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# Caerus

## SURFACE POST JOB REPORT

Puckett 33B-26-697 05-045-23362  
S:26 T:6S R:97W Garfield CO

CallSheet #: 541  
Proposal #: 12909



**SURFACE Post Job Report**

**Attention:** Mr. Steve Schmitz | (720) 880-6412 | 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**

Technical Specialist-II | (307) 757-7178 | zenkeith@altcem.com

**Field Office**      1716 East Allison Rd., Cheyenne WY, 82007  
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## Table of Contents

1 Job Details & Summary .....	3
1.1 Geometry .....	3
1.2 Equipment / People .....	3
1.3 Timing .....	3
1.4 General Job Information .....	3
1.5 Well Fluid Details .....	3
1.6 Job Details .....	3
1.7 Job Details (cont.) .....	3
1.8 Circulation .....	4
1.9 Job Execution Information .....	4
1.10 Job Fluid Details .....	5
2 Job Logs .....	6
3 Water Analysis .....	8
4 Pump Diagrams .....	8

## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Inner	9.625	8.835	40	LTC	0	2500	0
Open Hole	Outer	n/a	14.75	n/a	n/a	100	2000	25
Open Hole	Outer	n/a	14.75	n/a	n/a	2000	2531	0
Casing	Outer	20	19.5	53	n/a	0	100	0

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Pneumatic Trailer	702	Havel, Casey		660
Pneumatic Trailer	703	Pena, James		660
Pneumatic Trailer	704			660
Cement Pump	106	Cook, John	Quintana, Matt	660
Cement Chemical	401	Bell, Wesley		660
Light Duty Pickups	4	Boyd, Brian		660

### 1.3 Timing

Event	Date/Time
Call Out	2/13/2017 02:00
Depart Facility	2/13/2017 04:00
On Location	2/13/2017 06:45
Rig Up Iron	2/13/2017 06:55
Job Started	2/13/2017 09:00
Job Completed	2/13/2017 20:55
Rig Down Iron	2/13/2017 21:00
Depart Location	2/13/2017 23:00

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.9 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	190 bbls
Rig Circulation Time	1.25 hours
Calculated Displacement	189.3 bbls
Actual Displacement	189 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	8.9 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	27
Yield Point	22
10 sec. SGS	13
10 min. SGS	35
30 min. SGS	66
Filtrate	3
Flow Line Temp.	na

### 1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	yes
Well Fluid Density Into Well	9.9 lb/gal
Well Fluid Density Out of Well	9.9 lb/gal

### 1.7 Job Details (cont.)

Metrics	Value
BHCT	94 °F
BHST	128 °F

## 1.8 Circulation

Lost Circulation Experienced
Yes

### Circulation Details:

the rig had circulation while filling casing once they had run it to bottom. After the rig shut down and we were able to stab our plug loading head and we began pumping the job there were no returns. At 250bbls of lead cement away we got returns to surface of less than 5gal/min. they lasted only for a few minutes but once they stopped the fluid level stayed within a 2feet of surface. After the plug was dropped and displacement begun we again had returns at 35bbls away but they did not last long. Again the fluid level stayed close to surface throughout the rest of displacement.

## 1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		20.00	0
1	2	Sodium Silicate	Flush	10.00			21.00		20.00	0
1	3	Water	Flush	8.33			42.00		20.00	0
1	4	ALTCem S100-12	Lead	12.00	2.53	14.85		703.00	316.33	0
1	5	ALTCem S100-12	Tail	12.50	2.22	12.58		161.00	63.76	2000
1	6	Water	Displacement	8.33			42.00		10.00	2328
1	7	Mud	Displacement	8.33			42.00		160.00	218
1	8	Water	DisplacementFinal	8.33			42.00		19.00	0
1	9	ALTCem S100-12	Topout	12.50	2.22	12.58		20.00	178.20	0



### 1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Flush	Sodium Silicate	ASF-10	Extender	21.00	gal/bbl
1	4	Lead	ALTCem S100-12	AC3-10	Cement	100.00	%
1	4	Lead	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	4	Lead	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	4	Lead	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	4	Lead	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	4	Lead	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	4	Lead	ALTCem S100-12	ADF-20	Defoamer	0.00	
1	5	Tail	ALTCem S100-12	AC3-10	Cement	100.00	%
1	5	Tail	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Tail	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Tail	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Tail	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Tail	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	5	Tail	ALTCem S100-12	ADF-20	Defoamer	0.00	
1	9	Topout	ALTCem S100-12	AC3-10	Cement	100.00	%
1	9	Topout	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	9	Topout	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	9	Topout	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	9	Topout	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	9	Topout	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	9	Topout	ALTCem S100-12	ACL-10	Accelerator	6.00	%BWOW
1	9	Topout	ALTCem S100-12	ASF-10	Extender	21.00	gal/bbl

## 2 Job Logs

Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1		Arrive on location	2/13/2017	06:45					Arrived on location, requested time was 10:00am
2		Rig In	2/13/2017	06:55					Rig in all bulk, water, and treating lines
3		Safety meeting	2/13/2017	09:10					hold safety meeting with rig crew and pump crew, review job procedure and job hazards
4	1	Fill lines	2/13/2017	11:00	8.34	2	2	50	Fill lines with 2bbls fresh water
5		Pressure test lines	2/13/2017	11:02	8.34			3000	Pressure test lines, no leaks
6	2	Pump Spacer	2/13/2017	11:05	8.34	2.5	20	100	Pump 20bbls fresh water ahead
7	3	Pump Spacer	2/13/2017	11:13	10	2.5	20	100	Pump 20bbls Sodium Silicate 50/50 mix
8	4	Pump Spacer	2/13/2017	11:21	8.34	3	20	100	Pump 20bbls fresh water ahead
9	5	Pump Lead Cement	2/13/2017	11:29	12	4	316	75	Mix and pump 316bbls of lead cement at 12ppg, Y:2.53, WR:14.85, 703sks, 248.6bbls mix water
10	6	Pump Tail Cement	2/13/2017	13:16	12.5	5	63.7	70	Mix and pump tail cement at 12.5ppg, Y: 2.22, WR: 12.58, 161sks, 48bbls of mix water
11		Shut down/drop plug	2/13/2017	13:28	8.34				Drop 9 5/8 top rubber plug
12		Start Displacement	2/13/2017	13:39	8.34				calculated displacement is 189.3bbls, casing is 9 5/8 40# with a capacity of .0758bbl/ft
13	7	Pump	2/13/2017	13:40	8.34	2	10	0	Pump first 10 bbls with fresh water
14	8	Pump	2/13/2017	13:45	10	5	160	100	Pump 160bbls of water based mud
15	9	Pump	2/13/2017	14:18	8.34	5	10	390	Pump 10bbls fresh water
16	10	Decrease Pump Rate	2/13/2017	14:20	8.34	2	9	330	decrease pump rate prior to landing plug
17	11	land plug	2/13/2017	14:24	8.34	2	0	480	Final circulating pressure was 480psi, plug was bumped up 500psi to 950psi and held 3minutes
18		Casing test	2/13/2017	14:27	8.34	1		1500	Pressure up to 1500psi and hold for 15minutes
19		Check floats	2/13/2017	14:42	8.34				Floats held, 1bbl back to pump truck



20		Pump	2/13/2017	14:51	8.34	2	10	100	Pump 10bbls of sugar water down parasite line, burst disk ruptured at 200 psi
21		Pump	2/13/2017	19:20	9.5	0.5	2	0	Pump 2bbls of 6%Calcium Chloride Solution with 2.5bbls of Sodium Silicate pumped directly down the annulus
22		Shut down	2/13/2017	19:24					Annulus filled after 4.5bbls of fluid. Shut down so rig crew could get cellar pump working.
23		Pump	2/13/2017	20:15	8.34	0.5	2	0	Pump 2bbls fresh water to clear line of Calcium Chloride solution
24		Pump	2/13/2017	20:18	12.5	0.5	1		Pump 1bbl of Top off cement at 12.5pp and bring cement to surface, Y: 2.53, WR: 14.85,
25		Shut down/Wait	2/13/2017	20:20					Wait 10minutes to see if cement would fall back
26		Pump	2/13/2017	20:30	12.5	0.5	4		Pump 4bbls of top off cement, bring cement to surface
27		shut down/wait	2/13/2017	20:40					Wait to see if cement would fall back
28		Pump	2/13/2017	20:47	12.5	0.5	0.5		Pump top off cement, bring cement to surface
29		pump	2/13/2017	20:50	12.5	0.5	3.4		Pump Top off cement down parasite line on Puckett 33A-26
30		Job complete	2/13/2017	20:55					20sks, 8.9bbl, total mixed and pumped on top off of Puckett 33B-26
31		Rig Down	2/13/2017	21:00					Rig out all water, bulk, and treatment lines
32		Leave Location	2/13/2017	23:00					

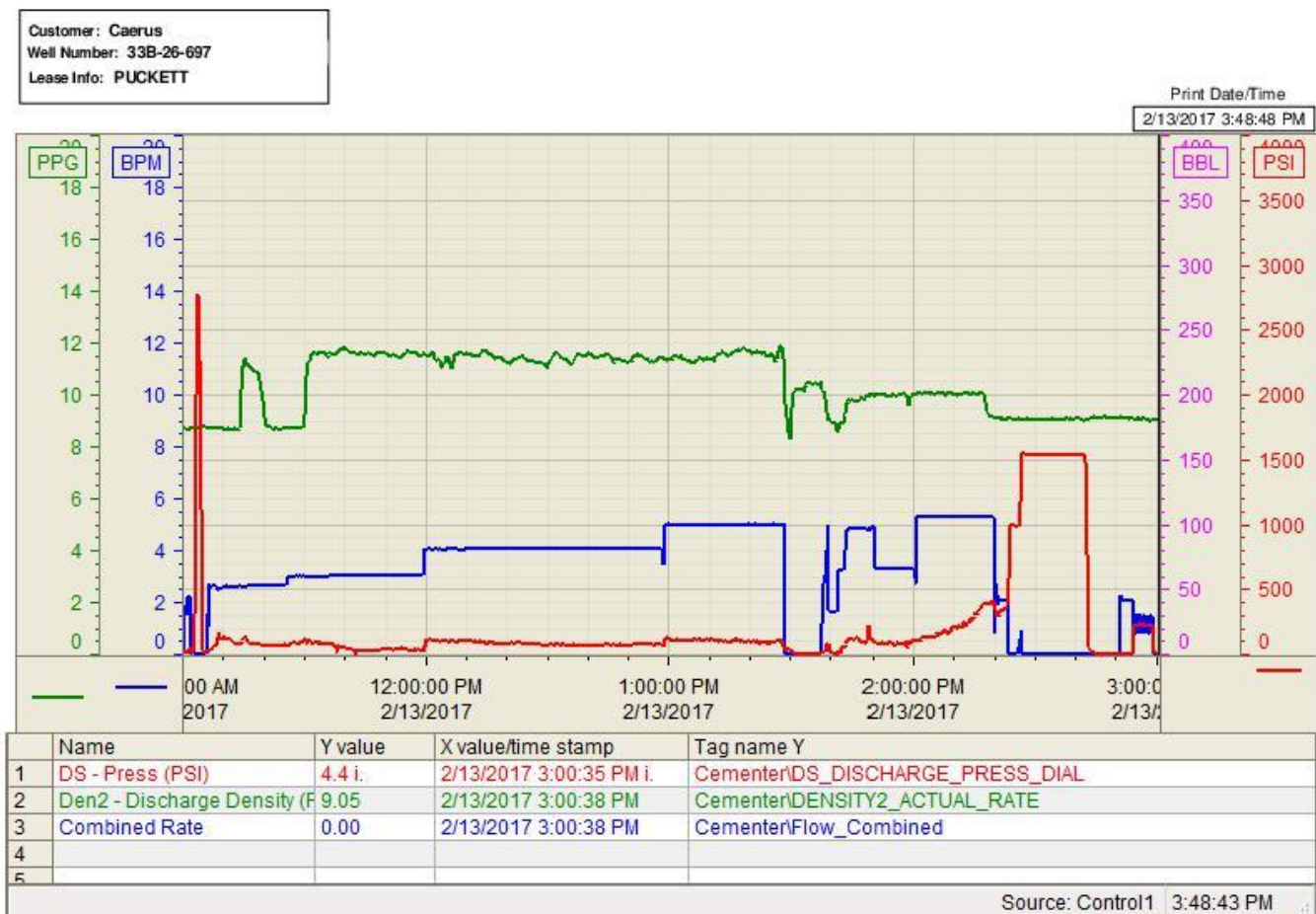


### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Flat Tank	
Temperature	75 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	170 mg/L	0-500 mg/L
Carbonates	50 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	140 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

Job Chart





Top Out

