



12-Jul-2016

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

Re: **RGU 23-6-297**

Work Order: **1607029**

Dear Mike,

ALS Environmental received 1 sample on 01-Jul-2016 08:00 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 22.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager



Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental A small version of the ALS logo.

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Terra Energy Partners, LLC
Project: RGU 23-6-297
Work Order: 1607029**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1607029-01	RGU 23-6-297 RG-SS1	Soil		6/28/2016	7/1/2016 08:00	<input type="checkbox"/>

<u>Qualifier</u>	<u>Description</u>
*	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
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.

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% 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: 12-Jul-16

Client: Terra Energy Partners, LLC
Project: RGU 23-6-297
Sample ID: RGU 23-6-297 RG-SS1
Collection Date: 6/28/2016

Work Order: 1607029
Lab ID: 1607029-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	100		12	mg/Kg-dry	1	Analyst: IT 7/7/2016 02:13 AM
Surr: 4-Terphenyl-d14	66.2		39-133	%REC	1	7/7/2016 02:13 AM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		4.6	mg/Kg-dry	1	Analyst: IT 7/6/2016 01:49 PM
Surr: Toluene-d8	103		50-150	%REC	1	7/6/2016 01:49 PM
MERCURY BY CVAA						
Mercury	0.030		0.018	mg/Kg-dry	1	Analyst: LR 7/8/2016 03:17 PM
METALS ANALYSIS BY ICP						
Arsenic	12		0.58	mg/Kg-dry	1	Analyst: JEC 7/10/2016 12:28 AM
Barium	570		0.58	mg/Kg-dry	1	7/10/2016 12:28 AM
Cadmium	ND		1.2	mg/Kg-dry	1	7/10/2016 12:28 AM
Chromium	60		0.58	mg/Kg-dry	1	7/10/2016 12:28 AM
Copper	27		1.2	mg/Kg-dry	1	7/10/2016 12:28 AM
Lead	27		0.58	mg/Kg-dry	1	7/10/2016 12:28 AM
Nickel	33		0.58	mg/Kg-dry	1	7/10/2016 12:28 AM
Selenium	ND		1.2	mg/Kg-dry	1	7/10/2016 12:28 AM
Silver	ND		0.58	mg/Kg-dry	1	7/10/2016 12:28 AM
Zinc	120		1.2	mg/Kg-dry	1	7/10/2016 12:28 AM
SOLUBLE CATIONS FOR SAR						
Calcium	300		5.0	mg/L	10	Analyst: JEC 7/11/2016 10:30 AM
Magnesium	28		2.0	mg/L	10	7/11/2016 10:30 AM
Sodium	590		2.0	mg/L	10	7/11/2016 10:30 AM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	8.6		0.010	none	1	Analyst: JEC 7/12/2016
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		0.019	mg/Kg-dry	1	Analyst: RM 7/7/2016 06:24 PM
Anthracene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Benzo(a)anthracene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Benzo(a)pyrene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Benzo(b)fluoranthene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Benzo(k)fluoranthene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Chrysene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Dibenzo(a,h)anthracene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Fluoranthene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM

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

ALS Group USA, Corp

Date: 12-Jul-16

Client: Terra Energy Partners, LLC
Project: RGU 23-6-297
Sample ID: RGU 23-6-297 RG-SS1
Collection Date: 6/28/2016

Work Order: 1607029
Lab ID: 1607029-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Indeno(1,2,3-cd)pyrene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Naphthalene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Pyrene	ND		0.019	mg/Kg-dry	1	7/7/2016 06:24 PM
Surr: 2-Fluorobiphenyl	64.8		12-100	%REC	1	7/7/2016 06:24 PM
Surr: 4-Terphenyl-d14	60.7		25-137	%REC	1	7/7/2016 06:24 PM
Surr: Nitrobenzene-d5	68.8		37-107	%REC	1	7/7/2016 06:24 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 7/6/16		Analyst: BJB
Benzene	ND		0.056	mg/Kg-dry	1	7/7/2016 03:37 PM
Ethylbenzene	ND		0.056	mg/Kg-dry	1	7/7/2016 03:37 PM
m,p-Xylene	0.16		0.11	mg/Kg-dry	1	7/7/2016 03:37 PM
o-Xylene	0.082		0.056	mg/Kg-dry	1	7/7/2016 03:37 PM
Toluene	ND		0.056	mg/Kg-dry	1	7/7/2016 03:37 PM
Xylenes, Total	0.24		0.17	mg/Kg-dry	1	7/7/2016 03:37 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	1	7/7/2016 03:37 PM
Surr: 4-Bromofluorobenzene	92.7		70-130	%REC	1	7/7/2016 03:37 PM
Surr: Dibromofluoromethane	99.0		70-130	%REC	1	7/7/2016 03:37 PM
Surr: Toluene-d8	99.1		70-130	%REC	1	7/7/2016 03:37 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep: USDA Method 20B / 7/8/16		Analyst: JB
Electrical Conductivity @ Saturation	7.1		0.050	mmhos/cm @2	10	7/8/2016 03:10 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	60		0.71	mg/Kg-dry	1	7/11/2016 02:20 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 7/1/16		Analyst: MB
Chromium, Hexavalent	ND		1.4	mg/Kg-dry	1	7/5/2016 04:00 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	30		0.050	% of sample	1	7/5/2016 04:55 PM
PH			SW9045D	Prep: EXTRACT / 7/4/16		Analyst: EDL
pH	7.4			s.u.	1	7/4/2016 11:51 AM

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

ALS Group USA, Corp

Date: 12-Jul-16

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88236a** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-88236-88236a				Units: mg/Kg		Analysis Date: 7/6/2016 05:12 PM		
Client ID:		Run ID: GC8_160706A				SeqNo: 3909999		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	ND	8.3								
Surr: 4-Terphenyl-d14	2.253	0	3.333	0	67.6	39-133		0		

LCS		Sample ID: DLCSS1-88236-88236a				Units: mg/Kg		Analysis Date: 7/6/2016 05:42 PM		
Client ID:		Run ID: GC8_160706A				SeqNo: 3910000		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	281.7	8.3	333.3	0	84.5	61-109		0		
Surr: 4-Terphenyl-d14	1.957	0	3.333	0	58.7	39-133		0		

MS		Sample ID: 1607017-11B MS				Units: mg/Kg		Analysis Date: 7/6/2016 06:12 PM		
Client ID:		Run ID: GC8_160706A				SeqNo: 3910001		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	268.8	7.9	315.3	16.03	80.2	48-110		0		
Surr: 4-Terphenyl-d14	1.881	0	3.153	0	59.6	39-133		0		

MSD		Sample ID: 1607017-11B MSD				Units: mg/Kg		Analysis Date: 7/6/2016 06:42 PM		
Client ID:		Run ID: GC8_160706A				SeqNo: 3910002		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	287.1	8.1	322.4	16.03	84.1	48-110	268.8	6.57	30	
Surr: 4-Terphenyl-d14	2.098	0	3.224	0	65.1	39-133	1.881	10.9	30	

The following samples were analyzed in this batch: 1607029-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 1607029
 Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88233** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-88233-88233				Units: µg/Kg-dry		Analysis Date: 7/6/2016 12:09 PM		
Client ID:		Run ID: GC9_160706A				SeqNo: 3909164		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5318	0	5000	0	106	50-150	0			

MBLK		Sample ID: MBLK-88233-88233				Units: µg/Kg		Analysis Date: 7/7/2016 08:01 AM		
Client ID:		Run ID: GC9_160706B				SeqNo: 3910576		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								

LCS		Sample ID: LCS-88233-88233				Units: µg/Kg-dry		Analysis Date: 7/6/2016 11:44 AM		
Client ID:		Run ID: GC9_160706A				SeqNo: 3909171		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	467100	2,500	500000	0	93.4	70-130	0			
Surr: Toluene-d8	5198	0	5000	0	104	50-150	0			

LCS		Sample ID: LCS-88233-88233				Units: µg/Kg		Analysis Date: 7/7/2016 07:36 AM		
Client ID:		Run ID: GC9_160706B				SeqNo: 3910575		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	537400	2,500	500000	0	107	80-120	0			

MS		Sample ID: 1607139-01A MS				Units: µg/Kg-dry		Analysis Date: 7/6/2016 02:14 PM		
Client ID:		Run ID: GC9_160706A				SeqNo: 3909169		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	618100	3,500	704800	0	87.7	70-130	0			
Surr: Toluene-d8	7318	0	7048	0	104	50-150	0			

MS		Sample ID: 1607017-11A MS				Units: µg/Kg		Analysis Date: 7/7/2016 10:55 AM		
Client ID:		Run ID: GC9_160706B				SeqNo: 3910583		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	746500	3,500	690500	0	108	80-120	0			

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88233** Instrument ID **GC9** Method: **SW8015D**

MSD				Sample ID: 1607139-01A MSD				Units: µg/Kg-dry			Analysis Date: 7/6/2016 02:37 PM		
Client ID:			Run ID: GC9_160706A			SeqNo: 3909170		Prep Date: 7/6/2016		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
GRO (C6-C10)	625600	3,500	704800	0	88.8	70-130	618100	1.22	30				
Surr: Toluene-d8	7377	0	7048	0	105	50-150	7318	0.796	30				

MSD				Sample ID: 1607017-11A MSD				Units: µg/Kg			Analysis Date: 7/7/2016 11:20 AM		
Client ID:			Run ID: GC9_160706B			SeqNo: 3910584			Prep Date: 7/6/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
GRO (C6-C10)	761600	3,500	690500	0	110	80-120	746500	2.01	20				

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88363** Instrument ID **HG1** Method: **SW7471B**

MBLK		Sample ID: MBLK-88363-88363				Units: mg/Kg		Analysis Date: 7/8/2016 02:35 PM		
Client ID:		Run ID: HG1_160708A				SeqNo: 3913536		Prep Date: 7/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-88363-88363				Units: mg/Kg		Analysis Date: 7/8/2016 02:37 PM		
Client ID:		Run ID: HG1_160708A				SeqNo: 3913537		Prep Date: 7/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1833 0.020 0.1665 0 110 80-120 0

MS		Sample ID: 1607017-43AMS				Units: mg/Kg		Analysis Date: 7/8/2016 03:02 PM		
Client ID:		Run ID: HG1_160708A				SeqNo: 3913548		Prep Date: 7/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1419 0.013 0.1066 0.02258 112 75-125 0

MSD		Sample ID: 1607017-43AMSD				Units: mg/Kg		Analysis Date: 7/8/2016 03:04 PM		
Client ID:		Run ID: HG1_160708A				SeqNo: 3913549		Prep Date: 7/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1372 0.013 0.1058 0.02258 108 75-125 0.1419 3.41 35

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88211** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 1607029-01ADUP				Units: mg/L		Analysis Date: 7/11/2016 10:36 AM		
Client ID: RGU 23-6-297 RG-SS1		Run ID: ICP2_160711A				SeqNo: 3918526		Prep Date: 7/8/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	447.7	5.0	0	0	0	0-0	300.5	39.3		
Magnesium	41.84	2.0	0	0	0	0-0	28.44	38.2		
Sodium	703.6	2.0	0	0	0	0-0	585.3	18.4		

DUP		Sample ID: 1607029-01ADUP				Units: none		Analysis Date: 7/12/2016		
Client ID: RGU 23-6-297 RG-SS1		Run ID: SAR_160712A				SeqNo: 3918585		Prep Date: 7/8/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	8.524	0.010	0	0	0		8.648	1.44	50	

The following samples were analyzed in this batch: | 1607029-01A |

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88240** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-88240-88240				Units: mg/Kg		Analysis Date: 7/9/2016 10:31 PM		
Client ID:		Run ID: ICP2_160709A				SeqNo: 3915323		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.03941	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.08631	0.50								J

LCS		Sample ID: LCS-88240-88240				Units: mg/Kg		Analysis Date: 7/11/2016 01:05 PM		
Client ID:		Run ID: ICP2_160711A				SeqNo: 3918552		Prep Date: 7/6/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.661	0.25	5	0	113	80-120	0			
Barium	5.651	0.25	5	0	113	80-120	0			
Cadmium	5.9	0.50	5	0	118	80-120	0			
Chromium	5.584	0.25	5	0	112	80-120	0			
Copper	5.972	0.50	5	0	119	80-120	0			
Lead	5.919	0.25	5	0	118	80-120	0			
Nickel	5.88	0.25	5	0	118	80-120	0			
Selenium	5.31	0.50	5	0	106	80-120	0			
Silver	5.587	0.25	5	0	112	80-120	0			
Zinc	5.816	0.50	5	0	116	80-120	0			

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88284** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-88284-88284				Units: µg/Kg			Analysis Date: 7/7/2016 05:28 PM		
Client ID:			Run ID: SVMS5_160707A				SeqNo: 3912600		Prep Date: 7/7/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Acenaphthene	ND	13											
Anthracene	ND	13											
Benzo(a)anthracene	ND	13											
Benzo(a)pyrene	ND	13											
Benzo(b)fluoranthene	ND	13											
Benzo(k)fluoranthene	ND	13											
Chrysene	ND	13											
Dibenzo(a,h)anthracene	ND	13											
Fluoranthene	ND	13											
Fluorene	ND	13											
Indeno(1,2,3-cd)pyrene	ND	13											
Naphthalene	ND	13											
Pyrene	ND	13											
Surr: 2-Fluorobiphenyl	1791	0	3333	0	53.7	12-100	0						
Surr: 4-Terphenyl-d14	2767	0	3333	0	83	25-137	0						
Surr: Nitrobenzene-d5	1713	0	3333	0	51.4	37-107	0						

LCS		Sample ID: SLCSS1-88284-88284				Units: µg/Kg		Analysis Date: 7/7/2016 05:53 PM		
Client ID:		Run ID: SVMS5_160707A			SeqNo: 3912601		Prep Date: 7/7/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	958.7	13	1333	0	71.9	45-110	0			
Anthracene	1168	13	1333	0	87.6	55-105	0			
Benzo(a)anthracene	1125	13	1333	0	84.4	50-110	0			
Benzo(a)pyrene	1033	13	1333	0	77.4	50-110	0			
Benzo(b)fluoranthene	1049	13	1333	0	78.6	45-115	0			
Benzo(k)fluoranthene	1048	13	1333	0	78.6	45-115	0			
Chrysene	1082	13	1333	0	81.1	55-110	0			
Dibenzo(a,h)anthracene	996	13	1333	0	74.7	40-125	0			
Fluoranthene	1031	13	1333	0	77.3	55-115	0			
Fluorene	952	13	1333	0	71.4	50-110	0			
Indeno(1,2,3-cd)pyrene	987.3	13	1333	0	74	40-120	0			
Naphthalene	866	13	1333	0	64.9	40-105	0			
Pyrene	1255	13	1333	0	94.1	45-125	0			
Surr: 2-Fluorobiphenyl	2166	0	3333	0	65	12-100	0			
Surr: 4-Terphenyl-d14	2757	0	3333	0	82.7	25-137	0			
Surr: Nitrobenzene-d5	2208	0	3333	0	66.2	37-107	0			

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

Client: Terra Energy Partners, LLC
 Work Order: 1607029
 Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88284** Instrument ID **SVMS5** Method: **SW846 8270D**

MS				Sample ID: 1607017-24A MS			Units: µg/Kg		Analysis Date: 7/7/2016 08:55 PM		
Client ID:			Run ID: SVMS5_160707A			SeqNo: 3912608		Prep Date: 7/7/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	924	13	1301	38.07	68.1	45-110	0				
Anthracene	1212	13	1301	90.11	86.3	55-105	0				
Benzo(a)anthracene	1512	13	1301	357.3	88.8	50-110	0				
Benzo(a)pyrene	1408	13	1301	328.7	83	50-110	0				
Benzo(b)fluoranthene	1575	13	1301	451.2	86.4	45-115	0				
Benzo(k)fluoranthene	1170	13	1301	168.8	77	45-115	0				
Chrysene	1462	13	1301	375.7	83.6	55-110	0				
Dibenzo(a,h)anthracene	1055	13	1301	81.22	74.9	40-125	0				
Fluoranthene	1760	13	1301	678.3	83.1	55-115	0				
Fluorene	909.7	13	1301	52.03	65.9	50-110	0				
Indeno(1,2,3-cd)pyrene	1313	13	1301	260.8	80.9	40-120	0				
Naphthalene	786.1	13	1301	0	60.4	40-105	0				
Pyrene	2123	13	1301	734.2	107	45-125	0				
Surr: 2-Fluorobiphenyl	1938	0	3251	0	59.6	12-100	0				
Surr: 4-Terphenyl-d14	2826	0	3251	0	86.9	25-137	0				
Surr: Nitrobenzene-d5	1988	0	3251	0	61.2	37-107	0				

MSD				Sample ID: 1607017-24A MSD			Units: µg/Kg		Analysis Date: 7/7/2016 09:18 PM		
Client ID:			Run ID: SVMS5_160707A			SeqNo: 3912609		Prep Date: 7/7/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	985.3	13	1305	38.07	72.6	45-110	924	6.42	30		
Anthracene	1204	13	1305	90.11	85.4	55-105	1212	0.625	30		
Benzo(a)anthracene	1368	13	1305	357.3	77.5	50-110	1512	10	30		
Benzo(a)pyrene	1281	13	1305	328.7	73	50-110	1408	9.39	30		
Benzo(b)fluoranthene	1435	13	1305	451.2	75.4	45-115	1575	9.31	30		
Benzo(k)fluoranthene	1132	13	1305	168.8	73.8	45-115	1170	3.28	30		
Chrysene	1347	13	1305	375.7	74.5	55-110	1462	8.19	30		
Dibenzo(a,h)anthracene	1027	13	1305	81.22	72.5	40-125	1055	2.72	30		
Fluoranthene	1501	13	1305	678.3	63	55-115	1760	15.9	30		
Fluorene	965	13	1305	52.03	70	50-110	909.7	5.9	30		
Indeno(1,2,3-cd)pyrene	1197	13	1305	260.8	71.7	40-120	1313	9.26	30		
Naphthalene	828.7	13	1305	0	63.5	40-105	786.1	5.27	30		
Pyrene	1852	13	1305	734.2	85.6	45-125	2123	13.6	30		
Surr: 2-Fluorobiphenyl	2114	0	3262	0	64.8	12-100	1938	8.7	40		
Surr: 4-Terphenyl-d14	2864	0	3262	0	87.8	25-137	2826	1.35	40		
Surr: Nitrobenzene-d5	2134	0	3262	0	65.4	37-107	1988	7.05	40		

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 1607029
 Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88232** Instrument ID **VMS6** Method: **SW8260B**

MBLK				Sample ID: MBLK-88232-88232				Units: µg/Kg-dry			Analysis Date: 7/6/2016 12:41 PM			
Client ID:				Run ID: VMS6_160706A				SeqNo: 3909808			Prep Date: 7/6/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Benzene	ND	30												
Ethylbenzene	ND	30												
m,p-Xylene	ND	60												
o-Xylene	ND	30												
Toluene	ND	30												
Xylenes, Total	ND	90												
Surr: 1,2-Dichloroethane-d4	947	0	1000	0	94.7	70-130	0							
Surr: 4-Bromofluorobenzene	968	0	1000	0	96.8	70-130	0							
Surr: Dibromofluoromethane	956	0	1000	0	95.6	70-130	0							
Surr: Toluene-d8	901.5	0	1000	0	90.2	70-130	0							

LCS				Sample ID: LCS-88232-88232			Units: µg/Kg-dry		Analysis Date: 7/6/2016 11:24 AM		
Client ID:			Run ID: VMS6_160706A			SeqNo: 3909807		Prep Date: 7/6/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1088	30	1000	0	109	75-125	0				
Ethylbenzene	1018	30	1000	0	102	75-125	0				
m,p-Xylene	2060	60	2000	0	103	80-125	0				
o-Xylene	1000	30	1000	0	100	75-125	0				
Toluene	1044	30	1000	0	104	70-125	0				
Xylenes, Total	3060	90	3000	0	102	75-125	0				
Surr: 1,2-Dichloroethane-d4	942	0	1000	0	94.2	70-130	0				
Surr: 4-Bromofluorobenzene	1010	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	1002	0	1000	0	100	70-130	0				
Surr: Toluene-d8	943.5	0	1000	0	94.4	70-130	0				

MS				Sample ID: 1607017-11A MS				Units: µg/Kg-dry			Analysis Date: 7/7/2016 01:45 AM		
Client ID:			Run ID: VMS5_160706A			SeqNo: 3909703		Prep Date: 7/6/2016		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	922	30	1000	0	92.2	75-125	0						
Ethylbenzene	908.5	30	1000	0	90.8	75-125	0						
m,p-Xylene	1861	60	2000	0	93	80-125	0						
o-Xylene	903	30	1000	0	90.3	75-125	0						
Toluene	904.5	30	1000	0	90.4	70-125	0						
Xylenes, Total	2764	90	3000	0	92.1	75-125	0						
Surr: 1,2-Dichloroethane-d4	996	0	1000	0	99.6	70-130	0						
Surr: 4-Bromofluorobenzene	995	0	1000	0	99.5	70-130	0						
Surr: Dibromofluoromethane	999	0	1000	0	99.9	70-130	0						
Surr: Toluene-d8	987.5	0	1000	0	98.8	70-130	0						

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88232** Instrument ID **VMS6** Method: **SW8260B**

MSD				Sample ID: 1607017-11A MSD			Units: µg/Kg-dry		Analysis Date: 7/7/2016 02:11 AM		
Client ID:		Run ID: VMS5_160706A			SeqNo: 3909704		Prep Date: 7/6/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1026	30	1000	0	103	75-125	922	10.6	30		
Ethylbenzene	1027	30	1000	0	103	75-125	908.5	12.2	30		
m,p-Xylene	2066	60	2000	0	103	80-125	1861	10.4	30		
o-Xylene	1002	30	1000	0	100	75-125	903	10.4	30		
Toluene	1000	30	1000	0	100	70-125	904.5	10	30		
Xylenes, Total	3068	90	3000	0	102	75-125	2764	10.4	30		
Surr: 1,2-Dichloroethane-d4	1012	0	1000	0	101	70-130	996	1.59	30		
Surr: 4-Bromofluorobenzene	1021	0	1000	0	102	70-130	995	2.58	30		
Surr: Dibromofluoromethane	1004	0	1000	0	100	70-130	999	0.499	30		
Surr: Toluene-d8	987	0	1000	0	98.7	70-130	987.5	0.0506	30		

The following samples were analyzed in this batch: 1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88146** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-88146-88146				Units: s.u.		Analysis Date: 7/4/2016 11:51 AM		
Client ID:		Run ID: WETCHEM_160704A				SeqNo: 3904620		Prep Date: 7/4/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	3.94	0	4	0	98.5	90-110	0			
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DUP		Sample ID: 1607024-01A DUP				Units: s.u.		Analysis Date: 7/4/2016 11:51 AM		
Client ID:		Run ID: WETCHEM_160704A				SeqNo: 3904627		Prep Date: 7/4/2016		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH	8.48	0	0	0	0	0-0	8.7	2.56	20	
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DUP		Sample ID: 1607129-05A DUP					Units: s.u.		Analysis Date: 7/4/2016 11:51 AM		
Client ID:			Run ID: WETCHEM_160704A			SeqNo: 3904633		Prep Date: 7/4/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	10.76	0	0	0	0	0-0	10.81	0.464	20	
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The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 1607029
 Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88183** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-88183-88183				Units: mg/Kg		Analysis Date: 7/5/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160705Q		SeqNo: 3906912		Prep Date: 7/1/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.97

LCS		Sample ID: LCS-88183-88183				Units: mg/Kg		Analysis Date: 7/5/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160705Q		SeqNo: 3906911		Prep Date: 7/1/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.713 0.95 4.762 0 99 80-120 0

MS		Sample ID: 1607023-03A MS				Units: mg/Kg		Analysis Date: 7/5/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160705Q		SeqNo: 3906895		Prep Date: 7/1/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.94 1.0 5 0.2178 94.4 75-125 0

MS		Sample ID: 1607023-03A MSI				Units: mg/Kg		Analysis Date: 7/5/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160705Q		SeqNo: 3906897		Prep Date: 7/1/2016		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3013 99 3075 0.2178 98 75-125 0

MSD		Sample ID: 1607023-03A MSD				Units: mg/Kg		Analysis Date: 7/5/2016 04:00 PM		
Client ID:		Run ID: WETCHEM_160705Q		SeqNo: 3906896		Prep Date: 7/1/2016		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.971 0.98 4.902 0.2178 97 75-125 4.94 0.617 20

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **88211** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP		Sample ID: 1607029-01A DUP				Units: mmhos/cm @25°		Analysis Date: 7/8/2016 03:10 PM		
Client ID: RGU 23-6-297 RG-SS1			Run ID: WETCHEM_160708J			SeqNo: 3913440		Prep Date: 7/8/2016		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	6.83	0.050	0	0	0		7.07	3.45	50	

The following samples were analyzed in this batch:

1607029-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1607029
Project: RGU 23-6-297

QC BATCH REPORT

Batch ID: **R190899** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R190899				Units: % of sample		Analysis Date: 7/5/2016 04:55 PM		
Client ID:		Run ID: MOIST_160705A				SeqNo: 3907832		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-R190899				Units: % of sample		Analysis Date: 7/5/2016 04:55 PM		
Client ID:		Run ID: MOIST_160705A				SeqNo: 3907831		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: 16061672-01A DUP					Units: % of sample		Analysis Date: 7/5/2016 04:55 PM		
Client ID:			Run ID: MOIST_160705A			SeqNo: 3907809		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 21.22 0.050 0 0 0 21.24 0.0942 20

DUP				Sample ID: 16061672-03A DUP				Units: % of sample			Analysis Date: 7/5/2016 04:55 PM			
Client ID:				Run ID: MOIST_160705A				SeqNo: 3907812			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture 13.61 0.050 0 0 0 14.58 6.88 20

The following samples were analyzed in this batch:

1607029-01A

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

WORKORDER

1607029

PAGE

1 of 1

DISPOSAL







By Lab or Return to Client

[illegible]

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

For metals or anions, please detail analytes below.

Comments: <div style="text-align: center;"> </div>	QC PACKAGE (check below)	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Tim Dobransky	6/29/2016	16:00
RECEIVED BY			6-29-16	1800
RELINQUISHED BY			6/29/16	1800
RECEIVED BY		M. Macellbert	7/1/16	800
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID: RILA (810) 298-1033
 NICK MARTINEZ
 ALS ENVIRONMENTAL PARACHUTE
 PARACHUTE SERVICE CENTER
 127 EAST 1ST ST
 PARACHUTE, CO 81635
 UNITED STATES US

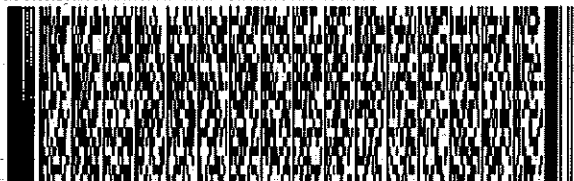
SHIP DATE: 29 JUN 16
 ACTWGT: 38.00 LB
 CAD: 2264840/NET3730
 DIMS: 13x18x16 IN
 BILL SENDER

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424

(810) 399-6070 REF: 062916-1
 INV PO: PARACHUTE DEPT:

540J15C80727F



FedEx Express



REL#
 3785346

2 of 2

THU - 30 JUN 10:30A
PRIORITY OVERNIGHT

MP6# 7766 4164 9512
 0283 Mstr# 7766 4164 9968

0201

XX HLMA

49424
GRR
 MI-US



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Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **01-Jul-16 08:00**

Work Order: **1607029**

Received by: **MEB**

Checklist completed by Meghan Broadbent
eSignature

01-Jul-16
Date

Reviewed by: Chad Whelton
eSignature

01-Jul-16
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):

1.4/1.4

SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

7/1/2016 9:58:21 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: