

October 03, 2019

Report to:

Gary Webber
Northwest Colorado Consultants
2580 Copper Ridge Dr.
Steamboat Springs, CO 80487

Bill to:

Gary Webber
Northwest Colorado Consultants
2580 Copper Ridge Cr.
Steamboat Springs, CO 80487

Project ID:

ACZ Project ID: L54390

Gary Webber:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 05, 2019. This project has been assigned to ACZ's project number, L54390. 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 L54390. 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 November 02, 2019. 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.



Northwest Colorado Consultants

October 03, 2019

Project ID:

ACZ Project ID: L54390

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 6 miscellaneous samples from Northwest Colorado Consultants on September 5, 2019. 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 L54390. 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.

Sample Analysis

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. (N1) Applies to:
L54390-01/TVH C6 TO C10
L54390-02/TVH C6 TO C10
L54390-06/TVH C6 TO C10

Due to limitations within LIMS, the percent recovery of TVH in the AS and ASD were not automatically calculated, but are passing acceptance criteria and shown below:

AS = 101% recovery ASD = 100% recovery

2. (RJ) Applies to: TPH C10 TO C28

The Control Sample (LCS) sample showed a low recovery for its surrogate and TPH. This caused the LCSS/LCSD precision to exceed the method or laboratory control limit. The Matrix Spike (MS) samples both showed an acceptable recovery for their surrogate and TPH. The precision was acceptable for the MS/MSD samples.

Northwest Colorado Consultants

Project ID:

Sample ID: PB-1

ACZ Sample ID: **L54390-01**

Date Sampled: 09/04/19 11:30

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6010D ICP	104	9	B	*	mg/Kg	4	20	09/19/19 0:57	kja/jlw
Barium, total (3050)	M6010D ICP	104	627		*	mg/Kg	0.7	4	09/20/19 0:06	jlw
Boron, soluble (Hot Water)	M6010D ICP	5	0.8		*	mg/Kg	0.1	0.5	09/20/19 19:53	jlw
Cadmium, total (3050)	M6010D ICP	104		U	*	mg/Kg	0.8	3	09/20/19 0:06	jlw
Calcium, soluble (Sat. Paste)	M6010D ICP	2	0.940			meq/L	0.01	0.0499	10/01/19 23:38	jlw
Chromium, total (3050)	M6010D ICP	104	51			mg/Kg	1	5	09/20/19 0:06	jlw
Chromium, Trivalent Total	Calculation (Total - Hexavalent)		51			mg/Kg	1	5	10/02/19 0:00	calc
Copper, total (3050)	M6010D ICP	104	55		*	mg/Kg	1	5	09/19/19 0:57	kja/jlw
Lead, total (3050)	M6010D ICP	104	42		*	mg/Kg	3	20	09/19/19 0:57	kja/jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	0.582			meq/L	0.033	0.165	10/01/19 23:38	jlw
Mercury, total	M7471A CVAA	241		U		mg/Kg	0.05	0.2	09/18/19 16:02	slm
Nickel, total (3050)	M6010D ICP	104	45.3		*	mg/Kg	0.8	4	09/19/19 0:57	kja/jlw
Selenium, total (3050)	M6010D ICP	104		U		mg/Kg	5	30	09/19/19 0:57	kja/jlw
Silver, total (3050)	M6010D ICP	104		U		mg/Kg	1	3	09/20/19 0:06	jlw
Sodium Adsorption Ratio	Calculation		4.6						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	3.97			meq/L	0.0174	0.087	10/01/19 23:38	jlw
Zinc, total (3050)	M6010D ICP	104	75			mg/Kg	1	5	09/19/19 0:57	kja/jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.572		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
Temperature		1	22.2		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
pH		1	8.1		*	units	0.1	0.1	09/25/19 0:00	llr
Solids, Percent	D2216-80	1	76.2		*	%	0.1	0.5	09/11/19 6:51	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:00	jbp
Digestion - Alkaline	M3060A								09/11/19 5:27	gkh
Digestion - Hot Plate	M3050B ICP								09/18/19 3:51	mlp
Hot Water Extraction	ASA No. 9 M80-3, M25-9								09/13/19 9:26	gkh
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 8:49	llr
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								09/10/19 14:00	jbp

Northwest Colorado Consultants

Project ID:

Sample ID: PB-1

ACZ Sample ID: **L54390-01**

Date Sampled: 09/04/19 11:30

Date Received: 09/05/19

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	260		U	*	mg/Kg	1	5	09/12/19 13:51	emk

Northwest Colorado Consultants

Project ID:

Sample ID: PB-2

ACZ Sample ID: **L54390-02**

Date Sampled: 09/04/19 12:20

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6010D ICP	118	9	B	*	mg/Kg	5	20	09/19/19 1:02	kja/jlw
Barium, total (3050)	M6010D ICP	118	521		*	mg/Kg	0.8	4	09/20/19 0:10	jlw
Boron, soluble (Hot Water)	M6010D ICP	5	1.0		*	mg/Kg	0.1	0.5	09/20/19 20:00	jlw
Cadmium, total (3050)	M6010D ICP	118		U	*	mg/Kg	0.9	3	09/20/19 0:10	jlw
Calcium, soluble (Sat. Paste)	M6010D ICP	2	2.16			meq/L	0.01	0.0499	10/01/19 23:42	jlw
Chromium, total (3050)	M6010D ICP	118	54			mg/Kg	1	6	09/20/19 0:10	jlw
Chromium, Trivalent Total	Calculation (Total - Hexavalent)		52			mg/Kg	1	6	10/02/19 0:00	calc
Copper, total (3050)	M6010D ICP	118	52		*	mg/Kg	1	6	09/19/19 1:02	kja/jlw
Lead, total (3050)	M6010D ICP	118	81		*	mg/Kg	4	20	09/19/19 1:02	kja/jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	1.10			meq/L	0.033	0.165	10/01/19 23:42	jlw
Mercury, total	M7471A CVAA	263		U		mg/Kg	0.05	0.3	09/18/19 16:05	slm
Nickel, total (3050)	M6010D ICP	118	37.5		*	mg/Kg	0.9	5	09/19/19 1:02	kja/jlw
Selenium, total (3050)	M6010D ICP	118		U		mg/Kg	6	30	09/19/19 1:02	kja/jlw
Silver, total (3050)	M6010D ICP	118		U		mg/Kg	1	3	09/20/19 0:10	jlw
Sodium Adsorption Ratio	Calculation		1.4						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	1.74			meq/L	0.0174	0.087	10/01/19 23:42	jlw
Zinc, total (3050)	M6010D ICP	118	113			mg/Kg	1	6	09/19/19 1:02	kja/jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.477		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
Temperature		1	22.3		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
pH		1	7.8		*	units	0.1	0.1	09/25/19 0:00	llr
Solids, Percent	D2216-80	1	71.6		*	%	0.1	0.5	09/11/19 7:48	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:07	jbp
Digestion - Alkaline	M3060A								09/11/19 7:50	gkh
Digestion - Hot Plate	M3050B ICP								09/18/19 4:52	mlp
Hot Water Extraction	ASA No. 9 M80-3, M25-9								09/13/19 10:52	gkh
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 8:51	llr
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								09/10/19 14:00	jbp

Northwest Colorado Consultants

Project ID:

Sample ID: PB-2

ACZ Sample ID: **L54390-02**

Date Sampled: 09/04/19 12:20

Date Received: 09/05/19

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	280	2	B	*	mg/Kg	1	6	09/12/19 13:53	emk

Northwest Colorado Consultants

Project ID:

Sample ID: OF-1

ACZ Sample ID: **L54390-03**

Date Sampled: 09/04/19 13:10

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, soluble (Sat. Paste)	M6010D ICP	2	3.13			meq/L	0.01	0.0499	10/01/19 23:53	jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	1.85			meq/L	0.033	0.165	10/01/19 23:53	jlw
Sodium Adsorption Ratio	Calculation		0.11						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	0.170			meq/L	0.0174	0.087	10/01/19 23:53	jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.476		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
Temperature		1	22.7		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
pH		1	6.6		*	units	0.1	0.1	09/25/19 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:14	jbp
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3								09/10/19 14:23	jbp
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 8:53	llr

Northwest Colorado Consultants

Project ID:

Sample ID: OF-2

ACZ Sample ID: **L54390-04**

Date Sampled: 09/04/19 13:40

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, soluble (Sat. Paste)	M6010D ICP	2	2.50			meq/L	0.01	0.0499	10/01/19 23:57	jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	1.72			meq/L	0.033	0.165	10/01/19 23:57	jlw
Sodium Adsorption Ratio	Calculation		0.10						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	0.150			meq/L	0.0174	0.087	10/01/19 23:57	jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.434		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
Temperature		1	22.9		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
pH		1	6.6		*	units	0.1	0.1	09/25/19 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:21	jbp
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3								09/10/19 14:38	jbp
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 8:55	llr

Northwest Colorado Consultants

Project ID:

Sample ID: OF-3

ACZ Sample ID: **L54390-05**

Date Sampled: 09/04/19 14:00

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, soluble (Sat. Paste)	M6010D ICP	2	2.75			meq/L	0.01	0.0499	10/02/19 0:01	jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	1.87			meq/L	0.033	0.165	10/02/19 0:01	jlw
Sodium Adsorption Ratio	Calculation		0.11						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	0.164			meq/L	0.0174	0.087	10/02/19 0:01	jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.450		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
Temperature		1	22.7		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	250		*	um			09/25/19 0:00	llr
pH		1	7.0		*	units	0.1	0.1	09/25/19 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:28	jbp
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3								09/10/19 14:53	jbp
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 8:57	llr

Northwest Colorado Consultants

Project ID:

Sample ID: OF-4

ACZ Sample ID: **L54390-06**

Date Sampled: 09/04/19 14:30

Date Received: 09/05/19

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6010D ICP	103	8	B	*	mg/Kg	4	20	09/19/19 1:10	kja/jlw
Barium, total (3050)	M6010D ICP	103	185		*	mg/Kg	0.7	4	09/20/19 0:14	jlw
Boron, soluble (Hot Water)	M6010D ICP	5	0.6		*	mg/Kg	0.1	0.5	09/20/19 20:08	jlw
Cadmium, total (3050)	M6010D ICP	103		U	*	mg/Kg	0.8	3	09/20/19 0:14	jlw
Calcium, soluble (Sat. Paste)	M6010D ICP	2	1.42			meq/L	0.01	0.0499	10/02/19 0:05	jlw
Chromium, total (3050)	M6010D ICP	103	39			mg/Kg	1	5	09/20/19 0:14	jlw
Chromium, Trivalent Total	Calculation (Total - Hexavalent)		39			mg/Kg	1	5	10/02/19 0:00	calc
Copper, total (3050)	M6010D ICP	103	21		*	mg/Kg	1	5	09/19/19 1:10	kja/jlw
Lead, total (3050)	M6010D ICP	103	22		*	mg/Kg	3	20	09/19/19 1:10	kja/jlw
Magnesium, soluble (Sat. Paste)	M6010D ICP	2	1.38			meq/L	0.033	0.165	10/02/19 0:05	jlw
Mercury, total	M7471A CVAA	197		U		mg/Kg	0.04	0.2	09/18/19 16:06	slm
Nickel, total (3050)	M6010D ICP	103	31.3		*	mg/Kg	0.8	4	09/19/19 1:10	kja/jlw
Selenium, total (3050)	M6010D ICP	103		U		mg/Kg	5	30	09/19/19 1:10	kja/jlw
Silver, total (3050)	M6010D ICP	103		U		mg/Kg	1	3	09/20/19 0:14	jlw
Sodium Adsorption Ratio	Calculation		0.21						10/02/19 0:00	calc
Sodium, soluble (Sat. Paste)	M6010D ICP	2	0.245			meq/L	0.0174	0.087	10/02/19 0:05	jlw
Zinc, total (3050)	M6010D ICP	103	71			mg/Kg	1	5	09/19/19 1:10	kja/jlw

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity @25C	SM2510B									
Conductivity		1	0.301		*	mmhos/cm	0.001	0.01	09/25/19 0:00	llr
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
Temperature		1	22.8		*	C	0.1	0.1	09/25/19 0:00	llr
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			09/25/19 0:00	llr
pH		1	6.1		*	units	0.1	0.1	09/25/19 0:00	llr
Solids, Percent	D2216-80	1	95.8		*	%	0.1	0.5	09/11/19 8:45	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972								09/09/19 14:35	jbp
Digestion - Alkaline	M3060A								09/11/19 10:13	gkh
Digestion - Hot Plate	M3050B ICP								09/18/19 5:52	mlp
Hot Water Extraction	ASA No. 9 M80-3, M25-9								09/13/19 13:45	gkh
Saturated Paste Extraction	USDA No. 60 (2)								09/23/19 9:00	llr
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2								09/10/19 14:00	jbp

Northwest Colorado Consultants

Project ID:

Sample ID: OF-4

ACZ Sample ID: **L54390-06**

Date Sampled: 09/04/19 14:30

Date Received: 09/05/19

Sample Matrix: Soil

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Chromium, Hexavalent (3060)	M7196A	210		U	*	mg/Kg	1	4	09/12/19 13:54	emk

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:

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

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	4		3.777	mg/L	94	90	110			
WG481914ICB	ICB	09/18/19 23:00				U	mg/L		-0.12	0.12			
WG481737PBS	PBS	09/18/19 23:24				U	mg/Kg		-12	12			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	202		179	mg/Kg		167	237			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	202		187.2	mg/Kg		167	237	4	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	103.0824	8	107	mg/Kg	96	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	103.0824	8	106.8	mg/Kg	96	75	125	0	20	

Barium, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481996													
WG481996ICV	ICV	09/19/19 22:00	II190912-1	2		1.931	mg/L	97	90	110			
WG481996ICB	ICB	09/19/19 22:04				U	mg/L		-0.021	0.021			
WG481737PBS	PBS	09/19/19 22:28				U	mg/Kg		-2.1	2.1			
WG481737LCSS	LCSS	09/19/19 22:32	PCN57844	270		249.3	mg/Kg		223	318			
WG481737LCSSD	LCSSD	09/19/19 22:36	PCN57844	270		252.5	mg/Kg		223	318	1	20	
L54390-06MS	MS	09/20/19 0:18	II190916-2	51.4485	185	256.47	mg/Kg	139	75	125			M3
L54390-06MSD	MSD	09/20/19 0:22	II190916-2	51.4485	185	256.99	mg/Kg	140	75	125	0	20	M3

Boron, soluble (Hot Water)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG482024													
WG482024ICV	ICV	09/20/19 19:22	II190916-3	2		2.022	mg/L	101	90	110			
WG482024ICB	ICB	09/20/19 19:26				U	mg/L		-0.06	0.06			
WG481545PBS	PBS	09/20/19 19:49				.14	mg/Kg		-0.3	0.3			
L54390-02DUP	DUP	09/20/19 20:04			1	1	mg/Kg				0	20	
L54390-06AS	AS	09/20/19 20:11	II190916-2	2.5025	.6	3.28	mg/Kg	107	75	125			
L54390-06ASD	ASD	09/20/19 20:15	II190916-2	2.5025	.6	3.37	mg/Kg	111	75	125	3	20	

Cadmium, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481996													
WG481996ICV	ICV	09/19/19 22:00	II190912-1	2		1.933	mg/L	97	90	110			
WG481996ICB	ICB	09/19/19 22:04				U	mg/L		-0.024	0.024			
WG481737PBS	PBS	09/19/19 22:28				U	mg/Kg		-2.4	2.4			
WG481737LCSS	LCSS	09/19/19 22:32	PCN57844	141		131.4	mg/Kg		117	165			
WG481737LCSSD	LCSSD	09/19/19 22:36	PCN57844	141		130.3	mg/Kg		117	165	1	20	
L54390-06MS	MS	09/20/19 0:18	II190916-2	51.5515	U	45.41	mg/Kg	88	75	125			
L54390-06MSD	MSD	09/20/19 0:22	II190916-2	51.5515	U	45.7	mg/Kg	89	75	125	1	20	

Calcium, soluble (Sat. Paste)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG482191													
WG482191ICV	ICV	10/01/19 22:39	II190916-3	100		96.6	mg/L	97	90	110			
WG482191ICB	ICB	10/01/19 22:42				U	mg/L		-0.3	0.3			
L54353-02DUP	DUP	10/01/19 23:14			0.326	.294	meq/L				10	20	

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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
WG481509													
WG481509ICV	ICV	09/12/19 10:43	WC190801-6	.05		.0476	mg/L	95	90	110			
WG481509ICB	ICB	09/12/19 10:46				U	mg/L		-0.005	0.005			
WG481541													
WG481541ICV	ICV	09/12/19 13:08	WC190801-6	.05		.0537	mg/L	107	90	110			
WG481541ICB	ICB	09/12/19 13:09				U	mg/L		-0.005	0.005			
WG481050PBS	PBS	09/12/19 13:33				U	mg/Kg		-1	1			
L53852-02MS1	MS	09/12/19 13:37	SI190906-	40.0162	U	38.6	mg/Kg	96	75	125			
L53852-03DUP	DUP	09/12/19 13:46			U	U	mg/Kg				0	20	DA H4 RA
WG481212LCSS	LCSS	09/12/19 13:59	PCN59285	140		144	mg/Kg		90.8	189			
WG481212PBS	PBS	09/12/19 14:00				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
WG481996													
WG481996ICV	ICV	09/19/19 22:00	II190912-1	2		2.041	mg/L	102	90	110			
WG481996ICB	ICB	09/19/19 22:04				U	mg/L		-0.03	0.03			
WG481737PBS	PBS	09/19/19 22:28				U	mg/Kg		-3	3			
WG481737LCSS	LCSS	09/19/19 22:32	PCN57844	167		161.1	mg/Kg		136	197			
WG481737LCSSD	LCSSD	09/19/19 22:36	PCN57844	167		162.9	mg/Kg		136	197	1	20	
L54390-06MS	MS	09/20/19 0:18	II190916-2	51.603	39	94.4	mg/Kg	107	75	125			
L54390-06MSD	MSD	09/20/19 0:22	II190916-2	51.603	39	94.6	mg/Kg	108	75	125	0	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG482229													
L54353-02DUP	DUP	09/24/19 16:15			.368	.353	mmhos/cm				4	20	

Copper, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	2		1.867	mg/L	93	90	110			
WG481914ICB	ICB	09/18/19 23:00				U	mg/L		-0.03	0.03			
WG481737PBS	PBS	09/18/19 23:24				1.3	mg/Kg		-3	3			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	108		94.7	mg/Kg		90.1	125			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	108		99.1	mg/Kg		90.1	125	5	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	51.5515	21	65.8	mg/Kg	87	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	51.5515	21	65.8	mg/Kg	87	75	125	0	20	

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ACZ Project ID: **L54390**

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.

Lead, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	4		3.815	mg/L	95	90	110			
WG481914ICB	ICB	09/18/19 23:00				.03	mg/L		-0.09	0.09			
WG481737PBS	PBS	09/18/19 23:24				U	mg/Kg		-9	9			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	73.8		70	mg/Kg		61.2	86.4			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	73.8		72.2	mg/Kg		61.2	86.4	3	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	103.1751	22	117.9	mg/Kg	93	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	103.1751	22	119.7	mg/Kg	95	75	125	2	20	

Magnesium, soluble (Sat. Paste)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG482191													
WG482191ICV	ICV	10/01/19 22:39	II190916-3	100		95.4	mg/L	95	90	110			
WG482191ICB	ICB	10/01/19 22:42				U	mg/L		-0.6	0.6			
L54353-02DUP	DUP	10/01/19 23:14			0.324	.293	meq/L				10	20	

Mercury, total

M7471A CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481745													
WG481745ICV	ICV	09/18/19 15:55	HG190827-6	.00999		.0101	mg/L	101	90	110			
WG481745ICB	ICB	09/18/19 15:57				U	mg/L		-0.0006	0.0006			
WG481745PBS	PBS	09/18/19 15:58				U	mg/Kg		-0.12	0.12			
WG481745LCSS	LCSS	09/18/19 15:59	PCN59512	5.79		5.1	mg/Kg		3.6	8.39			
WG481745LCSSD	LCSSD	09/18/19 16:00	PCN59512	5.79		5.21	mg/Kg		3.6	8.39	2	20	
L54390-01MS	MS	09/18/19 16:03	HG190827-9	1.106105	U	1.092	mg/Kg	99	85	115			
L54390-01MSD	MSD	09/18/19 16:04	HG190827-9	1.11111	U	1.099	mg/Kg	99	85	115	1	20	

Nickel, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	2.004		1.946	mg/L	97	90	110			
WG481914ICB	ICB	09/18/19 23:00				U	mg/L		-0.024	0.024			
WG481737PBS	PBS	09/18/19 23:24				U	mg/Kg		-2.4	2.4			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	89.4		84.77	mg/Kg		73.7	105			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	89.4		87.48	mg/Kg		73.7	105	3	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	51.603	31.3	77.75	mg/Kg	90	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	51.603	31.3	78.31	mg/Kg	91	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
WG482229													
L54353-02DUP	DUP	09/24/19 16:15			7.6	7.59	units				0	20	
WG482229ICV	ICV	09/26/19 7:50	PCN58503	4		4	units	100	3.9	4.1			

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ACZ Project ID: **L54390**

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.

Selenium, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	4		3.835	mg/L	96	90	110			
WG481914ICB	ICB	09/18/19 23:00				U	mg/L		-0.15	0.15			
WG481737PBS	PBS	09/18/19 23:24				U	mg/Kg		-15	15			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	49.9		47.3	mg/Kg		39.5	60.2			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	49.9		50.9	mg/Kg		39.5	60.2	7	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	103.1751	U	95	mg/Kg	92	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	103.1751	U	97.5	mg/Kg	94	75	125	3	20	

Silver, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481996													
WG481996ICV	ICV	09/19/19 22:00	II190912-1	1.001		1.012	mg/L	101	90	110			
WG481996ICB	ICB	09/19/19 22:04				U	mg/L		-0.03	0.03			
WG481737PBS	PBS	09/19/19 22:28				U	mg/Kg		-3	3			
WG481737LCSS	LCSS	09/19/19 22:32	PCN57844	71.1		62.9	mg/Kg		56.7	85.4			
WG481737LCSSD	LCSSD	09/19/19 22:36	PCN57844	71.1		64.8	mg/Kg		56.7	85.4	3	20	
L54390-06MS	MS	09/20/19 0:18	II190916-2	51.706	U	44.3	mg/Kg	86	75	125			
L54390-06MSD	MSD	09/20/19 0:22	II190916-2	51.706	U	44.5	mg/Kg	86	75	125	0	20	

Sodium, soluble (Sat. Paste)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG482191													
WG482191ICV	ICV	10/01/19 22:39	II190916-3	100		98.4	mg/L	98	90	110			
WG482191ICB	ICB	10/01/19 22:42				U	mg/L		-0.6	0.6			
L54353-02DUP	DUP	10/01/19 23:14			3.53	3.42	meq/L				3	20	

Solids, Percent

D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481350													
WG481350PBS	PBS	09/10/19 15:40				U	%		-0.1	0.1			
L54108-05DUP	DUP	09/11/19 2:06			96.5	96.44	%				0	20	

Zinc, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG481914													
WG481914ICV	ICV	09/18/19 22:56	II190912-1	2		1.898	mg/L	95	90	110			
WG481914ICB	ICB	09/18/19 23:00				U	mg/L		-0.03	0.03			
WG481737PBS	PBS	09/18/19 23:24				U	mg/Kg		-3	3			
WG481737LCSS	LCSS	09/18/19 23:28	PCN57844	264		239.3	mg/Kg		213	315			
WG481737LCSSD	LCSSD	09/18/19 23:32	PCN57844	264		247.8	mg/Kg		213	315	3	20	
L54390-06MS	MS	09/19/19 1:14	II190916-2	51.57725	71	119.5	mg/Kg	94	75	125			
L54390-06MSD	MSD	09/19/19 1:17	II190916-2	51.57725	71	120.7	mg/Kg	96	75	125	1	20	

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ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-01	WG481914	Arsenic, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Barium, total (3050)	M6010D ICP	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.
	WG482024	Boron, soluble (Hot Water)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Cadmium, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481541	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			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).
	WG481914	Copper, total (3050)	M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
		Lead, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Nickel, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
L54390-02	WG481914	Arsenic, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Barium, total (3050)	M6010D ICP	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.
	WG482024	Boron, soluble (Hot Water)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Cadmium, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481541	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			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).
	WG481914	Copper, total (3050)	M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
		Lead, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Nickel, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Northwest Colorado Consultants

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-06	WG481914	Arsenic, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Barium, total (3050)	M6010D ICP	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.
	WG482024	Boron, soluble (Hot Water)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481996	Cadmium, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG481541	Chromium, Hexavalent (3060)	M7196A	DA	Sample required dilution due to reactivity.
			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).
	WG481914	Copper, total (3050)	M6010D ICP	ZH	Serial Dilution exceeded the acceptance criteria. Matrix interference [physical or chemical] is suspected.
		Lead, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Nickel, total (3050)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

Northwest Colorado Consultants

Project ID:

Sample ID: PB-1

ACZ Sample ID: **L54390-01**

Date Sampled: 09/04/19 11:30

Date Received: 09/05/19

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

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

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 14:49

Analysis Date: 09/10/19 14:49

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	5	*	ug/Kg	5	5
Ethylbenzene	100-41-4		U	5	*	ug/Kg	5	5
m p Xylene	1330-20-7		U	5	*	ug/Kg	10	10
o Xylene	95-47-6		U	5	*	ug/Kg	5	5
Toluene	108-88-3		U	5	*	ug/Kg	5	5
TVH C6 to C10	TVH		U	5	*	mg/Kg	0.3	0.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	91.1		5		%	70	130
Bromofluorobenzene (TVH)	460-00 4	91.4		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: PB-1

ACZ Sample ID: **L54390-01**

Date Sampled: 09/04/19 11:30

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 18:03

Analysis Date: 09/20/19 19:36

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	0.164	*	mg/Kg	16.4	82.2
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	76.53		0.164		%	60	115

Northwest Colorado Consultants

Project ID:

Sample ID: PB-1

ACZ Sample ID: **L54390-01**

Date Sampled: 09/04/19 11:30

Date Received: 09/05/19

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: **WG482115**

Analyst: rgt

Extract Date: 09/12/19 15:20

Analysis Date: 09/20/19 19:47

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	222	*	ug/Kg	400	2000
Acenaphthene	83-32-9		U	222	*	ug/Kg	400	2000
Acenaphthylene	208-96-8		U	222	*	ug/Kg	400	2000
Anthracene	120-12-7		U	222	*	ug/Kg	400	2000
Benzo(a)anthracene	56-55-3		U	222	*	ug/Kg	400	2000
Benzo(a)pyrene	50-32-8		U	222	*	ug/Kg	400	2000
Benzo(b)fluoranthene	205-99-2		U	222	*	ug/Kg	400	2000
Benzo(g,h,i)perylene	191-24-2		U	222	*	ug/Kg	400	2000
Benzo(k)fluoranthene	207-08-9		U	222	*	ug/Kg	400	2000
Chrysene	218-01-9		U	222	*	ug/Kg	400	2000
Dibenzo(a,h)anthracene	53-70-3		U	222	*	ug/Kg	400	2000
Fluoranthene	206-44-0		U	222	*	ug/Kg	400	2000
Fluorene	86-73-7		U	222	*	ug/Kg	400	2000
Indeno(1,2,3-cd)pyrene	193-39-5		U	222	*	ug/Kg	400	2000
Naphthalene	91-20-3		U	222	*	ug/Kg	400	2000
Phenanthrene	85-01-8		U	222	*	ug/Kg	400	2000
Pyrene	129-00-0		U	222	*	ug/Kg	400	2000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	75.7		222		%	45	105
Nitrobenzene-d5	4165-60-0	73		222		%	35	100
Terphenyl-d14	1718-51-0	88.9		222		%	30	125

Northwest Colorado Consultants

Project ID:

Sample ID: PB-2

ACZ Sample ID: **L54390-02**

Date Sampled: 09/04/19 12:20

Date Received: 09/05/19

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

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

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 15:19

Analysis Date: 09/10/19 15:19

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	90		5		%	70	130
Bromofluorobenzene (TVH)	460-00 4	90		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: PB-2

ACZ Sample ID: **L54390-02**

Date Sampled: 09/04/19 12:20

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 19:32

Analysis Date: 09/23/19 16:27

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		40	J	0.265	*	mg/Kg	26.5	132
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	76.21		0.265		%	60	115

Northwest Colorado Consultants

Project ID:

Sample ID: PB-2

ACZ Sample ID: **L54390-02**

Date Sampled: 09/04/19 12:20

Date Received: 09/05/19

Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

Analysis Method: **M8270C GC/MS**

Extract Method: **M3540**

Workgroup: **WG482115**

Analyst: rgt

Extract Date: 09/12/19 18:40

Analysis Date: 09/20/19 21:28

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	248	*	ug/Kg	500	2000
Acenaphthene	83-32-9		U	248	*	ug/Kg	500	2000
Acenaphthylene	208-96-8		U	248	*	ug/Kg	500	2000
Anthracene	120-12-7		U	248	*	ug/Kg	500	2000
Benzo(a)anthracene	56-55-3		U	248	*	ug/Kg	500	2000
Benzo(a)pyrene	50-32-8		U	248	*	ug/Kg	500	2000
Benzo(b)fluoranthene	205-99-2		U	248	*	ug/Kg	500	2000
Benzo(g,h,i)perylene	191-24-2		U	248	*	ug/Kg	500	2000
Benzo(k)fluoranthene	207-08-9		U	248	*	ug/Kg	500	2000
Chrysene	218-01-9		U	248	*	ug/Kg	500	2000
Dibenzo(a,h)anthracene	53-70-3		U	248	*	ug/Kg	500	2000
Fluoranthene	206-44-0		U	248	*	ug/Kg	500	2000
Fluorene	86-73-7		U	248	*	ug/Kg	500	2000
Indeno(1,2,3-cd)pyrene	193-39-5		U	248	*	ug/Kg	500	2000
Naphthalene	91-20-3		U	248	*	ug/Kg	500	2000
Phenanthrene	85-01-8		U	248	*	ug/Kg	500	2000
Pyrene	129-00-0		U	248	*	ug/Kg	500	2000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	74.4		248		%	45	105
Nitrobenzene-d5	4165-60-0	71.4		248		%	35	100
Terphenyl-d14	1718-51-0	90.6		248		%	30	125

Northwest Colorado Consultants

Project ID:

Sample ID: OF-1

ACZ Sample ID: **L54390-03**

Date Sampled: 09/04/19 13:10

Date Received: 09/05/19

Sample Matrix: Soil

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 15:48

Analysis Date: 09/10/19 15:48

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	5		5	*	ug/Kg	5	5
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	87.9		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: OF-1

ACZ Sample ID: **L54390-03**

Date Sampled: 09/04/19 13:10

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 20:01

Analysis Date: 09/20/19 21:10

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	0.112	*	mg/Kg	11.2	56.1
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	59.72		0.112	*	%	60	115

Northwest Colorado Consultants

Project ID:

Sample ID: OF-2

ACZ Sample ID: **L54390-04**

Date Sampled: 09/04/19 13:40

Date Received: 09/05/19

Sample Matrix: Soil

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 16:18

Analysis Date: 09/10/19 16:18

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
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	86.4		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: OF-2

ACZ Sample ID: **L54390-04**

Date Sampled: 09/04/19 13:40

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 20:31

Analysis Date: 09/20/19 21:33

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	0.115	*	mg/Kg	11.5	57.4
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	26.26		0.115	*	%	60	115

Northwest Colorado Consultants

Project ID:

Sample ID: OF-3

ACZ Sample ID: **L54390-05**

Date Sampled: 09/04/19 14:00

Date Received: 09/05/19

Sample Matrix: Soil

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 16:47

Analysis Date: 09/10/19 16:47

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	6		5	*	ug/Kg	5	5
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	86.2		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: OF-3

ACZ Sample ID: **L54390-05**

Date Sampled: 09/04/19 14:00

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 21:00

Analysis Date: 09/20/19 21:57

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	0.107	*	mg/Kg	10.7	53.3
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	85.69		0.107		%	60	115

Northwest Colorado Consultants

Project ID:

Sample ID: OF-4

ACZ Sample ID: **L54390-06**

Date Sampled: 09/04/19 14:30

Date Received: 09/05/19

Sample Matrix: Soil

BTEX/Gasoline Range Organics (C6-C10)

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

Extract Method: **5035A**

Workgroup: WG481456

Analyst: jel

Extract Date: 09/10/19 17:17

Analysis Date: 09/10/19 17:17

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	84.7		5		%	70	130

Northwest Colorado Consultants

Project ID:

Sample ID: OF-4

ACZ Sample ID: **L54390-06**

Date Sampled: 09/04/19 14:30

Date Received: 09/05/19

Sample Matrix: Soil

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**

Extract Method: **M3540**

Workgroup: WG482195

Analyst: qhs

Extract Date: 09/16/19 21:30

Analysis Date: 09/20/19 22:44

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	0.121	*	mg/Kg	12.1	60.7
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	81.41		0.121		%	60	115

Northwest Colorado Consultants

Project ID:
 Sample ID: OF-4

ACZ Sample ID: **L54390-06**
 Date Sampled: 09/04/19 14:30
 Date Received: 09/05/19
 Sample Matrix: Soil

Polynuclear Aromatic Hydrocarbons GC/M

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

Workgroup: WG482115

Analyst: rgt
 Extract Date: 09/12/19 19:46
 Analysis Date: 09/20/19 22:02

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
2-Methylnaphthalene	91-57-6		U	95.9	*	ug/Kg	200	1000
Acenaphthene	83-32-9		U	95.9	*	ug/Kg	200	1000
Acenaphthylene	208-96-8		U	95.9	*	ug/Kg	200	1000
Anthracene	120-12-7		U	95.9	*	ug/Kg	200	1000
Benzo(a)anthracene	56-55-3		U	95.9	*	ug/Kg	200	1000
Benzo(a)pyrene	50-32-8		U	95.9	*	ug/Kg	200	1000
Benzo(b)fluoranthene	205-99-2		U	95.9	*	ug/Kg	200	1000
Benzo(g,h,i)perylene	191-24-2		U	95.9	*	ug/Kg	200	1000
Benzo(k)fluoranthene	207-08-9		U	95.9	*	ug/Kg	200	1000
Chrysene	218-01-9		U	95.9	*	ug/Kg	200	1000
Dibenzo(a,h)anthracene	53-70-3		U	95.9	*	ug/Kg	200	1000
Fluoranthene	206-44-0		U	95.9	*	ug/Kg	200	1000
Fluorene	86-73-7		U	95.9	*	ug/Kg	200	1000
Indeno(1,2,3-cd)pyrene	193-39-5		U	95.9	*	ug/Kg	200	1000
Naphthalene	91-20-3		U	95.9	*	ug/Kg	200	1000
Phenanthrene	85-01-8		U	95.9	*	ug/Kg	200	1000
Pyrene	129-00-0		U	95.9	*	ug/Kg	200	1000
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2-Fluorobiphenyl	321-60-8	73.1		95.9		%	45	105
Nitrobenzene-d5	4165-60-0	69.6		95.9		%	35	100
Terphenyl-d14	1718-51-0	101.5		95.9		%	30	125

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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.

Benzene, Toluene, Ethylbenzene & Xylenes

M8021B GC/PID

WG481456

AS		Sample ID: L54390-03AS		PCN/SCN: B190821-1-CCV				Analyzed: 09/10/19 18:17		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	251	U	260.6	ug/Kg	104.0	70	130			
ETHYLBENZENE	251	U	257.6	ug/Kg	103.0	70	130			
M P XYLENE	503	U	509	ug/Kg	101.0	70	130			
O XYLENE	252.3	U	253.6	ug/Kg	101.0	70	130			
TOLUENE	251.8	5	262	ug/Kg	102.0	70	130			
TVH C6 TO C10	2.5		2.53	mg/Kg		70	130			N1
BROMOFLUOROBENZENE (surr)				%	89.1	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	89.0	70	130			

ASD		Sample ID: L54390-03ASD		PCN/SCN: B190821-1-CCV				Analyzed: 09/10/19 18:47		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	251	U	261.4	ug/Kg	104.0	70	130	0	20	
ETHYLBENZENE	251	U	257.8	ug/Kg	103.0	70	130	0	20	
M P XYLENE	503	U	507	ug/Kg	101.0	70	130	0	20	
O XYLENE	252.3	U	252.3	ug/Kg	100.0	70	130	1	20	
TOLUENE	251.8	5	262.1	ug/Kg	102.0	70	130	0	20	
TVH C6 TO C10	2.5		2.51	mg/Kg		70	130	1	20	N1
BROMOFLUOROBENZENE (surr)				%	87.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	87.7	70	130			

LCSS		Sample ID: WG481456LCSS		PCN/SCN: B190821-2-ICV				Analyzed: 09/10/19 13:20		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		23.1	ug/Kg	92.0	70	130			
ETHYLBENZENE	25		23.1	ug/Kg	92.0	70	130			
M P XYLENE	50.4		46.8	ug/Kg	93.0	70	130			
O XYLENE	50.3		45.5	ug/Kg	91.0	70	130			
TOLUENE	75.3		67.8	ug/Kg	90.0	70	130			
TVH C6 TO C10	.5		.435	mg/Kg	87.0	70	130			
BROMOFLUOROBENZENE (surr)				%	99.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	99.9	70	130			

LCSSD		Sample ID: WG481456LCSSD		PCN/SCN: B190821-2-ICV				Analyzed: 09/10/19 13:50		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.3	ug/Kg	97.0	70	130	5	20	
ETHYLBENZENE	25		24.1	ug/Kg	96.0	70	130	4	20	
M P XYLENE	50.4		49	ug/Kg	97.0	70	130	5	20	
O XYLENE	50.3		47.8	ug/Kg	95.0	70	130	5	20	
TOLUENE	75.3		71.3	ug/Kg	95.0	70	130	5	20	
TVH C6 TO C10	.5		.459	mg/Kg	92.0	70	130	5	20	
BROMOFLUOROBENZENE (surr)				%	97.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	99.2	70	130			

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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: WG481456PBS						Analyzed: 09/10/19 14:19		
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)				%	96.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	96.5	70	130			

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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

WG481456

AS		Sample ID: L54390-03AS		PCN/SCN: B190821-1-CCV				Analyzed: 09/10/19 18:17		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	251	U	260.6	ug/Kg	104.0	70	130			
ETHYLBENZENE	251	U	257.6	ug/Kg	103.0	70	130			
M P XYLENE	503	U	509	ug/Kg	101.0	70	130			
O XYLENE	252.3	U	253.6	ug/Kg	101.0	70	130			
TOLUENE	251.8	5	262	ug/Kg	102.0	70	130			
TVH C6 TO C10	2.5		2.53	mg/Kg		70	130			N1
BROMOFLUOROBENZENE (surr)				%	89.1	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	89.0	70	130			

ASD		Sample ID: L54390-03ASD		PCN/SCN: B190821-1-CCV				Analyzed: 09/10/19 18:47		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	251	U	261.4	ug/Kg	104.0	70	130	0	20	
ETHYLBENZENE	251	U	257.8	ug/Kg	103.0	70	130	0	20	
M P XYLENE	503	U	507	ug/Kg	101.0	70	130	0	20	
O XYLENE	252.3	U	252.3	ug/Kg	100.0	70	130	1	20	
TOLUENE	251.8	5	262.1	ug/Kg	102.0	70	130	0	20	
TVH C6 TO C10	2.5		2.51	mg/Kg		70	130	1	20	N1
BROMOFLUOROBENZENE (surr)				%	87.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	87.7	70	130			

LCSS		Sample ID: WG481456LCSS		PCN/SCN: B190821-2-ICV				Analyzed: 09/10/19 13:20		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		23.1	ug/Kg	92.0	70	130			
ETHYLBENZENE	25		23.1	ug/Kg	92.0	70	130			
M P XYLENE	50.4		46.8	ug/Kg	93.0	70	130			
O XYLENE	50.3		45.5	ug/Kg	91.0	70	130			
TOLUENE	75.3		67.8	ug/Kg	90.0	70	130			
TVH C6 TO C10	.5		.435	mg/Kg	87.0	70	130			
BROMOFLUOROBENZENE (surr)				%	99.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	99.9	70	130			

LCSSD		Sample ID: WG481456LCSSD		PCN/SCN: B190821-2-ICV				Analyzed: 09/10/19 13:50		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
BENZENE	25.1		24.3	ug/Kg	97.0	70	130	5	20	
ETHYLBENZENE	25		24.1	ug/Kg	96.0	70	130	4	20	
M P XYLENE	50.4		49	ug/Kg	97.0	70	130	5	20	
O XYLENE	50.3		47.8	ug/Kg	95.0	70	130	5	20	
TOLUENE	75.3		71.3	ug/Kg	95.0	70	130	5	20	
TVH C6 TO C10	.5		.459	mg/Kg	92.0	70	130	5	20	
BROMOFLUOROBENZENE (surr)				%	97.8	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	99.2	70	130			

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ACZ Project ID: **L54390**

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: WG481456PBS					Analyzed: 09/10/19 14:19			
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)				%	96.5	70	130			
BROMOFLUOROBENZENE (TVH) (surr)				%	96.5	70	130			

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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

WG482195

MS		Sample ID: L54390-01MS		PCN/SCN: OPTPH190819-1			Analyzed: 09/20/19 20:00			
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2500.6	U	433.06	mg/Kg	107.0	70	130			
OTP (surr)				%	86.0	60	115			

MSD		Sample ID: L54390-01MSD		PCN/SCN: OPTPH190819-1				Analyzed: 09/20/19 20:23			
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	2500.6	U	451.02	mg/Kg	109.0	70	130	4	20		
OTP (surr)				%	87.3	60	115				

LCSS		Sample ID: WG481734LCSS		PCN/SCN: OPTPH190819-1				Analyzed: 09/20/19 18:49			
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	2500.6		47.785	mg/Kg	57.0	70	130			RJ	
OTP (surr)				%	52.2	60	115			RJ	

LCSSD		Sample ID: WG481734LCSSD		PCN/SCN: OPTPH190819-1				Analyzed: 09/20/19 19:13		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2500.6		82.187	mg/Kg	99.0	70	130	53	20	RJ
OTP (surr)				%	86.9	60	115			

PBS		Sample ID: WG481734PBS						Analyzed: 09/20/19 18:26			
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28			U	mg/Kg		-16.7	16.7				
OTP (surr)				%	80.5	60	115				

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ACZ Project ID: **L54390**

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.

Polynuclear Aromatic Hydrocarbons GC/MS

M8270C GC/MS

WG482115

MS		Sample ID: L54314-03MS		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 15:17		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648	U	7990	ug/Kg	83.0	40	123			
PYRENE	50428	U	7860	ug/Kg	80.0	47	127			
2,4,6-TRIBROMOPHENOL (surr)				%	84.1	35	125			
2-FLUOROBIPHENYL (surr)				%	79.1	45	105			
2-FLUOROPHENOL (surr)				%	75.3	35	105			
NITROBENZENE-D5 (surr)				%	75.2	35	100			
PHENOL-D6 (surr)				%	77.5	40	100			
TERPHENYL-D14 (surr)				%	94.6	30	125			

MSD		Sample ID: L54314-03MSD		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 15:51		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648	U	7140	ug/Kg	74.0	40	123	11	20	
PYRENE	50428	U	6820	ug/Kg	70.0	47	127	14	20	
2,4,6-TRIBROMOPHENOL (surr)				%	72.6	35	125			
2-FLUOROBIPHENYL (surr)				%	70.0	45	105			
2-FLUOROPHENOL (surr)				%	66.1	35	105			
NITROBENZENE-D5 (surr)				%	65.8	35	100			
PHENOL-D6 (surr)				%	68.8	40	100			
TERPHENYL-D14 (surr)				%	82.2	30	125			

MS		Sample ID: L54390-01MS		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 20:21		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648	U	8600	ug/Kg	77.0	40	123			
PYRENE	50428	U	8170	ug/Kg	72.0	47	127			
2,4,6-TRIBROMOPHENOL (surr)				%	63.3	35	125			
2-FLUOROBIPHENYL (surr)				%	76.5	45	105			
2-FLUOROPHENOL (surr)				%	72.9	35	105			
NITROBENZENE-D5 (surr)				%	74.4	35	100			
PHENOL-D6 (surr)				%	75.4	40	100			
TERPHENYL-D14 (surr)				%	88.1	30	125			

MSD		Sample ID: L54390-01MSD		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 20:54		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648	U	8600	ug/Kg	77.0	40	123	0	20	
PYRENE	50428	U	8360	ug/Kg	74.0	47	127	2	20	
2,4,6-TRIBROMOPHENOL (surr)				%	70.2	35	125			
2-FLUOROBIPHENYL (surr)				%	76.9	45	105			
2-FLUOROPHENOL (surr)				%	73.6	35	105			
NITROBENZENE-D5 (surr)				%	75.4	35	100			
PHENOL-D6 (surr)				%	76.1	40	100			
TERPHENYL-D14 (surr)				%	88.7	30	125			

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ACZ Project ID: **L54390**

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.

LCSS		Sample ID: WG480856LCSS			PCN/SCN: OPBNA190904-1			Analyzed: 09/20/19 13:36		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648		245	ug/Kg	15.0	40	123			N1
PYRENE	50428		218	ug/Kg	13.0	47	127			N1
2,4,6-TRIBROMOPHENOL (surr)				%	10.5	35	125			N1
2-FLUOROBIPHENYL (surr)				%	14.7	45	105			N1
2-FLUOROPHENOL (surr)				%	13.9	35	105			N1
NITROBENZENE-D5 (surr)				%	13.2	35	100			N1
PHENOL-D6 (surr)				%	14.0	40	100			N1
TERPHENYL-D14 (surr)				%	16.9	30	125			N1

LCSSD		Sample ID: WG480856LCSSD			PCN/SCN: OPBNA190904-1			Analyzed: 09/20/19 14:09		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648		1038	ug/Kg	63.0	40	123	124	20	RK
PYRENE	50428		1086	ug/Kg	65.0	47	127	133	20	RK
2,4,6-TRIBROMOPHENOL (surr)				%	62.9	35	125			
2-FLUOROBIPHENYL (surr)				%	61.1	45	105			
2-FLUOROPHENOL (surr)				%	58.8	35	105			
NITROBENZENE-D5 (surr)				%	57.9	35	100			
PHENOL-D6 (surr)				%	59.7	40	100			
TERPHENYL-D14 (surr)				%	78.5	30	125			

PBS		Sample ID: WG480856PBS				Analyzed:		09/20/19 13:02		
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)				%	44.8	35	125			
2-FLUOROBIPHENYL (surr)				%	54.8	45	105			
2-FLUOROPHENOL (surr)				%	52.3	35	105			
NITROBENZENE-D5 (surr)				%	51.9	35	100			
PHENOL-D6 (surr)				%	53.7	40	100			
TERPHENYL-D14 (surr)				%	67.3	30	125			

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ACZ Project ID: **L54390**

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.

LCSS		Sample ID: WG481501LCSS		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 18:40		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648		1242	ug/Kg	75.0	40	123			
PYRENE	50428		1203	ug/Kg	72.0	47	127			
2,4,6-TRIBROMOPHENOL (surr)				%	72.0	35	125			
2-FLUOROBIPHENYL (surr)				%	75.2	45	105			
2-FLUOROPHENOL (surr)				%	73.6	35	105			
NITROBENZENE-D5 (surr)				%	71.9	35	100			
PHENOL-D6 (surr)				%	74.2	40	100			
TERPHENYL-D14 (surr)				%	90.0	30	125			

LCSSD		Sample ID: WG481501LCSSD		PCN/SCN: OPBNA190904-1				Analyzed: 09/20/19 19:13		
Compound	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
ACENAPHTHENE	49648		1387	ug/Kg	84.0	40	123	11	20	
PYRENE	50428		1302	ug/Kg	77.0	47	127	8	20	
2,4,6-TRIBROMOPHENOL (surr)				%	77.4	35	125			
2-FLUOROBIPHENYL (surr)				%	82.9	45	105			
2-FLUOROPHENOL (surr)				%	78.7	35	105			
NITROBENZENE-D5 (surr)				%	78.9	35	100			
PHENOL-D6 (surr)				%	80.8	40	100			
TERPHENYL-D14 (surr)				%	93.8	30	125			

PBS		Sample ID: WG481501PBS						Analyzed: 09/20/19 18:06		
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)				%	63.8	35	125			
2-FLUOROBIPHENYL (surr)				%	70.8	45	105			
2-FLUOROPHENOL (surr)				%	68.7	35	105			
NITROBENZENE-D5 (surr)				%	68.8	35	100			
PHENOL-D6 (surr)				%	70.9	40	100			
TERPHENYL-D14 (surr)				%	82.9	30	125			

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-01	WG481456	Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	N1	See Case Narrative.
			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.
	WG482195	TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
			M8015D GC/FID	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [$< MDL$].
WG482115		2-Methylnaphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Acenaphthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Acenaphthylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(b)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(g,h,i)perylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(k)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Chrysene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Dibenzo(a,h)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluorene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Indeno(1,2,3-cd)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Naphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Phenanthrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.

REPAD.15.06.05.01

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-02	WG481456	Pyrene	M8270C GC/MS	DK	moisture content. Sample mass used for extraction decreased due to high moisture content.
		Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		TVH C6 to C10	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	N1	See Case Narrative.
			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.
	WG482195	TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
	WG482115	2-Methylnaphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Acenaphthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Acenaphthylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(b)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(g,h,i)perylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(k)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Chrysene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Dibenzo(a,h)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluorene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Indeno(1,2,3-cd)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Naphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high

REPAD.15.06.05.01

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-03	WG481456	Phenanthrene	M8270C GC/MS	DK	moisture content. Sample mass used for extraction decreased due to high moisture content.
		Pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	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.
	WG482195	OTP	M8015D GC/FID	S7	Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.
		TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
			M8015D GC/FID	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [$< MDL$].
L54390-04	WG481456	Benzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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.
	WG482195	OTP	M8015D GC/FID	S7	Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.
		TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
			M8015D GC/FID	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [$< MDL$].

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L54390-05	WG481456	Benzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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.
	WG482195	o Xylene	M8021B GC/PID	D1	Sample required dilution due to matrix.
			M8021B GC/PID	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 GC/PID	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.
		TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
L54390-06	WG481456	Benzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Ethylbenzene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		m p Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		o Xylene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	ZM	Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.
		Toluene	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	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.
	WG482195	TVH C6 to C10	M8021B/8015D GC/PID/FID	D1	Sample required dilution due to matrix.
			M8021B/8015D GC/PID/FID	N1	See Case Narrative.
			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.
		TPH C10 to C28	M8015D GC/FID	DK	Sample mass used for extraction decreased due to high moisture content.
			M8015D GC/FID	RJ	LCS/LCSD RPD or RSD exceeded the method or laboratory control limit. Sample(s) could not be re-prepped. See Case Narrative.
			M8015D GC/FID	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG482115	2-Methylnaphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Acenaphthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high

ACZ Project ID: **L54390**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					moisture content.
		Acenaphthylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(a)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(b)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(g,h,i)perylene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Benzo(k)fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Chrysene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Dibenzo(a,h)anthracene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluoranthene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Fluorene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Indeno(1,2,3-cd)pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Naphthalene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Phenanthrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.
		Pyrene	M8270C GC/MS	DK	Sample mass used for extraction decreased due to high moisture content.

Northwest Colorado Consultants

ACZ Project ID: **L54390**

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

Northwest Colorado Consultants

ACZ Project ID: L54390

Date Received: 09/05/2019 10:34

Received By:

Date Printed: 9/6/2019

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 checked="" type="checkbox"/>	<input 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 Company. Sample Identification Date Time Line 8 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"/>

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
6055	3.7	<=6.0	15	N/A
5189	3.1	<=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.

Northwest Colorado Consultants

ACZ Project ID: L54390

Date Received: 09/05/2019 10:34

Received By:

Date Printed: 9/6/2019

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.

L54390

CHAIN of CUSTODY

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

Report to:

Name: Gary Webber
Company: NWCC
E-mail: gwebber@nwccusa.com

Address: 2580 Copper Ridge Dr
SBS, CO
Telephone: (970) 879-7888

Copy of Report to:

Name: Same
Company: Same

E-mail: Same
Telephone: Same

Invoice to:

Name: Same
Company: Same
E-mail: Same

Address: Same
Telephone: Same

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: C. Peters Sampler's Site Information State CO Zip code 80672 Time Zone MTH

*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?	SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	OM-COCC	-SW	COCC	910	OMIMEX	SO	BT	BOA				
				PW-1	9/4/19 1035	SW	13	X											
				PB-1	9/4/19 1130	SO	4			X									
				PB-2	9/4/19 1220	SO	4			X									
				OF-1	9/4/19 1310	SO	3					X							
				OF-2	9/4/19 1340	SO	3					X							
				OF-3	9/4/19 1400	SO	3					X							
				OF-4	9/4/19 1430	SO	4			X									
				TB-1	9/4/19 0830									X					

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

REMARKS

TRIP Blank Laboratory prepared 3.7°C at Drop off

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

[Signature] 9/5/19 0953 [Signature] 9/5/19 9:53