26 PM**
Client ID: Run ID: **MOIST_190501A** SeqNo: **5636028** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.65	0.10	0	0	0	0-0	8.89	2.74	10	

DUP Sample ID: **19041740-02A DUP** Units: **% of sample** Analysis Date: **5/1/2019 01:26 PM**
Client ID: Run ID: **MOIST_190501A** SeqNo: **5636034** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	5.95	0.10	0	0	0	0-0	6.06	1.83	10	

The following samples were analyzed in this batch:

19041741-01A	19041741-02A	19041741-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1904174 1

PAGE 1 of 2

DISPOSAL By Lab or Return to Client

PROJECT NAME	Terra Energy -	SAMPLER	Matt Smith
PROJECT No.	GM 34-33	SITE ID	
	Confirmation Sampling	EDD FORMAT	
COMPANY NAME	HRL COMPLIANCE SOLUTIONS Inc.	PURCHASE ORDER	
SEND REPORT TO	KRIS ROWE & MIKE GARDNER	BILL TO COMPANY	Terra Energy
ADDRESS	2385 F 1/2	INVOICE ATTN TO	Mike Gardner
CITY / STATE / ZIP	GRAND JUNCTION CO 81505	ADDRESS	1058 CR 2015
PHONE	970-243-3271	CITY / STATE / ZIP	Parachute CO, 81635
FAX	970-243-3280	PHONE	970-263-2760
E-MAIL	KROWE@HRLCOMP.COM	FAX	
		E-MAIL	mgardner@terraep.com
		DATE	4/24/2019
		TURNAROUND	STD 5 Day

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO	GRO	BTEX	910-1 Metals	Semi Vols - PAH	SAR / EC / pH	ARSENIC
	BKGD 1	S	4/24/2019	14:30	1								x	x
	BKGD 2	S	4/24/2019	14:45	1								x	x
	BKGD 3	S	4/24/2019	15:00	1								x	x

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
3.1°c	LEVEL II (Standard QC)
SR2	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Matt Smith	Matt Smith	4/24/19	1700
RECEIVED BY			4-25-19	1300
RELINQUISHED BY			4-25-19	1530
RECEIVED BY		KEITH WERENKA	4/26/19	1000
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **26-Apr-19 10:00**

Work Order: **19041741** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 26-Apr-19 (Date) Reviewed by: Alex J. Csaszar (eSignature) 26-Apr-19 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.2/3.2 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	4/26/2019 1:16:01 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

GM 268-3
Background Data

05-Jun-2014

Mark Mumby
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **GM 268-3 Background 5.27.14** Work Order: **14051481**

Dear Mark,

ALS Environmental received 3 samples on 29-May-2014 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 05-Jun-14

Client: HRL Compliance Solutions, Inc
Project: GM 268-3 Background 5.27.14
Work Order: **14051481**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14051481-01	GM 268-3-B-1	Soil		5/27/2014 13:50	5/29/2014 10:30	☐
14051481-02	GM 268-3-B-2	Soil		5/27/2014 13:55	5/29/2014 10:30	☐
14051481-03	GM 268-3-B-3	Soil		5/27/2014 14:00	5/29/2014 10:30	☐

ALS Group USA, Corp

Date: 05-Jun-14

Client: HRL Compliance Solutions, Inc
Project: GM 268-3 Background 5.27.14
Work Order: 14051481

Case Narrative

Batch 59181 MS/MSD data for Arsenic is not related to this project's samples. No data requires qualification.

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *05-Jun-14*

Client: HRL Compliance Solutions, Inc
Project: GM 268-3 Background 5.27.14
Work Order: 14051481
Sample ID: GM 268-3-B-1
Lab ID: 14051481-01
Collection Date: 5/27/2014 01:50 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 5/30/14	Analyst: **ML**
Arsenic	**11**		**2.3**	**mg/Kg-dry**	5	5/30/2014 07:52 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 6/2/14	Analyst: **RH**
Calcium	**89**		**10**	**mg/L**	20	6/3/2014 03:29 PM
Magnesium	**21**		**4.0**	**mg/L**	20	6/3/2014 03:29 PM
Sodium	**58**		**4.0**	**mg/L**	20	6/3/2014 03:29 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 6/2/14	Analyst: **RH**
Sodium Adsorption Ratio	**1.4**		**0.010**	**none**	1	6/3/2014
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 6/2/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**0.68**		**0.050**	**mmhos/cm @25**	10	6/2/2014 04:15 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**17**		**0.050**	**% of sample**	1	5/29/2014 04:03 PM
PH			**SW9045D**		Prep: EXTRACT / 5/29/14	Analyst: **AT**
pH	**8.1**			**s.u.**	1	5/29/2014 04:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *05-Jun-14*

Client: HRL Compliance Solutions, Inc
Project: GM 268-3 Background 5.27.14 **Work Order:** 14051481
Sample ID: GM 268-3-B-2 **Lab ID:** 14051481-02
Collection Date: 5/27/2014 01:55 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 5/30/14	Analyst: **ML**
Arsenic	**4.7**		**2.1**	**mg/Kg-dry**	5	5/30/2014 07:58 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**15**		**0.050**	**% of sample**	1	5/29/2014 04:03 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *05-Jun-14*

Client: HRL Compliance Solutions, Inc
Project: GM 268-3 Background 5.27.14
Work Order: 14051481
Sample ID: GM 268-3-B-3
Lab ID: 14051481-03
Collection Date: 5/27/2014 02:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 5/30/14	Analyst: **ML**
Arsenic	**5.9**		**2.4**	**mg/Kg-dry**	5	5/30/2014 08:04 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**20**		**0.050**	**% of sample**	1	5/29/2014 04:03 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 05-Jun-14

Client: HRL Compliance Solutions, Inc

Work Order: 14051481

Project: GM 268-3 Background 5.27.14

QC BATCH REPORT

Batch ID: **59181** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK	Sample ID: **MBLK-59181-59181**				Units: **mg/Kg**			Analysis Date: **5/30/2014 05:16 PM**			
Client ID:	Run ID: **ICPMS1_140530A**			SeqNo: **2789009**		Prep Date: **5/30/2014**		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS	Sample ID: **LCS-59181-59181**				Units: **mg/Kg**			Analysis Date: **5/30/2014 05:22 PM**			
Client ID:	Run ID: **ICPMS1_140530A**			SeqNo: **2789010**		Prep Date: **5/30/2014**		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.236	0.25	5	0	84.7	80-120	0			

MS	Sample ID: **14051482-02AMS**				Units: **mg/Kg**			Analysis Date: **5/30/2014 08:45 PM**			
Client ID:	Run ID: **ICPMS1_140530A**			SeqNo: **2789044**		Prep Date: **5/30/2014**		DF: **5**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.7	1.9	7.776	6.638	65	75-125	0			S

MSD	Sample ID: **14051482-02AMSD**				Units: **mg/Kg**			Analysis Date: **5/30/2014 08:51 PM**			
Client ID:	Run ID: **ICPMS1_140530A**			SeqNo: **2789045**		Prep Date: **5/30/2014**		DF: **5**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.28	1.9	7.704	6.638	73.2	75-125	11.7	4.85	25	S

The following samples were analyzed in this batch:

14051481-01A	14051481-02A	14051481-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 14051481
Project: GM 268-3 Background 5.27.14

QC BATCH REPORT

Batch ID: **59205** Instrument ID **ICPMS2** Method: **SW6020A**

DUP Sample ID: **14051479-01CDUP** Units: **mg/L** Analysis Date: **6/3/2014 03:17 PM**
Client ID: Run ID: **ICPMS2_140603A** SeqNo: **2791554** Prep Date: **6/2/2014** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	84	10	0	0	0	0-0	88.78	5.53		
Magnesium	26.2	4.0	0	0	0	0-0	27.68	5.49		
Sodium	40.22	4.0	0	0	0	0-0	41.58	3.33		

DUP Sample ID: **14051479-01CDUP** Units: **none** Analysis Date: **6/3/2014**
Client ID: Run ID: **SAR_140603A** SeqNo: **2791558** Prep Date: **6/2/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.982	0.010	0	0	0		0.9876	0.565	50	

The following samples were analyzed in this batch: 14051481-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 14051481
Project: GM 268-3 Background 5.27.14

QC BATCH REPORT

Batch ID: **59163** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-59163-59163** Units: **s.u.** Analysis Date: **5/29/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_140529R** SeqNo: **2786008** Prep Date: **5/29/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.98	0	4	0	99.5	90-110	0			

DUP Sample ID: **14051403-01A DUP** Units: **s.u.** Analysis Date: **5/29/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_140529R** SeqNo: **2786012** Prep Date: **5/29/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.03	0	0	0	0	0-0	7.04	0.142	20	

DUP Sample ID: **14051481-01A DUP** Units: **s.u.** Analysis Date: **5/29/2014 04:00 PM**
Client ID: **GM 268-3-B-1** Run ID: **WETCHEM_140529R** SeqNo: **2786020** Prep Date: **5/29/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.12	0	0	0	0	0-0	8.13	0.123	20	

The following samples were analyzed in this batch: 14051481-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 14051481
Project: GM 268-3 Background 5.27.14

QC BATCH REPORT

Batch ID: **59205** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **14051479-01C DUP** Units: **mmhos/cm @25°C** Analysis Date: **6/2/2014 04:15 PM**

Client ID: Run ID: **WETCHEM_140602L** SeqNo: **2789851** Prep Date: **6/2/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.854	0.050	0	0	0		0.924	7.87	50	

The following samples were analyzed in this batch: 14051481-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 14051481
Project: GM 268-3 Background 5.27.14

QC BATCH REPORT

Batch ID: **R141687** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R141687** Units: **% of sample** Analysis Date: **5/29/2014 04:03 PM**
Client ID: Run ID: **MOIST_140529C** SeqNo: **2786848** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R141687** Units: **% of sample** Analysis Date: **5/29/2014 04:03 PM**
Client ID: Run ID: **MOIST_140529C** SeqNo: **2786847** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **14051479-01B DUP** Units: **% of sample** Analysis Date: **5/29/2014 04:03 PM**
Client ID: Run ID: **MOIST_140529C** SeqNo: **2786825** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.92	0.050	0	0	0	0-0	21.45	7.4	20	

DUP Sample ID: **14051482-01A DUP** Units: **% of sample** Analysis Date: **5/29/2014 04:03 PM**
Client ID: Run ID: **MOIST_140529C** SeqNo: **2786836** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.43	0.050	0	0	0	0-0	6.76	5	20	

The following samples were analyzed in this batch:

14051481-01A	14051481-02A	14051481-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

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South Charleston, WV +1 304 356 3168
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Chain of Custody Form

Page 1 of 1

COC ID: 13051

ALS Project Manager:

ALS Work Order #: 1405481

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	GM 268-3 Background	A	Arsenic
Work Order		Project Number		B	SAR/Eclph
Company Name	HCST	Bill To Company	HRL	C	
Send Report To	Mark Mumby	Invoice Attn	Mark Mumby	D	
Address		Address		E	
				F	
City/State/Zip		City/State/Zip		G	
Phone	970-243-3271	Phone		H	
Fax		Fax		I	
e-Mail Address	RDW@HRLcorp.com	e-Mail Address	Mmumby@HRLcorp.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	GM 268-3-B1	5/27/14	1:50	SO	8	2	X	X									
2	GM 268-3-B2		1:55			1	X										
3	GM 268-3-B3		2:00			1	X										
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: RDW

Shipment Method:

Required Turnaround Time: (Check Box) ☐ Other ☐ STD 10 Wk Days ☑ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: RDW	Date: 5/27/14	Time: 3:00	Received by:	Notes:	
Relinquished by:	Date: 5/27/14	Time: 16:00	Received by (Laboratory): 5/29/14 1030	Cooler ID	Cooler Temp
Logged by (Laboratory): DCS	Date: 5/29/14	Time: 1330	Checked by (Laboratory):		4.6c

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **29-May-14 10:30**

Work Order: **14051481** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 29-May-14 (Date) Reviewed by: Ann Preston (eSignature) 30-May-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.6 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	5/29/2014 1:23:53 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (616) 399-6070
Sample Receiving
ALS Laboratory Group
3352 128th Avenue

Holland, MI 49424

Origin ID: GRRA

FedEx. Express

E

J141014020703236

Ship Date: 27MAY14
ActWgt: 67.0 LB
CAD: 2264840/INET3490

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code

SHIP TO: (616) 399-6070 BILL SENDER
sample receiving
ALS Laboratory Group
3352 128TH AVE

HOLLAND, MI 49424

Ref # 052714-1
Invoice #
PO # Parachute
Dept #

WED - 28 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7701 0783 4746

68 GRRA

49424
MI-US
GRR

522G1/62D3/F220

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

#R
B. Hill-Cole

5/29/14 1550

GM 323-28
Background Data

11-Aug-2014

Mark Mumby
HRL Compliance Solutions, Inc
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX GM 323-28 7.31.14** Work Order: **1408035**

Dear Mark,

ALS Environmental received 3 samples on 01-Aug-2014 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 11-Aug-14

Client: HRL Compliance Solutions, Inc
Project: WPX GM 323-28 7.31.14
Work Order: **1408035**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1408035-01	GM 323-28 B-1	Soil		7/31/2014 13:05	8/1/2014 09:00	☐
1408035-02	GM 323-28 B-2	Soil		7/31/2014 13:10	8/1/2014 09:00	☐
1408035-03	GM 323-28 B-3	Soil		7/31/2014 13:15	8/1/2014 09:00	☐

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *11-Aug-14*

Client: HRL Compliance Solutions, Inc
Project: WPX GM 323-28 7.31.14
Work Order: 1408035
Sample ID: GM 323-28 B-1
Lab ID: 1408035-01
Collection Date: 7/31/2014 01:05 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 8/4/14	Analyst: **ML**
Arsenic	**7.1**		**2.3**	**mg/Kg-dry**	5	8/5/2014 11:37 AM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep: USDA Method 20B / 8/6/14	Analyst: **ML**
Calcium	**270**		**10**	**mg/L**	20	8/8/2014 05:48 PM
Magnesium	**49**		**4.0**	**mg/L**	20	8/8/2014 05:48 PM
Sodium	**31**		**4.0**	**mg/L**	20	8/8/2014 05:48 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHOD**		Prep: USDA Method 20B / 8/6/14	Analyst: **RH**
Sodium Adsorption Ratio	**0.45**		**0.010**	**none**	1	8/8/2014
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHOD**		Prep: USDA Method 20B / 8/6/14	Analyst: **JB**
Electrical Conductivity @ Saturation	**1.9**		**0.050**	**mmhos/cm @25**	10	8/6/2014 09:45 AM
MOISTURE			**A2540 G**			Analyst: **TM**
Moisture	**9.1**		**0.050**	**% of sample**	1	8/4/2014 09:44 AM
PH			**SW9045D**		Prep: EXTRACT / 8/4/14	Analyst: **AT**
pH	**8.0**			**s.u.**	1	8/4/2014 04:36 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *11-Aug-14*

Client: HRL Compliance Solutions, Inc
Project: WPX GM 323-28 7.31.14 **Work Order:** 1408035
Sample ID: GM 323-28 B-2 **Lab ID:** 1408035-02
Collection Date: 7/31/2014 01:10 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 8/4/14	Analyst: **ML**
Arsenic	**11**		**2.2**	**mg/Kg-dry**	5	8/5/2014 12:02 PM
MOISTURE			**A2540 G**			Analyst: **TM**
Moisture	**5.4**		**0.050**	**% of sample**	1	8/4/2014 09:44 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *11-Aug-14*

Client: HRL Compliance Solutions, Inc
Project: WPX GM 323-28 7.31.14 **Work Order:** 1408035
Sample ID: GM 323-28 B-3 **Lab ID:** 1408035-03
Collection Date: 7/31/2014 01:15 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep: SW3050B / 8/4/14	Analyst: **ML**
Arsenic	**7.6**		**2.2**	**mg/Kg-dry**	5	8/5/2014 12:08 PM
MOISTURE			**A2540 G**			Analyst: **TM**
Moisture	**7.4**		**0.050**	**% of sample**	1	8/4/2014 09:44 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **61254** Instrument ID **ICPMS1** Method: **SW6020A**

DUP Sample ID: **1408015-06CDUP** Units: **mg/L** Analysis Date: **8/8/2014 05:11 PM**

Client ID: Run ID: **ICPMS1_140808A** SeqNo: **2882764** Prep Date: **8/6/2014** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	535.2	10	0	0	0	0-0	554	3.45		
Magnesium	81.42	4.0	0	0	0	0-0	85.12	4.44		
Sodium	1029	4.0	0	0	0	0-0	1068	3.66		

DUP Sample ID: **1408015-06CDUP** Units: **none** Analysis Date: **8/8/2014**

Client ID: Run ID: **SAR_140808A** SeqNo: **2883667** Prep Date: **8/6/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	10.95	0.010	0	0	0		11.16	1.84	50	

The following samples were analyzed in this batch: 1408035-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1408035
Project: WPX GM 323-28 7.31.14

QC BATCH REPORT

Batch ID: **61303** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-61303-61303** Units: **mg/Kg** Analysis Date: **8/5/2014 07:59 AM**
Client ID: Run ID: **ICPMS1_140804A** SeqNo: **2876343** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS Sample ID: **LCS-61303-61303** Units: **mg/Kg** Analysis Date: **8/5/2014 08:05 AM**
Client ID: Run ID: **ICPMS1_140804A** SeqNo: **2876344** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.218	0.25	5	0	84.4	80-120	0			

MS Sample ID: **14071622-02BMS** Units: **mg/Kg** Analysis Date: **8/5/2014 08:59 PM**
Client ID: Run ID: **ICPMS1_140805A** SeqNo: **2878108** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.228	0.33	6.658	0.4897	86.2	75-125	0			

MSD Sample ID: **14071622-02BMSD** Units: **mg/Kg** Analysis Date: **8/5/2014 09:05 PM**
Client ID: Run ID: **ICPMS1_140805A** SeqNo: **2878109** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.507	0.34	6.729	0.4897	89.4	75-125	6.228	4.38	25	

The following samples were analyzed in this batch: 1408035-01A 1408035-02A 1408035-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1408035
Project: WPX GM 323-28 7.31.14

QC BATCH REPORT

Batch ID: **61254** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1408015-06C DUP** Units: **mmhos/cm @25°C** Analysis Date: **8/6/2014 09:45 AM**

Client ID: Run ID: **WETCHEM_140806B** SeqNo: **2878536** Prep Date: **8/6/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	9.61	0.050	0	0	0		9.39	2.32	50	

The following samples were analyzed in this batch: 1408035-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1408035
Project: WPX GM 323-28 7.31.14

QC BATCH REPORT

Batch ID: **61307** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-61307-61307** Units: **s.u.** Analysis Date: **8/4/2014 04:36 PM**
Client ID: Run ID: **WETCHEM_140804K** SeqNo: **2875816** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.98	0	4	0	99.5	90-110	0			

DUP Sample ID: **1408034-01B DUP** Units: **s.u.** Analysis Date: **8/4/2014 04:36 PM**
Client ID: Run ID: **WETCHEM_140804K** SeqNo: **2875818** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.45	0	0	0	0	0-0	7.37	1.08	20	

DUP Sample ID: **1408085-01A DUP** Units: **s.u.** Analysis Date: **8/4/2014 04:36 PM**
Client ID: Run ID: **WETCHEM_140804K** SeqNo: **2875826** Prep Date: **8/4/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.71	0	0	0	0	0-0	7.71	0	20	

The following samples were analyzed in this batch: 1408035-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1408035
Project: WPX GM 323-28 7.31.14

QC BATCH REPORT

Batch ID: **R145700** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R145700** Units: **% of sample** Analysis Date: **8/4/2014 09:44 AM**
Client ID: Run ID: **MOIST_140804A** SeqNo: **2876538** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R145700** Units: **% of sample** Analysis Date: **8/4/2014 09:44 AM**
Client ID: Run ID: **MOIST_140804A** SeqNo: **2876537** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **14071644-01C DUP** Units: **% of sample** Analysis Date: **8/4/2014 09:44 AM**
Client ID: Run ID: **MOIST_140804A** SeqNo: **2876517** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	84.48	0.050	0	0	0	0-0	82.39	2.5	20	

DUP Sample ID: **1408029-01B DUP** Units: **% of sample** Analysis Date: **8/4/2014 09:44 AM**
Client ID: Run ID: **MOIST_140804A** SeqNo: **2876525** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.38	0.050	0	0	0	0-0	14.5	5.89	20	

The following samples were analyzed in this batch: 1408035-01A 1408035-02A 1408035-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER #	1408035		
SAMPLER	Reed Wold	DATE	
PAGE	1 of 1		
PROJECT NAME	WPX GM 323-28	SITE ID	GM 323-28
TURNAROUND	3 Day	DISPOSAL	(By Lab) or Return to Client
PROJECT No.	Backgrounds	EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance	BILL TO COMPANY	WPX
SEND REPORT TO	Mark Mumby	INVOICE ATTN TO	Karolina Blaney
ADDRESS	2385 F 1/2 Rd	ADDRESS	1058 Co Rd 215
CITY / STATE / ZIP	Grand Junction, CO 81506	CITY / STATE / ZIP	Parachure CO 81635
PHONE	970-243-3271	PHONE	970-683-2295
FAX	970-243-3280	FAX	
E-MAIL	mmumby@hrlcomp.com rwold@hrlcomp.com	E-MAIL	Karolina.blaney@wpxenergy.com

Lab ID	Field ID	Matrix	Sample Time	Sample Date	# Bottles	Pres.	QC	Arsenic	SAR/Ec/pH
1	GM 323-28 B-1	SO	11:05	7/31/14	2	8		X	X
2	B-2	↓	1:10	↓	1	8		X	
3	B-3	↓	1:15	↓	1	8		X	

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

3.0°c

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Reed Wold	Reed Wold	7/31/14	1:30
RECEIVED BY	NM	NM	7-31-14	1:30
RELINQUISHED BY	NM	NM	7-31-14	1:55
RECEIVED BY	[signature]	Keith Wierenga	8/1/14	0900
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **01-Aug-14 09:00**

Work Order: **1408035** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 01-Aug-14 (Date) Reviewed by: Ann Preston (eSignature) 02-Aug-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0 C		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/1/2014 12:15:06 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (970) 285-5783
Nick Martinez
ALS Environmental
127 E. 1st Street

PARACHUTE, CO 81635

Origin ID: RILA

Ship Date: 31JUL14
ActWgt: 40.0 LB
CAD: 2284640/INET3550

Dims: 14 X 26 X 15 IN

Delivery Address Bar Code

Ref # 073114-1
Invoice #
PO #
Dept #

Parachute

SHIP TO: (616) 399-6070
sample receiving
ALS Laboratory Group
3352 128TH AVE

HOLLAND, MI 49424

BILL SENDER

1 of 5

TRK# 7707 3813 1011
8261

MASTER

XX GRRA

FRI - 01 AUG 10:30A
PRIORITY OVERNIGHT

49424
MI-US
GRR

After printing this label:
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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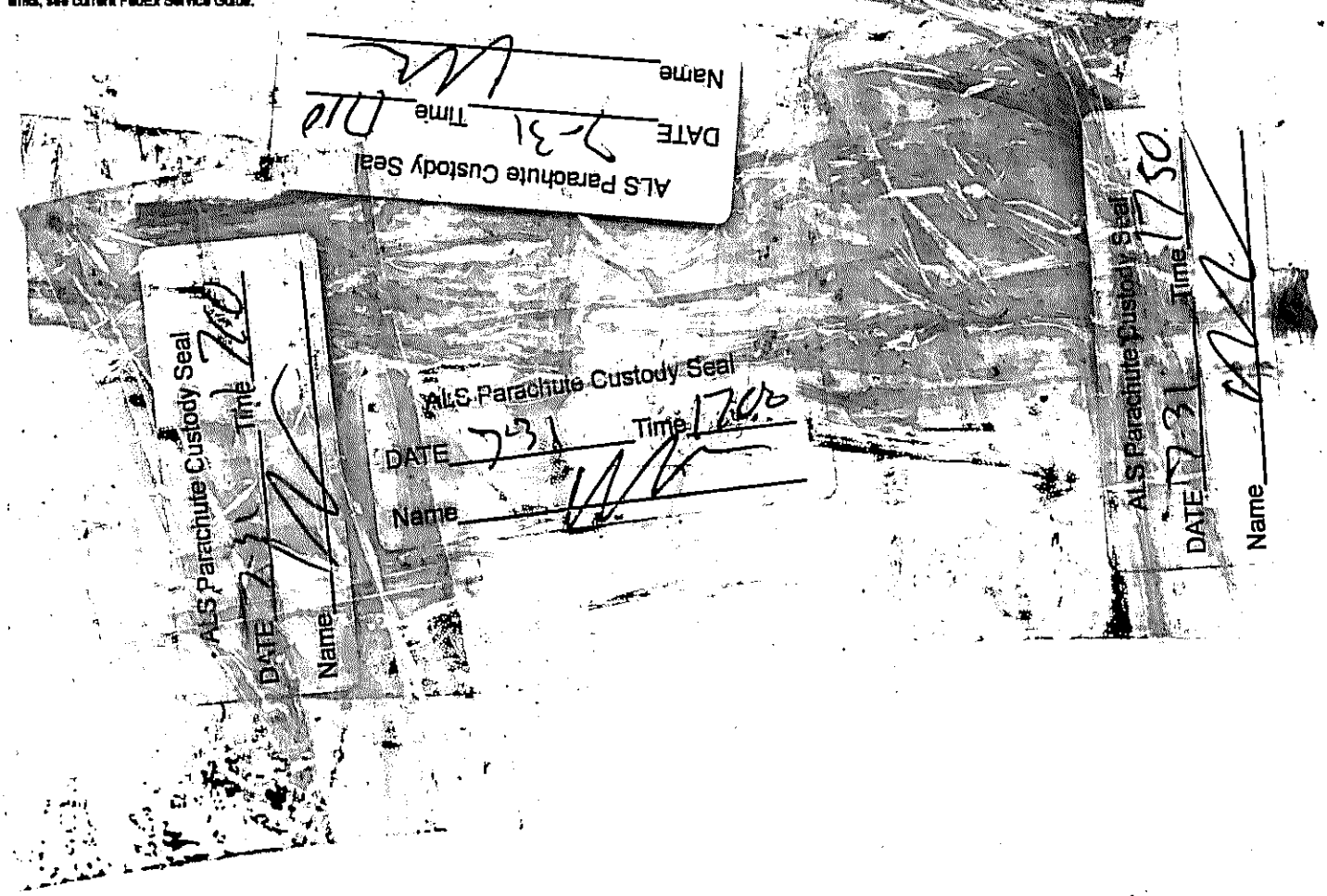
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



GV 41-34
Background Data

31-Jan-2014

Mark Mumby
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX GV 41-34 Backgrounds 1.23.14** Work Order: **1401965**

Dear Mark,

ALS Environmental received 3 samples on 24-Jan-2014 12:15 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 31-Jan-14

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14
Work Order: **1401965**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1401965-01	GV 41-34-B-1	Soil		1/23/2014 14:30	1/24/2014 12:15	☐
1401965-02	GV 41-34-B-2	Soil		1/23/2014 14:35	1/24/2014 12:15	☐
1401965-03	GV 41-34-B-3	Soil		1/23/2014 14:40	1/24/2014 12:15	☐

ALS Group USA, Corp

Date: 31-Jan-14

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14
Work Order: 1401965

Case Narrative

Batch 55264 MS/MSD data for Arsenic is not related to this project's samples. No data requires qualification.

ALS Group USA, Corp

Date: 31-Jan-14

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14
WorkOrder: **1401965**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *31-Jan-14*

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14 **Work Order:** 1401965
Sample ID: GV 41-34-B-1 **Lab ID:** 1401965-01
Collection Date: 1/23/2014 02:30 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/27/2014**	Analyst: **RH**
Arsenic	**8.5**		**2.1**	**mg/Kg-dry**	5	1/27/2014 10:05 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**23**		**0.050**	**% of sample**	1	1/27/2014 09:20 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *31-Jan-14*

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14
Work Order: 1401965
Sample ID: GV 41-34-B-2
Lab ID: 1401965-02
Collection Date: 1/23/2014 02:35 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/27/2014**	Analyst: **RH**
Arsenic	**7.1**		**2.1**	**mg/Kg-dry**	5	1/27/2014 10:10 PM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**8.9**		**0.050**	**% of sample**	1	1/27/2014 09:20 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *31-Jan-14*

Client: HRL Compliance Solutions
Project: WPX GV 41-34 Backgrounds 1.23.14 **Work Order:** 1401965
Sample ID: GV 41-34-B-3 **Lab ID:** 1401965-03
Collection Date: 1/23/2014 02:40 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/27/2014**	Analyst: **RH**
Arsenic	**8.7**		**2.2**	**mg/Kg-dry**	5	1/27/2014 10:16 PM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep Date: **1/29/2014**	Analyst: **ML**
Calcium	**35**		**10**	**mg/L**	20	1/30/2014 12:33 PM
Magnesium	**7.4**		**4.0**	**mg/L**	20	1/30/2014 12:33 PM
Sodium	**1,400**		**4.0**	**mg/L**	20	1/30/2014 12:33 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep Date: **1/29/2014**	Analyst: **RH**
Sodium Adsorption Ratio	**57**		**0.010**	**none**	1	1/30/2014
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep Date: **1/29/2014**	Analyst: **JB**
Electrical Conductivity @ Saturation	**6.8**		**0.050**	**mmhos/cm @25**	10	1/30/2014 10:15 AM
MOISTURE			**A2540 G**			Analyst: **AT**
Moisture	**15**		**0.050**	**% of sample**	1	1/27/2014 09:20 AM
PH			**SW9045D**		Prep Date: **1/27/2014**	Analyst: **AT**
pH	**9.2**			**s.u.**	1	1/27/2014 02:56 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Jan-14

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1401965

Project: WPX GV 41-34 Backgrounds 1.23.14

Batch ID: **55264** Instrument ID **ICPMS2** Method: **SW6020A**

MBLK Sample ID: **MBLK-55264-55264** Units: **mg/Kg** Analysis Date: **1/27/2014 08:16 PM**

Client ID: Run ID: **ICPMS2_140127A** SeqNo: **2624988** Prep Date: **1/27/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS Sample ID: **LCS-55264-55264** Units: **mg/Kg** Analysis Date: **1/27/2014 08:22 PM**

Client ID: Run ID: **ICPMS2_140127A** SeqNo: **2624993** Prep Date: **1/27/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.581	0.25	5	0	91.6	80-120	0			

MS Sample ID: **1401931-01BMS** Units: **mg/Kg** Analysis Date: **1/27/2014 09:42 PM**

Client ID: Run ID: **ICPMS2_140127A** SeqNo: **2625007** Prep Date: **1/27/2014** DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	20.92	1.5	7.485	13.37	101	75-125	0			

MSD Sample ID: **1401931-01BMSD** Units: **mg/Kg** Analysis Date: **1/27/2014 09:48 PM**

Client ID: Run ID: **ICPMS2_140127A** SeqNo: **2625008** Prep Date: **1/27/2014** DF: **4**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	23.13	1.5	7.418	13.37	132	75-125	20.92	10.1	25	S

The following samples were analyzed in this batch: 1401965-01A 1401965-02A 1401965-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401965
Project: WPX GV 41-34 Backgrounds 1.23.14

QC BATCH REPORT

Batch ID: **55335** Instrument ID **SAR** Method: **USDA H60 Method**

DUP Sample ID: **1401965-03BDUP** Units: **none** Analysis Date: **1/30/2014**
Client ID: **GV 41-34-B-3** Run ID: **SAR_140130A** SeqNo: **2628336** Prep Date: **1/29/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	52.95	0.010	0	0	0		57	7.37	50	

The following samples were analyzed in this batch: 1401965-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401965
Project: WPX GV 41-34 Backgrounds 1.23.14

QC BATCH REPORT

Batch ID: **55275** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-55275-55275** Units: **s.u.** Analysis Date: **1/27/2014 02:56 PM**
Client ID: Run ID: **WETCHEM_140127L** SeqNo: **2624266** Prep Date: **1/27/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.02	0	4	0	100	90-110	0			

DUP Sample ID: **14011011-01B DUP** Units: **s.u.** Analysis Date: **1/27/2014 02:56 PM**
Client ID: Run ID: **WETCHEM_140127L** SeqNo: **2624268** Prep Date: **1/27/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.53	0	0	0	0	0-0	7.49	0.533	20	

DUP Sample ID: **14011011-11B DUP** Units: **s.u.** Analysis Date: **1/27/2014 02:56 PM**
Client ID: Run ID: **WETCHEM_140127L** SeqNo: **2624279** Prep Date: **1/27/2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.3	0	0	0	0	0-0	8.33	0.361	20	

The following samples were analyzed in this batch: 1401965-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401965
Project: WPX GV 41-34 Backgrounds 1.23.14

QC BATCH REPORT

Batch ID: **55335** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1401965-03B DUP** Units: **mmhos/cm @25°C** Analysis Date: **1/30/2014 10:15 AM**

Client ID: **GV 41-34-B-3** Run ID: **WETCHEM_140130C** SeqNo: **2627977** Prep Date: **1/29/2014** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.31	0.050	0	0	0		6.79	7.33	50	

The following samples were analyzed in this batch: 1401965-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1401965
Project: WPX GV 41-34 Backgrounds 1.23.14

QC BATCH REPORT

Batch ID: **R134670** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R134670** Units: **% of sample** Analysis Date: **1/27/2014 09:20 AM**
Client ID: Run ID: **MOIST_140127A** SeqNo: **2625193** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R134670** Units: **% of sample** Analysis Date: **1/27/2014 09:20 AM**
Client ID: Run ID: **MOIST_140127A** SeqNo: **2625192** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **14011012-01C DUP** Units: **% of sample** Analysis Date: **1/27/2014 09:20 AM**
Client ID: Run ID: **MOIST_140127A** SeqNo: **2625174** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	5.4	0.050	0	0	0	0-0	5.32	1.49	20	

DUP Sample ID: **14011012-02C DUP** Units: **% of sample** Analysis Date: **1/27/2014 09:20 AM**
Client ID: Run ID: **MOIST_140127A** SeqNo: **2625176** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.43	0.050	0	0	0	0-0	7.69	9.18	20	

The following samples were analyzed in this batch: 1401965-01A 1401965-02A 1401965-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1401965

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	WPX GV 41-34 Background	SAMPLER	Reed Wold
PROJECT No.		SITE ID	GV 41-34
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance	BILL TO COMPANY	WPX
SEND REPORT TO	Mark Mumby	INVOICE ATTN TO	Karolina Blaney
ADDRESS	2385 F 1/2 Rd	ADDRESS	1058 Co Rd 215
CITY / STATE / ZIP	Grand Junction, CO 81506	CITY / STATE / ZIP	Parachure CO 81635
PHONE	970-243-3271	PHONE	970-683-2295
FAX	970-243-3280	FAX	
E-MAIL	mmumby@hrlcomp.com rwold@hrlcomp.com	E-MAIL	Karolina.blaney@wpxenergy.com

DATE 1/23/14

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Arsenic	SAR/Ecopy
1	GV 41-34-B-1	SO	1/23/14	2:30	1	8		X	
2	GV 41-34-B-2	↓	↓	2:35	1	8		X	
3	GV 41-34-B-3	↓	↓	2:40	2	8		X	X

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 2.4°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Reed Wold	1/23/14	3:00
RECEIVED BY		N.M	1-23-14	3:00
RELINQUISHED BY		N.M	1-23-14	3:?C
RECEIVED BY		Diane F Shaw	1/24/14	125
RELINQUISHED BY				
RECEIVED BY				

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **24-Jan-14 12:15**

Work Order: **1401965** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 24-Jan-14 (Date) Reviewed by: Ann Preston (eSignature) 24-Jan-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/24/2014 1:37:54 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (970) 424-4749
Lab Hub, LLC
127 E First Street
PARACHUTE, CO 81635

Origin ID: RILA

FedEx Express

J14101312270326

Ship Date: 23JAN14
ActWgt: 36.0 LB
CAD: 103923490/INET3490

Dims: 25 X 14 X 15 IN

Delivery Address Bar Code

Ref # 1001-012314-1
Invoice #
PO #
Dept #

SHIP TO: (616) 399-6070
BILL RECIPIENT

Sample recieving
ALS Holland
3352 128TH AVE

HOLLAND, MI 49424

FRI - 24 JAN AA
STANDARD OVERNIGHT

TRK# 0201 7977 1309 3557

XX GRRA

49424
MI-US
GRR

522G1/D6EC/F220

After printing this label:
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