



# Caerus

**Well Name: NPR 12B-14-596**

**API #: 05-045-23849**

**Job Type: Surface**

**Date Job Completed: 12/08/2018**

**Quote #: QUO-23707**

**Execution #: EXC-13798**



# Caerus

Attention: Mr. Steve Schmitz | (720) 880-6412 | [sschmitz@caerusoilandgas.com](mailto:sschmitz@caerusoilandgas.com)

Caerus | 1001 17th Street, Suite 1600 | Denver, CO 80202

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Dear Mr. Schmitz,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,

Zen Keith  
Field Engineer III | (307) 757-7178 | [Zen.Keith@BJServices.com](mailto:Zen.Keith@BJServices.com)

Field Office 28730 US-6, Rifle, CO 81650  
Phone: (970) 632-2412

Sales Office 999 18th St. Suite 1200 Denver, CO 80202  
Phone: (281) 408-2361

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# Cementing Treatment



<b>Start Date</b>	12/8/2018	<b>Field Ticket#</b>	FT-13798-X7D0Y40202-00772
<b>End Date</b>	12/8/2018	<b>Well</b>	NPR 12B-14-596
<b>Client</b>	Caerus Operating LLC	<b>API#</b>	05-045-23849
<b>Client Field Rep.</b>	Leonard Stomley	<b>Well Classification</b>	
<b>Service Sup.</b>	Wendell Youngberg	<b>County</b>	GARFIELD
<b>District</b>	Rifle, CO	<b>State/Province</b>	CO
<b>Type of Job</b>	Surface	<b>Formation</b>	
<b>Execution ID</b>	EXC-13798-X7D0Y402	<b>Rig</b>	H&P 273
<b>Project ID</b>	PRJ1013303		

## WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Previous Casing	15.50	16.00	42.05	100.00			
Open Hole	14.75	0.00	0.00	2,403.00			
Casing	8.92	9.63	36.00	2,386.00		J-55	LTC

**Shoe Length (ft):** 41.70

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Top Plug Used?</b>	Yes	<b>Tool Depth (ft)</b>	2,344.30
<b>Top Plug Provided By</b>	Non BJ	<b>Max Casing Pressure - Rated (psi)</b>	3,520.00
<b>Top Plug Size</b>	9.625	<b>Max Casing Pressure - Operated (psi)</b>	2,000.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	None
<b>Centralizers Quantity</b>	10.00	<b>Job Pumped Through</b>	Manifold
<b>Centralizers Type</b>	Bow	<b>Top Connection Thread</b>	8 RD
<b>Landing Collar Depth (ft)</b>	2,386	<b>Top Connection Size</b>	9.625

# Cementing Treatment



## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	5.00
Circulation Time (min)	180.00	10 min SGS	9.00
Circulation Rate (bpm)	7.00	30 min SGS	120.00
Circulation Volume (bbls)	1,260.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	8.95		
PV Mud In	10		
YP Mud In	5		

## TEMPERATURE

Ambient Temperature (°F)	36.00	Slurry Cement Temperature (°F)	48.00
Mix Water Temperature (°F)	43.00		

## BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (Ft)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water 1	8.3300			0.00				20.0000
Spacer / Pre Flush / Flush	Sodium Silicate	10.0000			0.00				20.0000
Spacer / Pre Flush / Flush	Water 2	8.3300			0.00				20.0000
Lead Slurry	BJCem S100.3.01D	12.0000	2.5298	14.86	0.00	1900	517	1,306.0000	232.6000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	1,900.00	500	161	358.0000	63.7000
Displacement Final	Displacement	8.3300			0.00			0.0000	181.5000

# Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	Sodium Silicate	SILICATE, SODIUM, A-3L	21.0000	GPB
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB

## TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
12/8/2018 9:00:00 AM	Water 1	5.00	20.00	197.00	
12/8/2018 9:03:00 AM	Sodium Silicate	5.00	20.00	182.00	
12/8/2018 9:06:00 AM	Water 2	5.00	20.00	166.00	
12/8/2018 11:40:00 AM	BJCem S100.3.01D	4.50	232.60	240.00	
12/8/2018 12:48:00 PM	BJCem S100.3.01D	4.50	63.70	109.00	
12/8/2018 1:00:00 PM	Displacement	6.50	181.50	590.00	

	Min	Max	Avg
Pressure (psi)	0.00	1,103.00	400.00
Rate (bpm)	2.00	6.50	5.00

# Cementing Treatment



## DISPLACEMENT AND END OF JOB SUMMARY

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Displaced By	BJ	Amount of Cement Returned/Reversed	40.00
Calculated Displacement Volume (bbls)	181.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	181.00	Amount of Spacer to Surface	60.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	0.75
Bump Plug Pressure (psi)	590.00	Total Volume Pumped (bbls)	544.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	Yes
Cement returns During Job	Full	Lost Circulation During Cement Job	No

## EVENT LOG



**Customer Name:** Caerus Operating LLC

**Well Name:** NPR 12B-14-596

**Job Type:** Surface

**Quote ID:** QUO-23707-D1N0C8

**Plan ID:** ORD-13798-X7D0Y4

**Execution ID:** EXC-13798-X7D0Y402

**District:** Rifle, CO

**BJ Supervisor:** Wendell Youngberg

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	12/08/2018 02:30	Callout					Ready to Service At 04:00
2	12/08/2018 03:00	Arrive on Location					Arrive on Location
3	12/08/2018 03:15	Rig					Rig Running Casing
4	12/08/2018 04:30	Rig					Landing Joint Going In
5	12/08/2018 04:45	Rig					Start Circulating Two Bottoms Up
6	12/08/2018 05:00	STEACS Briefing					Rig Up STEACS
7	12/08/2018 05:15	Rig Up					Rig Up Iron, Bulk, Water
8	12/08/2018 06:36	STEACS Briefing					Job STEACS With Rig
9	12/08/2018 07:00	Rig					Rig Circulating
10	12/08/2018 08:30	Open Wellhead					Stab Head And Open
11	12/08/2018 08:42	Pump Spacer	8.3400	5.00	5.00	311.00	Fill Lines Water Spacer
12	12/08/2018 08:45	Pressure Test				3,600.00	Test Lines

## EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
13	12/08/2018 09:00	Pump Spacer	8.3400	5.00	15.00	199.00	Fresh Water Spacer
14	12/08/2018 09:03	Pump Spacer	8.3400	5.00	20.00	182.00	S.S. Water Mix Spacer
15	12/08/2018 09:06	Pump Spacer	8.3400	5.00	20.00	166.00	Fresh Water Spacer
16	12/08/2018 09:10	Equipment Issue					Pump Plugged Call for Pump
17	12/08/2018 11:30	Pump Spacer	8.3400	2.20	10.00	62.00	Fresh Water Fill Lines
18	12/08/2018 11:37	Pressure Test				3,500.00	Test Lines
19	12/08/2018 11:40	Pump Lead Cement					Batch Up Lead Cement
20	12/08/2018 11:43	Pump Lead Cement	12.0000	4.50	232.00	240.00	Start Pumping Lead Cement
21	12/08/2018 11:53	Pump Lead Cement	12.0000	4.50		120.00	50 BBLS Pumped Lead Cement
22	12/08/2018 12:05	Pump Lead Cement	12.0000	3.50		75.00	100 BBLS Pumped Lead Cement
23	12/08/2018 12:18	Pump Lead Cement	12.0000	2.50		76.00	150 BBLS Pumped Lead Cement
24	12/08/2018 12:30	Pump Lead Cement	12.0000	4.00		119.00	200 BBLS Pumped Lead Cement
25	12/08/2018 12:39	Pump Lead Cement	12.0000	4.00		91.00	232 BBLS Pumped Lead Cement
26	12/08/2018 12:47	Pump Tail Cement	12.5000	4.00	63.00	109.00	Start Tail Cement
27	12/08/2018 12:48	Pump Tail Cement	12.5000	4.00		109.00	50 BBLS Pumped Tail Cement
28	12/08/2018 12:50	Pump Tail Cement	12.5000	2.00		81.00	63 BBLS Pumped Tail Cement
29	12/08/2018 12:54	Drop Top Plug					Drop Plug
30	12/08/2018 13:00	Pump Displacement	8.3400	6.00	181.00	230.00	Start Displacement. 2 BBLS Cement on Plug
31	12/08/2018 13:11	Pump Displacement	8.3400	6.50		410.00	50 BBLS Pumped Displacement
32	12/08/2018 13:18	Pump Displacement	8.3400	6.50		490.00	100 BBLS Pumped Displacement
33	12/08/2018 13:30	Pump Displacement	8.3400	4.00		509.00	150 BBLS Pumped Displacement
34	12/08/2018 13:35	Pump Displacement	8.3400	2.30		590.00	181 BBLS Pumped Displacement
35	12/08/2018 13:37	Land Plug				590.00	Land Plug



## EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
36	12/08/2018 13:38	Pressure Test				1,103.00	Hold PSI 5 Min.
37	12/08/2018 13:43	Check Floats				0.00	Check Floats
38	12/08/2018 13:45	Rig Up					Rig Up to Parasite Line
39	12/08/2018 13:50	Pump Spacer	8.3400	2.00	10.00	300.00	Pump Sugar Water Down Parasite Line
40	12/08/2018 14:00	Other (See comment)	12.0000	1.00	10.00	10.00	Move Over To 330 Pad and Pump Parasite Lines
41	12/08/2018 14:30	Other (See comment)	12.0000	1.00	10.00	10.00	Move Back To 273 Pad And Top Off Well
42	12/08/2018 15:00	STEACS Briefing					Rig Down STEACS
43	12/08/2018 15:30	Rig Down					Rig Down Iron, Bulk, Water, Cement Head
44	12/08/2018 17:00	STEACS Briefing					Travel STEACS
45	12/08/2018 17:15	Depart for Location					Leave Rig Site



**Caerus NPR 12B-14 Surface Chart #2**

