



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

19 July 2023

David Bounds
Hilcorp
382 CR 3100
Aztec, NM 87410
RE: South

Enclosed are the results of analyses for samples received by the laboratory on 07/14/23 14:47. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Veronica J. Wells'.

Veronica Wells
Project 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. TNI Certificate Number: T104704514-23-17

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. TNI Certificate Number: T104704398-23-16



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

www.GreenAnalytical.com

Hilcorp
382 CR 3100
Aztec NM, 87410

Project: Braden Head
Project Name / Number: South
Project Manager: David Bounds

Reported:
07/19/23 15:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Pierce Fed A 2 E	2307145-01	Water	07/13/23 07:50	07/14/23 14:47	

Green Analytical Laboratories

Veronica Wells, Project 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.



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

www.GreenAnalytical.com

Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: South Project Manager: David Bounds	Reported: 07/07/23 13:20
---	---	-----------------------------

Pierce Fed A 2E

2306251-09 (Produced Water)

Sampled Date: 06/22/23 10:00

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

General Chemistry

Chloride*	17.6	5.00	0.278	mg/L	5	07/04/23 06:01	EPA300.0		AWG
pH*	10.5			pH Units	1	06/23/23 16:30	EPA150.1		KRW
pH Temperature, degrees C	18.7			pH Units	1	06/23/23 16:30	EPA150.1		KRW
Sulfate*	2440	15.0	1.86	mg/L	15	07/04/23 06:22	EPA300.0		AWG
Total Dissolved Solids*	3710	10.0		mg/L	1	06/27/23 10:56	EPA160.1		CAI

Green Analytical Laboratories

Veronica Wells, Project 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.



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

www.GreenAnalytical.com

Hilcorp
382 CR 3100
Aztec NM, 87410

Project: Braden Head
Project Name / Number: South
Project Manager: David Bounds

Reported:
07/19/23 15:24

Pierce Fed A 2 E

2307145-01 (Water)

Sampled Date: 07/13/23 07:50

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

General Chemistry

Chloride*	2390	50.0	2.78	mg/L	50	07/18/23 12:59	EPA300.0		AWG
pH*	5.79			pH Units	1	07/18/23 16:15	EPA150.1	H4	KRW
pH Temperature, degrees C	18.1			pH Units	1	07/18/23 16:15	EPA150.1	H4	KRW
Sulfate*	36.6	50.0	6.20	mg/L	50	07/18/23 12:59	EPA300.0	J	AWG
Total Dissolved Solids*	4050	10.0		mg/L	1	07/18/23 16:11	EPA160.1		CAI

Green Analytical Laboratories

Veronica Wells, Project 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.



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

www.GreenAnalytical.com

Hilcorp
382 CR 3100
Aztec NM, 87410

Project: Braden Head
Project Name / Number: South
Project Manager: David Bounds

Reported:
07/19/23 15:24

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B232051 - General Prep - Wet Chem										
Blank (B232051-BLK1) Prepared & Analyzed: 07/18/23										
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B232051-SRM1) Prepared & Analyzed: 07/18/23										
Total Dissolved Solids	400	10.0	mg/L	400		100	85-115			
Batch B232054 - IC- Ion Chromatograph										
Blank (B232054-BLK1) Prepared & Analyzed: 07/18/23										
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B232054-BS1) Prepared & Analyzed: 07/18/23										
Chloride	25.1	1.00	mg/L	25.0		100	90-110			
Sulfate	24.0	1.00	mg/L	25.0		95.9	90-110			
LCS Dup (B232054-BSD1) Prepared & Analyzed: 07/18/23										
Chloride	25.2	1.00	mg/L	25.0		101	90-110	0.537	20	
Sulfate	24.2	1.00	mg/L	25.0		97.0	90-110	1.11	20	
Batch B232067 - General Prep - Wet Chem										
Reference (B232067-SRM1) Prepared & Analyzed: 07/18/23										
pH	7.06		pH Units	7.00		101	98.57-101.42			

Green Analytical Laboratories

Veronica Wells, Project 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.



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

www.GreenAnalytical.com

Hilcorp	Project: Braden Head	
382 CR 3100	Project Name / Number: South	Reported:
Aztec NM, 87410	Project Manager: David Bounds	07/19/23 15:24

Notes and Definitions

- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- H4 pH analysis performed more than 48 hours after sampling.
- 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

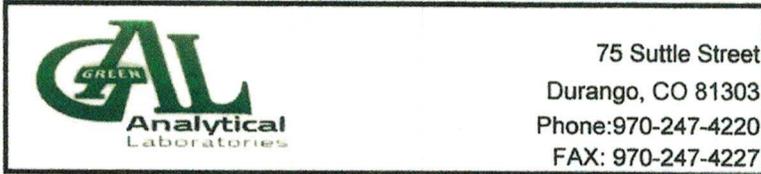
Green Analytical Laboratories

Veronica Wells, Project 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.

100% Rush

Client: Hilcorp	Asset: South	Phone# 505-419-3410	Contact: David Bounds
Address: 9A CR# 5793, Farmington NM 87401		E-Mail Address: dbounds@hilcorp.com	



CHAIN OF CUSTODY RECORD	
GAL Work Order #	<i>2307-145</i>
PO#	
Project Name:	

*27.4c
NO: a a*

Sample Location:

- (1)BumperSpring, (2)CompressorDischarge, (3)Flowline, (4)Meter, (5)Oil Tank
- (6)PigLauncher, (7)PigReceiver, (8)Pipeline, (9)Pit Tank, (10)PostFilter, (11)Prefilter
- (12)SeparatorInlet, (13)SeparatorOutlet, (14)SeparatorDump, (15)SWDInlet
- (16)SWDOutlet, (17)TransferPump, (18)ValveCan, (19)WaterTank, (20)Wellhead
- (21)Other

Sample Type:

- (1)Casing, (2)CO2GasTube, (3)Coupon, (4)Water, (5)H2SGasTube, (6)Metals
- (7)O2GasTube, (8)PipeSection, (9)Residual, (10)Sludge, (11)Solid, (12)Tubing, (13)Other

Well Name (Sample Name)	Area	Date	Time	Collected By: (Init.)	Sample Location	Sample Type	No. of Containers	Preservative				Analyses Required					
								Filtered: Y / N	Unpreserved	H2SO4	Other:	Iron and Manganese	Phosphate	Full Water API	Bradford Test		
1. Pierce																	
<i>1 Pierce Fed A 2 E</i>	<i>7</i>	<i>7-13</i>	<i>7:50</i>	<i>TK</i>	<i>14</i>	<i>4</i>	<i>1</i>	<i>N</i>									<i>X</i>
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	
11.																	
12.																	
13.																	
14.																	
15.																	
16.																	
17.																	
18.																	
19.																	
20.																	

100% Rush

Relinquished by:	Date:	Time:	Received By:	Date:	Time:
<i>[Signature]</i>	<i>7-14</i>	<i>14:47</i>	<i>[Signature]</i>	<i>7/14/23</i>	<i>14:47</i>
<i>Chusko Chan</i>	<i>7/17/23</i>	<i>16:55</i>	<i>Kangaroo Express</i>	<i>7/17/23</i>	<i>16:55</i>
<i>KANGAROO EXPRESS</i>	<i>7/19/23</i>	<i>8:40</i>	<i>[Signature]</i>	<i>2.9°C / ON ICE / C-20242</i>	

Project Information

Printed: 07/18/2023 8:46 am

Hilcorp

382 CR 3100

Aztec, NM 87410

Laboratory PM: Veronica Wells

Hilcorp

Phone: (505) 599-4005

Fax: (505) 599-4005

Project Name: Braden Head

Project Number:

Client PM: Kevin Fredrickson

Comments:

Analysis	Comment
----------	---------

Chloride [IC]

pH

Sulfate [IC]

Total Dissolved Solids [TDS]



SAMPLE CONDITION RECEIPT FORM

Client Name: Hilltop

Work Order # 2307-145

Courier: Fed Ex UPS USPS Client Kangaroo

Custody Seals on Box/Cooler Present: Yes No Seals Intact: Yes No

Thermometer Used: #2 Samples on ice, cooling process has begun: Yes No

Type of Ice: Wet Blue None

Cooler Temp: Observed Temp: 2.9 °C Correction Factor: 0 °C Final Temp: 2.9 °C
* Temp should be above freezing to 6°C

Date/Initials of person examining contents: 7/18/23
[Signature]
Labeled by initials: _____
(if different than above)

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4.
Samples arrived within hold time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. <u>PA</u>
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. <u>3 Day T.A.T.</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	9.
Containers Intact:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10.
Dissolved Testing Needed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	11.
Field Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Sample Labels match COC: -Includes Date/Time/ID	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	12.
Matrix:	<input checked="" type="checkbox"/> W <input type="checkbox"/> SL <input type="checkbox"/> OT	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/Resolution:

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 247854

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 247854
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	tds 4050 - produced water	9/18/2023