



Caerus

SURFACE POST JOB REPORT

Puckett 13C-23 697 05-045-23375
S:23 T:6S R:97W Garfield CO

CallSheet #: 1369
Proposal #: 13996



SURFACE Post Job Report

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

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

Field Office 28730 US-6, Rifle, CO 81650
Phone: (307) 360-3062

Sales Office 999 18th St. Suite 1200 Denver, CO 80202
Phone: (281) 408-2361



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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	2540	0
Casing	Outer	20	19.5	53	n/a	0	100	0
Casing	Inner	9.625	8.921	36	LTC	0	2491	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	11			
Silo	25			
Light Duty Pickups	4	Linn III, Paul	Tippetts, Allen	65
Cement Chemical	401	Ham, Robert	Aden, Alan	65
Cement Pump	C992	Turek, Chad		65

1.3 Timing

Event	Date/Time
Call Out	9/19/2017 17:00
Depart Facility	9/19/2017 19:30
On Location	9/19/2017 20:30
Rig Up Iron	9/19/2017 20:45
Job Started	9/20/2017 03:50
Job Completed	9/20/2017 13:00
Rig Down Iron	9/20/2017 13:01
Depart Location	9/20/2017 13:45

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	0.5 hours
Calculated Displacement	189.37 bbls
Actual Displacement	189 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	15.82 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	24
Yield Point	26
10 sec. SGS	8
10 min. SGS	22
30 min. SGS	8.8
Filtrate	2
Flow Line Temp.	81

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	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	0	0

Circulation Details:

Returns during rig circulation, Lost returns when swapped over to pump cement job, gained returns 260 BBLS into Lead cement. Returns were intermittent until shut down to drop top plug, then no returns through displacement.

1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /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		675.00	267.30	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	Call out	9/19/2017	17:00					Call out, on location time of 24:00
2	Safety Meeting	9/19/2017	19:15					Pre convoy STEACS meeting
3	Depart yard	9/19/2017	19:30					Depart Rifle yard for H&P 330
4	On location	9/19/2017	20:30					Arrived on location.
5	Safety Meeting	9/19/2017	20:35					Pre rig up STEACS meeting
6	Rig up	9/19/2017	20:45					Spot equipment and rig up to cellar
7	Safety Meeting	9/20/2017	03:00					Pre job STEACS meeting with rig crew and BJ
8	Rig up	9/20/2017	03:20					Stab plug container, load plug
9	Fill Lines	9/20/2017	03:51	8.33	2		95	Filled lines with 5 BBLS. water
10	Pressure test	9/20/2017	03:57				3450	Pressure test to 3450 PSI. pressure hold
11	Spacer	9/20/2017	04:00	8.33	5	20	601	Finished pumping 20 BBLS. Of Fresh water
12	Spacer	9/20/2017	04:04	10	5	20	437	Pump 20 BBLS. Of Sodium Silicate
13	Spacer	9/20/2017	04:07	8.33	5	20	537	Pumped 20 BBLS. Of Fresh water
14	Lead	9/20/2017	04:12	12	6		332	Lead cement 12 PPG. 703 SKS. 2.53 FT3/SK. 14.85 GAL/SK. Weight verified with mud scales
15	Lead	9/20/2017	04:38	12	6		264	160 BBLS of Lead away
16	Lead	9/20/2017	04:51	12	6		277	240 BBLS of Lead away
17	Slowed rate	9/20/2017	04:54	12	3		72	Slowed rate to 3 BPM With 260 BBLS. Away due to returns and cellar pump not keeping up
18	Lead	9/20/2017	04:58	12	4		121	270 BBLS. Away rate up to 4 BPM
19	Lead	9/20/2017	05:02	12	5		208	290 BBLS. Away rate up to 5 BPM
20	Lead	9/20/2017	05:04	12	6		272	300 BBLS. Away rate up to 6 BPM
21	Lead	9/20/2017	05:09	12	6	335	286	Finish Lead
22	Tail	9/20/2017	05:10	12.5	6		288	Tail cement 12.5 PPG. 162 SKS. 2.22 FT3/SK. 12.58 GAL/SK. Weight verified with mud scales
23	Tail	9/20/2017	05:20	12.5	3.5	57	78	Slow rate to 3.5 BPM to finish Tail.
24	Shut down	9/20/2017	05:21					Shut down. No returns for the rest of the job
25	Drop top plug	9/20/2017	05:24					Drop top plug verified by driller
26	Displacement	9/20/2017	05:25	8.33	5		103	Pumped 2 BBLS. Of Tail cement on top of the plug. Calculated displacement was 189.37 BBLS.
27	Displacement	9/20/2017	05:31	8.33	6		171	30 BBLS - pick rate up to 6 BPM
28	Displacement	9/20/2017	05:33	8.33	6.5		241	40 BBLS - pick rate up to 6.5 BPM
29	Slowed rate	9/20/2017	05:41	8.33	5.5		460	90 BBLS - slow rate to 5.5 BPM
30	Slowed rate	9/20/2017	05:45	8.33	4.5		494	110 BBLS - slow rate to 4.5 BPM
31	Slowed rate	9/20/2017	05:52	8.33	3.5		439	140 BBLS - slow rate to 3.5 BPM



32	Land plug	9/20/2017	06:09		2		306	179 BBLS away slow rate to 2 BPM. Land the plug at 189 bbls. FCP 306 PSI. took to 830 PSI.
33	Check floats	9/20/2017	06:14				830	Checked floats, Floats held 3/4 BBL. Back
34	Safety Meeting	9/20/2017	06:15					Pre rig down STEACS meeting
35	Rig down/ Rig up	9/20/2017	06:17					Rigged down plug container and rigged up to parasite string
36	Break circulation on parasite	9/20/2017	06:18					Pumped 7 BBLS. Of sugar water down parasite sting before pressuring up to 345 PSI. with 7 BBLS. Away.
37	Rig down	9/20/2017	06:25					Rigged down parasite sting
38	wash pumps and lines	9/20/2017	06:30					Wash pumps and lines into cellar
39	Safety Meeting	9/20/2017	06:45					Post job AAR with BJ cement crew. Waiting 4 hours to top out
40	Safety Meeting	9/20/2017	09:55					Pre Top out/ rig up safety meeting
41	Rig up	9/20/2017	10:05					Rig up 1" for top out, and Sodium Silicate
42	Waiting	9/20/2017	10:15					Rig testing B.O.P.
43	Spacer	9/20/2017	12:05					200 LBS. of Calcium Chloride
44	Spacer	9/20/2017	12:07					175 GALS of Sodium Silicate
45	Top out	9/20/2017	12:10					Top Out cement 12.5 PPG. 40 SKS. 2.22 FT3/SK. 12.58 GAL/SK. Calculated 15.82 BBLS. Of Top Out cement. Weight verified with mud scales
46	Spacer	9/20/2017	12:12					155 GALS. Of Sodium Silicate
47	Cement to surface	9/20/2017	12:25					Cement to surface shut down
48	Top out	9/20/2017	12:30					Pumped 4 BBLS. Of cement down parasite sting on 24D-23
49	Shut down	9/20/2017	12:35					Shut down
50	Rig down	9/20/2017	12:40					Rig down 1" line
51	Wash pumps and lines	9/20/2017	12:45					Wash up pumps and lines
52	Safety Meeting	9/20/2017	13:00					Pre rig down STEACS meeting
53	Rig down	9/20/2017	13:00					Rig down all equipment
54	Safety Meeting	9/20/2017	13:30					Post job AAR.
55	Safety Meeting	9/20/2017	13:40					Pre convoy safety meeting attended by all BJ cement crew.
56	Depart location	9/20/2017	13:45					Depart location. Thank you for using BJ services, Andrew Linn and crew



3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	57.9 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	<289 mg/L	0-3000 mg/L
Total Alkalinity	240	0-1000
Total Hardness	425 mg/L	0-500 mg/L
Carbonates	N/A mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams

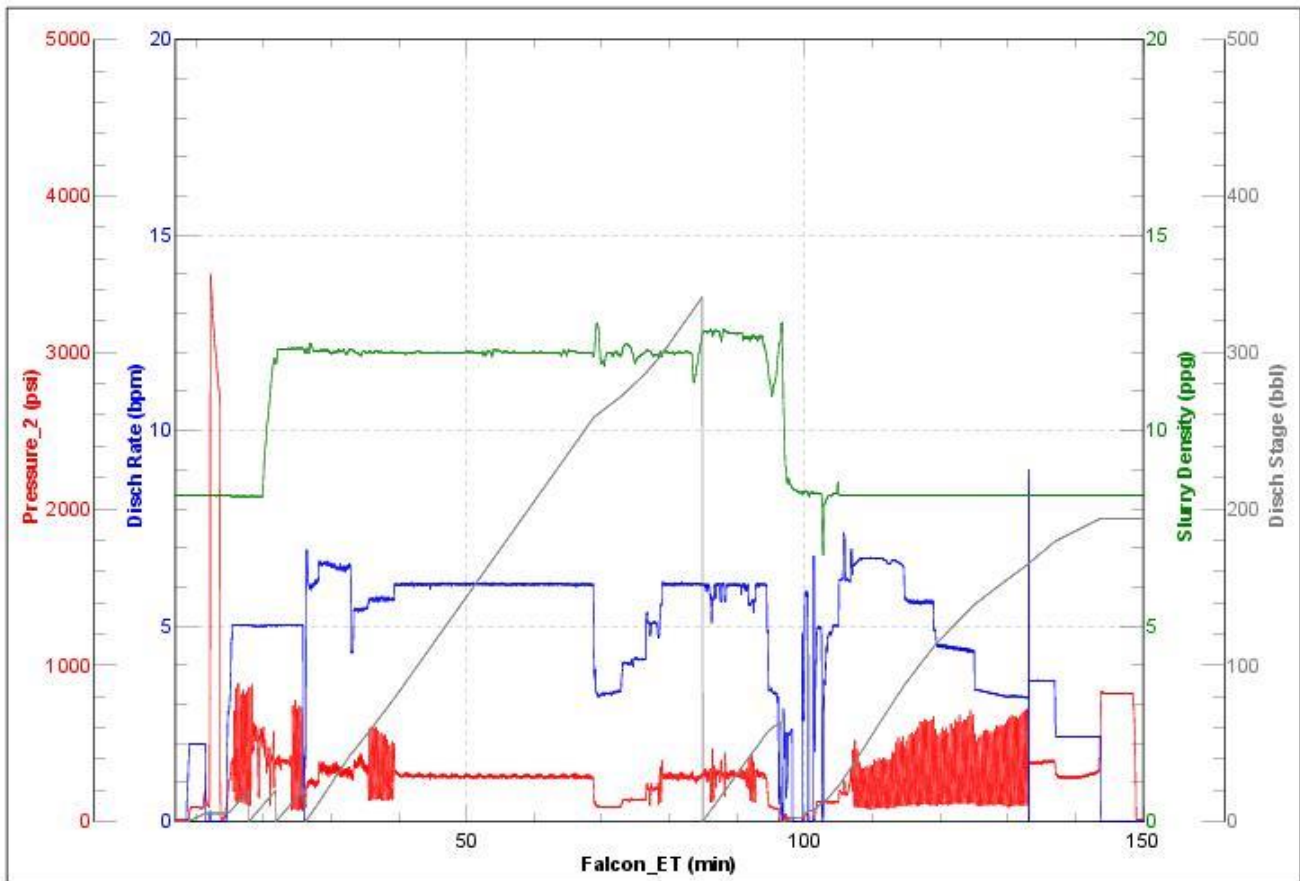


JobMaster Program Version 4.02C1

Job Number: 1369

Customer: Caerus

Well Name: Puckett 13C-23 697



BJ Services

Job Start: Wednesday, September 20, 2017