



Caerus

Well Name: NPR 11D-14-596

API # 05-045-23858

Job Type: Surface

Date Job Completed: 09/22/18

Quote #: QUO-19546

Execution #: EXC-11301



Caerus

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

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

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

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

Cementing Treatment



Start Date	9/21/2018	Field Ticket#	FT-11301-X2Z2H10202-84640
End Date	9/22/2018	Well	NPR 11D-14-596
Client	CAERUS OPERATING, LLC	API#	05-045-23858
Client Field Rep.	George Urban	Well Classification	
Service Sup.	Wendell Youngberg	County	GARFIELD
District	Rifle, CO	State/Province	CO
Type of Job	Surface	Formation	
Execution ID	EXC-11301-X2Z2H102	Rig	H&P 330
Project ID	PRJ1010989		

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			2,400.00			
Casing	8.92	9.63	36.00	2,368.00		J-55	LTC

Shoe Length (ft): 44.00

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	2,324.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	1,616.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	5.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8 rd
Landing Collar Depth (ft)	2,324	Top Connection Size	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)	30.00	10 min SGS	37.00
Circulation Rate (bpm)	6.00	30 min SGS	42.00
Circulation Volume (bbls)	230.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.00	Gas Units	
PV Mud In	19		
YP Mud In	12		

TEMPERATURE

Ambient Temperature (°F)	49.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	103.00

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	182.5000

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 EXTENDER, GYPSUM, A-10	5.0000	BWOB
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, ASTM TYPE III	100.0000	PCT
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
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
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
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

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
9/22/2018 6:05:00 AM	Water 1	3.00	20.00	52.00	
9/22/2018 6:17:00 AM	Sodium Silicate	5.00	20.00	287.00	
9/22/2018 6:21:00 AM	Water 2	5.00	20.00	363.00	
9/22/2018 6:30:00 AM	BJCem S100.3.01D	5.00	232.60	348.00	
9/22/2018 7:10:00 AM	BJCem S100.3.01D	5.00	63.70	250.00	
9/22/2018 7:27:00 AM	Displacement	8.00	179.60	810.00	
		Min	Max	Avg	
Pressure (psi)		52.00	810.00	351.67	
Rate (bpm)		2.00	8.00	5.17	

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	25.00
Calculated Displacement Volume (bbls)	179.60	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	179.00	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)	650.00	Total Volume Pumped (bbls)	530.00
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 11D-14-596

Job Type: Surface

Quote ID: QUO-19546-M1B2N7

Plan ID: ORD-11301-X2Z2H1

Execution ID: EXC-11301-X2Z2H102

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	09/21/2018 23:00	Callout					Call out yard ASAP with Ready to service ASAP
2	09/22/2018 00:00	Leave Location					Leave yard Rifle, CO
3	09/22/2018 01:00	Arrive on Location					Arrive at location and spot trucks
4	09/22/2018 01:30	Arrive on Location					Rig up STEACS and rig in iron, bulk, water
5	09/22/2018 02:30	Customer					Running casing
6	09/22/2018 05:00	Safety Meeting					STEACS Safety Meeting with Rig
7	09/22/2018 05:15	Safety Meeting					Rig circulating 50 BBLS mud and Pump 180 BBLS Fresh water spacer
8	09/22/2018 06:00	Open Wellhead					Stab head and open
9	09/22/2018 06:05	Pump Spacer	8.3400	3.00	5.00	52.00	Fresh water fill lines
10	09/22/2018 06:08	Pressure Test				4,100.00	Pressure test lines
11	09/22/2018 06:12	Pump Spacer	8.3400	5.50	15.00	180.00	Fresh water spacer
12	09/22/2018 06:17	Pump Spacer	10.0000	5.50	20.00	287.00	S.S. water mix spacer
13	09/22/2018 06:21	Pump Spacer	8.3400	5.50	20.00	363.00	Fresh water spacer

EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
14	09/22/2018 06:24	Pump Lead Cement	12.0000	0.00	232.00	0.00	Batch up lead cement
15	09/22/2018 06:30	Pump Lead Cement	12.0000	5.50		348.00	Start lead cement
16	09/22/2018 06:39	Pump Lead Cement	12.0000	5.50		262.00	50 BBLS pumped lead cement
17	09/22/2018 06:48	Pump Lead Cement	12.0000	5.50		266.00	100 BBLS pumped lead cement
18	09/22/2018 07:00	Pump Lead Cement	12.0000	5.50		246.00	150 BBLS pumped lead cement
19	09/22/2018 07:07	Pump Lead Cement	12.0000	4.00		134.00	200 BBLS pumped lead cement
20	09/22/2018 07:10	Pump Tail Cement	12.5000	4.00	63.00	118.00	Start tail cement
21	09/22/2018 07:15	Pump Tail Cement	12.5000	5.50		250.00	20 BBLS pumped tail cement
22	09/22/2018 07:19	Pump Tail Cement	12.5000	5.50		249.00	50 BBLS pumped tail cement
23	09/22/2018 07:27	Pump Displacement	8.3400	5.50	179.00	135.00	Start displacement
24	09/22/2018 07:28	Pump Displacement	8.3400	8.00		400.00	50 BBLS pumped displacement
25	09/22/2018 07:40	Pump Displacement	8.3400	8.00		640.00	100 BBLS pumped displacement
26	09/22/2018 07:47	Pump Displacement	8.3400	8.00		755.00	150 BBLS pumped displacement
27	09/22/2018 07:51	Pump Displacement	8.3400	2.00		650.00	179 BBLS Pumped displacement
28	09/22/2018 07:52	Land Plug				650.00	Land Plug FSP 650
29	09/22/2018 07:53	Land Plug				1,416.00	Hold PSI 1416
30	09/22/2018 07:58	Check Floats				0.00	Check Floats, got .75 BBL back
31	09/22/2018 08:00	Pump Spacer	8.3400	2.00	10.00	750.00	Pump Sugar water down Parasite Line
32	09/22/2018 08:07	Rig Down					Rig Down STEACS and Rig Down Iron, Bulk, Water
33	09/22/2018 08:55	Leave Location					Travel STEACS and Leave Location

EVENT LOG



20 BBLS Fresh water spacer
20 BBLS S.S. water mix spacer
20 BBLS Fresh water spacer
232BBLS Lead cement – 517 SKS, 12.0#, Y-2.53, MW-14.86
63 BBLS Tail cement – 161 SKS, 12.5#, Y-2.23, MW-12.59
179.6 BBLS Displacement
Landed plug at 179 BBLS of Displacement
Got Cement to surface with 25 BBLS back
Floats held with .75 BBL back
500 BBLS of Mix water
Top of tail is 1877.7
Height of tail is 490.3
Top of lead is surface 0ft
Height of lead is 1911.7

