ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 18, 2021

Report to:
Randall Miller
North Park Engineering & Consulting, Inc
P.O. Box 395
Walden, CO 80480

cc: Mark Brown

Bill to:
Randall Miller
North Park Engineering & Consulting, Inc
P.O. Box 395
Walden, CO 80480

Project ID: Marcus Production
ACZ Project ID: L63311

Randall Miller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 11, 2020. This project has been assigned to ACZ's project number, L63311. 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 L63311. 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 February 17, 2021. 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.

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Case Narrative

North Park Engineering Consulting, Inc

January 18, 2021

Project ID: Marcus Production
ACZ Project ID: L63311

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 miscellaneous samples from North Park Engineering & Consulting, Inc on December 11, 2020. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L63311. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times except for parameters flagged with "H" flags (H3, HC), received either after the hold time expired or requiring re-analysis after the hold time had expired.

Sample Analysis

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports.

Sample L63311-04 was subcontracted to ALS for the PAH analysis. Results can be found in the attachment section of this report.

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT W @ 3'

ACZ Sample ID: ***L63311-04***
Date Sampled: *12/10/20 14:20*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020B ICP-MS	510	3.81			mg/Kg	0.102	0.51	12/29/20 10:20	bsu
Barium, total (3050)	M6010D ICP	102	271			mg/Kg	0.714	3.57	12/29/20 13:50	jlw
Boron, total (3050)	M6010D ICP	102	4.80	B		mg/Kg	2.04	10.2	12/29/20 13:50	jlw
Cadmium, total (3050)	M6010D ICP	102	<0.816	U		mg/Kg	0.816	2.55	12/29/20 13:50	jlw
Calcium, soluble (Sat. Paste)	M6010D ICP	2	1.23			meq/L	0.01	0.05	01/15/21 9:41	jlw
Chromium, total (3050)	M6010D ICP	102	26.2			mg/Kg	1.02	5.1	12/29/20 13:50	jlw
Chromium, Trivalent Total	Calculation (Total - Hexavalent)		26			mg/Kg	2	9	01/18/21 0:00	calc
Copper, total (3050)	M6010D ICP	102	29.6			mg/Kg	1.02	5.1	12/29/20 13:50	jlw
Lead, total (3050)	M6010D ICP	102	14.9	B		mg/Kg	3.06	15.3	12/29/20 13:50	jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	0.31			meq/L	0.03	0.17	01/15/21 9:41	jlw
Mercury by Direct Combustion AA	M7473 CVAAS	1	38.8		*	ng/g	2.48	12.4	12/18/20 14:58	aeh
Nickel, total (3050)	M6010D ICP	102	22.0		*	mg/Kg	0.816	4.08	12/29/20 13:50	jlw
Selenium, total (3050)	M6010D ICP	102	<5.1	U		mg/Kg	5.1	25.5	12/29/20 13:50	jlw
Silver, total (3050)	M6010D ICP	102	<1.02	U		mg/Kg	1.02	2.55	12/29/20 13:50	jlw
Sodium Adsorption Ratio	Calculation		0.72						01/18/21 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	0.64			meq/L	0.02	0.09	01/15/21 9:41	jlw
Zinc, total (3050)	M6010D ICP	102	65.3			mg/Kg	2.04	5.1	12/29/20 13:50	jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.255		*	mmhos/cm	0.001	0.01	01/14/21 0:00	mlp
Max Particle Size		1	2000		*	um			01/14/21 0:00	mlp
Temperature		1	21.6		*	C	0.1	0.1	01/14/21 0:00	mlp
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			01/14/21 0:00	mlp
pH		1	6.6		*	units	0.1	0.1	01/14/21 0:00	mlp
Solids, Percent	D2216-80	1	84.5		*	%	0.1	0.5	12/17/20 6:23	krs

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								12/15/20 17:30	krs
Crush and Pulverize	EPA-600/2-78-054 3.1.3								12/21/20 16:30	krs
Digestion - Alkaline	M3060A								01/05/21 9:00	gkh
Digestion - Hot Plate	M3050B ICP								12/28/20 20:00	krs
Digestion - Hot Plate	M3050B ICP-MS								12/28/20 20:00	krs
Saturated Paste Extraction	USDA No. 60 (2)								01/13/21 14:37	mlp

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT W @ 3'

ACZ Sample ID: ***L63311-04***
Date Sampled: *12/10/20 14:20*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Subcontract

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Polynuclear Aromatic Hydrocarbons GC/MS	M8270D/E GC/MS									

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	470	<2.35	U	*	mg/Kg	2.35	9.4	01/06/21 13:37	jck

Report Header Explanations

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

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	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:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

North Park Engineering & Consulting, Inc

ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic, total (3050) M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512022													
WG512022ICV	ICV	12/29/20 9:41	MS201021-2	.05		.04941	mg/L	99	90	110			
WG512022ICB	ICB	12/29/20 9:43				U	mg/L		-0.0006	0.0006			
WG511981PBS	PBS	12/29/20 9:52				U	mg/Kg		-0.3	0.3			
WG511981LCSS	LCSS	12/29/20 9:54	PCN62459	162		141.78564	mg/Kg		134	191			
WG511981LCSSD	LCSSD	12/29/20 9:56	PCN62459	162		139.51601	mg/Kg		134	191	2	20	
L63076-01MS	MS	12/29/20 10:09	MS201117-9	25.025	1.71	24.53761	mg/Kg	91	75	125			
L63076-01MSD	MSD	12/29/20 10:10	MS201117-9	25.025	1.71	24.82919	mg/Kg	92	75	125	1	20	

Barium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		2.021	mg/L	101	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.021	0.021			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-2.1	2.1			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	138		132.8	mg/Kg		114	162			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	138		124	mg/Kg		114	162	7	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50	150	193.9	mg/Kg	88	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50	150	196.7	mg/Kg	93	75	125	1	20	

Boron, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		1.978	mg/L	99	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.06	0.06			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-6	6			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	265		285.1	mg/Kg		189	341			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	265		276.5	mg/Kg		189	341	3	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50.05	U	47.03	mg/Kg	94	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50.05	U	48.12	mg/Kg	96	75	125	2	20	

Cadmium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		1.988	mg/L	99	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.024	0.024			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-2.4	2.4			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	135		143.4	mg/Kg		111	158			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	135		133.1	mg/Kg		111	158	7	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50	1.89	43.12	mg/Kg	83	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50	1.89	44.32	mg/Kg	85	75	125	3	20	

Calcium, soluble (Sat. Paste) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512827													
WG512827ICV	ICV	01/15/21 9:14	II201223-1	100		99.55	mg/L	100	90	110			
WG512827ICB	ICB	01/15/21 9:17				U	mg/L		-0.3	0.3			
L63311-04DUP	DUP	01/15/21 9:45			1.23	1.28	meq/L				4	20	

North Park Engineering & Consulting, Inc

ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chromium, Hexavalent (3060) M7196A

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512373													
WG512373ICV	ICV	01/06/21 13:28	WC210104-5	.05		.0527	mg/L	105	90	110			
WG512373ICB	ICB	01/06/21 13:32				U	mg/L		-0.005	0.005			
L63311-04MS2	MS	01/06/21 13:46	SI160824-	1482.38	U	1636.587	mg/Kg	110	75	125			
L63508-02DUP	DUP	01/06/21 14:04			U	U	mg/Kg				0	20	RA
WG512252LCSS	LCSS	01/06/21 14:36	PCN61792	92.5		92.152	mg/Kg		51.5	134			
WG512252PBS	PBS	01/06/21 14:40				U	mg/Kg		-1	1			

Chromium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		1.977	mg/L	99	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.03	0.03			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-3	3			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	117		110.7	mg/Kg		95.9	138			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	117		106.5	mg/Kg		95.9	138	4	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50.15	16.5	62.77	mg/Kg	94	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50.15	16.5	64.5	mg/Kg	98	75	125	3	20	

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512821													
L63311-04DUP	DUP	01/14/21 12:20			.255	.26	mmhos/cm				2	20	

Copper, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		1.994	mg/L	100	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.03	0.03			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-3	3			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	143		134.5	mg/Kg		119	166			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	143		132.5	mg/Kg		119	166	1	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50.15	22	68.15	mg/Kg	92	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50.15	22	69.09	mg/Kg	94	75	125	1	20	

Lead, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	4		4.021	mg/L	101	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.09	0.09			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-9	9			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	77.6		69.92	mg/Kg		64.7	90.4			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	77.6		68.87	mg/Kg		64.7	90.4	2	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	100.14	3.47	87.79	mg/Kg	84	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	100.14	3.47	90.06	mg/Kg	86	75	125	3	20	

North Park Engineering & Consulting, Inc ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, soluble (Sat. Paste) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512827													
WG512827ICV	ICV	01/15/21 9:14	II201223-1	100		100.4	mg/L	100	90	110			
WG512827ICB	ICB	01/15/21 9:17				U	mg/L		-0.6	0.6			
L63311-04DUP	DUP	01/15/21 9:45			0.31	.3	meq/L				3	20	

Mercury by Direct Combustion AA M7473 CVAAS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG503539													
WG503539ICV3	ICV	08/18/20 13:09	HG200817-6	1000		1000	ng/g	100	90	110			
WG511641													
WG511641ICV1	ICV	12/18/20 10:50	HG201218-3	100		95.5	ng/g	96	90	110			
WG511641ICV2	ICV	12/18/20 10:57	HG201218-3	100		99.7	ng/g	100	90	110			
WG511641ICV3	ICV	12/18/20 11:04	HG201218-2	1000		1000	ng/g	100	90	110			
WG511641ICV4	ICV	12/18/20 11:11	HG201218-4	10000		9270	ng/g	93	90	110			
WG511641PBS	PBS	12/18/20 12:05				U	ng/g		-6.99	6.99			
WG511641LCSS	LCSS	12/18/20 12:15	PCN60050	90		80	ng/g		80	120			
WG511641LCSSD	LCSSD	12/18/20 12:24	PCN60050	90		76.3	ng/g		80	120	5	20	
L63184-05MS	MS	12/18/20 12:44	HG201218-2				ng/g	83	80	120			
L63184-06DUP	DUP	12/18/20 13:03			98.9	101	ng/g				2	20	

Nickel, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		2.011	mg/L	101	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.024	0.024			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-2.4	2.4			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	79.9		83.8	mg/Kg		65.6	94.2			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	79.9		81.21	mg/Kg		65.6	94.2	3	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50.2	33.3	75.2	mg/Kg	83	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50.2	33.3	76.11	mg/Kg	85	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
WG512821													
WG512821ICV	ICV	01/14/21 12:05	PCN61057	4.01		3.9	units	97	3.9	4.1			
L63311-04DUP	DUP	01/14/21 12:20			6.6	6.73	units				2	20	

Selenium, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	4		3.9	mg/L	98	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.15	0.15			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-15	15			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	172		159.1	mg/Kg		136	208			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	172		155.1	mg/Kg		136	208	3	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	100.1	U	93.22	mg/Kg	93	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	100.1	U	93.91	mg/Kg	94	75	125	1	20	

North Park Engineering & Consulting, Inc

ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Silver, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	1		1.002	mg/L	100	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.03	0.03			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-3	3			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	24.7		21.53	mg/Kg		19.9	29.6			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	24.7		21.15	mg/Kg		19.9	29.6	2	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50	U	46.04	mg/Kg	92	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50	U	46.61	mg/Kg	93	75	125	1	20	

Sodium, soluble (Sat. Paste) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512827													
WG512827ICV	ICV	01/15/21 9:14	II201223-1	100		99.28	mg/L	99	90	110			
WG512827ICB	ICB	01/15/21 9:17				U	mg/L		-0.6	0.6			
L63311-04DUP	DUP	01/15/21 9:45			0.64	.66	meq/L				3	20	

Solids, Percent D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG511508													
WG511508PBS	PBS	12/16/20 17:11				U	%		-0.1	0.1			
L63321-01DUP	DUP	12/17/20 9:41			42.1	42.2	%				0	20	

Zinc, total (3050) M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG512020													
WG512020ICV	ICV	12/29/20 12:22	II201218-1	2		1.977	mg/L	99	90	110			
WG512020ICB	ICB	12/29/20 12:25				U	mg/L		-0.06	0.06			
WG511981PBS	PBS	12/29/20 12:49				U	mg/Kg		-6	6			
WG511981LCSS	LCSS	12/29/20 12:53	PCN62459	312		303.2	mg/Kg		251	373			
WG511981LCSSD	LCSSD	12/29/20 12:57	PCN62459	312		297.2	mg/Kg		251	373	2	20	
L63075-01MS	MS	12/29/20 13:13	II201228-2	50.075	91.7	147.7	mg/Kg	87	75	125			
L63075-01MSD	MSD	12/29/20 13:17	II201228-2	50.075	91.7	155.4	mg/Kg	103	75	125	5	20	

Inorganic Extended Qualifier Report

North Park Engineering & Consulting, Inc

ACZ Project ID: ***L63311***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63311-04	WG512373	Chromium, Hexavalent (3060)	M7196A	D1	Sample required dilution due to matrix.
			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).
	WG511641	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG512020	Nickel, total (3050)	M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT N @ 3'

ACZ Sample ID: ***L63311-01***
Date Sampled: *12/10/20 13:40*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3546**

Workgroup: WG512048
Analyst: ttg
Extract Date: 12/15/20 9:56
Analysis Date: 01/04/21 12:16

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		55.4	J	0.329	*	mg/Kg	32.9	165
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	65.03		0.329	*	%	60	115

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT E @ 3'

ACZ Sample ID: ***L63311-02***
Date Sampled: *12/10/20 13:50*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3546**

Workgroup: WG512048
Analyst: ttg
Extract Date: 12/15/20 9:56
Analysis Date: 01/04/21 12:39

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		15.9	J	0.0666	*	mg/Kg	6.66	33.3
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	53.02		0.0666	*	%	60	115

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT S @ 3'

ACZ Sample ID: ***L63311-03***
Date Sampled: *12/10/20 14:05*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3546**

Workgroup: WG512048
Analyst: ttg
Extract Date: 12/15/20 9:56
Analysis Date: 01/04/21 16:38

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		30.2	J	0.13	*	mg/Kg	13	65.2
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	63.37		0.13	*	%	60	115

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT W @ 3'

ACZ Sample ID: ***L63311-04***
Date Sampled: *12/10/20 14:20*
Date Received: *12/11/20*
Sample Matrix: *Soil*

BTEX/Gasoline Range Organics (C6-C10)

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

Workgroup: WG510303
Analyst: jmm
Extract Date: 12/30/20 17:07
Analysis Date: 12/30/20 17:07

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2	<1	UH	1	*	ug/Kg	1	1
Ethylbenzene	100-41-4	<1	UH	1	*	ug/Kg	1	1
m p Xylene	1330-20-7	<2	UH	1	*	ug/Kg	2	2
o Xylene	95-47-6	<1	UH	1	*	ug/Kg	1	1
Toluene	108-88-3	<1	UH	1	*	ug/Kg	1	1
TVH C6 to C10	TVH	<0.05	UH	1	*	mg/Kg	0.05	0.25
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
Bromofluorobenzene	460-00-4	66.6		1	*	%	70	130
Bromofluorobenzene (TVH)	460-00 4	67.8		1	*	%	70	130

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: STATE 1-36 PIT W @ 3'

ACZ Sample ID: ***L63311-04***
Date Sampled: *12/10/20 14:20*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3546**

Workgroup: WG512048
Analyst: ttg
Extract Date: 12/15/20 9:56
Analysis Date: 01/04/21 17:01

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		295	J	1.24	*	mg/Kg	124	618
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	73.42		1.24	*	%	60	115

North Park Engineering & Consulting, Inc
Project ID: Marcus Production
Sample ID: SPILL SOUTH BOTTOM

ACZ Sample ID: ***L63311-05***
Date Sampled: *12/10/20 14:30*
Date Received: *12/11/20*
Sample Matrix: *Soil*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3546**

Workgroup: WG512048
Analyst: ttg
Extract Date: 12/15/20 9:56
Analysis Date: 01/04/21 17:24

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		14.6	J	0.0399	*	mg/Kg	3.99	20
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	64.67		0.0399	*	%	60	115

Report Header Explanations

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

QC Sample Types

SURR	Surrogate	*LFB*	Laboratory Fortified Blank
INTS	Internal Standard	*LFM*	Laboratory Fortified Matrix
AS	Analytical Spike (Post Digestion)	*LFMD*	Laboratory Fortified Matrix Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LRB*	Laboratory Reagent Blank
DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	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)

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:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

North Park Engineering & Consulting, Inc ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

BTEX/Gasoline Range Organics (C6-C10)

M8021B/8015D GC/PID/FID

WG510303

AS **Sample ID: L62616-03AS** **PCN/SCN: B201125-2-ICV** **Analyzed: 12/30/20 15:27**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	250.5	U	311.8	ug/Kg	124.0	70	130			
ETHYLBENZENE	250.5	U	315.3	ug/Kg	126.0	70	130			
M P XYLENE	501.5	U	581.2	ug/Kg	116.0	70	130			
O XYLENE	503	U	610.2	ug/Kg	121.0	70	130			
TOLUENE	753	U	940.6	ug/Kg	125.0	70	130			
TVH C6 TO C10	5	U	5.9	mg/Kg	118.0	70	130			
BROMOFLUOROBENZENE (surr)				%	88.4	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	90.7	70	130			

ASD **Sample ID: L62616-03ASD** **PCN/SCN: B201125-2-ICV** **Analyzed: 12/30/20 15:57**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	250.5	U	293.4	ug/Kg	117.0	70	130	6	20	
ETHYLBENZENE	250.5	U	294.3	ug/Kg	117.0	70	130	7	20	
M P XYLENE	501.5	U	544.4	ug/Kg	109.0	70	130	7	20	
O XYLENE	503	U	571.1	ug/Kg	114.0	70	130	7	20	
TOLUENE	753	U	883.9	ug/Kg	117.0	70	130	6	20	
TVH C6 TO C10	5	U	5.6	mg/Kg	112.0	70	130	5	20	
BROMOFLUOROBENZENE (surr)				%	88.6	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	92.0	70	130			

LCSS **Sample ID: WG510303LCSS** **PCN/SCN: B201125-2-ICV** **Analyzed: 12/30/20 12:30**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.7	ug/Kg	99.0	70	130			
ETHYLBENZENE	25.1		25	ug/Kg	100.0	70	130			
M P XYLENE	50.2		46.7	ug/Kg	93.0	70	130			
O XYLENE	50.3		49.2	ug/Kg	98.0	70	130			
TOLUENE	75.3		73.8	ug/Kg	98.0	70	130			
TVH C6 TO C10	.5		.489	mg/Kg	97.0	70	130			
BROMOFLUOROBENZENE (surr)				%	95.3	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	100.3	70	130			

LCSSD **Sample ID: WG510303LCSSD** **PCN/SCN: B201125-2-ICV** **Analyzed: 12/30/20 12:59**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.8	ug/Kg	99.0	70	130	0	20	
ETHYLBENZENE	25.1		25.2	ug/Kg	101.0	70	130	1	20	
M P XYLENE	50.2		47	ug/Kg	94.0	70	130	1	20	
O XYLENE	50.3		50.2	ug/Kg	100.0	70	130	2	20	
TOLUENE	75.3		74.9	ug/Kg	99.0	70	130	1	20	
TVH C6 TO C10	.5		.485	mg/Kg	97.0	70	130	1	20	
BROMOFLUOROBENZENE (surr)				%	93.1	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	96.9	70	130			

North Park Engineering & Consulting, Inc

ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

PBS **Sample ID: WG510303PBS** **Analyzed: 12/30/20 13:28**

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		-.25	.25			
BROMOFLUOROBENZENE (surr)				%	90.3	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	95.3	70	130			

North Park Engineering & Consulting, Inc ACZ Project ID: ***L63311***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Diesel Range Organics (C10-C28)

M8015D GC/FID

WG512048

MS **Sample ID: L63311-02MS** **PCN/SCN: OPTPH201029-1** **Analyzed: 01/04/21 13:02**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2508.3	15.9	19.94	mg/L	5.0	70	130			M2
OTP (surr)				%	21.6	60	120			S6

MSD **Sample ID: L63311-02MSD** **PCN/SCN: OPTPH201029-1** **Analyzed: 01/04/21 16:15**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2508.3	15.9	54.16	mg/L	46.0	70	130	92	20	M2 RD
OTP (surr)				%	55.3	60	120			S6

LCSS **Sample ID: WG511347LCSS** **PCN/SCN: OPTPH201029-1** **Analyzed: 01/04/21 11:29**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2508.3		70.9	mg/L	85.0	70	130			
OTP (surr)				%	73.5	60	120			

LCSSD **Sample ID: WG511347LCSSD** **PCN/SCN: OPTPH201029-1** **Analyzed: 01/04/21 11:52**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2508.3		78.67	mg/L	94.0	70	130	10	20	
OTP (surr)				%	77.5	60	120			

PBS **Sample ID: WG511347PBS** **Analyzed: 01/04/21 11:06**

Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28			U	mg/Kg		-16.6	16.6			
OTP (surr)				%	73.7	60	120			

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63311-01	WG512048	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	DD	Sample required dilution due to matrix color or odor.
			M8015D GC/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8015D GC/FID	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.
L63311-02	WG512048	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		OTP	M8015D GC/FID	S6	Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.
		TPH C10 to C28	M8015D GC/FID	DD	Sample required dilution due to matrix color or odor.
			M8015D GC/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8015D GC/FID	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.
L63311-03	WG512048	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	DD	Sample required dilution due to matrix color or odor.
			M8015D GC/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8015D GC/FID	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.
L63311-04	WG510303	*All Compounds*	M8021B/8015D GC/PID/FID	Q6	Sample was received above recommended temperature.
		Benzene	M8021B/8015D GC/PID/FID	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			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.
		Bromofluorobenzene	M8021B/8015D GC/PID/FID	S6	Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.
		Bromofluorobenzene (TVH)	M8021B/8015D GC/PID/FID	S6	Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.
		Ethylbenzene	M8021B/8015D GC/PID/FID	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			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	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			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	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			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	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			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	HC	Initial analysis within holding time. Reanalysis was past

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					holding time, which was required due to a QC failure during the initial analysis.
			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.
	WG512048	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	DD	Sample required dilution due to matrix color or odor.
			M8015D GC/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8015D GC/FID	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.
L63311-05	WG512048	*All Compounds*	M8015D GC/FID	Q6	Sample was received above recommended temperature.
		TPH C10 to C28	M8015D GC/FID	DD	Sample required dilution due to matrix color or odor.
			M8015D GC/FID	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8015D GC/FID	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.

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

North Park Engineering & Consulting, Inc
Marcus Production

ACZ Project ID: L63311
Date Received: 12/11/2020 12:06
Received By:
Date Printed: 12/14/2020

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Relinquished by: Date:Time section prior to ACZ custody.

A change was made in the Relinquished by: Date:Time section prior to ACZ custody.

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A change was made in the Relinquished by: Date:Time section prior to ACZ custody.

Samples/Containers

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

NA indicates Not Applicable

Chain of Custody Related Remarks

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

North Park Engineering & Consulting, Inc
Marcus Production

ACZ Project ID: L63311
Date Received: 12/11/2020 12:06
Received By:
Date Printed: 12/14/2020

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
NA34249	8.2	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

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

[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).

ACZ Laboratories, Inc. L63311

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

CHAIN of CUSTODY

Report to:

Name: Randy Miller	Address: PO Box 395
Company: North Park Engineering & Consulting, Inc.	Walden, CO 80480
E-mail: randy@npeng.com	Telephone: 970-218-4974

Copy of Report to:

Name: Mark Brown	E-mail: mark@markusproduction.com
Company: Markus Production	Telephone: 720-350-8858

Invoice to:

Name: Randy Miller	Address: PO Box 395
Company: North Park Engineering & Consulting, Inc.	Walden, CO 80480
E-mail: randy@npeng.com	Telephone: 970-218-4974

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? YES [ ] NO [ ]

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 CO DW Compliance Monitoring? YES [ ] NO [X]

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

PROJECT INFORMATION

Quote #: TPH-DRO, SOIL 910-1

Project/PO #: Marcus Production

Reporting state for compliance testing: n/a

Sampler's Name: Curtis Utley

Are any samples NRC licensable material? Yes No N

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	TPH,DRO	soil 910-1
State 1-36 Pit N @ 3'	12-10-20 1340 PM	SO	1	X	
State 1-36 Pit E @ 3'	12-10-20 1350 PM	SO	1	X	
State 1-36 Pit S @ 3'	12-10-20 1405 PM	SO	1	X	
State 1-36 Pit W @ 3'	12-10-20 1420 PM	SO	2	X	X
Spill South Bottom	12-10-20 1430 PM	SO	1	X	

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
Curtis Utley	12/10/20 1516 PM		12/11/20 12:06

L63311 Chain of Custod

FRMAD050.01.15.09 White - Return with sample. Yellow - Retain for your records.

L63311-2101181617

GC/MS Semivolatiles

Case Narrative

ACZ Laboratories, Inc.

Work Order Number: 2012331

1. This report consists of 1 soil sample. The sample was received cool and intact by ALS on 12/16/20.

2. The sample was prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the soil sample was extracted using soxhlet procedures according to SW-846 Method 3540C, utilizing the current revision of SOP 625.

3. The extract was analyzed using GC/MS according to the current revision of SOP 506 based on SW-846 Method 8270E. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and mass spectrum of the sample versus the daily calibration standard.

4. All initial calibration criteria were met. If average response factors were used in the initial calibration, %RSD was ≤20%. If linear or higher order regression calibrations were used in the initial calibration, the coefficient of determination (r^2) ≥0.99.

5. All initial calibration standards are verified by comparing a second source standard initial calibration verification (ICV) against the calibration curve. All target compounds in the second source verification had a %D ≤30%.

6. Per the guidance in methods 8000 and 8270, all compounds in each of the daily (continuing) calibration verifications had sufficient response to support accurate quantitation of the data included in this report.

7. All method blank criteria were met.

8. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.

9. A matrix spike and matrix spike duplicate were not performed because of insufficient sample. A laboratory control sample and laboratory control sample duplicate were performed instead.

10. The sample was extracted and analyzed within the established holding time.

11. All surrogate recoveries were within acceptance criteria.

12. All internal standard recoveries were within acceptance criteria.

13. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

mindy norton

Mindy Norton
Organics Primary Data Reviewer

1/5/21
Date

Organics Final Data Reviewer

1/5/21
Date

ALS
Data Qualifier Flags
Organics

U or ND: This flag indicates that the compound was analyzed for but not detected.

J: This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.

B: This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.

E: This flag identifies compounds whose concentration exceeds the upper level of the calibration range.

A: This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.

X: This flag indicates that the analyte was diluted below an accurate quantitation level.

***:** This flag indicates that a spike recovery is equal to or outside the control criteria used.

+: This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2012331
Client Name: ACZ Laboratories, Inc.
Client Project Name:
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L63311-04	2012331-1		SOIL	10-Dec-20	14:20

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Sue Webber	Address: 2773 Downhill Drive
Company: ACZ Laboratories, Inc.	Steamboat Springs, CO 80487
E-mail: suew@acz.com	Telephone: 970-879-6590 Ext 110

Copy of Report to:

Name:	E-mail:
Company:	Telephone:

Invoice to:

Name: Same as above	Address:
Company:	
E-mail:	Telephone:

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? YES ☐ NO ☐

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: ________ **Sampler's Site Information** **State**________ **Zip code**________ **Time Zone**________
***Sampler's 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? ☐

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	PAH by M8270D/E							
L63311-04	12/10/20 14:20	SO	1	☒	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐

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

REMARKS

NO SIM NEEDED

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	12/15/20 16:00	[signature]	12.16.20 1013

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: ACZ Workorder No: 2012331

Project Manager: MMH Initials: RGA Date: 12/16/2020

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO	
2. Are custody seals on **shipping** containers intact?	☐ NONE	☑ YES	☐ NO*	
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*	
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*	
6. Are short-hold samples present?		☐ YES	☑ NO	
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*	
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*	
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*	
10. Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		☑ YES	☐ NO*	
11. Are all aqueous samples preserved correctly, if required?	☑ N/A	☐ YES	☐ NO*	
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO	
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO	
14. Were the samples shipped on ice?		☑ YES	☐ NO	
15. Were cooler temperatures measured at 0.1 - 6.0°C? IR gun used+: ☐ #3 ☑ #5	☐ Rad Only	☑ YES	☐ NO	

Cooler #: 1

Temperature (°C): 5.4

# of custody seals on cooler: 0

External mR/hr reading: 11

Background mR/hr reading: 10

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

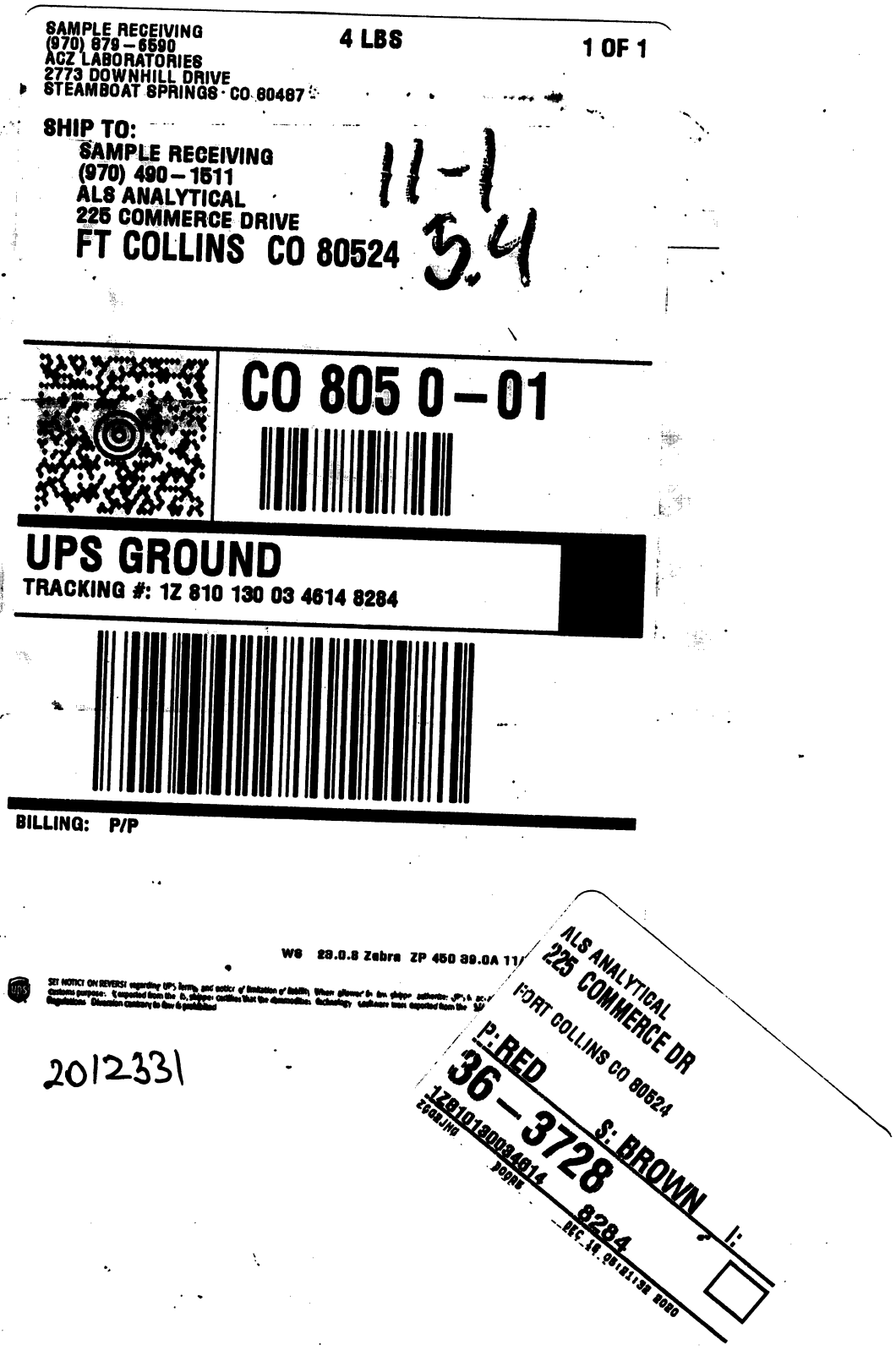
All client bottle ID's vs ALS lab ID's double-checked by: RGA

If applicable, was the client contacted? ☐ YES ☑ N/A Contact Name Date:

Project Manager Signature / Date: 12-17-20

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192272629


SAMPLE RECEIVING
(970) 879-6590
ACZ LABORATORIES
2773 DOWNHILL DRIVE
STEAMBOAT SPRINGS CO 80487
4 LBS
1 OF 1
SHIP TO:
SAMPLE RECEIVING
(970) 490-1511
ALS ANALYTICAL
225 COMMERCE DRIVE
FT COLLINS CO 80524
11-1
5.4
CO 805 0-01
UPS GROUND
TRACKING #: 1Z 810 130 03 4614 8284
BILLING: P/P
2012331
ALS ANALYTICAL
225 COMMERCE DR
FORT COLLINS CO 80524
P:RED
36-3728
S: BROWN

GC/MS Semi-volatiles

Method SW8270E

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 2012331
Client Name: ACZ Laboratories, Inc.
ClientProject ID:

Lab ID: EX201221-2MB

Sample Matrix: SOIL
% Moisture: N/A
Date Collected: N/A
Date Extracted: 21-Dec-20
Date Analyzed: 05-Jan-21

Prep Batch: EX201221-2
QCBatchID: EX201221-2-1
Run ID: SV210104-444
Cleanup: NONE
Basis: N/A
File Name: SV543

Sample Aliquot: 30 g
Final Volume: 1 ml
Result Units: UG/KG
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
91-20-3	NAPHTHALENE	1	100	U	330	100
91-57-6	2-METHYLNAPHTHALENE	1	100	U	330	100
208-96-8	ACENAPHTHYLENE	1	100	U	330	100
83-32-9	ACENAPHTHENE	1	100	U	330	100
86-73-7	FLUORENE	1	100	U	330	100
85-01-8	PHENANTHRENE	1	100	U	330	100
120-12-7	ANTHRACENE	1	100	U	330	100
206-44-0	FLUORANTHENE	1	100	U	330	100
129-00-0	PYRENE	1	100	U	330	100
56-55-3	BENZO(A)ANTHRACENE	1	100	U	330	100
218-01-9	CHRYSENE	1	100	U	330	100
205-99-2	BENZO(B)FLUORANTHENE	1	170	U	330	170
207-08-9	BENZO(K)FLUORANTHENE	1	100	U	330	100
50-32-8	BENZO(A)PYRENE	1	130	U	330	130
193-39-5	INDENO(1,2,3-CD)PYRENE	1	160	U	330	160
53-70-3	DIBENZO(A,H)ANTHRACENE	1	140	U	330	140
191-24-2	BENZO(G,H,I)PERYLENE	1	100	U	330	100

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
321-60-8	2-FLUOROBIPHENYL	1410		1670	85	34 - 120
4165-60-0	NITROBENZENE-D5	1460		1670	88	31 - 120
1718-51-0	TERPHENYL-D14	1740		1670	105	39 - 120

Data Package ID: *SV2012331-1*

GC/MS Semi-volatiles

Method SW8270E

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2012331
Client Name: ACZ Laboratories, Inc.
ClientProject ID:

Field ID: L63311-04
Lab ID: 2012331-1

Sample Matrix: SOIL
% Moisture: N/A
Date Collected: 10-Dec-20
Date Extracted: 21-Dec-20
Date Analyzed: 05-Jan-21
Prep Method: SW3540 Rev C

Prep Batch: EX201221-2
QCBatchID: EX201221-2-1
Run ID: SV210104-444
Cleanup: NONE
Basis: As Received
File Name: SV550

Analyst: Tyler Knaebel
Sample Aliquot: 14.92 g
Final Volume: 1 ml
Result Units: UG/KG
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
91-20-3	NAPHTHALENE	1	200	U	670	200
91-57-6	2-METHYLNAPHTHALENE	1	200	U	670	200
208-96-8	ACENAPHTHYLENE	1	200	U	670	200
83-32-9	ACENAPHTHENE	1	200	U	670	200
86-73-7	FLUORENE	1	200	U	670	200
85-01-8	PHENANTHRENE	1	200	U	670	200
120-12-7	ANTHRACENE	1	200	U	670	200
206-44-0	FLUORANTHENE	1	200	U	670	200
129-00-0	PYRENE	1	200	U	670	200
56-55-3	BENZO(A)ANTHRACENE	1	200	U	670	200
218-01-9	CHRYSENE	1	200	U	670	200
205-99-2	BENZO(B)FLUORANTHENE	1	340	U	670	340
207-08-9	BENZO(K)FLUORANTHENE	1	200	U	670	200
50-32-8	BENZO(A)PYRENE	1	260	U	670	260
193-39-5	INDENO(1,2,3-CD)PYRENE	1	320	U	670	320
53-70-3	DIBENZO(A,H)ANTHRACENE	1	280	U	670	280
191-24-2	BENZO(G,H,I)PERYLENE	1	200	U	670	200

Data Package ID: *SV2012331-1*

GC/MS Semi-volatiles

Method SW8270E

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 2012331
Client Name: ACZ Laboratories, Inc.
ClientProject ID:

Field ID: L63311-04
Lab ID: 2012331-1

Sample Matrix: SOIL
% Moisture: N/A
Date Collected: 10-Dec-20
Date Extracted: 21-Dec-20
Date Analyzed: 05-Jan-21
Prep Method: SW3540 Rev C

Prep Batch: EX201221-2
QCBatchID: EX201221-2-1
Run ID: SV210104-444
Cleanup: NONE
Basis: As Received
File Name: SV550

Analyst: Tyler Knaebel
Sample Aliquot: 14.92 g
Final Volume: 1 ml
Result Units: UG/KG
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
321-60-8	2-FLUOROBIPHENYL	3020		3350	90	34 - 120
4165-60-0	NITROBENZENE-D5	2920		3350	87	31 - 120
1718-51-0	TERPHENYL-D14	3490		3350	104	39 - 120

Data Package ID: *SV2012331-1*

GC/MS Semi-volatiles

Method SW8270E

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 2012331
Client Name: ACZ Laboratories, Inc.
ClientProject ID:

Lab ID: EX201221-2LCS

Sample Matrix: SOIL
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/21/2020
Date Analyzed: 01/05/2021
Prep Method: SW3540C

Prep Batch: EX201221-2
QCBatchID: EX201221-2-1
Run ID: SV210104-444
Cleanup: NONE
Basis: N/A
File Name: SV544

Sample Aliquot: 30 g
Final Volume: 1 ml
Result Units: UG/KG
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
91-20-3	NAPHTHALENE	1330	1170	333		88	64 - 120%
91-57-6	2-METHYLNAPHTHALENE	1330	1160	333		87	63 - 120%
208-96-8	ACENAPHTHYLENE	1330	1140	333		85	67 - 120%
83-32-9	ACENAPHTHENE	1330	1150	333		87	63 - 120%
86-73-7	FLUORENE	1330	1170	333		87	71 - 120%
85-01-8	PHENANTHRENE	1330	1210	333		91	69 - 120%
120-12-7	ANTHRACENE	1330	1210	333		91	67 - 120%
206-44-0	FLUORANTHENE	1330	1170	333		88	66 - 120%
129-00-0	PYRENE	1330	1230	333		92	69 - 120%
56-55-3	BENZO(A)ANTHRACENE	1330	1150	333		86	70 - 120%
218-01-9	CHRYSENE	1330	1140	333		86	70 - 120%
205-99-2	BENZO(B)FLUORANTHENE	1330	1180	333		89	64 - 120%
207-08-9	BENZO(K)FLUORANTHENE	1330	1190	333		89	66 - 120%
50-32-8	BENZO(A)PYRENE	1330	1180	333		89	65 - 120%
193-39-5	INDENO(1,2,3-CD)PYRENE	1330	1220	333		91	62 - 120%
53-70-3	DIBENZO(A,H)ANTHRACENE	1330	1180	333		88	64 - 120%
191-24-2	BENZO(G,H,I)PERYLENE	1330	1160	333		87	61 - 120%

Data Package ID: *SV2012331-1*

GC/MS Semi-volatiles

Method SW8270E

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 2012331
Client Name: ACZ Laboratories, Inc.
ClientProject ID:

Lab ID: EX201221-2LCSD

Sample Matrix: SOIL
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/21/2020
Date Analyzed: 01/05/2021
Prep Method: SW3540C

Prep Batch: EX201221-2
QCBatchID: EX201221-2-1
Run ID: SV210104-444
Cleanup: NONE
Basis: N/A
File Name: SV545

Sample Aliquot: 30 g
Final Volume: 1 ml
Result Units: UG/KG
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
91-20-3	NAPHTHALENE	1330	1150	333		87	30	1
91-57-6	2-METHYLNAPHTHALENE	1330	1130	333		85	30	3
208-96-8	ACENAPHTHYLENE	1330	1110	333		83	30	2
83-32-9	ACENAPHTHENE	1330	1140	333		85	30	2
86-73-7	FLUORENE	1330	1160	333		87	30	1
85-01-8	PHENANTHRENE	1330	1190	333		89	30	2
120-12-7	ANTHRACENE	1330	1180	333		89	30	2
206-44-0	FLUORANTHENE	1330	1140	333		85	30	3
129-00-0	PYRENE	1330	1220	333		91	30	1
56-55-3	BENZO(A)ANTHRACENE	1330	1140	333		85	30	1
218-01-9	CHRYSENE	1330	1130	333		85	30	1
205-99-2	BENZO(B)FLUORANTHENE	1330	1180	333		88	30	1
207-08-9	BENZO(K)FLUORANTHENE	1330	1170	333		88	30	1
50-32-8	BENZO(A)PYRENE	1330	1170	333		88	30	1
193-39-5	INDENO(1,2,3-CD)PYRENE	1330	1210	333		91	30	1
53-70-3	DIBENZO(A,H)ANTHRACENE	1330	1160	333		87	30	2
191-24-2	BENZO(G,H,I)PERYLENE	1330	1150	333		87	30	0

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
321-60-8	2-FLUOROBIPHENYL	1670	89		88		34 - 120
4165-60-0	NITROBENZENE-D5	1670	88		87		31 - 120
1718-51-0	TERPHENYL-D14	1670	105		104		39 - 120

Data Package ID: *SV2012331-1*