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# Caerus

## SURFACE POST JOB REPORT

Puckett 23D-23 697 05-045-23387  
S:23 T:6S R:97W Garfield CO

CallSheet #: 1201  
Proposal #: 13807



**SURFACE Post Job Report**

**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**

Technical Specialist-II | (307) 757-7178 | [Zen.Keith@bjservices.com](mailto:Zen.Keith@bjservices.com)

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## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
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	2544	0
Casing	Outer	20	19.5	53	n/a	0	100	0
Casing	Inner	9.625	8.921	36	LTC	0	2524	0

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	651			
Silo	Silo 25			
Light Duty Pickups	4	Gilliam, Glen	Roush, James	60
Cement Chemical	403	Cose, Rhaun		60
Cement Pump	104	Youngberg, Wendell		

### 1.3 Timing

Event	Date/Time
Call Out	8/20/2017 06:00
Depart Facility	8/20/2017 08:30
On Location	8/20/2017 10:00
Rig Up Iron	8/20/2017 10:45
Job Started	8/20/2017 17:20
Job Completed	8/21/2017 01:35
Rig Down Iron	8/21/2017 01:50
Depart Location	8/21/2017 03:00

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	200 bbls
Rig Circulation Time	1 hours
Calculated Displacement	192 bbls
Actual Displacement	192 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	2 bbls
Well Topped Out	Yes
Top Out Volume	125 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	9.4
Yield Point	18
10 sec. SGS	4
10 min. SGS	113
30 min. SGS	38
Filtrate	0.09
Flow Line Temp.	89

### 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	9.4 lb/gal
Well Fluid Density Out of Well	9.4 lb/gal

### 1.7 Job Details (cont.)

Metrics	Value
BHCT	94 °F
BHST	128 °F

## 1.8 Circulation

Lost Circulation Experienced
Yes

### Circulation Details:

Circulation was lost during whole job procedure, had no returns throughout whole job.

## 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	S100-12	Lead	12.00	2.53	14.85		703.00	316.33	0
1	5	S100-12	Tail	12.50	2.22	12.58		162.00	64.15	2000
1	6	Water	DisplacementFinal	8.33			42.00		191.00	0
1	7	S100-12	Topout	12.50	2.22	12.58		316.00	125.00	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	S100-12	AC3-10	Cement	100.00	%
1	4	Lead	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	4	Lead	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	4	Lead	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	4	Lead	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	4	Lead	S100-12	AXE-30	Extender	2.00	lb/sk
1	5	Tail	S100-12	AC3-10	Cement	100.00	%
1	5	Tail	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Tail	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Tail	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Tail	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Tail	S100-12	AXE-30	Extender	2.00	lb/sk
1	7	Topout	S100-12	AC3-10	Cement	100.00	%
1	7	Topout	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	7	Topout	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	7	Topout	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	7	Topout	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	7	Topout	S100-12	AXE-30	Extender	2.00	lb/sk

## 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	BJ crew called out	8/20/2017	06:00					BJ crew called out to location RTS 12:00
2	BJ crew yard time	8/20/2017	07:30					Yard time for BJ crew
3	STEACS/ Journey	8/20/2017	08:00					Journey meeting with BJ crew
4	BJ crew departs yard	8/20/2017	08:30					BJ crew departs yard
5	BJ crew arrives at location	8/20/2017	10:00					BJ crew arrives at location
6	Rig up meeting	8/20/2017	10:30					STEACS rig up meeting with BJ crew
7	BJ crew rigs up	8/20/2017	10:45					BJ crew rigs up iron, hoses, bulk equipment
8	Pipe on bottom	8/20/2017	16:30					Casing Pipe on bottom
9	Safety meeting	8/20/2017	16:45					Safety meeting with rig crew and BJ crew
10	Stab head	8/20/2017	17:10					BJ crew stabs head
11	Break circulation	8/20/2017	17:20	8.34	4	5	40	Break circulation with fresh water
12	Test Lines	8/20/2017	17:22	8.34	0	5	3000	Test lines at 3000 psi
13	fresh water spacer	8/20/2017	17:25	8.34	4	15	54	15 fresh water spacer
14	Sodium Silicate spacer	8/20/2017	17:28	10	4	20	60	20 bbls sodium silicate
15	fresh water spacer	8/20/2017	17:33	8.34	4.5	20	57	20 bbls fresh water
16	Batch up lead cement	8/20/2017	17:35	12		0	0	Batch up lead cement
17	down hole lead cement	8/20/2017	17:38	12	4.5	0	80	down hole lead cement
18	50 bbls gone	8/20/2017	17:46	12	6.5	50	140	50 bbls lead cement gone
19	100 bbls gone	8/20/2017	17:54	12	6.5	100	180	100 bbls lead cement gone
20	150 bbls gone	8/20/2017	18:01	12	6.5	150	250	150 bbls lead cement gone
21	200 bbls gone	8/20/2017	18:10	12	5.5	200	110	200 bbls lead cement gone
22	250 bbls gone	8/20/2017	18:19	12	5.5	250	105	250 bbls lead cement gone
23	300 bbls gone	8/20/2017	18:28	12	5.5	300	115	300 bbls lead cement gone
24	batch up tail cement	8/20/2017	18:35	12.5	4.5	0	80	Batch up tail cement
25	down hole tail cement	8/20/2017	18:36	12.5	5.5	0	125	down hole tail cement
26	50 bbls gone	8/20/2017	18:46	12.5	3.5	50	60	50 bbls tail cement gone
27	shut down, drop plug	8/20/2017	18:53	0	0	0	0	shut down drop top plug
28	pump 2 bbls tail cement	8/20/2017	18:54	12.5	4	2	54	pump 2 bbls tail cement on top of plug



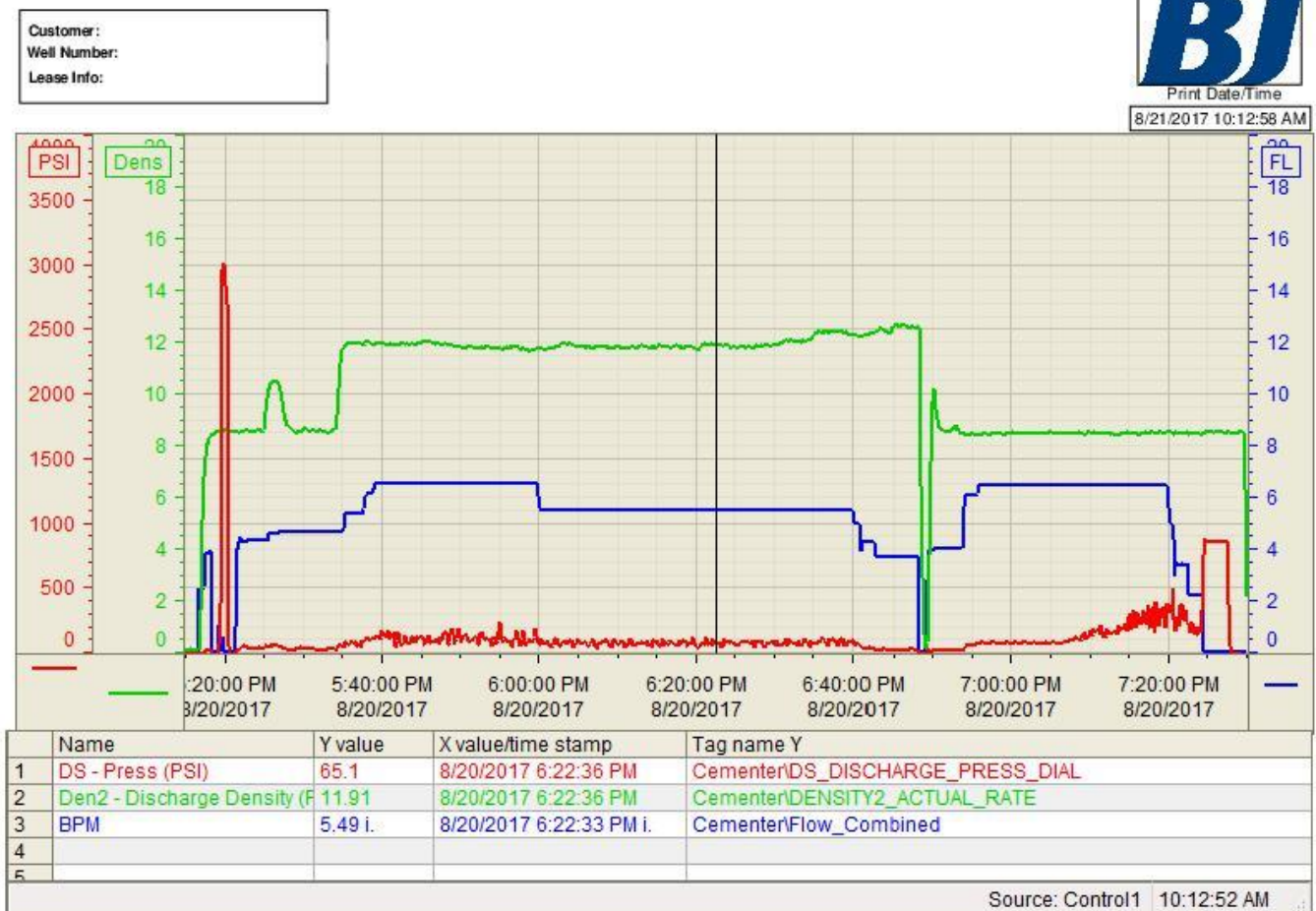
29	Start water displacement	8/20/2017	18:56	8.34	4	10	54	10 bbls gone water displacement
30	50 bbls gone	8/20/2017	19:03	8.34	6.5	50	110	50 bbls gone displacement
31	100 bbls gone	8/20/2017	19:11	8.34	6.5	100	150	100 bbls gone displacement
32	150 bbls gone	8/20/2017	19:20	8.34	6.5	150	360	150 bbls gone displacement
33	slow rate to 2 BPM	8/20/2017	19:25	8.34	2	180	360	180 bbls gone, slowed rate to 2bpm
34	bumped plug	8/20/2017	19:28	8.34	2	190	375	bumped plug, FCP was 375, took to 900 psi
35	bled pressure, check floats	8/20/2017	19:31					Bled pressure off, received .5 bbls back
36	Pump sugar water	8/20/2017	19:37		2	6	277	Pumped 6 bbls sugar water down parasite line, took pressure to 277 psi
37	shut down, wash pump	8/20/2017	19:41					washed pump, wait on rig before topout job
38	top out steacs meeting	8/20/2017	23:45					STEACS meeting with BJ crew
39	rig up top out	8/20/2017	00:00					BJ crew rigs up top out job
40	Calcium chloride	8/20/2017	00:18		2	2	5	200 lbs of Calcium chloride in 2 bbls of FW
41	Sodium Silicate spacer	8/20/2017	00:21		2		10	pumped 175 gal of Sodium silicate
42	Cement down hole	8/20/2017	00:33	12.5	2	0	10	start cement down hole, top out
43	50 bbls gone	8/20/2017	00:54	12.5	2	40	50	50 bbls top out cement gone
44	100 bbls gone	8/20/2017	01:14	12.5	2	46	100	100 bbls top out cement gone
45	125 bbls gone	8/20/2017	01:25	12.5	2	40	125	2 bbls Cement to surface, 125 bbls pumped
46	top out job complete	8/20/2017	01:35					Job complete
47	rig down meeting	8/20/2017	01:45					Rig down meeting with BJ crew
48	rig down iron, hoses,bulk	8/20/2017	01:50					BJ crew rigs down iron, hoses, bulk
49	depart location	8/20/2017	03:00					BJ crew departs location

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	7.1	5.5-8.5
Chlorides	29 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	415 mg/L	0-500 mg/L
Carbonates	45 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	750 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

Job Chart







Top Out Chart

