



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

26 June 2023

Kevin Fredrickson
Hilcorp
382 CR 3100
Aztec, NM 87410
RE: North

Enclosed are the results of analyses for samples received by the laboratory on 06/13/23 12:20. 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	Project: Braden Head	
382 CR 3100	Project Name / Number: North	Reported:
Aztec NM, 87410	Project Manager: Kevin Fredrickson	06/26/23 11:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Aztec Com 4 # 2 H	2306147-01	Water	06/13/23 07:00	06/13/23 12:20	
Fee 3B	2306147-02	Water	06/13/23 08:00	06/13/23 12:20	

Green Analytical Laboratories

Veronica Wells, Project Manager

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 06/26/23 11:46
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Aztec Com 4 # 2 H

2306147-01 (Produced Water)

Sampled Date: 06/13/23 07:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Chloride*	56.9	25.0	1.39	mg/L	25	06/23/23 13:36	EPA300.0		AWG
pH*	12.7			pH Units	1	06/15/23 16:35	EPA150.1	H4	KRW
pH Temperature, degrees C	20.8			pH Units	1	06/15/23 16:35	EPA150.1	H4	KRW
Sulfate*	26.8	25.0	3.10	mg/L	25	06/23/23 13:36	EPA300.0		AWG
Total Dissolved Solids*	5380	40.0		mg/L	4	06/15/23 12:30	EPA160.1		CAI

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 06/26/23 11:46
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Fee 3B

2306147-02 (Produced Water)

Sampled Date: 06/13/23 08:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Chloride*	526	25.0	1.39	mg/L	25	06/21/23 21:44	EPA300.0		AES
pH*	11.0			pH Units	1	06/15/23 16:35	EPA150.1	H4	KRW
pH Temperature, degrees C	20.1			pH Units	1	06/15/23 16:35	EPA150.1	H4	KRW
Sulfate*	398	25.0	3.10	mg/L	25	06/21/23 21:44	EPA300.0		AES
Total Dissolved Solids*	3900	20.0		mg/L	2	06/15/23 12:32	EPA160.1		CAI

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Hilcorp 382 CR 3100 Aztec NM, 87410	Project: Braden Head Project Name / Number: North Project Manager: Kevin Fredrickson	Reported: 06/26/23 11:46
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General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B231679 - General Prep - Wet Chem										
Reference (B231679-SRM1) Prepared & Analyzed: 06/15/23										
pH	7.07		pH Units	7.00		101	98.57-101.42			
Batch B231680 - General Prep - Wet Chem										
Blank (B231680-BLK1) Prepared & Analyzed: 06/15/23										
Total Dissolved Solids	ND	10.0	mg/L							
Reference (B231680-SRM1) Prepared & Analyzed: 06/15/23										
Total Dissolved Solids	400	10.0	mg/L	400		100	85-115			
Batch B231755 - IC- Ion Chromatograph										
Blank (B231755-BLK1) Prepared & Analyzed: 06/21/23										
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B231755-BS1) Prepared & Analyzed: 06/21/23										
Chloride	24.8	1.00	mg/L	25.0		99.3	90-110			
Sulfate	24.1	1.00	mg/L	25.0		96.3	90-110			
LCS Dup (B231755-BSD1) Prepared & Analyzed: 06/21/23										
Chloride	25.1	1.00	mg/L	25.0		100	90-110	1.21	20	
Sulfate	24.4	1.00	mg/L	25.0		97.5	90-110	1.31	20	
Batch B231784 - IC- Ion Chromatograph										
Blank (B231784-BLK1) Prepared & Analyzed: 06/23/23										
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B231784-BS1) Prepared & Analyzed: 06/23/23										
Chloride	25.0	1.00	mg/L	25.0		99.9	90-110			
Sulfate	24.1	1.00	mg/L	25.0		96.6	90-110			
LCS Dup (B231784-BSD1) Prepared & Analyzed: 06/23/23										
Chloride	25.0	1.00	mg/L	25.0		100	90-110	0.0881	20	
Sulfate	24.1	1.00	mg/L	25.0		96.6	90-110	0.0207	20	

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382 CR 3100	Project Name / Number: North	Reported:
Aztec NM, 87410	Project Manager: Kevin Fredrickson	06/26/23 11:46

Notes and Definitions

- 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

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Project Information

Printed: 06/14/2023 8:54 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: HIL CORP

Work Order # 2306-147

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 4.2 °C Correction Factor: 0 °C Final Temp: 4.2 °C
*Temp should be above freezing to 6°C

Date/Initials of person examining contents: 6/14/23
[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 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>9H</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
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 checked="" 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 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 232881

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 232881
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	TDS 5380 bradenhead has production water	9/22/2023