



75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

20 December 2019

30-039-05420

Jake Harter
Cottonwood Consulting
PO Box 1653
Durango, CO 81302
RE: Braden Head

Enclosed are the results of analyses for samples received by the laboratory on 12/11/19 17:00.
If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jeremy D. Allen'.

Jeremy D Allen For Debbie Zufelt
Reports Manager

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water.

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8.



dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: Braden Head
Project Name / Number: Jicarilla Apache B#9
Project Manager: Jake Harter

Reported:
12/20/19 16:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Jicarilla Apache B#9	1912122-01	Water	12/11/19 11:15	12/11/19 17:00	

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.



dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: Braden Head
Project Name / Number: Jicarilla Apache B#9
Project Manager: Jake Harter

Reported:
12/20/19 16:24

Jicarilla Apache B#9
API # 30-039-05420
1912122-01 (Produced Water)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
---------	--------	----	-----	-------	----------	----------	--------	-------	---------

General Chemistry

Chloride*	326	25.0	4.82	mg/L	25	12/19/19 10:53	EPA300.0		AES
pH*	8.17			pH Units	1	12/13/19 09:00	EPA150.1		FGH
Total Dissolved Solids*	3700	200		mg/L	20	12/12/19 15:15	EPA160.1		VJL
Sulfate*	15.7	25.0	7.38	mg/L	25	12/19/19 10:53	EPA300.0	J	AES

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.

Page 3 of 6 1912122 GAL FINAL 12 20 19 1624 12/20/19 16:24:52



dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: Braden Head
Project Name / Number: Jicarilla Apache B#9
Project Manager: Jake Harter

Reported:
12/20/19 16:24

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B912094 - General Prep - Wet Chem										
Blank (B912094-BLK1)				Prepared & Analyzed: 12/12/19						
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B912094-SRM1)				Prepared & Analyzed: 12/12/19						
Total Dissolved Solids	535	10.0	mg/L	600		89.2	85-115			
Batch B912115 - General Prep - Wet Chem										
Reference (B912115-SRM1)				Prepared & Analyzed: 12/13/19						
pH	7.03		pH Units	7.00		100	98.5-101.4			
Batch B912151 - General Prep - Wet Chem										
Blank (B912151-BLK1)				Prepared: 12/18/19 Analyzed: 12/20/19						
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B912151-BS1)				Prepared & Analyzed: 12/18/19						
Chloride	23.8	1.00	mg/L	25.0		95.4	90-110			
Sulfate	23.3	1.00	mg/L	25.0		93.3	90-110			
LCS Dup (B912151-BSD1)				Prepared & Analyzed: 12/18/19						
Chloride	24.9	1.00	mg/L	25.0		99.4	90-110	4.15	20	
Sulfate	24.3	1.00	mg/L	25.0		97.2	90-110	4.12	20	

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.



dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: Braden Head
Project Name / Number: Jicarilla Apache B#9
Project Manager: Jake Harter

Reported:
12/20/19 16:24

Notes and Definitions

J	Estimated concentration. Analyte concentration between MDL and RL.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis *Results reported on as received basis unless designated as dry.
RPD	Relative Percent Difference
LCS	Laboratory Control Sample (Blank Spike)
RL	Report Limit
MDL	Method Detection Limit

Green Analytical Laboratories

Jeremy D Allen For Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.

