

July 18, 2016

Report to:

Richard Miller
Gadeco, LLC
3600 S Yosemite Ste 800
Denver, CO 80237

Bill to:

Richard Miller
Gadeco, LLC
3600 S Yosemite Ste 800
Denver, CO 80237

cc: Carl Colby

Project ID:

ACZ Project ID: L31369

Richard Miller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 30, 2016. This project has been assigned to ACZ's project number, L31369. 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 L31369. 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 August 17, 2016. 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.



Scott Habermehl has reviewed
and approved this report.



Gadeco, LLC

Project ID:

Sample ID: #1

ACZ Sample ID: **L31369-01**

Date Sampled: 06/29/16 11:30

Date Received: 06/30/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	525	4.8			mg/Kg	0.1	0.5	07/11/16 18:55	msh
Barium, total (3050)	M6010B ICP	105	141		*	mg/Kg	0.3	2	07/07/16 15:38	aeb
Boron, total (3050)	M6010B ICP	105	5		*	mg/Kg	1	5	07/07/16 15:38	aeb
Cadmium, total (3050)	M6010B ICP	105		U		mg/Kg	0.5	2	07/07/16 15:38	aeb
Calcium, soluble (Sat. Paste)	M6010B ICP	1	14.7		*	meq/L	0.005	0.025	07/14/16 15:10	aeb
Chromium, total (3050)	M6010B ICP	105	22		*	mg/Kg	1	5	07/07/16 15:38	aeb
Copper, total (3050)	M6010B ICP	105	21		*	mg/Kg	1	5	07/07/16 15:38	aeb
Lead, total (3050)	M6010B ICP	105	15	B		mg/Kg	3	20	07/07/16 15:38	aeb
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	3.66		*	meq/L	0.017	0.082	07/14/16 15:10	aeb
Mercury by Direct Combustion AA	M7473	1	31.6		*	ng/g	1.88	9.4	07/13/16 11:46	pta
Nickel, total (3050)	M6010B ICP	105	16.2		*	mg/Kg	0.8	4	07/07/16 15:38	aeb
Selenium, total (3050)	M6010B ICP	105		U		mg/Kg	5	30	07/07/16 15:38	aeb
Silver, total (3050)	M6010B ICP	105		U		mg/Kg	1	3	07/07/16 15:38	aeb
Sodium Adsorption Ratio	Calculation		1.3						07/18/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	3.82		*	meq/L	0.0087	0.0435	07/14/16 15:10	aeb
Zinc, total (3050)	M6010B ICP	105	70			mg/Kg	1	5	07/07/16 15:38	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	1.79		*	mmhos/cm	0.001	0.01	07/07/16 0:00	rbt
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
Temperature		1	22.5		*	C	0.1	0.1	07/07/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
pH		1	7.5		*	units	0.1	0.1	07/07/16 0:00	rbt
Solids, Percent	D2216-80	1	76		*	%	0.1	0.5	07/01/16 13:00	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								07/01/16 12:17	rbt
Digestion - Hot Plate	M3050B ICP								07/06/16 15:33	bcc
Digestion - Hot Plate	M3050B ICP-MS								07/06/16 15:33	bcc
Saturated Paste Extraction	USDA No. 60 (2)								07/06/16 15:00	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								07/06/16 3:37	rbt

Gadeco, LLC

Project ID:

Sample ID: #2

ACZ Sample ID: **L31369-02**

Date Sampled: 06/29/16 12:00

Date Received: 06/30/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	5			mg/Kg	0.1	0.5	07/11/16 18:58	msh
Barium, total (3050)	M6010B ICP	102	120		*	mg/Kg	0.3	2	07/07/16 15:42	aeb
Boron, total (3050)	M6010B ICP	102	5		*	mg/Kg	1	5	07/07/16 15:42	aeb
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	07/07/16 15:42	aeb
Calcium, soluble (Sat. Paste)	M6010B ICP	5	44.1		*	meq/L	0.025	0.125	07/14/16 15:26	aeb
Chromium, total (3050)	M6010B ICP	102	20		*	mg/Kg	1	5	07/07/16 15:42	aeb
Copper, total (3050)	M6010B ICP	102	18		*	mg/Kg	1	5	07/07/16 15:42	aeb
Lead, total (3050)	M6010B ICP	102	13	B		mg/Kg	3	20	07/07/16 15:42	aeb
Magnesium, soluble (Sat. Paste)	M6010B ICP	5	14.4		*	meq/L	0.082	0.411	07/14/16 15:26	aeb
Mercury by Direct Combustion AA	M7473	1	18.3		*	ng/g	2.17	10.85	07/13/16 12:20	pta
Nickel, total (3050)	M6010B ICP	102	14.3		*	mg/Kg	0.8	4	07/07/16 15:42	aeb
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	07/07/16 15:42	aeb
Silver, total (3050)	M6010B ICP	102		U		mg/Kg	1	3	07/07/16 15:42	aeb
Sodium Adsorption Ratio	Calculation		1.7						07/18/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	5	9.03		*	meq/L	0.0435	0.218	07/14/16 15:26	aeb
Zinc, total (3050)	M6010B ICP	102	63			mg/Kg	1	5	07/07/16 15:42	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	9.98		*	mmhos/cm	0.001	0.01	07/07/16 0:00	rbt
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
Temperature		1	22.5		*	C	0.1	0.1	07/07/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
pH		1	7.3		*	units	0.1	0.1	07/07/16 0:00	rbt
Solids, Percent	D2216-80	1	84.5		*	%	0.1	0.5	07/01/16 13:00	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								07/01/16 12:21	rbt
Digestion - Hot Plate	M3050B ICP-MS								07/06/16 15:52	bcc
Digestion - Hot Plate	M3050B ICP								07/06/16 15:52	bcc
Saturated Paste Extraction	USDA No. 60 (2)								07/06/16 15:07	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								07/06/16 5:28	rbt

Gadeco, LLC

Project ID:

Sample ID: #04

ACZ Sample ID: **L31369-03**

Date Sampled: 06/29/16 12:34

Date Received: 06/30/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	5			mg/Kg	0.1	0.5	07/11/16 19:00	msh
Barium, total (3050)	M6010B ICP	102	232		*	mg/Kg	0.3	2	07/07/16 15:45	aeb
Boron, total (3050)	M6010B ICP	102	5		*	mg/Kg	1	5	07/07/16 15:45	aeb
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	07/07/16 15:45	aeb
Calcium, soluble (Sat. Paste)	M6010B ICP	1	1.04		*	meq/L	0.005	0.025	07/14/16 15:19	aeb
Chromium, total (3050)	M6010B ICP	102	28		*	mg/Kg	1	5	07/07/16 15:45	aeb
Copper, total (3050)	M6010B ICP	102	21		*	mg/Kg	1	5	07/07/16 15:45	aeb
Lead, total (3050)	M6010B ICP	102	40			mg/Kg	3	20	07/07/16 15:45	aeb
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	0.219		*	meq/L	0.017	0.082	07/14/16 15:19	aeb
Mercury by Direct Combustion AA	M7473	1	40.7		*	ng/g	1.76	8.8	07/13/16 12:26	pta
Nickel, total (3050)	M6010B ICP	102	15.4		*	mg/Kg	0.8	4	07/07/16 15:45	aeb
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	07/07/16 15:45	aeb
Silver, total (3050)	M6010B ICP	102		U		mg/Kg	1	3	07/07/16 15:45	aeb
Sodium Adsorption Ratio	Calculation		4.7						07/18/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	3.75		*	meq/L	0.0087	0.0435	07/14/16 15:19	aeb
Zinc, total (3050)	M6010B ICP	102	81			mg/Kg	1	5	07/07/16 15:45	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.722		*	mmhos/cm	0.001	0.01	07/07/16 0:00	rbt
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
Temperature		1	22.7		*	C	0.1	0.1	07/07/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
pH		1	7.9		*	units	0.1	0.1	07/07/16 0:00	rbt
Solids, Percent	D2216-80	1	85.9		*	%	0.1	0.5	07/01/16 13:00	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								07/01/16 12:25	rbt
Digestion - Hot Plate	M3050B ICP								07/06/16 16:11	bcc
Digestion - Hot Plate	M3050B ICP-MS								07/06/16 16:11	bcc
Saturated Paste Extraction	USDA No. 60 (2)								07/06/16 15:11	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								07/06/16 7:19	rbt

Gadeco, LLC

Project ID:

Sample ID: #03

ACZ Sample ID: **L31369-04**

Date Sampled: 06/29/16 12:58

Date Received: 06/30/16

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	510	3.6			mg/Kg	0.1	0.5	07/11/16 19:02	msh
Barium, total (3050)	M6010B ICP	102	106		*	mg/Kg	0.3	2	07/07/16 15:48	aeb
Boron, total (3050)	M6010B ICP	102	5		*	mg/Kg	1	5	07/07/16 15:48	aeb
Cadmium, total (3050)	M6010B ICP	102		U		mg/Kg	0.5	2	07/07/16 15:48	aeb
Calcium, soluble (Sat. Paste)	M6010B ICP	1	4.70		*	meq/L	0.005	0.025	07/14/16 15:22	aeb
Chromium, total (3050)	M6010B ICP	102	18		*	mg/Kg	1	5	07/07/16 15:48	aeb
Copper, total (3050)	M6010B ICP	102	16		*	mg/Kg	1	5	07/07/16 15:48	aeb
Lead, total (3050)	M6010B ICP	102	13	B		mg/Kg	3	20	07/07/16 15:48	aeb
Magnesium, soluble (Sat. Paste)	M6010B ICP	1	0.978		*	meq/L	0.017	0.082	07/14/16 15:22	aeb
Mercury by Direct Combustion AA	M7473	1	7.22	B	*	ng/g	1.98	9.9	07/13/16 12:33	pta
Nickel, total (3050)	M6010B ICP	102	12.7		*	mg/Kg	0.8	4	07/07/16 15:48	aeb
Selenium, total (3050)	M6010B ICP	102		U		mg/Kg	5	30	07/07/16 15:48	aeb
Silver, total (3050)	M6010B ICP	102		U		mg/Kg	1	3	07/07/16 15:48	aeb
Sodium Adsorption Ratio	Calculation		8.5						07/18/16 0:00	calc
Sodium, soluble (Sat. Paste)	M6010B ICP	1	14.4		*	meq/L	0.0087	0.0435	07/14/16 15:22	aeb
Zinc, total (3050)	M6010B ICP	102	52			mg/Kg	1	5	07/07/16 15:48	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	2.56		*	mmhos/cm	0.001	0.01	07/07/16 0:00	rbt
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
Temperature		1	22.8		*	C	0.1	0.1	07/07/16 0:00	rbt
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/07/16 0:00	rbt
pH		1	8.0		*	units	0.1	0.1	07/07/16 0:00	rbt
Solids, Percent	D2216-80	1	90.1		*	%	0.1	0.5	07/01/16 13:00	rbt

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								07/01/16 12:29	rbt
Digestion - Hot Plate	M3050B ICP								07/06/16 16:30	bcc
Digestion - Hot Plate	M3050B ICP-MS								07/06/16 16:30	bcc
Saturated Paste Extraction	USDA No. 60 (2)								07/06/16 15:15	rbt
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								07/06/16 9:09	rbt


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>

Gadeco, LLC

ACZ Project ID: **L31369**

Arsenic, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG406051													
WG406051ICV	ICV	07/11/16 18:05	MS160601-2	.05		.05177	mg/L	104	90	110			
WG406051ICB	ICB	07/11/16 18:07				U	mg/L		-0.0006	0.0006			
WG405730PBS	PBS	07/11/16 18:17				.14	mg/Kg		-0.3	0.3			
WG405730LCSS1	LCSS	07/11/16 18:19	PCN49585	139		139.1	mg/Kg		109	169			
WG405730LCSSD1	LCSSD	07/11/16 18:21	PCN49585	139		146.8	mg/Kg		109	169	5	20	
L31285-05MS	MS	07/11/16 18:44	MS160706-2	27.3045	22.7	49.27	mg/Kg	97	75	125			
L31285-05MSD	MSD	07/11/16 18:46	MS160706-2	27.3045	22.7	50.49	mg/Kg	102	75	125	2	20	

Barium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		1.988	mg/L	99	90	110			
WG405855ICB	ICB	07/07/16 14:45				.0041	mg/L		-0.009	0.009			
WG405730PBS	PBS	07/07/16 14:58				.39	mg/Kg		-0.9	0.9			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	203		193	mg/Kg		168	239			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	203		199.4	mg/Kg		168	239	3	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.5515	150	212.8	mg/Kg	122	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.5515	150	218.46	mg/Kg	133	75	125	3	20	MA

Boron, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		2.054	mg/L	103	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.03	0.03			
WG405730PBS	PBS	07/07/16 14:58				1.3	mg/Kg		-3	3			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	133		131.9	mg/Kg		96.4	170			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	133		138.7	mg/Kg		96.4	170	5	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.5515	10	64.9	mg/Kg	106	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.5515	10	64.8	mg/Kg	106	75	125	0	20	

Cadmium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		1.969	mg/L	98	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.015	0.015			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-1.5	1.5			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	96		86.72	mg/Kg		78.4	113			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	96		93.85	mg/Kg		78.4	113	8	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.706	U	43.81	mg/Kg	85	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.706	U	44.26	mg/Kg	86	75	125	1	20	

Calcium, soluble (Sat. Paste)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG406338													
WG406338ICV	ICV	07/14/16 14:54	II160624-1	100		100	mg/L	100	90	110			
WG406338ICB	ICB	07/14/16 14:57				U	mg/L		-0.3	0.3			
L31369-01DUP	DUP	07/14/16 15:13			14.7	8.95	meq/L				49	20	RD

Gadeco, LLC

ACZ Project ID: **L31369**

Chromium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		1.968	mg/L	98	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.03	0.03			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-3	3			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	136		132.9	mg/Kg		107	164			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	136		139.4	mg/Kg		107	164	5	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.5515	20	70.9	mg/Kg	99	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.5515	20	70.8	mg/Kg	99	75	125	0	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405838													
L31369-01DUP	DUP	07/07/16 9:48			1.79	1.92	mmhos/cm				7	20	

Copper, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		2.005	mg/L	100	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.03	0.03			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-3	3			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	168		160.6	mg/Kg		137	199			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	168		170.3	mg/Kg		137	199	6	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.603	17	59.8	mg/Kg	83	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.603	17	60.2	mg/Kg	84	75	125	1	20	

Lead, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	4		3.873	mg/L	97	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.09	0.09			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-9	9			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	133		128.7	mg/Kg		109	158			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	133		133.1	mg/Kg		109	158	3	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	103.103	14	102.3	mg/Kg	86	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	103.103	14	103.5	mg/Kg	87	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
WG406338													
WG406338ICV	ICV	07/14/16 14:54	II160624-1	100		100	mg/L	100	90	110			
WG406338ICB	ICB	07/14/16 14:57				U	mg/L		-0.6	0.6			
L31369-01DUP	DUP	07/14/16 15:13			3.66	2.27	meq/L				47	20	RD

Gadeco, LLC

ACZ Project ID: **L31369**

Mercury by Direct Combustion AA

M7473

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG404769													
WG404769ICV1	ICV	06/20/16 11:20	HG160616-1	100		109	ng/g	109	90	110			
WG404769ICV2	ICV	06/20/16 11:32	HG160616-2	100		103	ng/g	103	90	110			
WG404769ICV3	ICV	06/20/16 11:41	HG160616-3	1000		1060	ng/g	106	90	110			
WG404769ICV4	ICV	06/20/16 11:51	HG160616-3	1000		1030	ng/g	103	90	110			
WG406192													
WG406192ICV1	ICV	07/13/16 9:19	HG160713-1	100		101	ng/g	101	90	110			
WG406192ICV2	ICV	07/13/16 9:38	HG160713-2	100		91.7	ng/g	92	90	110			
WG406192ICV3	ICV	07/13/16 9:59	HG160713-3	1000		904	ng/g	90	90	110			
WG406192PBS	PBS	07/13/16 10:58				U	ng/g		-6	6			
WG406192LCSS	LCSS	07/13/16 11:05	PCN50109	80		78.1	ng/g		80	120			
WG406192LCSSD	LCSSD	07/13/16 11:12	PCN50109	80		81.2	ng/g		80	120	4	20	
L31425-14DUP	DUP	07/13/16 13:51			240	216	ng/g				11	20	
L31425-14MS	MS	07/13/16 13:58	PCN50109				ng/g	56	80	120			M3

Nickel, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		2.034	mg/L	102	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.024	0.024			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-2.4	2.4			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	123		117.6	mg/Kg		101	146			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	123		124.7	mg/Kg		101	146	6	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.603	21.2	64.86	mg/Kg	85	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.603	21.2	65.38	mg/Kg	86	75	125	1	20	

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
WG405838													
L31369-01DUP	DUP	07/07/16 9:48			7.5	7.5	units				0	20	
WG405838ICV	ICV	07/07/16 10:59	PCN48828	4		3.9	units	98	3.9	4.1			

Selenium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	4		3.993	mg/L	100	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.15	0.15			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-15	15			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	177		173.4	mg/Kg		137	217			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	177		182.2	mg/Kg		137	217	5	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	102.897	U	89.7	mg/Kg	87	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	102.897	U	88.9	mg/Kg	86	75	125	1	20	

Gadeco, LLC

ACZ Project ID: **L31369**

Silver, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	1.001		1.004	mg/L	100	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.03	0.03			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-3	3			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	40.2		38.2	mg/Kg		30.1	50.4			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	40.2		39.4	mg/Kg		30.1	50.4	3	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.6545	U	48	mg/Kg	93	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.6545	U	48.4	mg/Kg	94	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
WG406338													
WG406338ICV	ICV	07/14/16 14:54	II160624-1	100		98.9	mg/L	99	90	110			
WG406338ICB	ICB	07/14/16 14:57				U	mg/L		-0.6	0.6			
L31369-01DUP	DUP	07/14/16 15:13			3.82	2.5	meq/L				42	20	RD

Solids, Percent

D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405614													
L31369-04DUP	DUP	07/01/16 13:00			90.1	90.27	%				0	20	
WG405614PBS	PBS	07/01/16 13:00				U	%		-0.1	0.1			

Zinc, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG405855													
WG405855ICV	ICV	07/07/16 14:42	II160614-6	2		2	mg/L	100	90	110			
WG405855ICB	ICB	07/07/16 14:45				U	mg/L		-0.03	0.03			
WG405730PBS	PBS	07/07/16 14:58				U	mg/Kg		-3	3			
WG405730LCSS1	LCSS	07/07/16 15:01	PCN49585	189		185.2	mg/Kg		154	224			
WG405730LCSSD1	LCSSD	07/07/16 15:04	PCN49585	189		194.2	mg/Kg		154	224	5	20	
L31330-02MS	MS	07/07/16 15:26	II160614-2	51.4485	47	93.8	mg/Kg	91	75	125			
L31330-02MSD	MSD	07/07/16 15:35	II160614-2	51.4485	47	94.9	mg/Kg	93	75	125	1	20	

Gadeco, LLC

ACZ Project ID: **L31369**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L31369-01	WG405855	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Boron, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Calcium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG405855	Chromium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Copper, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG406192	Mercury by Direct Combustion AA	M7473	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG405855	Nickel, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Sodium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
L31369-02	WG405855	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Boron, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Calcium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG405855	Chromium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Copper, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG406192	Mercury by Direct Combustion AA	M7473	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG405855	Nickel, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Sodium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.

Gadeco, LLC

ACZ Project ID: **L31369**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L31369-03	WG405855	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Boron, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Calcium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG405855	Chromium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Copper, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG406192	Mercury by Direct Combustion AA	M7473	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG405855	Nickel, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Sodium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
L31369-04	WG405855	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Boron, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Calcium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG405855	Chromium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Copper, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Magnesium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG406192	Mercury by Direct Combustion AA	M7473	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG405855	Nickel, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG406338	Sodium, soluble (Sat. Paste)	M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.

Gadeco, LLC

Project ID:

Sample ID: #1

ACZ Sample ID: **L31369-01**

Date Sampled: 06/29/16 11:30

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405827

Analyst: mmn

Extract Date: 07/07/16 19:40

Analysis Date: 07/07/16 19:40

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH	0.09		1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	91.5		1	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	91.7		1	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #1

ACZ Sample ID: **L31369-01**

Date Sampled: 06/29/16 11:30

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:16

Analysis Date: 07/07/16 21:47

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		249		66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	97.9		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #1

ACZ Sample ID: **L31369-01**

Date Sampled: 06/29/16 11:30

Date Received: 06/30/16

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: WG405826

Analyst: itm

Extract Date: 07/05/16 15:35

Analysis Date: 07/11/16 23:16

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	68.7		66.7	*	%	45	105
Nitrobenzene-d5	4165-60-0	48.4		66.7	*	%	35	100
Terphenyl-d14	1718-51-0	80.6		66.7	*	%	30	125

Gadeco, LLC

Project ID:

Sample ID: #2

ACZ Sample ID: **L31369-02**

Date Sampled: 06/29/16 12:00

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: **WG405827**

Analyst: mmn

Extract Date: 07/07/16 20:10

Analysis Date: 07/07/16 20:10

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	87.1		1	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	85.8		1	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #2

ACZ Sample ID: **L31369-02**

Date Sampled: 06/29/16 12:00

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: **WG405924**

Analyst: itk

Extract Date: 06/30/16 16:19

Analysis Date: 07/07/16 22:14

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		13	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	94.2		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #2

ACZ Sample ID: **L31369-02**

Date Sampled: 06/29/16 12:00

Date Received: 06/30/16

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: WG405826

Analyst: itm

Extract Date: 07/05/16 15:38

Analysis Date: 07/11/16 23:50

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	77.8		66.7	*	%	45	105
Nitrobenzene-d5	4165-60-0	76.8		66.7	*	%	35	100
Terphenyl-d14	1718-51-0	86.5		66.7	*	%	30	125

Gadeco, LLC

Project ID:

Sample ID: #04

ACZ Sample ID: **L31369-03**

Date Sampled: 06/29/16 12:34

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: **WG405827**

Analyst: mmn

Extract Date: 07/07/16 20:39

Analysis Date: 07/07/16 20:39

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	84.8		5	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	83.5		5	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #04

ACZ Sample ID: **L31369-03**

Date Sampled: 06/29/16 12:34

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG405924

Analyst: itk

Extract Date: 06/30/16 16:22

Analysis Date: 07/08/16 10:57

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		760		133	*	mg/Kg	10	70
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	125.6		133	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #04

ACZ Sample ID: **L31369-03**

Date Sampled: 06/29/16 12:34

Date Received: 06/30/16

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: **WG405826**

Analyst: itm

Extract Date: 07/05/16 15:41

Analysis Date: 07/12/16 0:23

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6	1500	J	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	600	J	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	88.7		267	*	%	45	105
Nitrobenzene-d5	4165-60-0	74.3		267	*	%	35	100
Terphenyl-d14	1718-51-0	96.4		267	*	%	30	125

Gadeco, LLC

Project ID:

Sample ID: #03

ACZ Sample ID: **L31369-04**

Date Sampled: 06/29/16 12:58

Date Received: 06/30/16

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

Analysis Method: **M8021B/8015D GC/PID/FID**

Extract Method: **5035A**

Workgroup: WG405827

Analyst: mmn

Extract Date: 07/07/16 21:39

Analysis Date: 07/07/16 21:39

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4		U	1	*	ug/Kg	1	1
m p Xylene	1330-20-7		U	1	*	ug/Kg	2	2
o Xylene	95-47-6		U	1	*	ug/Kg	1	1
Toluene	108-88-3		U	1	*	ug/Kg	1	1
TVH C6 to C10	TVH		U	1	*	mg/Kg	0.05	0.05
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	86.3		1	*	%	70	130
Bromofluorobenzene (TVH)	460-00-4	85.7		1	*	%	70	130

Gadeco, LLC

Project ID:

Sample ID: #03

ACZ Sample ID: **L31369-04**

Date Sampled: 06/29/16 12:58

Date Received: 06/30/16

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG405924

Analyst: itk

Extract Date: 06/30/16 16:24

Analysis Date: 07/07/16 23:09

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		13	J	66.7	*	mg/Kg	7	30
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	91.7		66.7		%	70	130

Gadeco, LLC

Project ID:

Sample ID: #03

ACZ Sample ID: **L31369-04**

Date Sampled: 06/29/16 12:58

Date Received: 06/30/16

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: WG405826

Analyst: itm

Extract Date: 07/05/16 15:44

Analysis Date: 07/12/16 0:56

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	81.8		66.7	*	%	45	105
Nitrobenzene-d5	4165-60-0	76.6		66.7	*	%	35	100
Terphenyl-d14	1718-51-0	98.3		66.7	*	%	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>

Gadeco, LLC

ACZ Project ID: **L31369**

BTEX/Gasoline Range Organics (C6-C10)

M8021B/8015D GC/PID/FID

WG405827

AS	Sample ID: L31368-05AS		PCN/SCN: B160705-1-CCV				Analyzed:		07/07/16 22:08	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	50	U	46.3	ug/Kg	93.0	70	130			
ETHYLBENZENE	50	U	42.6	ug/Kg	85.0	70	130			
M P XYLENE	100	U	78.7	ug/Kg	79.0	70	130			
O XYLENE	50	U	41.8	ug/Kg	84.0	70	130			
TOLUENE	50	U	44.9	ug/Kg	90.0	70	130			
TVH C6 TO C10	.5	U	.401	mg/Kg	80.0	70	130			
BROMOFLUOROBENZENE (surr)				%	90.3	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	87.8	70	130			

ASD	Sample ID: L31368-05ASD		PCN/SCN: B160705-1-CCV				Analyzed:		07/07/16 22:38	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	50	U	46.3	ug/Kg	93.0	70	130	0	20	
ETHYLBENZENE	50	U	42.6	ug/Kg	85.0	70	130	0	20	
M P XYLENE	100	U	80.9	ug/Kg	81.0	70	130	3	20	
O XYLENE	50	U	41.7	ug/Kg	83.0	70	130	0	20	
TOLUENE	50	U	45.1	ug/Kg	90.0	70	130	0	20	
TVH C6 TO C10	.5	U	.401	mg/Kg	80.0	70	130	0	20	
BROMOFLUOROBENZENE (surr)				%	90.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	88.7	70	130			

LCSS	Sample ID: WG405827LCSS		PCN/SCN: B160705-2-ICV				Analyzed:		07/07/16 10:13	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24	ug/Kg	96.0	70	130			
ETHYLBENZENE	25		24.2	ug/Kg	97.0	70	130			
M P XYLENE	50.4		50.1	ug/Kg	100.0	70	130			
O XYLENE	50.3		48.3	ug/Kg	96.0	70	130			
TOLUENE	75.3		71.5	ug/Kg	95.0	70	130			
TVH C6 TO C10	.5		.411	mg/Kg	91.0	70	130			
BROMOFLUOROBENZENE (surr)				%	102.4	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	102.1	70	130			

LCSSD	Sample ID: WG405827LCSSD		PCN/SCN: B160705-2-ICV				Analyzed:		07/07/16 10:53	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.1	ug/Kg	96.0	70	130	0	20	
ETHYLBENZENE	25		24.4	ug/Kg	98.0	70	130	1	20	
M P XYLENE	50.4		50.6	ug/Kg	100.0	70	130	1	20	
O XYLENE	50.3		48.8	ug/Kg	97.0	70	130	1	20	
TOLUENE	75.3		71.7	ug/Kg	95.0	70	130	0	20	
TVH C6 TO C10	.5		.415	mg/Kg	92.0	70	130	1	20	
BROMOFLUOROBENZENE (surr)				%	100.4	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	101.2	70	130			

Gadeco, LLC

ACZ Project ID: **L31369**

PBS		Sample ID: WG405827PBS						Analyzed:		07/07/16 11:23	
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)				%	92.4	70	130				
BROMOFLUOROBENZENE (TVH) (surr)				%	92.1	70	130				

Gadeco, LLC

ACZ Project ID: **L31369**

Diesel Range Organics (C10-C28)

M8015D GC/FID

WG405924

DUP		Sample ID: L31369-04DUP						Analyzed: 07/07/16 23:36		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28		13	U	mg/Kg				200	20	RA
OTP (surr)				%	90.8	70	130			

MS	Sample ID: L31369-04MS		PCN/SCN: OPTPH160509-2				Analyzed:		07/08/16 0:04	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7	13	166.1	mg/Kg	92.0	70	130			
OTP (surr)				%	95.5	70	130			

LCSS		Sample ID: WG405571LCSS		PCN/SCN: OPTPH160509-2			Analyzed: 07/07/16 15:24			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7		84	mg/Kg	101.0	70	130			
OTP (surr)				%	101.1	70	130			

LCSSD		Sample ID: WG405571LCSSD		PCN/SCN: OPTPH160509-2			Analyzed: 07/07/16 15:51			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7		83.5	mg/Kg	100.0	70	130	1	20	
OTP (surr)				%	99.6	70	130			

PBS		Sample ID: WG405571PBS						Analyzed: 07/07/16 14:57		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28			U	mg/Kg		-20	20			
OTP (surr)				%	90.0	70	130			

Gadeco, LLC

ACZ Project ID: **L31369**

Polynuclear Aromatic Hydrocarbons GC/MS

M8270C GC/MS

WG405826

DUP		Sample ID: L31369-04DUP						Analyzed: 07/12/16 1:29		
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)				%	46.4	45	105			
NITROBENZENE-D5 (surr)				%	50.8	35	100			
TERPHENYL-D14 (surr)				%	67.6	30	125			

MS		Sample ID: L31369-04MS			PCN/SCN: OPBNA160509-1			Analyzed: 07/12/16 2:03		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007	U	2410	ug/Kg	72.0	45	110			
PYRENE	50003	U	2870	ug/Kg	86.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	85.9	35	125			
2-FLUOROBIPHENYL (surr)				%	77.6	45	105			
2-FLUOROPHENOL (surr)				%	83.5	35	105			
NITROBENZENE-D5 (surr)				%	74.8	35	100			
PHENOL-D6 (surr)				%	81.0	40	100			
TERPHENYL-D14 (surr)				%	89.6	30	125			

LCSS		Sample ID: WG405670LCSS			PCN/SCN: OPBNA160509-1			Analyzed: 07/11/16 21:03		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1243	ug/Kg	75.0	45	110			
PYRENE	50003		1401	ug/Kg	84.0	45	125			
2,4,6-TRIBROMOPHENOL (surr)				%	88.0	35	125			
2-FLUOROBIPHENYL (surr)				%	78.7	45	105			
2-FLUOROPHENOL (surr)				%	83.0	35	105			
NITROBENZENE-D5 (surr)				%	74.7	35	100			
PHENOL-D6 (surr)				%	80.7	40	100			
TERPHENYL-D14 (surr)				%	88.2	30	125			

Gadeco, LLC

ACZ Project ID: **L31369**

LCSSD	Sample ID: WG405670LCSSD		PCN/SCN: OPBNA160509-1				Analyzed: 07/11/16 21:37			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	50007		1396	ug/Kg	84.0	45	110	12	20	
PYRENE	50003		1522	ug/Kg	91.0	45	125	8	20	
2,4,6-TRIBROMOPHENOL (surr)				%	95.0	35	125			
2-FLUOROBIPHENYL (surr)				%	87.8	45	105			
2-FLUOROPHENOL (surr)				%	93.7	35	105			
NITROBENZENE-D5 (surr)				%	84.2	35	100			
PHENOL-D6 (surr)				%	90.6	40	100			
TERPHENYL-D14 (surr)				%	94.4	30	125			

PBS	Sample ID: WG405670PBS					Analyzed:			07/11/16 20:30	
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)				%	120.6	35	125			
2-FLUOROBIPHENYL (surr)				%	100.3	45	105			
2-FLUOROPHENOL (surr)				%	99.0	35	105			
NITROBENZENE-D5 (surr)				%	89.4	35	100			
PHENOL-D6 (surr)				%	102.3	40	100			S15
TERPHENYL-D14 (surr)				%	106.9	30	125			

S15

ACZ Project ID: **L31369**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION	
L31369-01	WG405827	*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.	
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.	
			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).	
	WG405826	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.	
			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).	
		Benzo(g,h,i)perylene	M8270C GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].	
L31369-02	WG405827	*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.	
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.	
			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).	
	WG405826	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.	
			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).	
		Benzo(g,h,i)perylene	M8270C GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].	
L31369-03	WG405827	*All Compounds*	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.	
	WG405924	TPH C10 to C28	M8015D GC/FID	D2	Sample required dilution. Target analyte exceeded calibration range.	
			M8015D GC/FID	D1	Sample required dilution due to matrix.	
				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).
				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).
	Benzo(g,h,i)perylene	M8270C GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].		
L31369-04	WG405827	*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.	
	WG405924	TPH C10 to C28	M8015D GC/FID	D1	Sample required dilution due to matrix.	
			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).	
	WG405826	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.	
			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).	
		Benzo(g,h,i)perylene	M8270C GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].	

Gadeco, LLC

ACZ Project ID: **L31369**

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

Gadeco, LLC

ACZ Project ID: L31369

Date Received: 06/30/2016 12:52

Received By: ddp

Date Printed: 7/1/2016

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A change was made in the Report to: and Analyses Requested on COC 1 section prior to ACZ custody.			

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?
4305	2.4	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was 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.

Gadeco, LLC

ACZ Project ID: L31369

Date Received: 06/30/2016 12:52

Received By: ddp

Date Printed: 7/1/2016

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).



Laboratories, Inc.

131369

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Richard Miller
Company: Gradeco LLC
E-mail: r.miller@grynberg.com

Address: 3600 S. Yosemite Ste 800
Denver CO 80237
Telephone: 303-850-7490

Copy of Report to:

Name: Carl Colby
Company: Wild West Excavating

E-mail: wildwestexcavating@gmail.com
Telephone: 970-326-5776

Invoice to:

Name: Richard Miller
Company: Gradeco
E-mail: r.miller@grynberg.com

Address: 3600 S Yosemite Ste 900
Denver 80237
Telephone: 303-850-7490

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring?

Yes

No

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Carl Sampler's Site Information State CO Zip code 81625 Time Zone MT

*Sampler's Signature: [Signature]

I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

PO#:

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

of Containers

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

#1	6-29-16 11:30am	SO	910-1																
#2	6-29-16 12:00pm	SO	910-1																
#15	6-29-16 12:15pm	SO	BTX+PH																
#12	6-29-16 12:25	SO	BTX+PH																
#18	6-29-16 12:30	SO	BTX+PH																
#20	6-29-16 12:31	SO	BTX+PH																
#21	6-29-16 12:32	SO	BTX+PH																
#23	6-29-16 12:32	SO	BTX+PH																
#24	6-29-16 12:34	SO	910-1 (910-1)																
#24	6-29-16 12:35	SO	BTX+PH																

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Carl Colby

6-29-16

Richard Miller

6-29-16

