



75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
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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

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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

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

Veronica Wells, Project Manager

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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
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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

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Veronica Wells, Project Manager

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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
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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

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Veronica Wells, Project Manager

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Project: Braden Head
Project Name / Number: South
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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
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Batch B232051 - General Prep - Wet Chem

Blank (B232051-BLK1)

Prepared & Analyzed: 07/18/23

Total Dissolved Solids	ND	10.0	mg/L
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Reference (B232051-SRM1)

Prepared & Analyzed: 07/18/23

Total Dissolved Solids	400	10.0	mg/L	400	100	85-115
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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
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Green Analytical Laboratories

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

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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	



75 Suttle Street
Durango, CO 81303
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FAX: 970-247-4227

CHAIN OF CUSTODY RECORD

GAL Work Order # **2307-145**

PO#

Project Name:

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

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

Relinquished by:	Date:	Time:	Received By:	Date:	Time:
<i>[Signature]</i>	7-14/23	14:47	<i>[Signature]</i>	7/14/23	1447
<i>[Signature]</i>	7/17/23	1655	<i>[Signature]</i>	7/17/23	1655
KANGAROO EXPRESS	7/19/23	8:40	<i>[Signature]</i>	29°C / ON ICE / CRYO #2	

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: HucarpWork Order # 2307-145Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ KangarooCustody Seals on Box/Cooler Present: ☐ Yes ☒ NoSeals Intact: ☐ Yes ☐ NoThermometer Used: #2 Samples on ice, cooling process has begun: ☒ Yes ☐ NoType of Ice: ☒ Wet ☐ Blue ☐ NoneCooler Temp: Observed Temp: 29 °C Correction Factor: 0 °C Final Temp: 29 °C

* Temp should be above freezing to 6°C

Date/Initials of person
examining contents: 7/18/23
SLLabeled 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 checked="" type="checkbox"/> Yes <input 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>PH</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input 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 type="checkbox"/> No	12.
Matrix:	<u>WT</u> SL OT	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input 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