



Caerus

Well Name: NPR 11C-9

API #: 05-045-23873

Job Type: Surface

Date Job Completed: 01/13/2019

Quote #: QUO-25276

Execution #: EXC-14784



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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Mark Rust	FORMATION	
CLIENT FIELD REPRESENTATIVE	Jarvis Abbey	RIG	H&P 273
DISTRICT	Rifle, CO	COUNTY	GARFIELD
SERVICE	Cementing	STATE / PROVINCE	CO

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	0.00	14.75	0.00	2,509.00			
Casing	9.63	8.92	36.00	2,464.75		J-55	LTC
Previous Casing	20.00	19.50	52.73	130.00			

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	2,421.11
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.630	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Type	Bow	Job Pumped Through	No Manifold
Landing Collar Depth (ft)	2,421	Top Connection Thread	8 Rnd
		Top Connection Size	9.63



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	21
Circulation Prior to Job	Yes	YP Mud Out	21
Circulation Time (min)	90.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	8.00	10 sec SGS	10
Circulation Volume (bbls)	720.00	10 min SGS	24
Lost Circulation Prior to Cement Job	No	30 min SGS	46
Mud Density In (ppg)	9.20	Flare Prior to / during the Cement Job	No
Mud Density Out (ppg)	9.20	Gas Present	No
PV Mud In	15		
PV Mud Out	15		

TEMPERATURE

Ambient Temperature (°F)	36.00	Slurry Cement Temperature (°F)	70.00
Mix Water Temperature (°F)	45.00	Flow Line Temperature (°F)	87.00

FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water 1	8.3300					20.0000
Spacer / Pre Flush / Flush	Sodium Silicate	10.0000					20.0000
Spacer / Pre Flush / Flush	Water 2	8.3300					20.0000
Lead Slurry	BJCem S100.3.01D	12.0000	2.5298	14.86	584	1477.0000	263.0000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	161	358.0000	63.7000
Displacement Final	Displacement	8.3300				0.0000	190.2000
Top Out Slurry	BJCem S100.3.01D	12.5000	2.2256	12.59	18	40.0000	7.0000

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

TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESSURE (psi)	ANNULUS PRESSURE (psi)	COMMENTS
1/12/2019 4:55:00 PM	Water 1	5.00	20.00	149.00		
1/12/2019 4:59:00 PM	Sodium Silicate	5.00	20.00	255.00		
1/12/2019 5:02:00 PM	Water 2	5.00	20.00	154.00		
1/12/2019 5:14:00 PM	BJCem S100.3.01D	5.00	263.00	163.00		
1/12/2019 6:08:00 PM	BJCem S100.3.01D	5.00	63.70	169.00		
1/12/2019 6:26:00 PM	Displacement	5.00	187.00	919.00		

MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	149.00	919.00	301.50
Rate (bpm)	5.00	5.00	5.00



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	187.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	187.00	Amt of Spacer to Surface	0.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	1,423.00	Total Volume Pumped (bbls)	570.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Full	Lost Circulation During Cement Job	No

Client Name: Caerus Operating LLC

Well: NPR 11C-9-596

Well API: 05-045-23873

Start Date: 1/12/2019

End Date: 1/13/2019

Field Ticket #: FT-14784-S0B2R20202-22865



BJ Cementing Event Log

Surface - Rifle, CO - Mark Rust

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	01/12/2019 10:00	Depart for Location					Depart shop for location
2	01/12/2019 12:30	Arrive on Location					Arrive on location, rig running casing
3	01/12/2019 12:30	Spot Units					Spot all equipment
4	01/12/2019 13:00	Rig Up					Pre-rig up safety meeting, rig up equipment and lines
5	01/12/2019 14:30	Rig					Waiting on rig to circulate
6	01/12/2019 15:30	STEACS Briefing					Pre-job safety meeting with rig crew and company man
7	01/12/2019 15:55	Rig Up					Rig up cement head
8	01/12/2019 16:40	Prime Up	8.3400	2.00		34.00	Prime up pumps and lines
9	01/12/2019 16:50	Pressure Test				3500.00	Pressure test, pressure held
10	01/12/2019 16:55	Pump Spacer	8.3400	5.00	20.00	149.00	Pumped fresh water spacer
11	01/12/2019 16:59	Pump Spacer	8.3400	5.00	20.00	255.00	Pumped sodium silicate spacer
12	01/12/2019 17:02	Pump Spacer	8.3400	5.00	20.00	154.00	Pumped fresh water spacer
13	01/12/2019 17:07	Pump Lead Cement	12.0000				Batched Lead cement
14	01/12/2019 17:14	Pump Lead Cement	12.0000	5.00	0.00	137.00	Start pumping lead cement
15	01/12/2019 17:14	Pump Lead Cement	12.0000	5.00	50.00	148.00	Pumping lead cement
16	01/12/2019 17:26	Pump Lead Cement	12.0000	5.00	100.00	152.00	Pumping lead cement
17	01/12/2019 17:36	Pump Lead Cement	12.0000	5.00	150.00	158.00	Pumping lead cement



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
18	01/12/2019 17:45	Pump Lead Cement	12.0000	5.00	200.00	163.00	Pumping lead cement
19	01/12/2019 17:57	Pump Lead Cement	12.0000	4.00	263.00	143.00	Pumping lead cement
20	01/12/2019 18:08	Pump Tail Cement	12.5000	5.00	0.00	166.00	Start pumping tail cement
21	01/12/2019 18:08	Pump Tail Cement	12.5000	5.00	50.00	169.00	Pumping tail cement
22	01/12/2019 18:20	Pump Tail Cement	12.5000	2.00	63.00	150.00	Finish pumping tail cement
23	01/12/2019 18:23	Pumping Cement	12.5000	1.00	4.00	30.00	Pumping cement down parasite line
24	01/12/2019 18:26	Drop Top Plug					Drop top plug
25	01/12/2019 18:26	Pump Displacement	8.3400	5.00	0.00	130.00	Start pumping fresh water displacement
26	01/12/2019 18:27	Pump Displacement	8.3400	5.00	50.00	187.00	Pumping fresh water displacement
27	01/12/2019 18:36	Pump Displacement	8.3400	5.00	100.00	436.00	Pumping fresh water displacement
28	01/12/2019 18:45	Pump Displacement	8.3400	5.00	150.00	712.00	Pumping fresh water displacement
29	01/12/2019 18:56	Pump Displacement	8.3400	2.00	187.00	919.00	Finish pumping fresh water displacement
30	01/12/2019 19:05	Land Plug				1423.00	Land plug 919 Psi Fcp took to 1423 Psi
31	01/12/2019 19:05	Check Floats					Checked floats, floats held, .5 BBLs bled back
32	01/12/2019 19:14	Other (See comment)	8.3400	2.00	10.00	175.00	Pumped sugar water down parasite line, pressure broke at 175
33	01/12/2019 19:21	Rig Down					Pre-rig down safety meeting, rig down cement head
34	01/12/2019 19:45	Wash Pumps and Lines					Wash and winterized pumps and lines
35	01/12/2019 20:20	Client					Wait time before top out
36	01/12/2019 23:45	Rig Up					Rig up for top out
37	01/13/2019 00:20	Top Out	12.5000	2.00	7.00		Pump top out (18 sks Topout , 7 bbls)
38	01/13/2019 01:00	Wash Pumps and Lines					Wash and winterized pumps and lines
39	01/13/2019 01:48	Rig Down					Pre-rig down safety meeting, rig down all lines and equipment
40	01/13/2019 02:45	Leave Location					Depart location



