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www.greenanalytical.com

25 July 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 07/20/23 12:15. 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



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Hilcorp
382 CR 3100
Aztec NM, 87410

Project: Braden Head
Project Name / Number: North
Project Manager: Kevin Fredrickson

Reported:
07/25/23 16:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Abrams 1	2307190-03	Water	07/19/23 09:00	07/20/23 12:15	

Green Analytical Laboratories

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Veronica Wells, Project Manager

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Reported:
07/25/23 16:04

Abrams 1**2307190-03 (Produced Water)****Sampled Date: 07/19/23 09:00**

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

Chloride*	1680	100	5.55	mg/L	100	07/21/23 01:19	EPA300.0		AWG
pH*	9.60			pH Units	1	07/20/23 14:00	EPA150.1		KRW
pH Temperature, degrees C	19.8			pH Units	1	07/20/23 14:00	EPA150.1		KRW
Sulfate*	11400	100	12.4	mg/L	100	07/21/23 01:19	EPA300.0		AWG
Total Dissolved Solids*	19400	40.0		mg/L	4	07/21/23 14:14	EPA160.1		CAI

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07/25/23 16:04

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 B232090 - IC- Ion Chromatograph

Blank (B232090-BLK1)

Prepared & Analyzed: 07/20/23

Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							

LCS (B232090-BS1)

Prepared & Analyzed: 07/20/23

Chloride	25.8	1.00	mg/L	25.0		103	90-110			
Sulfate	24.8	1.00	mg/L	25.0		99.1	90-110			

LCS Dup (B232090-BSD1)

Prepared & Analyzed: 07/20/23

Chloride	25.9	1.00	mg/L	25.0		103	90-110	0.0813	20	
Sulfate	24.8	1.00	mg/L	25.0		99.4	90-110	0.282	20	

Batch B232092 - General Prep - Wet Chem

Reference (B232092-SRM1)

Prepared & Analyzed: 07/20/23

pH	10.1		pH Units	10.0		101	98.57-101.42			
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Batch B232097 - General Prep - Wet Chem

Blank (B232097-BLK1)

Prepared & Analyzed: 07/21/23

Total Dissolved Solids	ND	10.0	mg/L							
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Reference (B232097-SRM1)

Prepared & Analyzed: 07/21/23

Total Dissolved Solids	375	10.0	mg/L	400		93.7	85-115			
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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: 07/25/23 16:04
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Notes and Definitions

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: 07/20/2023 1:29 pm

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]

Project Information

Printed: 07/20/2023 1:29 pm

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Laboratory PM: Veronica Wells

Hilcorp

Phone: (505) 599-4005

Fax: (505) 599-4005

Project Name: Formation Comparison**Project Number:****Client PM:** Kevin Fredrickson**Comments:**

Analysis	Comment
Alkalinity, Total	
Calcium Potentially Dissolved by ICP	
Chloride [IC]	
Iron Potentially Dissolved by ICP	
Magnesium Potentially Dissolved by ICP	
Sodium Potentially Dissolved by ICP	
Sulfate [IC]	
Total Dissolved Solids [TDS]	
Potentially Dissolved Metals are not filtered.	



SAMPLE CONDITION RECEIPT FORM

Client Name: HincorpWork Order # 2307-190Courier: ☐ 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: 26.5 °C Correction Factor: 4 °C Final Temp: 25.5 °C

* Temp should be above freezing to 6°C

Date/Initials of person
examining contents: 7/20/23
[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 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 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. <u>POURED OFF / ACIDIFIED 7/20 @ 13:40</u>
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:	<input checked="" type="checkbox"/> WT <input type="checkbox"/> SL <input type="checkbox"/> OT	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" 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 244504

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 244504
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	TDS 375	9/20/2023