

June 23, 2017

Report to:

Rhett Montgomery

Antler Energy

PO Box 336

Baggs, WY 82321

Bill to:

Tanya Evans

Antler Energy

PO Box 336

Baggs, WY 82321

cc: Clay Evans

Project ID:

ACZ Project ID: L37155

Rhett Montgomery:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on May 15, 2017. This project has been assigned to ACZ's project number, L37155. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L37155. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after July 23, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and
approved this report.



Antler Energy

Project ID:

Sample ID: PTASYSKI-X NORTHSIDE LANDFORM

ACZ Sample ID: **L37155-01**

Date Sampled: 05/15/17 11:22

Date Received: 05/15/17

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	11.5			mg/Kg	0.1	0.5	05/23/17 15:55	enb
Barium, total (3050)	M6010B ICP	102	329			mg/Kg	0.3	2	05/22/17 15:42	gss
Boron, total (3050)	M6010B ICP	102	20		*	mg/Kg	1	5	05/22/17 15:42	gss
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	05/22/17 15:42	gss
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.38			meq/L	0.005	0.025	05/25/17 11:55	aeh
Chromium, total (3050)	M6010B ICP	102	21		*	mg/Kg	1	5	05/22/17 15:42	gss
Chromium, Trivalent	Calculation (Total - Hexavalent)		21			mg/Kg	1	5	06/23/17 0:00	calc
Copper, total (3050)	M6010B ICP	102	23			mg/Kg	1	5	05/22/17 15:42	gss
Lead, total (3050)	M6010B ICP	102	25		*	mg/Kg	3	20	05/22/17 15:42	gss
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	0.828			meq/L	0.017	0.082	05/25/17 11:55	aeh
Mercury by Direct Combustion AA	M7473	1	30.5		*	ng/g	2.04	10.2	06/01/17 12:23	gss
Nickel, total (3050)	M6010B ICP	102	16.7		*	mg/Kg	0.8	4	05/22/17 15:42	gss
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	05/22/17 15:42	gss
Silver, total (3050)	M6010B ICP	102	2	B	*	mg/Kg	1	3	05/22/17 15:42	gss
Sodium Adsorption Ratio	Calculation		21						06/23/17 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	21.8			meq/L	0.0087	0.0435	05/25/17 11:55	aeh
Zinc, total (3050)	M6010B ICP	102	62			mg/Kg	1	5	05/22/17 15:42	gss

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	2.46		*	mmhos/cm	0.001	0.01	05/23/17 0:00	jlw
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
Temperature		1	20.3		*	C	0.1	0.1	05/23/17 0:00	jlw
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
pH		1	8.4		*	units	0.1	0.1	05/23/17 0:00	jlw
Solids, Percent	D2216-80	1	94.4		*	%	0.1	0.5	05/17/17 6:05	jlw

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								05/16/17 14:59	dbt
Digestion - Alkaline	M3060A								05/25/17 14:31	jlw
Digestion - Hot Plate	M3050B ICP								05/19/17 13:35	bcc
Digestion - Hot Plate	M3050B ICP-MS								05/19/17 13:35	bcc
Saturated Paste Extraction	USDA No. 60 (2)								05/22/17 16:07	jlw
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								05/18/17 14:58	dbt

Antler Energy

Project ID:

Sample ID: PTASYNski-X NORTHSIDE LANDFORM

ACZ Sample ID: **L37155-01**

Date Sampled: 05/15/17 11:22

Date Received: 05/15/17

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	210		U	*	mg/Kg	1	4	06/01/17 11:35	abd

Antler Energy

Project ID:

Sample ID: PTASYSKI-X SOUTHSIDE LANDFORM

ACZ Sample ID: **L37155-02**

Date Sampled: 05/15/17 11:39

Date Received: 05/15/17

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	9.8			mg/Kg	0.1	0.5	05/23/17 15:58	enb
Barium, total (3050)	M6010B ICP	102	272			mg/Kg	0.3	2	05/22/17 15:45	gss
Boron, total (3050)	M6010B ICP	102	15		*	mg/Kg	1	5	05/22/17 15:45	gss
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	05/22/17 15:45	gss
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.58			meq/L	0.005	0.025	05/25/17 12:05	aeh
Chromium, total (3050)	M6010B ICP	102	19		*	mg/Kg	1	5	05/22/17 15:45	gss
Chromium, Trivalent	Calculation (Total - Hexavalent)		19			mg/Kg	1	5	06/23/17 0:00	calc
Copper, total (3050)	M6010B ICP	102	20			mg/Kg	1	5	05/22/17 15:45	gss
Lead, total (3050)	M6010B ICP	102	25		*	mg/Kg	3	20	05/22/17 15:45	gss
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	1.22			meq/L	0.017	0.082	05/25/17 12:05	aeh
Mercury by Direct Combustion AA	M7473	1	14.4		*	ng/g	2.11	10.55	06/01/17 12:30	gss
Nickel, total (3050)	M6010B ICP	102	14.0		*	mg/Kg	0.8	4	05/22/17 15:45	gss
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	05/22/17 15:45	gss
Silver, total (3050)	M6010B ICP	102	2	B	*	mg/Kg	1	3	05/22/17 15:45	gss
Sodium Adsorption Ratio	Calculation		0.65						06/23/17 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	0.773			meq/L	0.0087	0.0435	05/25/17 12:05	aeh
Zinc, total (3050)	M6010B ICP	102	59			mg/Kg	1	5	05/22/17 15:45	gss

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.390		*	mmhos/cm	0.001	0.01	05/23/17 0:00	jlw
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
Temperature		1	20.2		*	C	0.1	0.1	05/23/17 0:00	jlw
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
pH		1	7.9		*	units	0.1	0.1	05/23/17 0:00	jlw
Solids, Percent	D2216-80	1	94.7		*	%	0.1	0.5	05/17/17 7:28	jlw

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								05/16/17 15:01	dbt
Digestion - Alkaline	M3060A								05/25/17 23:34	jlw
Digestion - Hot Plate	M3050B ICP								05/19/17 14:04	bcc
Digestion - Hot Plate	M3050B ICP-MS								05/19/17 14:04	bcc
Saturated Paste Extraction	USDA No. 60 (2)								05/22/17 16:11	jlw
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								05/18/17 15:02	dbt

Antler Energy

Project ID:

Sample ID: PTASYNski-X SOUTHSIDE LANDFORM

ACZ Sample ID: **L37155-02**

Date Sampled: 05/15/17 11:39

Date Received: 05/15/17

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	210		U	*	mg/Kg	1	4	06/01/17 11:41	abd

Antler Energy

Project ID:

Sample ID: PTASYSKI-X NORTHSIDE PIT

ACZ Sample ID: **L37155-03**

Date Sampled: 05/15/17 11:48

Date Received: 05/15/17

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	515	13.0			mg/Kg	0.1	0.5	05/23/17 16:04	enb
Barium, total (3050)	M6010B ICP	103	319			mg/Kg	0.3	2	05/22/17 15:55	gss
Boron, total (3050)	M6010B ICP	103	17		*	mg/Kg	1	5	05/22/17 15:55	gss
Cadmium, total (3050)	M6010B ICP	103		U		mg/Kg	0.5	2	05/22/17 15:55	gss
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.25			meq/L	0.005	0.025	05/25/17 12:08	aeh
Chromium, total (3050)	M6010B ICP	103	21		*	mg/Kg	1	5	05/22/17 15:55	gss
Chromium, Trivalent	Calculation (Total - Hexavalent)		21			mg/Kg	1	5	06/23/17 0:00	calc
Copper, total (3050)	M6010B ICP	103	24			mg/Kg	1	5	05/22/17 15:55	gss
Lead, total (3050)	M6010B ICP	103	24		*	mg/Kg	3	20	05/22/17 15:55	gss
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	1.18			meq/L	0.017	0.082	05/25/17 12:08	aeh
Mercury by Direct Combustion AA	M7473	1	22.9		*	ng/g	2.2	11	06/01/17 12:36	gss
Nickel, total (3050)	M6010B ICP	103	16.7		*	mg/Kg	0.8	4	05/22/17 15:55	gss
Selenium, total (3050)	M6010B ICP	103		U		mg/Kg	5	30	05/22/17 15:55	gss
Silver, total (3050)	M6010B ICP	103	2	B	*	mg/Kg	1	3	05/22/17 15:55	gss
Sodium Adsorption Ratio	Calculation		1.7						06/23/17 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	1.82			meq/L	0.0087	0.0435	05/25/17 12:08	aeh
Zinc, total (3050)	M6010B ICP	103	61			mg/Kg	1	5	05/22/17 15:55	gss

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.467		*	mmhos/cm	0.001	0.01	05/23/17 0:00	jlw
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
Temperature		1	21.5		*	C	0.1	0.1	05/23/17 0:00	jlw
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
pH		1	7.8		*	units	0.1	0.1	05/23/17 0:00	jlw
Solids, Percent	D2216-80	1	87.6		*	%	0.1	0.5	05/17/17 8:51	jlw

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								05/16/17 15:02	dbt
Digestion - Alkaline	M3060A								05/26/17 2:35	jlw
Digestion - Hot Plate	M3050B ICP								05/19/17 15:31	bcc
Digestion - Hot Plate	M3050B ICP-MS								05/19/17 15:31	bcc
Saturated Paste Extraction	USDA No. 60 (2)								05/22/17 16:15	jlw
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								05/18/17 15:06	dbt

Antler Energy

Project ID:

Sample ID: PTASYNski-X NORTHSIDE PIT

ACZ Sample ID: **L37155-03**

Date Sampled: 05/15/17 11:48

Date Received: 05/15/17

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	225		U	*	mg/Kg	1	5	06/01/17 11:43	abd

Antler Energy

Project ID:

Sample ID: PTASYSKI-X SOUTHSIDE PIT

ACZ Sample ID: **L37155-04**

Date Sampled: 05/15/17 11:55

Date Received: 05/15/17

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	12.8			mg/Kg	0.1	0.5	05/23/17 16:07	enb
Barium, total (3050)	M6010B ICP	102	257			mg/Kg	0.3	2	05/22/17 15:59	gss
Boron, total (3050)	M6010B ICP	102	18		*	mg/Kg	1	5	05/22/17 15:59	gss
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	05/22/17 15:59	gss
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.18			meq/L	0.005	0.025	05/25/17 12:11	aeh
Chromium, total (3050)	M6010B ICP	102	22		*	mg/Kg	1	5	05/22/17 15:59	gss
Chromium, Trivalent	Calculation (Total - Hexavalent)		22			mg/Kg	1	5	06/23/17 0:00	calc
Copper, total (3050)	M6010B ICP	102	25			mg/Kg	1	5	05/22/17 15:59	gss
Lead, total (3050)	M6010B ICP	102	23		*	mg/Kg	3	20	05/22/17 15:59	gss
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	1.02			meq/L	0.017	0.082	05/25/17 12:11	aeh
Mercury by Direct Combustion AA	M7473	1	20.2		*	ng/g	2.22	11.1	06/01/17 12:43	gss
Nickel, total (3050)	M6010B ICP	102	17.8		*	mg/Kg	0.8	4	05/22/17 15:59	gss
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	05/22/17 15:59	gss
Silver, total (3050)	M6010B ICP	102	2	B	*	mg/Kg	1	3	05/22/17 15:59	gss
Sodium Adsorption Ratio	Calculation		0.08						06/23/17 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	0.0854			meq/L	0.0087	0.0435	05/25/17 12:11	aeh
Zinc, total (3050)	M6010B ICP	102	66			mg/Kg	1	5	05/22/17 15:59	gss

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.331		*	mmhos/cm	0.001	0.01	05/23/17 0:00	jlw
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
Temperature		1	20.8		*	C	0.1	0.1	05/23/17 0:00	jlw
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			05/23/17 0:00	jlw
pH		1	7.9		*	units	0.1	0.1	05/23/17 0:00	jlw
Solids, Percent	D2216-80	1	89.0		*	%	0.1	0.5	05/17/17 10:15	jlw

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								05/16/17 15:04	dbt
Digestion - Alkaline	M3060A								05/26/17 5:36	jlw
Digestion - Hot Plate	M3050B ICP								05/19/17 16:00	bcc
Digestion - Hot Plate	M3050B ICP-MS								05/19/17 16:00	bcc
Saturated Paste Extraction	USDA No. 60 (2)								05/22/17 16:20	jlw
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								05/18/17 15:09	dbt

Antler Energy

Project ID:

Sample ID: PTASYNski-X SOUTHSIDE PIT

ACZ Sample ID: **L37155-04**

Date Sampled: 05/15/17 11:55

Date Received: 05/15/17

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	225		U	*	mg/Kg	1	5	06/01/17 11:44	abd


Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Antler Energy

ACZ Project ID: **L37155**

Arsenic, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423383													
WG423383ICV	ICV	05/23/17 14:29	MS170420-2	.05		.05159	mg/L	103	90	110			
WG423383ICB	ICB	05/23/17 14:32				U	mg/L		-0.0006	0.0006			
WG423086PBS	PBS	05/23/17 14:45				.16	mg/Kg		-0.3	0.3			
WG423168PBS	PBS	05/23/17 15:17				.18	mg/Kg		-0.3	0.3			
WG423168LCSS	LCSS	05/23/17 15:20	PCN52824	145		149.6	mg/Kg		115	176			
WG423168LCSSD	LCSSD	05/23/17 15:23	PCN52824	145		149.4	mg/Kg		115	176	0	20	
L36871-04MS	MS	05/23/17 15:39	MS170209-3	25.3005	1.7	26.56	mg/Kg	98	75	125			
L36871-04MSD	MSD	05/23/17 15:42	MS170209-3	25.3005	1.7	26.26	mg/Kg	97	75	125	1	20	
WG423259PBS	PBS	05/23/17 16:11				.1	mg/Kg		-0.3	0.3			

Barium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		1.994	mg/L	100	90	110			
WG423275ICB	ICB	05/22/17 15:21				.0044	mg/L		-0.009	0.009			
WG423168PBS	PBS	05/22/17 15:33				.41	mg/Kg		-0.9	0.9			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	209		200	mg/Kg		174	245			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	209		199.1	mg/Kg		174	245	0	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51.153	272	316.3	mg/Kg	87	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51.153	272	326.6	mg/Kg	107	75	125	3	20	

Boron, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		2.067	mg/L	103	90	110			
WG423275ICB	ICB	05/22/17 15:21				.014	mg/L		-0.03	0.03			
WG423168PBS	PBS	05/22/17 15:33				1.4	mg/Kg		-3	3			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	126		120.1	mg/Kg		91.8	160			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	126		121.2	mg/Kg		91.8	160	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51.051	15	75.7	mg/Kg	119	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51.051	15	75.1	mg/Kg	118	75	125	1	20	

Cadmium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		2.029	mg/L	101	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.015	0.015			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-1.5	1.5			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	87.6		82.97	mg/Kg		72.4	103			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	87.6		84.07	mg/Kg		72.4	103	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51.051	U	46.5	mg/Kg	91	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51.051	U	46.67	mg/Kg	91	75	125	0	20	

Antler Energy

ACZ Project ID: **L37155**

Calcium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423552													
WG423552ICV	ICV	05/25/17 11:11	II170428-3	100		99.8	mg/L	100	90	110			
WG423552ICB	ICB	05/25/17 11:14				U	mg/L		-0.3	0.3			
L37011-02DUP	DUP	05/25/17 11:33			13	13.8	meq/L				6	20	

Chromium, Hexavalent (3060)

M7196A

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423877													
WG423877ICV	ICV	06/01/17 11:30	WC170304-3	.05		.0501	mg/L	100	90	110			
WG423877ICB	ICB	06/01/17 11:31				U	mg/L		-0.005	0.005			
L37155-01MS1	MS	06/01/17 11:37	SI170525-4	42.01701	U	32.8	mg/Kg	78	75	125			
L37155-01MS2	MS	06/01/17 11:39	SI160824-4	1324.68021	U	1250	mg/Kg	94	75	125			
L37155-04DUP	DUP	06/01/17 11:52			U	U	mg/Kg				0	20	RA
WG423555LCSS	LCSS	06/01/17 11:54	PCN53453	148		148	mg/Kg		83.8	211			
WG423555PBS	PBS	06/01/17 11:56				U	mg/Kg		-1	1			

Chromium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		1.986	mg/L	99	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.03	0.03			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-3	3			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	143		135.4	mg/Kg		114	171			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	143		136.3	mg/Kg		114	171	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51.255	19	73.3	mg/Kg	106	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51.255	19	73.6	mg/Kg	107	75	125	0	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423351													
L37011-02DUP	DUP	05/23/17 11:53			3.21	3.31	mmhos/cm				3	20	

Copper, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		2.035	mg/L	102	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.03	0.03			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-3	3			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	173		164	mg/Kg		141	204			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	173		167.4	mg/Kg		141	204	2	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51.051	20	71.9	mg/Kg	102	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51.051	20	71.8	mg/Kg	101	75	125	0	20	

Antler Energy

ACZ Project ID: **L37155**

Lead, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	4		3.949	mg/L	99	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.09	0.09			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-9	9			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	146		142.1	mg/Kg		119	173			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	146		147.3	mg/Kg		119	173	4	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	102.1734	25	121	mg/Kg	94	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	102.1734	25	120.2	mg/Kg	93	75	125	1	20	

Magnesium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423552													
WG423552ICV	ICV	05/25/17 11:11	II170428-3	100		101	mg/L	101	90	110			
WG423552ICB	ICB	05/25/17 11:14				U	mg/L		-0.6	0.6			
L37011-02DUP	DUP	05/25/17 11:33			2.17	2.31	meq/L				7	20	

Mercury by Direct Combustion AA

M7473

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG421025													
WG421025ICV1	ICV	04/12/17 9:12	HG170412-3	100		102	ng/g	102	90	110			
WG421025ICV3	ICV	04/12/17 9:27	HG170412-5	1000		1000	ng/g	100	90	110			
WG421025ICV4	ICV	04/12/17 9:36	HG170412-5	1000		944	ng/g	94	90	110			
WG423886													
WG423886ICV2	ICV	06/01/17 10:40	HG170518-2	100		98.7	ng/g	99	90	110			
WG423886ICV3	ICV	06/01/17 10:50	HG170518-3	1000		993	ng/g	99	90	110			
WG423886ICV4	ICV	06/01/17 10:58	HG170518-3	1000		951	ng/g	95	90	110			
WG423886ICV1	ICV	06/01/17 11:22	HG170518-1	100		109	ng/g	109	90	110			
WG423886PBS	PBS	06/01/17 11:36				U	ng/g		-6	6			
WG423886LCSS	LCSS	06/01/17 11:42	PCN52951	80		84.9	ng/g		80	120			
WG423886LCSSD	LCSSD	06/01/17 11:49	PCN52951	80		81.8	ng/g		80	120	4	20	
L37155-04MS	MS	06/01/17 12:50	PCN52951				ng/g	95	80	120			
L37318-02DUP	DUP	06/01/17 13:16			5.64	2.5	ng/g				77	20	RA

Nickel, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2.002		2.006	mg/L	100	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.024	0.024			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-2.4	2.4			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	129		121.3	mg/Kg		107	151			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	129		122.8	mg/Kg		107	151	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	50.796	14	61.65	mg/Kg	94	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	50.796	14	61.02	mg/Kg	93	75	125	1	20	

Antler Energy

ACZ Project ID: **L37155**

pH, Saturated Paste EPA 600/2-78-054 section 3.2.2

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423351													
WG423351ICV	ICV	05/23/17 11:06	PCN51722	4		4	units	100	3.9	4.1			
L37011-02DUP	DUP	05/23/17 11:53			3.6	3.6	units				0	20	

Selenium, total (3050) M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	4		4.125	mg/L	103	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.15	0.15			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-15	15			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	178		175	mg/Kg		140	216			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	178		173.6	mg/Kg		140	216	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	102.0714	U	104.4	mg/Kg	102	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	102.0714	U	104.4	mg/Kg	102	75	125	0	20	

Silver, total (3050) M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	1.002		1.034	mg/L	103	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.03	0.03			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-3	3			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	31.3		31.7	mg/Kg		23.5	39.1			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	31.3		31.8	mg/Kg		23.5	39.1	0	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	51	2	51.4	mg/Kg	97	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	51	2	51.9	mg/Kg	98	75	125	1	20	

Sodium, soluble (Sat. Paste) M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423552													
WG423552ICV	ICV	05/25/17 11:11	II170428-3	100		101	mg/L	101	90	110			
WG423552ICB	ICB	05/25/17 11:14				U	mg/L		-0.6	0.6			
L37011-02DUP	DUP	05/25/17 11:33			0.0744	.0809	meq/L				8	20	

Solids, Percent D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG422939													
WG422939PBS	PBS	05/16/17 14:50				U	%		-0.1	0.1			
L37056-21DUP	DUP	05/16/17 17:36			96.9	97.03	%				0	20	

Zinc, total (3050) M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG423275													
WG423275ICV	ICV	05/22/17 15:18	II170515-3	2		2.077	mg/L	104	90	110			
WG423275ICB	ICB	05/22/17 15:21				U	mg/L		-0.03	0.03			
WG423168PBS	PBS	05/22/17 15:33				U	mg/Kg		-3	3			
WG423168LCSS	LCSS	05/22/17 15:36	PCN52824	194		189.4	mg/Kg		159	229			
WG423168LCSSD	LCSSD	05/22/17 15:39	PCN52824	194		190.6	mg/Kg		159	229	1	20	
L37155-02MS	MS	05/22/17 15:49	II170417-4	50.4084	59	115.1	mg/Kg	111	75	125			
L37155-02MSD	MSD	05/22/17 15:52	II170417-4	50.4084	59	113.7	mg/Kg	109	75	125	1	20	

Antler Energy

ACZ Project ID: **L37155**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L37155-01	WG423275	Boron, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423877	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			M7196A	Q6	Sample was received above recommended temperature.
			M7196A	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Chromium, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Lead, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423886	Mercury by Direct Combustion AA	M7473	Q6	Sample was received above recommended temperature.
			M7473	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Nickel, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Silver, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
L37155-02	WG423275	Boron, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423877	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			M7196A	Q6	Sample was received above recommended temperature.
			M7196A	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Chromium, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Lead, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423886	Mercury by Direct Combustion AA	M7473	Q6	Sample was received above recommended temperature.
			M7473	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Nickel, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Silver, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Antler Energy

ACZ Project ID: **L37155**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L37155-03	WG423275	Boron, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423877	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			M7196A	Q6	Sample was received above recommended temperature.
			M7196A	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Chromium, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Lead, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423886	Mercury by Direct Combustion AA	M7473	Q6	Sample was received above recommended temperature.
			M7473	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Nickel, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Silver, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
L37155-04	WG423275	Boron, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423877	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			M7196A	Q6	Sample was received above recommended temperature.
			M7196A	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Chromium, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Lead, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG423886	Mercury by Direct Combustion AA	M7473	Q6	Sample was received above recommended temperature.
			M7473	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG423275	Nickel, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Silver, total (3050)	M6010B ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Antler Energy

Project ID:
 Sample ID: PTASYNski-X NORTHSIDE LANDFORM

ACZ Sample ID: **L37155-01**
 Date Sampled: 05/15/17 11:22
 Date Received: 05/15/17
 Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**
 Extract Method: **5035A**

Workgroup: WG423666

Analyst: jel
 Extract Date: 05/24/17 20:33
 Analysis Date: 05/24/17 20:33

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	5	*	ug/Kg	5	5
Ethylbenzene	100-41-4		U	5	*	ug/Kg	5	5
m p Xylene	1330-20-7		U	5	*	ug/Kg	10	10
o Xylene	95-47-6		U	5	*	ug/Kg	5	5
Toluene	108-88-3		U	5	*	ug/Kg	5	5
TVH C6 to C10	TVH		U	5	*	mg/Kg	0.3	0.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	91.6		5	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	93		5	*	%	70	130

Antler Energy

Project ID:

Sample ID: PTASYNski-X NORTHSIDE LANDFORM

ACZ Sample ID: **L37155-01**

Date Sampled: 05/15/17 11:22

Date Received: 05/15/17

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG423260**

Analyst: rgt

Extract Date: 05/17/17 13:13

Analysis Date: 05/19/17 12:38

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		620		333	*	mg/Kg	30	200
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	86.3		333	*	%	70	130

Antler Energy

Project ID:
Sample ID: PTASYNski-X NORTHSIDE LANDFORM

ACZ Sample ID: **L37155-01**
Date Sampled: 05/15/17 11:22
Date Received: 05/15/17
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**
Extract Method: **M3540**

Workgroup: WG424016

Analyst: itm
Extract Date: 05/24/17 10:18
Analysis Date: 06/01/17 13:20

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	267	*	ug/Kg	500	3000
Acenaphthene	83-32-9		U	267	*	ug/Kg	500	3000
Acenaphthylene	208-96-8		U	267	*	ug/Kg	500	3000
Anthracene	120-12-7		U	267	*	ug/Kg	500	3000
Benzo(a)anthracene	56-55-3		U	267	*	ug/Kg	500	3000
Benzo(a)pyrene	50-32-8		U	267	*	ug/Kg	500	3000
Benzo(b)fluoranthene	205-99-2		U	267	*	ug/Kg	500	3000
Benzo(g,h,i)perylene	191-24-2		U	267	*	ug/Kg	500	3000
Benzo(k)fluoranthene	207-08-9		U	267	*	ug/Kg	500	3000
Chrysene	218-01-9		U	267	*	ug/Kg	500	3000
Dibenzo(a,h)anthracene	53-70-3		U	267	*	ug/Kg	500	3000
Fluoranthene	206-44-0		U	267	*	ug/Kg	500	3000
Fluorene	86-73-7		U	267	*	ug/Kg	500	3000
Indeno(1,2,3-cd)pyrene	193-39-5		U	267	*	ug/Kg	500	3000
Naphthalene	91-20-3		U	267	*	ug/Kg	500	3000
Phenanthrene	85-01-8		U	267	*	ug/Kg	500	3000
Pyrene	129-00-0		U	267	*	ug/Kg	500	3000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	88.5		267	*	%	45	105
Nitrobenzene-d5	4165-60-0	76		267	*	%	35	100
Terphenyl-d14	1718-51-0	99.8		267	*	%	30	125

Antler Energy

Project ID:
 Sample ID: PTASYNski-X SOUTHSIDE LANDFORM

ACZ Sample ID: **L37155-02**
 Date Sampled: 05/15/17 11:39
 Date Received: 05/15/17
 Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**
 Extract Method: **5035A**

Workgroup: WG423666

Analyst: jel
 Extract Date: 05/24/17 21:03
 Analysis Date: 05/24/17 21:03

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	5	*	ug/Kg	5	5
Ethylbenzene	100-41-4		U	5	*	ug/Kg	5	5
m p Xylene	1330-20-7		U	5	*	ug/Kg	10	10
o Xylene	95-47-6		U	5	*	ug/Kg	5	5
Toluene	108-88-3		U	5	*	ug/Kg	5	5
TVH C6 to C10	TVH		U	5	*	mg/Kg	0.3	0.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	94.1		5	*	%	70	130
Bromofluorobenzene (TVH)	460-00 4	95.6		5	*	%	70	130

Antler Energy

Project ID:
 Sample ID: PTASYNski-X SOUTHSIDE LANDFORM

ACZ Sample ID: **L37155-02**
 Date Sampled: 05/15/17 11:39
 Date Received: 05/15/17
 Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
 Extract Method: **M3540**

Workgroup: WG423260

Analyst: rgt
 Extract Date: 05/17/17 13:23
 Analysis Date: 05/19/17 13:25

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		68		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	71.6		66.7	*	%	70	130

Antler Energy

Project ID:
Sample ID: PTASYNski-X SOUTHSIDE LANDFORM

ACZ Sample ID: **L37155-02**
Date Sampled: 05/15/17 11:39
Date Received: 05/15/17
Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**
Extract Method: **M3540**

Workgroup: **WG424016**

Analyst: itm
Extract Date: 05/24/17 10:30
Analysis Date: 06/01/17 14:27

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	133	*	ug/Kg	300	1000
Acenaphthene	83-32-9		U	133	*	ug/Kg	300	1000
Acenaphthylene	208-96-8		U	133	*	ug/Kg	300	1000
Anthracene	120-12-7		U	133	*	ug/Kg	300	1000
Benzo(a)anthracene	56-55-3		U	133	*	ug/Kg	300	1000
Benzo(a)pyrene	50-32-8		U	133	*	ug/Kg	300	1000
Benzo(b)fluoranthene	205-99-2		U	133	*	ug/Kg	300	1000
Benzo(g,h,i)perylene	191-24-2		U	133	*	ug/Kg	300	1000
Benzo(k)fluoranthene	207-08-9		U	133	*	ug/Kg	300	1000
Chrysene	218-01-9		U	133	*	ug/Kg	300	1000
Dibenzo(a,h)anthracene	53-70-3		U	133	*	ug/Kg	300	1000
Fluoranthene	206-44-0		U	133	*	ug/Kg	300	1000
Fluorene	86-73-7		U	133	*	ug/Kg	300	1000
Indeno(1,2,3-cd)pyrene	193-39-5		U	133	*	ug/Kg	300	1000
Naphthalene	91-20-3		U	133	*	ug/Kg	300	1000
Phenanthrene	85-01-8		U	133	*	ug/Kg	300	1000
Pyrene	129-00-0		U	133	*	ug/Kg	300	1000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	86.2		133	*	%	45	105
Nitrobenzene-d5	4165-60-0	66.2		133	*	%	35	100
Terphenyl-d14	1718-51-0	100.1		133	*	%	30	125

Antler Energy

Project ID:
 Sample ID: PTASYNski-X NORTHSIDE PIT

ACZ Sample ID: **L37155-03**
 Date Sampled: 05/15/17 11:48
 Date Received: 05/15/17
 Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**
 Extract Method: **5035A**

Workgroup: WG423666

Analyst: jel
 Extract Date: 05/24/17 21:33
 Analysis Date: 05/24/17 21:33

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	5	*	ug/Kg	5	5
Ethylbenzene	100-41-4		U	5	*	ug/Kg	5	5
m p Xylene	1330-20-7		U	5	*	ug/Kg	10	10
o Xylene	95-47-6		U	5	*	ug/Kg	5	5
Toluene	108-88-3		U	5	*	ug/Kg	5	5
TVH C6 to C10	TVH		U	5	*	mg/Kg	0.3	0.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	95.2		5	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	97.2		5	*	%	70	130

Antler Energy

Project ID:

Sample ID: PTASYNski-X NORTHSIDE PIT

ACZ Sample ID: **L37155-03**

Date Sampled: 05/15/17 11:48

Date Received: 05/15/17

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG423260**

Analyst: rgt

Extract Date: 05/17/17 13:32

Analysis Date: 05/19/17 14:12

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		36		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	73.6		66.7	*	%	70	130

Antler Energy

Project ID:

Sample ID: PTASYNski-X NORTHSIDE PIT

ACZ Sample ID: **L37155-03**

Date Sampled: 05/15/17 11:48

Date Received: 05/15/17

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: **WG424016**

Analyst: itm

Extract Date: 05/24/17 10:42

Analysis Date: 06/01/17 15:33

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	66.7	*	ug/Kg	100	700
Acenaphthene	83-32-9		U	66.7	*	ug/Kg	100	700
Acenaphthylene	208-96-8		U	66.7	*	ug/Kg	100	700
Anthracene	120-12-7		U	66.7	*	ug/Kg	100	700
Benzo(a)anthracene	56-55-3		U	66.7	*	ug/Kg	100	700
Benzo(a)pyrene	50-32-8		U	66.7	*	ug/Kg	100	700
Benzo(b)fluoranthene	205-99-2		U	66.7	*	ug/Kg	100	700
Benzo(g,h,i)perylene	191-24-2		U	66.7	*	ug/Kg	100	700
Benzo(k)fluoranthene	207-08-9		U	66.7	*	ug/Kg	100	700
Chrysene	218-01-9		U	66.7	*	ug/Kg	100	700
Dibenzo(a,h)anthracene	53-70-3		U	66.7	*	ug/Kg	100	700
Fluoranthene	206-44-0		U	66.7	*	ug/Kg	100	700
Fluorene	86-73-7		U	66.7	*	ug/Kg	100	700
Indeno(1,2,3-cd)pyrene	193-39-5		U	66.7	*	ug/Kg	100	700
Naphthalene	91-20-3		U	66.7	*	ug/Kg	100	700
Phenanthrene	85-01-8		U	66.7	*	ug/Kg	100	700
Pyrene	129-00-0		U	66.7	*	ug/Kg	100	700
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	84		66.7	*	%	45	105
Nitrobenzene-d5	4165-60-0	65.7		66.7	*	%	35	100
Terphenyl-d14	1718-51-0	102.5		66.7	*	%	30	125

Antler Energy

Project ID:
 Sample ID: PTASYNski-X SOUTHSIDE PIT

ACZ Sample ID: **L37155-04**
 Date Sampled: 05/15/17 11:55
 Date Received: 05/15/17
 Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**
 Extract Method: **5035A**

Workgroup: WG423666

Analyst: jel
 Extract Date: 05/24/17 22:02
 Analysis Date: 05/24/17 22:02

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	5	*	ug/Kg	5	5
Ethylbenzene	100-41-4		U	5	*	ug/Kg	5	5
m p Xylene	1330-20-7		U	5	*	ug/Kg	10	10
o Xylene	95-47-6		U	5	*	ug/Kg	5	5
Toluene	108-88-3		U	5	*	ug/Kg	5	5
TVH C6 to C10	TVH		U	5	*	mg/Kg	0.3	0.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	91.7		5	*	%	70	130
Bromofluorobenzene (TVH)	460-00 4	93.6		5	*	%	70	130

Antler Energy

Project ID:

Sample ID: PTASYNski-X SOUTHSIDE PIT

ACZ Sample ID: **L37155-04**

Date Sampled: 05/15/17 11:55

Date Received: 05/15/17

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG423260**

Analyst: rgt

Extract Date: 05/17/17 13:36

Analysis Date: 05/19/17 14:35

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		140		133	*	mg/Kg	10	70
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	78.2		133	*	%	70	130

Antler Energy

Project ID:

Sample ID: PTASYNski-X SOUTHSIDE PIT

ACZ Sample ID: **L37155-04**

Date Sampled: 05/15/17 11:55

Date Received: 05/15/17

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: **WG424016**

Analyst: itm

Extract Date: 05/24/17 10:48

Analysis Date: 06/01/17 16:07

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	133	*	ug/Kg	300	1000
Acenaphthene	83-32-9		U	133	*	ug/Kg	300	1000
Acenaphthylene	208-96-8		U	133	*	ug/Kg	300	1000
Anthracene	120-12-7		U	133	*	ug/Kg	300	1000
Benzo(a)anthracene	56-55-3		U	133	*	ug/Kg	300	1000
Benzo(a)pyrene	50-32-8		U	133	*	ug/Kg	300	1000
Benzo(b)fluoranthene	205-99-2		U	133	*	ug/Kg	300	1000
Benzo(g,h,i)perylene	191-24-2		U	133	*	ug/Kg	300	1000
Benzo(k)fluoranthene	207-08-9		U	133	*	ug/Kg	300	1000
Chrysene	218-01-9		U	133	*	ug/Kg	300	1000
Dibenzo(a,h)anthracene	53-70-3		U	133	*	ug/Kg	300	1000
Fluoranthene	206-44-0		U	133	*	ug/Kg	300	1000
Fluorene	86-73-7		U	133	*	ug/Kg	300	1000
Indeno(1,2,3-cd)pyrene	193-39-5		U	133	*	ug/Kg	300	1000
Naphthalene	91-20-3		U	133	*	ug/Kg	300	1000
Phenanthrene	85-01-8		U	133	*	ug/Kg	300	1000
Pyrene	129-00-0		U	133	*	ug/Kg	300	1000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	85.4		133	*	%	45	105
Nitrobenzene-d5	4165-60-0	72.5		133	*	%	35	100
Terphenyl-d14	1718-51-0	99.9		133	*	%	30	125


Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Antler Energy

ACZ Project ID: **L37155**

BTEX/Gasoline Range Organics (C6-C10)

M8021B/8015D GC/PID/FID

WG423666

AS	Sample ID: L37155-04AS		PCN/SCN: B170516-5-ICV				Analyzed:		05/24/17 22:32	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	125.5	U	130	ug/Kg	104.0	70	130			
ETHYLBENZENE	125	U	63.4	ug/Kg	51.0	70	130			MC
M P XYLENE	251.8	U	204	ug/Kg	81.0	70	130			
O XYLENE	251.3	U	263.9	ug/Kg	105.0	70	130			
TOLUENE	376.5	U	140	ug/Kg	37.0	70	130			MC
TVH C6 TO C10	2.3	U	1.86	mg/Kg	82.0	70	130			
BROMOFLUOROBENZENE (surr)				%	91.9	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	92.5	70	130			

ASD	Sample ID: L37155-04ASD		PCN/SCN: B170516-5-ICV				Analyzed:		05/24/17 23:02	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	125.5	U	127.5	ug/Kg	102.0	70	130	2	20	
ETHYLBENZENE	125	U	61.2	ug/Kg	49.0	70	130	4	20	MC
M P XYLENE	251.8	U	199	ug/Kg	79.0	70	130	2	20	
O XYLENE	251.3	U	265.6	ug/Kg	106.0	70	130	1	20	
TOLUENE	376.5	U	131.1	ug/Kg	35.0	70	130	7	20	MC
TVH C6 TO C10	2.3	U	1.83	mg/Kg	81.0	70	130	2	20	
BROMOFLUOROBENZENE (surr)				%	94.6	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	96.4	70	130			

LCSS	Sample ID: WG423666LCSS		PCN/SCN: B170516-5-ICV				Analyzed:		05/24/17 17:30	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		30.4	ug/Kg	121.0	70	130			
ETHYLBENZENE	25		28.5	ug/Kg	114.0	70	130			
M P XYLENE	50.4		62.6	ug/Kg	124.0	70	130			
O XYLENE	50.3		62.8	ug/Kg	125.0	70	130			
TOLUENE	75.3		84	ug/Kg	112.0	70	130			
TVH C6 TO C10	.5		.566	mg/Kg	125.0	70	130			
BROMOFLUOROBENZENE (surr)				%	103.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	107.2	70	130			

LCSSD	Sample ID: WG423666LCSSD		PCN/SCN: B170516-5-ICV				Analyzed:		05/24/17 18:00	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		29.5	ug/Kg	118.0	70	130	3	20	
ETHYLBENZENE	25		27.2	ug/Kg	109.0	70	130	5	20	
M P XYLENE	50.4		59.8	ug/Kg	119.0	70	130	5	20	
O XYLENE	50.3		60.6	ug/Kg	121.0	70	130	4	20	
TOLUENE	75.3		81.4	ug/Kg	108.0	70	130	3	20	
TVH C6 TO C10	.5		.55	mg/Kg	122.0	70	130	3	20	
BROMOFLUOROBENZENE (surr)				%	101.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	102.7	70	130			

Antler Energy

ACZ Project ID: **L37155**

PBS		Sample ID: WG423666PBS						Analyzed: 05/24/17 20:04		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE			U	ug/Kg		-1	1			
ETHYLBENZENE			U	ug/Kg		-1	1			
M P XYLENE			U	ug/Kg		-2	2			
O XYLENE			U	ug/Kg		-1	1			
TOLUENE			U	ug/Kg		-1	1			
TVH C6 TO C10			U	mg/Kg		-.05	.05			
BROMOFLUOROBENZENE (surr)				%	101.1	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	104.4	70	130			

Antler Energy

ACZ Project ID: **L37155**

Diesel Range Organics (C10-C28)

M8015D GC/FID

WG423260

MS	Sample ID: L37155-01MS		PCN/SCN: OPTPH170515-1				Analyzed:		05/19/17 13:02	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2500.1	620	739	mg/Kg	71.0	70	130			
OTP (surr)				%	92.4	70	130			

DUP		Sample ID: L37155-02DUP						Analyzed: 05/19/17 13:49		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28		68	72.2	mg/Kg				6	20	RA
OTP (surr)				%	80.1	70	130			

LCSS		Sample ID: WG422990LCSS		PCN/SCN: OPTPH170515-1			Analyzed: 05/19/17 11:52			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2500.1		74.3	mg/Kg	89.0	70	130			
OTP (surr)				%	85.2	70	130			

LCSSD	Sample ID: WG422990LCSSD		PCN/SCN: OPTPH170515-1				Analyzed: 05/19/17 12:15			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2500.1		72.4	mg/Kg	87.0	70	130	3	20	
OTP (surr)				%	81.3	70	130			

PBS		Sample ID: WG422990PBS						Analyzed: 05/19/17 11:28		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28			U	mg/Kg		-20	20			
OTP (surr)				%	67.9	70	130			S13

Antler Energy

ACZ Project ID: **L37155**

Polynuclear Aromatic Hydrocarbons GC/MS

M8270C GC/MS

WG424016

MS	Sample ID: L37155-01MS		PCN/SCN: OPBNA170523-1				Analyzed:		06/01/17 13:53	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007	U	2600	ug/Kg	78.0	45	110			
PYRENE	50003	U	2830	ug/Kg	85.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	87.6	35	125			
2-FLUOROBIPHENYL (surr)				%	82.3	45	105			
2-FLUOROPHENOL (surr)				%	73.6	35	105			
NITROBENZENE-D5 (surr)				%	73.8	35	100			
PHENOL-D6 (surr)				%	82.0	40	100			
TERPHENYL-D14 (surr)				%	93.0	30	125			

DUP	Sample ID: L37155-02DUP						Analyzed:		06/01/17 15:00	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
2-METHYLNAPHTHALENE		U	U	ug/Kg				0	20	RA
ACENAPHTHENE		U	U	ug/Kg				0	20	RA
ACENAPHTHYLENE		U	U	ug/Kg				0	20	RA
ANTHRACENE		U	U	ug/Kg				0	20	RA
BENZO(A)ANTHRACENE		U	U	ug/Kg				0	20	RA
BENZO(A)PYRENE		U	U	ug/Kg				0	20	RA
BENZO(B)FLUORANTHENE		U	U	ug/Kg				0	20	RA
BENZO(G,H,I)PERYLENE		U	U	ug/Kg				0	20	RA
BENZO(K)FLUORANTHENE		U	U	ug/Kg				0	20	RA
CHRYSENE		U	U	ug/Kg				0	20	RA
DIBENZO(A,H)ANTHRACENE		U	U	ug/Kg				0	20	RA
FLUORANTHENE		U	U	ug/Kg				0	20	RA
FLUORENE		U	U	ug/Kg				0	20	RA
INDENO(1,2,3-CD)PYRENE		U	U	ug/Kg				0	20	RA
NAPHTHALENE		U	U	ug/Kg				0	20	RA
PHENANTHRENE		U	U	ug/Kg				0	20	RA
PYRENE		U	U	ug/Kg				0	20	RA
2-FLUOROBIPHENYL (surr)				%	93.9	45	105			
NITROBENZENE-D5 (surr)				%	71.2	35	100			
TERPHENYL-D14 (surr)				%	108.1	30	125			

LCSS	Sample ID: WG423364LCSS		PCN/SCN: OPBNA170523-1				Analyzed:		06/01/17 12:13	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1276	ug/Kg	77.0	45	110			
PYRENE	50003		1513	ug/Kg	91.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	78.0	35	125			
2-FLUOROBIPHENYL (surr)				%	75.7	45	105			
2-FLUOROPHENOL (surr)				%	77.1	35	105			
NITROBENZENE-D5 (surr)				%	75.8	35	100			
PHENOL-D6 (surr)				%	77.6	40	100			
TERPHENYL-D14 (surr)				%	93.0	30	125			

Antler Energy

ACZ Project ID: **L37155**

LCSSD		Sample ID: WG423364LCSSD		PCN/SCN: OPBNA170523-1			Analyzed: 06/01/17 12:46			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1324	ug/Kg	79.0	45	110	4	20	
PYRENE	50003		1589	ug/Kg	95.0	45	125	5	20	
2,4,6-TRIBROMOPHENOL (surr)				%	87.3	35	125			
2-FLUOROBIPHENYL (surr)				%	80.5	45	105			
2-FLUOROPHENOL (surr)				%	77.5	35	105			
NITROBENZENE-D5 (surr)				%	75.6	35	100			
PHENOL-D6 (surr)				%	81.5	40	100			
TERPHENYL-D14 (surr)				%	99.6	30	125			

PBS		Sample ID: WG423364PBS					Analyzed: 06/01/17 11:40			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
2-METHYLNAPHTHALENE			U	ug/Kg		-300	300			
ACENAPHTHENE			U	ug/Kg		-300	300			
ACENAPHTHYLENE			U	ug/Kg		-300	300			
ANTHRACENE			U	ug/Kg		-300	300			
BENZO(A)ANTHRACENE			U	ug/Kg		-300	300			
BENZO(A)PYRENE			U	ug/Kg		-300	300			
BENZO(B)FLUORANTHENE			U	ug/Kg		-300	300			
BENZO(G,H,I)PERYLENE			U	ug/Kg		-300	300			
BENZO(K)FLUORANTHENE			U	ug/Kg		-300	300			
CHRYSENE			U	ug/Kg		-300	300			
DIBENZO(A,H)ANTHRACENE			U	ug/Kg		-300	300			
FLUORANTHENE			U	ug/Kg		-300	300			
FLUORENE			U	ug/Kg		-300	300			
INDENO(1,2,3-CD)PYRENE			U	ug/Kg		-300	300			
NAPHTHALENE			U	ug/Kg		-300	300			
PHENANTHRENE			U	ug/Kg		-300	300			
PYRENE			U	ug/Kg		-300	300			
2,4,6-TRIBROMOPHENOL (surr)				%	47.8	35	125			
2-FLUOROBIPHENYL (surr)				%	71.8	45	105			
2-FLUOROPHENOL (surr)				%	69.7	35	105			
NITROBENZENE-D5 (surr)				%	69.7	35	100			
PHENOL-D6 (surr)				%	72.2	40	100			
TERPHENYL-D14 (surr)				%	94.9	30	125			

ACZ Project ID: **L37155**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L37155-01	WG423666	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.
		Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
	WG423260	TVH C6 to C10	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
		All Compounds	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG424016	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.
			M8270C GC/MS	Q6	Sample was received above recommended temperature.
			M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L37155-02	WG423666	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.
		Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.

REPAD.15.06.05.01

ACZ Project ID: **L37155**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION		
L37155-03	WG423260	*All Compounds*	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
			TVH C6 to C10	D1	Sample required dilution due to matrix.		
			M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.		
		All Compounds	M8015D GC/FID	Q6	Sample was received above recommended temperature.		
			TPH C10 to C28	M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).	
			All Compounds	M8270C GC/MS	D1	Sample required dilution due to matrix.	
		M8270C GC/MS		Q6	Sample was received above recommended temperature.		
		M8270C GC/MS		RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).		
		WG423666	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.	
	Benzene			M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.	
	M8021B/8015D GC/PID/FID			ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
	Ethylbenzene		M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.		
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.		
	m p Xylene		M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
			M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.		
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
	o Xylene		M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.		
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
	Toluene		M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.		
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.		
	WG423260		*All Compounds*	M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.	
				TVH C6 to C10	D1	Sample required dilution due to matrix.	
				M8015D GC/FID	Q6	Sample was received above recommended temperature.	
			All Compounds	TPH C10 to C28	M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
				All Compounds	M8270C GC/MS	D1	Sample required dilution due to matrix.
	M8270C GC/MS				Q6	Sample was received above recommended temperature.	
	M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).				
L37155-04	WG423666	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.		
			Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.	
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.		
	Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.			
		M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.			
		M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ			

REPAD.15.06.05.01

ACZ Project ID: **L37155**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
		m p Xylene	M8021B/8015D GC/PID/FID	D1	does not have a closed-system purge and trap as described in method 5035. Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	MC	Recovery for matrix spike and matrix spike duplicate are outside of acceptance limits; recovery for the method control sample was acceptable.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
WG423260		*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
WG424016		*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.
			M8270C GC/MS	Q6	Sample was received above recommended temperature.
			M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Antler Energy

ACZ Project ID: **L37155**

Soil Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80

Antler Energy

ACZ Project ID: L37155

Date Received: 05/15/2017 16:26

Received By:

Date Printed: 5/16/2017

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate? The 'sampled by' field on the Chain of Custody was not completed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4515	15.9	<=6.0	13	Yes

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Antler Energy

ACZ Project ID: L37155

Date Received: 05/15/2017 16:26

Received By:

Date Printed: 5/16/2017

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Account: ANTLER/Antler Energy

Bottle Order: BO36386

Bill to Account: Bill to ACZ

Ship Date Requested: 10/25/2016

Request Placed at: 10/24/2016 15:02

Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	1	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	16	LABELS	Sample Labels	ACZ supplied labels for sample containers

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	4515	Large	14	1Z8101300375118921

Quote number: 910-1-15-DAY-W-CR6

Sample Quantity: 4

15 Day TAT. Soil Samples- COGCC Table 910-1 including Hexa
valent Chromium
ACZ is responsible for necessary sample filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	1 GAL ZIPLOCK	1 GAL	Raw	Fill bag with a homogenous sample.
	1	SJ INORG	8 OZ	Raw	Soil analyses - Completely fill jar with a homogenous sample.
	1	SJ ORG	8 OZ	Raw	Soil analyses - Completely fill jar with a homogenous sample.
	1	SJ ORG VQA	4 OZ	Raw	Soil analyses - Completely fill jar with a homogenous sample.

Prepared By/Date:

mpg