



29-Jan-2018

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

Re: **PA 22-6 land farm (spoils)**

Work Order: **1801953**

Dear Mike,

ALS Environmental received 1 sample on 19-Jan-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 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 23.

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", is written over a white background.

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

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Environmental The logo icon for ALS Environmental, a stylized blue triangle with a yellow flame-like shape inside.

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Terra Energy Partners, LLC
Project: PA 22-6 land farm (spoils)
Work Order: 1801953

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>
1801953-01	PA 22-6 land farm (spoils)	Soil		1/18/2018 10:30	1/19/2018 10:00	<input type="checkbox"/>

Client: Terra Energy Partners, LLC
Project: PA 22-6 land farm (spoils)
Work Order: 1801953

Case Narrative

Batch 113388, Method CR6_7196_S, Sample 1801953-01A MS/MSD: The MS/MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

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

<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	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

Client: Terra Energy Partners, LLC
Project: PA 22-6 land farm (spoils)
Sample ID: PA 22-6 land farm (spoils)
Collection Date: 1/18/2018 10:30 AM

Work Order: 1801953
Lab ID: 1801953-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	1/26/18 10:31	Analyst: MEB
DRO (C10-C28)	ND		6.9	mg/Kg-dry	1	1/26/2018 11:48 AM
Surr: 4-Terphenyl-d14	61.1		34-130	%REC	1	1/26/2018 11:48 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	1/19/18 09:51	Analyst: MEB
GRO (C6-C10)	ND		5.6	mg/Kg	1	1/23/2018 03:42 AM
Surr: Toluene-d8	100		71-123	%REC	1	1/23/2018 03:42 AM
MERCURY BY CVAA			SW7471B	Prep: SW7471	1/25/18 11:57	Analyst: RSB
Mercury	0.019		0.017	mg/Kg-dry	1	1/25/2018 01:14 PM
METALS ANALYSIS BY ICP			SW846 6010C	Prep: SW3050B	1/24/18 13:49	Analyst: HBA
Arsenic	8.2		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Barium	290		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Cadmium	ND		0.75	mg/Kg-dry	1	1/24/2018 09:32 PM
Chromium	12		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Copper	11		0.75	mg/Kg-dry	1	1/24/2018 09:32 PM
Lead	13		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Nickel	17		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Selenium	0.99		0.75	mg/Kg-dry	1	1/24/2018 09:32 PM
Silver	ND		0.37	mg/Kg-dry	1	1/24/2018 09:32 PM
Zinc	70		0.75	mg/Kg-dry	1	1/24/2018 09:32 PM
SOLUBLE CATIONS FOR SAR			SW6020A	Prep: USDA Method 20B	1/23/18 09:13	Analyst: JF
Calcium	130		5.0	mg/L	10	1/23/2018 02:32 PM
Magnesium	19		2.0	mg/L	10	1/23/2018 02:32 PM
Sodium	250		2.0	mg/L	10	1/23/2018 02:32 PM
SODIUM ADSORPTION RATIO			USDA H60 MET	Prep: USDA Method 20B	1/23/18 09:13	Analyst: RH
Sodium Adsorption Ratio	5.3		0.010	none	1	1/23/2018
SEMI-VOLATILE ORGANIC COMPOUNDS			SW846 8270D	Prep: SW3546	1/26/18 10:31	Analyst: RS
Acenaphthene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Anthracene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Benzo(a)anthracene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Benzo(a)pyrene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Benzo(b)fluoranthene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Benzo(k)fluoranthene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Chrysene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Dibenzo(a,h)anthracene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Fluoranthene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM

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

ALS Group, USA

Date: 29-Jan-18

Client: Terra Energy Partners, LLC
Project: PA 22-6 land farm (spoils)
Sample ID: PA 22-6 land farm (spoils)
Collection Date: 1/18/2018 10:30 AM

Work Order: 1801953
Lab ID: 1801953-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Indeno(1,2,3-cd)pyrene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Naphthalene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Pyrene	ND		0.058	mg/Kg-dry	1	1/26/2018 09:29 PM
Surr: 2-Fluorobiphenyl	60.1		20-140	%REC	1	1/26/2018 09:29 PM
Surr: 4-Terphenyl-d14	50.4		22-172	%REC	1	1/26/2018 09:29 PM
Surr: Nitrobenzene-d5	64.0		28-140	%REC	1	1/26/2018 09:29 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	1/19/18 14:20	Analyst: EMR
Benzene	ND		0.030	mg/Kg	1	1/22/2018 03:41 PM
Ethylbenzene	ND		0.030	mg/Kg	1	1/22/2018 03:41 PM
m,p-Xylene	0.18		0.060	mg/Kg	1	1/22/2018 03:41 PM
o-Xylene	0.040		0.030	mg/Kg	1	1/22/2018 03:41 PM
Toluene	0.036		0.030	mg/Kg	1	1/22/2018 03:41 PM
Xylenes, Total	0.22		0.090	mg/Kg	1	1/22/2018 03:41 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/22/2018 03:41 PM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	1/22/2018 03:41 PM
Surr: Dibromofluoromethane	93.6		70-130	%REC	1	1/22/2018 03:41 PM
Surr: Toluene-d8	96.8		70-130	%REC	1	1/22/2018 03:41 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 MET	Prep: USDA Method 20B	1/23/18 09:13	Analyst: ED
Electrical Conductivity @ Saturation	2.2		0.10	mmhos/cm @2	20	1/25/2018 03:55 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JB
Chromium, Trivalent	12		1.1	mg/Kg-dry	1	1/25/2018 02:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A	1/23/18 17:00	Analyst: RP
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	1/25/2018 01:30 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	5.6		0.050	% of sample	1	1/24/2018 04:15 PM
PH			SW9045D	Prep: EXTRACT	1/23/18 18:30	Analyst: ED
pH	8.64		0.100	s.u.	1	1/23/2018 08:50 PM

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

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113288** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-113288-113288				Units: mg/Kg		Analysis Date: 1/24/2018 03:27 PM		
Client ID:		Run ID: GC8_180124A		SeqNo: 4862414		Prep Date: 1/24/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	2.85	0	3.33	0	85.6	34-130	0			

LCS		Sample ID: DLCSS1-113288-113288				Units: mg/Kg		Analysis Date: 1/24/2018 03:56 PM		
Client ID:		Run ID: GC8_180124A		SeqNo: 4862415		Prep Date: 1/24/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	313	5.0	333	0	94	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	2.85	0	3.33	0	85.6	34-130	0			

MS		Sample ID: 1801907-01B MS				Units: mg/Kg		Analysis Date: 1/24/2018 04:54 PM		
Client ID:		Run ID: GC8_180124A		SeqNo: 4862417		Prep Date: 1/24/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	238	4.9	329.7	0	72.2	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	2.244	0	3.297	0	68.1	34-130	0			

MSD		Sample ID: 1801907-01B MSD				Units: mg/Kg		Analysis Date: 1/24/2018 05:23 PM		
Client ID:		Run ID: GC8_180124A		SeqNo: 4862418		Prep Date: 1/24/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	241.5	5.0	332.5	0	72.6	65-122	238	1.46	30	
<i>Surr: 4-Terphenyl-d14</i>	2.979	0	3.325	0	89.6	34-130	2.244	28.1	30	

The following samples were analyzed in this batch: 1801953-01A

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113383** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-113383-113383				Units: mg/Kg		Analysis Date: 1/26/2018 12:17 PM		
Client ID:		Run ID: GC8_180126A		SeqNo: 4865212		Prep Date: 1/26/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	2.917	0	3.33	0	87.6	34-130	0			

LCS		Sample ID: DLCSS1-113383-113383				Units: mg/Kg		Analysis Date: 1/26/2018 12:46 PM		
Client ID:		Run ID: GC8_180126A		SeqNo: 4865213		Prep Date: 1/26/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	337.5	5.0	333	0	101	65-122	0			
<i>Surr: 4-Terphenyl-d14</i>	2.833	0	3.33	0	85.1	34-130	0			

The following samples were analyzed in this batch: | 1801953-01A |

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113132 Instrument ID GC9 Method: SW8015D

MBLK		Sample ID: MBLK-113132-113132				Units: µg/Kg-dry		Analysis Date: 1/22/2018 07:20 PM		
Client ID:		Run ID: GC9_180122A		SeqNo: 4858893		Prep Date: 1/19/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
<i>Surr: Toluene-d8</i>	4654	0	5000	0	93.1	71-123	0			

LCS		Sample ID: LCS-113132-113132				Units: µg/Kg-dry		Analysis Date: 1/22/2018 06:21 PM		
Client ID:		Run ID: GC9_180122A		SeqNo: 4858889		Prep Date: 1/19/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	413200	5,000	500000	0	82.6	71-123	0			
<i>Surr: Toluene-d8</i>	4630	0	5000	0	92.6	71-123	0			

MS		Sample ID: 1801872-04A MS				Units: µg/Kg-dry		Analysis Date: 1/23/2018 07:09 AM		
Client ID:		Run ID: GC9_180122A		SeqNo: 4858903		Prep Date: 1/19/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	438800	5,000	500000	0	87.8	71-123	0			
<i>Surr: Toluene-d8</i>	4640	0	5000	0	92.8	71-123	0			

MSD		Sample ID: 1801872-04A MSD				Units: µg/Kg-dry		Analysis Date: 1/23/2018 07:38 AM		
Client ID:		Run ID: GC9_180122A		SeqNo: 4858905		Prep Date: 1/19/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	407200	5,000	500000	0	81.4	71-123	438800	7.48	30	
<i>Surr: Toluene-d8</i>	4623	0	5000	0	92.5	71-123	4640	0.356	30	

The following samples were analyzed in this batch:

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113316 Instrument ID ICP2 Method: SW846 6010C

MBLK		Sample ID: MBLK-113316-113316				Units: mg/Kg		Analysis Date: 1/24/2018 06:41 PM		
Client ID:		Run ID: ICP2_180124A			SeqNo: 4862050		Prep Date: 1/24/2018		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	0.0469	0.50								J
Chromium	0.0205	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.227	0.50								J

LCS		Sample ID: LCS-113316-113316				Units: mg/Kg		Analysis Date: 1/24/2018 06:48 PM		
Client ID:		Run ID: ICP2_180124A			SeqNo: 4862051		Prep Date: 1/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.845	0.25	5	0	96.9	80-120	0			
Barium	4.785	0.25	5	0	95.7	80-120	0			
Cadmium	4.75	0.50	5	0	95	80-120	0			
Chromium	5.575	0.25	5	0	112	80-120	0			
Copper	5.038	0.50	5	0	101	80-120	0			
Lead	5.123	0.25	5	0	102	80-120	0			
Nickel	4.97	0.25	5	0	99.4	80-120	0			
Selenium	4.66	0.50	5	0	93.2	80-120	0			
Silver	4.71	0.25	5	0	94.2	80-120	0			
Zinc	5.373	0.50	5	0	107	80-120	0			

MS		Sample ID: 1801952-02AMS				Units: mg/Kg		Analysis Date: 1/24/2018 09:19 PM		
Client ID:		Run ID: ICP2_180124A			SeqNo: 4862074		Prep Date: 1/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.96	0.35	7.092	4.242	109	75-125	0			
Barium	360.6	0.35	7.092	344.3	230	75-125	0			SO
Cadmium	7.528	0.71	7.092	0.3286	102	75-125	0			
Chromium	36.35	0.35	7.092	29.69	93.9	75-125	0			O
Copper	21.93	0.71	7.092	14.65	103	75-125	0			
Lead	17.18	0.35	7.092	10.66	91.8	75-125	0			
Nickel	25.92	0.35	7.092	17.75	115	75-125	0			
Selenium	7.293	0.71	7.092	1.317	84.3	75-125	0			
Silver	6.298	0.35	7.092	-0.1105	90.4	75-125	0			
Zinc	67.96	0.71	7.092	63.97	56.3	75-125	0			SO

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

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113316** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1801952-02AMSD				Units: mg/Kg		Analysis Date: 1/24/2018 09:25 PM		
Client ID:		Run ID: ICP2_180124A			SeqNo: 4862075		Prep Date: 1/24/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.91	0.35	7.052	4.242	123	75-125	11.96	7.6	20	
Barium	392.4	0.35	7.052	344.3	683	75-125	360.6	8.46	20	SO
Cadmium	7.674	0.71	7.052	0.3286	104	75-125	7.528	1.91	20	
Chromium	36.06	0.35	7.052	29.69	90.3	75-125	36.35	0.791	20	O
Copper	21.24	0.71	7.052	14.65	93.5	75-125	21.93	3.2	20	
Lead	17.2	0.35	7.052	10.66	92.7	75-125	17.18	0.125	20	
Nickel	25.02	0.35	7.052	17.75	103	75-125	25.92	3.54	20	
Selenium	7.25	0.71	7.052	1.317	84.1	75-125	7.293	0.581	20	
Silver	6.354	0.35	7.052	-0.1105	91.7	75-125	6.298	0.888	20	
Zinc	67.12	0.71	7.052	63.97	44.7	75-125	67.96	1.24	20	SO

The following samples were analyzed in this batch: 1801953-01A

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113236** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 1801952-01ADUP				Units: mg/L		Analysis Date: 1/23/2018 02:29 PM		
Client ID:		Run ID: ICPMS3_180123A			SeqNo: 4859507		Prep Date: 1/23/2018		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	291.6	5.0	0	0	0	0-0	262.1	10.7		
Magnesium	48.12	2.0	0	0	0	0-0	43.15	10.9		
Sodium	416	2.0	0	0	0	0-0	384.2	7.95		

The following samples were analyzed in this batch:

Batch ID: **113236** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 1801952-01ADUP				Units: none		Analysis Date: 1/23/2018		
Client ID:		Run ID: SAR_180123A			SeqNo: 4861435		Prep Date: 1/23/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	5.947	0.010	0	0	0		5.795	2.59	50	

The following samples were analyzed in this batch:

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113382 Instrument ID SVMS6 Method: SW846 8270D

MBLK		Sample ID: SBLKS1-113382-113382				Units: µg/Kg		Analysis Date: 1/26/2018 06:30 PM		
Client ID:		Run ID: SVMS6_180126A		SeqNo: 4866832		Prep Date: 1/26/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	42								
Anthracene	ND	42								
Benzo(a)anthracene	ND	42								
Benzo(a)pyrene	ND	42								
Benzo(b)fluoranthene	ND	42								
Benzo(k)fluoranthene	ND	42								
Chrysene	ND	42								
Dibenzo(a,h)anthracene	ND	42								
Fluoranthene	ND	42								
Fluorene	ND	42								
Indeno(1,2,3-cd)pyrene	ND	42								
Naphthalene	ND	42								
Pyrene	ND	42								
Surr: 2-Fluorobiphenyl	2799	0	3333	0	84	20-140	0			
Surr: 4-Terphenyl-d14	3116	0	3333	0	93.5	22-172	0			
Surr: Nitrobenzene-d5	3455	0	3333	0	104	28-140	0			

MS		Sample ID: 18011126-14B MS				Units: µg/Kg		Analysis Date: 1/26/2018 07:25 PM		
Client ID:		Run ID: SVMS6_180126A		SeqNo: 4866836		Prep Date: 1/26/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1092	41	1304	0	83.8	40-140	0			
Anthracene	1234	41	1304	0	94.6	40-140	0			
Benzo(a)anthracene	1331	41	1304	0	102	40-140	0			
Benzo(a)pyrene	1170	41	1304	0	89.7	40-140	0			
Benzo(b)fluoranthene	1210	41	1304	0	92.8	40-140	0			
Benzo(k)fluoranthene	900	41	1304	0	69	40-140	0			
Chrysene	1062	41	1304	0	81.4	40-140	0			
Dibenzo(a,h)anthracene	1462	41	1304	0	112	40-140	0			
Fluoranthene	1076	41	1304	0	82.5	40-140	0			
Fluorene	1178	41	1304	0	90.3	40-140	0			
Indeno(1,2,3-cd)pyrene	1587	41	1304	0	122	40-140	0			
Naphthalene	1114	41	1304	0	85.4	40-140	0			
Pyrene	1081	41	1304	0	82.9	40-140	0			
Surr: 2-Fluorobiphenyl	2772	0	3261	0	85	20-140	0			
Surr: 4-Terphenyl-d14	2820	0	3261	0	86.5	22-172	0			
Surr: Nitrobenzene-d5	3853	0	3261	0	118	28-140	0			

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113382 Instrument ID SVMS6 Method: SW846 8270D

MSD		Sample ID: 18011126-14B MSD				Units: µg/Kg		Analysis Date: 1/26/2018 07:39 PM		
Client ID:		Run ID: SVMS6_180126A			SeqNo: 4866837		Prep Date: 1/26/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	819.9	41	1295	0	63.3	40-140	1092	28.5	30	
Anthracene	900.6	41	1295	0	69.6	40-140	1234	31.3	30	R
Benzo(a)anthracene	995.6	41	1295	0	76.9	40-140	1331	28.8	30	
Benzo(a)pyrene	891.8	41	1295	0	68.9	40-140	1170	27	30	
Benzo(b)fluoranthene	847.9	41	1295	0	65.5	40-140	1210	35.2	30	R
Benzo(k)fluoranthene	741.1	41	1295	0	57.2	40-140	900	19.4	30	
Chrysene	823.4	41	1295	0	63.6	40-140	1062	25.3	30	
Dibenzo(a,h)anthracene	1178	41	1295	0	91	40-140	1462	21.5	30	
Fluoranthene	801.3	41	1295	0	61.9	40-140	1076	29.3	30	
Fluorene	879.1	41	1295	0	67.9	40-140	1178	29.1	30	
Indeno(1,2,3-cd)pyrene	1265	41	1295	0	97.7	40-140	1587	22.6	30	
Naphthalene	816.2	41	1295	0	63	40-140	1114	30.9	30	R
Pyrene	859.5	41	1295	0	66.4	40-140	1081	22.9	30	
Surr: 2-Fluorobiphenyl	2445	0	3238	0	75.5	20-140	2772	12.5	0	
Surr: 4-Terphenyl-d14	2512	0	3238	0	77.6	22-172	2820	11.5	0	
Surr: Nitrobenzene-d5	3188	0	3238	0	98.5	28-140	3853	18.9	0	

The following samples were analyzed in this batch: 1801953-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113152 Instrument ID VMS8 Method: SW8260B

MBLK		Sample ID: MBLK-113152-113152				Units: µg/Kg-dry		Analysis Date: 1/19/2018 04:35 PM		
Client ID:		Run ID: VMS8_180119A			SeqNo: 4856697		Prep Date: 1/19/2018		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	944	0	1000	0	94.4	70-130	0			
Surr: 4-Bromofluorobenzene	869.5	0	1000	0	87	70-130	0			
Surr: Dibromofluoromethane	1024	0	1000	0	102	70-130	0			
Surr: Toluene-d8	961	0	1000	0	96.1	70-130	0			

LCS		Sample ID: LCS-113152-113152				Units: µg/Kg-dry		Analysis Date: 1/19/2018 03:48 PM		
Client ID:		Run ID: VMS8_180119A			SeqNo: 4856695		Prep Date: 1/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	921	30	1000	0	92.1	75-125	0			
Ethylbenzene	955.5	30	1000	0	95.6	75-125	0			
m,p-Xylene	1750	60	2000	0	87.5	80-125	0			
o-Xylene	882	30	1000	0	88.2	75-125	0			
Toluene	941.5	30	1000	0	94.2	70-125	0			
Xylenes, Total	2632	90	3000	0	87.7	75-125	0			
Surr: 1,2-Dichloroethane-d4	878	0	1000	0	87.8	70-130	0			
Surr: 4-Bromofluorobenzene	1054	0	1000	0	105	70-130	0			
Surr: Dibromofluoromethane	934	0	1000	0	93.4	70-130	0			
Surr: Toluene-d8	1008	0	1000	0	101	70-130	0			

MS		Sample ID: 1801953-01A MS				Units: µg/Kg-dry		Analysis Date: 1/22/2018 10:07 PM		
Client ID: PA 22-6 land farm (spoils)		Run ID: VMS9_180122A			SeqNo: 4858642		Prep Date: 1/19/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1093	30	1000	0	109	75-125	0			
Ethylbenzene	1053	30	1000	11.5	104	75-125	0			
m,p-Xylene	2196	60	2000	184.5	101	80-125	0			
o-Xylene	1066	30	1000	39.5	103	75-125	0			
Toluene	1036	30	1000	35.5	100	70-125	0			
Xylenes, Total	3262	90	3000	220	101	75-125	0			
Surr: 1,2-Dichloroethane-d4	1006	0	1000	0	101	70-130	0			
Surr: 4-Bromofluorobenzene	1044	0	1000	0	104	70-130	0			
Surr: Dibromofluoromethane	1008	0	1000	0	101	70-130	0			
Surr: Toluene-d8	963	0	1000	0	96.3	70-130	0			

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

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113152** Instrument ID **VMS8** Method: **SW8260B**

MSD		Sample ID: 1801953-01A MSD				Units: µg/Kg-dry		Analysis Date: 1/22/2018 10:31 PM		
Client ID: PA 22-6 land farm (spoils)		Run ID: VMS9_180122A		SeqNo: 4858643		Prep Date: 1/19/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1056	30	1000	0	106	75-125	1093	3.44	30	
Ethylbenzene	1041	30	1000	11.5	103	75-125	1053	1.15	30	
m,p-Xylene	2208	60	2000	184.5	101	80-125	2196	0.545	30	
o-Xylene	1052	30	1000	39.5	101	75-125	1066	1.42	30	
Toluene	1024	30	1000	35.5	98.9	70-125	1036	1.12	30	
Xylenes, Total	3259	90	3000	220	101	75-125	3262	0.092	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	1029	0	1000	0	103	70-130	1006	2.21	30	
<i>Surr: 4-Bromofluorobenzene</i>	1055	0	1000	0	106	70-130	1044	1	30	
<i>Surr: Dibromofluoromethane</i>	995	0	1000	0	99.5	70-130	1008	1.25	30	
<i>Surr: Toluene-d8</i>	978	0	1000	0	97.8	70-130	963	1.55	30	

The following samples were analyzed in this batch: 1801953-01A

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

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113236** Instrument ID **Titrator 1** Method: **USDA H60 Metho**

DUP	Sample ID: 1801952-01ADUP		Units: mmhos/cm @25°		Analysis Date: 1/25/2018 03:55 PM					
Client ID:	Run ID: TITRATOR 1_180125B		SeqNo: 4863733		Prep Date: 1/23/2018 DF: 20					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.642	0.10	0	0	0		4.164	10.9	50	

The following samples were analyzed in this batch:

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

Client: Terra Energy Partners, LLC
Work Order: 1801953
Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **113286** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-113286-113286				Units: s.u.		Analysis Date: 1/23/2018 08:50 PM			
Client ID:		Run ID: WETCHEM_180123N		SeqNo: 4860252		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	3.92	0.10	4	0	98	90-110	0				

DUP		Sample ID: 1801952-01A DUP				Units: s.u.		Analysis Date: 1/23/2018 08:50 PM			
Client ID:		Run ID: WETCHEM_180123N		SeqNo: 4860256		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	7.8	0.10	0	0	0	0-0	7.79	0.128	20		

The following samples were analyzed in this batch: 1801953-01A

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: 113388 Instrument ID WETCHEM Method: SW7196A

MBLK	Sample ID: MBLK-113388-113388		Units: mg/Kg		Analysis Date: 1/25/2018 01:30 PM					
Client ID:	Run ID: WETCHEM_180125E		SeqNo: 4863209		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 1.0

LCS	Sample ID: LCS-113388-113388		Units: mg/Kg		Analysis Date: 1/25/2018 01:30 PM					
Client ID:	Run ID: WETCHEM_180125E		SeqNo: 4863210		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.68 1.0 5 0 93.6 80-120 0

MS	Sample ID: 1801953-01A MS		Units: mg/Kg		Analysis Date: 1/25/2018 01:30 PM					
Client ID: PA 22-6 land farm (spoils)	Run ID: WETCHEM_180125E		SeqNo: 4863214		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.2 1.0 5 0.13 61.4 75-125 0 S

MS	Sample ID: 1801953-01A MSI		Units: mg/Kg		Analysis Date: 1/25/2018 01:30 PM					
Client ID: PA 22-6 land farm (spoils)	Run ID: WETCHEM_180125E		SeqNo: 4863216		Prep Date: 1/23/2018		DF: 100			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2175 100 2397 0.13 90.7 75-125 0

MSD	Sample ID: 1801953-01A MSD		Units: mg/Kg		Analysis Date: 1/25/2018 01:30 PM					
Client ID: PA 22-6 land farm (spoils)	Run ID: WETCHEM_180125E		SeqNo: 4863215		Prep Date: 1/23/2018		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.45 1.0 5 0.13 66.4 75-125 3.2 7.52 20 S

The following samples were analyzed in this batch:

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

Client: Terra Energy Partners, LLC
 Work Order: 1801953
 Project: PA 22-6 land farm (spoils)

QC BATCH REPORT

Batch ID: **R228799** Instrument ID **MOIST** Method: **SW3550C**

MBLK	Sample ID: WBLKS-R228799		Units: % of sample				Analysis Date: 1/24/2018 04:15 PM			
Client ID:	Run ID: MOIST_180124C		SeqNo: 4862923		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-R228799		Units: % of sample				Analysis Date: 1/24/2018 04:15 PM			
Client ID:	Run ID: MOIST_180124C		SeqNo: 4862922		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.99 0.050 100 0 100 99.5-100.5 0

DUP	Sample ID: 1801945-01B DUP		Units: % of sample				Analysis Date: 1/24/2018 04:15 PM			
Client ID:	Run ID: MOIST_180124C		SeqNo: 4862908		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 12.05 0.050 0 0 0 0-0 12.18 1.07 10

DUP	Sample ID: 1801961-01B DUP		Units: % of sample				Analysis Date: 1/24/2018 04:15 PM			
Client ID:	Run ID: MOIST_180124C		SeqNo: 4862916		Prep Date:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 3.7 0.050 0 0 0 0-0 3.74 1.08 10

The following samples were analyzed in this batch:

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



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 202r8

WORKORDER #

1801953

PAGE

1 of 1

PROJECT NAME		PA 22-6 land farm (spoils)		SAMPLER		Mike Gardner		DATE		1/18/2018		TURNAROUND		5-day		DISPOSAL		By Lab or Return to Client	
PROJECT No.				SITE ID		PA 22-6 land farm		EDD FORMAT				PURCHASE ORDER							
COMPANY NAME		TEP Rocky Mountain LLC		BILL TO COMPANY		TEP Rocky Mountain LLC		INVOICE ATTN TO		Mike Gardner, Dusty Richards		ADDRESS		1058 Co Rd 215		CITY / STATE / ZIP		Parachure CO 81635	
SEND REPORT TO		Mike Gardner		PHONE		970-263-2760		FAX				E-MAIL		michael.gardner@wpenergy.com		E-MAIL		michael.gardner@wpenergy.com; dusty.richards@wpenergy.com	
Lab ID		Field ID		Matrix		Sample Date		Sample Time		# Bottles		Pres.		QC					
		PA 22-6 land farm (spoils)		soil		1/18/2018		10:30		2				X					

COGCC 910-1 Fujii List

*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: Dusty: This is a spill and should be coded to the PA 22-6 spill that occurred in October 2017.	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	<i>[Signature]</i>	Mike Gardner	1/18/2018	1500
RECEIVED BY	<i>[Signature]</i>		1-18-18	1500
RELINQUISHED BY	<i>[Signature]</i>		1-18-18	1830
RECEIVED BY	<i>[Signature]</i>	Nicole Fredericks	1/19/18	1000
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **TERRAENERGY**

Date/Time Received: **19-Jan-18 10:00**

Work Order: **1801953**

Received by: **NCF**

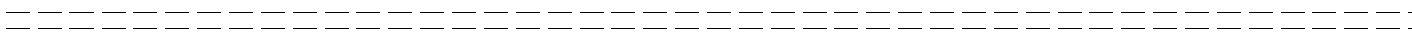
Checklist completed by Nicole Fredericks 19-Jan-18
eSignature Date

Reviewed by: Chad Whilton 19-Jan-18
eSignature Date

Matrices: Soil
 Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.6/4.6</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u> </u>		
Date/Time sample(s) sent to storage:	<u>1/19/2018 1:03:13 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<u> </u>		

Login Notes:



Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

CorrectiveAction: