



# Caerus

**Well Name: NPR 15D-11-596**

**API #: 05-045-23855**

**Job Type: Surface**

**Date Job Completed: 10/15/2018**

**Quote #: QUO-20903**

**Execution #: EXC-12111**



# 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>	10/15/2018	<b>Field Ticket#</b>	FT-12111-G7T7C30202-83150
<b>End Date</b>	10/15/2018	<b>Well</b>	NPR 15D-11-596
<b>Client</b>	CAERUS OPERATING, LLC	<b>API#</b>	05-045-23855
<b>Client Field Rep.</b>	George Urban	<b>Well Classification</b>	
<b>Service Sup.</b>	Francisco Castillo	<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-12111-G7T7C302	<b>Rig</b>	H&P 330
<b>Project ID</b>	PRJ1011749		

## 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	2,430.00			
Casing	8.92	9.63	36.00	2,367.36		J-55	LTC

**Shoe Length (ft):** 44.34

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Top Plug Used?</b>	Yes	<b>Tool Depth (ft)</b>	2,323.02
<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>	2,816.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	None
<b>Centralizers Quantity</b>		<b>Job Pumped Through</b>	Manifold
<b>Centralizers Type</b>	Bow	<b>Top Connection Thread</b>	8RD
<b>Landing Collar Depth (ft)</b>	2,323	<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	0.00
Circulation Time (min)	60.00	10 min SGS	0.00
Circulation Rate (bpm)	7.00	30 min SGS	0.00
Circulation Volume (bbls)	420.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.00		
PV Mud In	21		
YP Mud In	18		

## TEMPERATURE

Ambient Temperature (°F)	43.00	Slurry Cement Temperature (°F)	67.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	107.00

## 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	233.0000
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	180.0000

# 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	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
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
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	BJCem S100.3.01D	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB

## TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
10/16/2018 7:43:00 PM	Water 1	4.00	20.00	208.00	SPACER
10/16/2018 7:46:00 PM	Sodium Silicate	4.00	20.00	217.00	SPACER
10/16/2018 7:50:00 PM	Water 2	4.00	20.00	225.00	SPACER
10/16/2018 7:56:00 PM	BJCem S100.3.01D	5.50	233.00	350.00	LEAD CEMENT
10/16/2018 8:39:00 PM	BJCem S100.3.01D	5.50	63.00	263.00	TAIL CEMENT
10/16/2018 8:54:00 PM	Displacement	5.50	180.00	706.00	DISPLACEMENT

	Min	Max	Avg
Pressure (psi)	208.00	706.00	328.17
Rate (bpm)	4.00	5.50	4.75

# Cementing Treatment



## DISPLACEMENT AND END OF JOB SUMMARY

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Displaced By	BJ	Amount of Cement Returned/Reversed	90.00
Calculated Displacement Volume (bbls)	180.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	180.00	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	0.50
Bump Plug Pressure (psi)	1,135.00	Total Volume Pumped (bbls)	536.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No

# EVENT LOG



**Customer Name:** CAERUS OPERATING, LLC

**Well Name:** NPR 15D-11-596

**Job Type:** Surface

**Quote ID:** QUO-20903-H7G6F7

**Plan ID:** ORD-12111-G7T7C3

**Execution ID:** EXC-12111-G7T7C302

**District:** Rifle, CO

**BJ Supervisor:** Francisco Castillo

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	10/16/2018 15:20	Other (See comment)					BJ CREW LEAVE THE YARD, ON LOCATION TIME 20:00HRS
2	10/16/2018 16:20	Arrive on Location					ARRIVE ON LOCATION, RIG RUNNING CASING
3	10/16/2018 16:45	Rig Up					RIG UP BJ EQUIPMENT
4	10/16/2018 18:53	Safety Meeting					PRE-JOB SAFETY MEETING WITH RIG CREW
5	10/16/2018 19:40	Pressure Test				4,700.00	PRESSURE TEST LINES
6	10/16/2018 19:43	Pump Spacer	8.3400	4.00	20.00	208.00	WATER SPACER
7	10/16/2018 19:46	Pump Spacer	11.0000	4.00	20.00	217.00	SODIUM SILICATE SPACER
8	10/16/2018 19:50	Pump Spacer	8.3400	4.00	20.00	225.00	WATER SPACER
9	10/16/2018 19:56	Pump Lead Cement	12.0000				LEAD 517SKS/233BBLS, 12PPG, 2.53YLD, 14.86GAL/SK
10	10/16/2018 20:05	Pump Lead Cement	12.0000	5.50	50.00	350.00	50 BBLS LEAD CEMENT PUMPED
11	10/16/2018 20:13	Pump Lead Cement	12.0000	5.50	50.00	255.00	100 BBLS LEAD CEMENT PUMPED
12	10/16/2018 20:23	Pump Lead Cement	12.0000	5.50	50.00	251.00	150 BBLS LEAD CEMENT PUMPED
13	10/16/2018 20:34	Pump Lead Cement	12.0000	5.50	83.00	255.00	233 BBLS LEAD CEMENT PUMPED
14	10/16/2018 20:39	Pump Tail Cement	12.5000	5.50	63.00	263.00	TAIL 161SKS/63BBLS, 12.5PPG, 2.22YLD, 12.59GAL/SK, TOP OF TAIL 1,829'

## EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
15	10/16/2018 20:52	End Pumping					SHUTDOWN, DROP TOP PLUG WITH 2 BBLS CMT ON TOP OF PLUG
16	10/16/2018 20:54	Pump Displacement					BEGIN DISPLACEMENT FRESH WATER
17	10/16/2018 21:04	Pump Displacement	8.3400	5.50	50.00	338.00	50 BBLS DISPLACEMENT PUMPED
18	10/16/2018 21:13	Pump Displacement	8.3400	5.50	50.00	533.00	100 BBLS DISPLACEMENT PUMPED
19	10/16/2018 21:22	Pump Displacement	8.3400	5.50	70.00	706.00	170 BBLS DISPLACEMENT PUMPED
20	10/16/2018 21:25	Pump Displacement	8.3400	5.50	10.00	653.00	SLOW RATE LAST 10 BBLS
21	10/16/2018 21:30	Land Plug				1,135.00	LAND PLUG, FULL RETURNS, 90 BBLS CEMENT TO SURFACE
22	10/16/2018 21:35	Check Floats					FLOATS HELD, 0.5 BBL FLOW BACK
23	10/16/2018 21:43	Other (See comment)	8.3400	1.00	10.00	247.00	10 BBLS SUGAR WATER THROUGH PARASITE, BROKE AT 247 PSI
24	10/16/2018 21:51	End Pumping					SHUTDOWN, SWAP TO PREVIOUS WELL FOR PTA
25	10/16/2018 22:45	Rig Down					RIG DOWN EQUIPMENT
26	10/16/2018 23:59	Leave Location					BJ CREW LEAVE LOCATION
27	10/17/2018 00:01	Other (See comment)					THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW
28	10/17/2018 00:03	Other (See comment)					CALCULATED TOP OF TAIL 1,829', 90 BBLS OF CMT TO SURFACE





CAERUS 9 5/8 SURFACE

