



COGCC doc # 2597370

# Caerus

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## Surface Post Job Report

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Puckett 15B-23 697 05-045-23380

S:23 T:6S R:97W Garfield CO

Quote #:

00550

I Execution #:

00329



## Caerus

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,

Gage Putnam  
Field Engineer I | (970) 632-2006 | [Gage.Putnam@BJServices.com](mailto:Gage.Putnam@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

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# Cementing Treatment



Start Date	10/18/2017	Well	Puckett 15B-23 697
End Date	11/30/2017	County	GARFIELD
Client	CAERUS OPERATING, LLC	State/Province	CO
Client Field Rep	Doug McAdams	API	05-045-23380
Service Supervisor	Andrew Linn	Formation	-
Field Ticket No.	FT-00329-Y8F8S60202-38291	Rig	H&P 330
District	Rifle, CO	Type of Job	Surface

## WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	19.50	20.00	52.73	100.00	100.00			
Open Hole	14.75			2,000.00	2,000.00	25.00		
Open Hole	14.75			2530	2530			
Casing	8.92	9.63	36.00	2,515.00	2,515.00			

Shoe Length (ft): 41.97

## HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Bottom Plug Provided By	-	Tool Depth (ft)	2,471
Bottom Plug Size	-	Max Tubing Pressure - Rated (psi)	-
Top Plug Used?	Yes	Max Tubing Pressure - Operated (psi)	-
Top Plug Provided By	Non-BJ	Max Casing Pressure - Rated (psi)	3425.00
Top Plug Size	8.92	Max Casing Pressure - Operated (psi)	2740.00
Centralizers Used	Yes	Pipe Movement	No
Centralizers Quantity	10	Job Pumped Through	Plug Container
Centralizers Type	Bow	Top Connection Thread	8 RND
Landing Collar Depth (ft)	2,471	Top Connection Size	9 5/8

# 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	10.00
Circulation Time (min)	60	10 min SGS	18.00
Circulation Rate (bpm)	3.33	30 min SGS	35.00
Circulation Volume (bbls)	200	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	Yes	Gas Present	No
Mud Density In (ppg)	9.0	Gas Units	0
Mud Density Out (ppg)	N/A		
PV Mud In	8.00		
PV Mud Out	-		
YP Mud In	9.00		
YP Mud Out	-		

## TEMPERATURE

Ambient Temperature (°F)	52	Slurry Cement Temperature (°F)	73
Mix Water Temperature (°F)	73.4	Flow Line Temperature (°F)	-

## BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water	8.3300					20.0000
Spacer / Pre Flush / Flush	Water	8.3300					20.0000
Spacer / Pre Flush / Flush	Sodium Silicate	10.0000					20.0000
Lead Slurry	S100-12	12.0000	2.5329	14.89	704	1,774.0000	315.9000
Tail Slurry	S100-12	12.5000	2.2282	12.62	162	358.0000	63.7000
Top-Out / Scavenger Slurry	S100-12	12.5000	2.2282	12.62	70	155.974	27.7790
Displacement Final	Displacement	8.3300				0.0000	190.2000

# Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	Sodium Silicate	SILICATE, SODIUM, A-3L	21.00	GPB
Lead Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Lead Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB
Lead Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.00	LBS/SK
Lead Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE	2.00	LBS/SK
Lead Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Lead Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Tail Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Tail Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB
Tail Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE	2.00	LBS/SK
Tail Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.00	LBS/SK
Tail Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Top-Out / Scavenger Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Top-Out / Scavenger Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.00	LBS/SK
Top-Out / Scavenger Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Top-Out / Scavenger Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Top-Out / Scavenger Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE	2.00	LBS/SK
Top-Out / Scavenger Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB

# Cementing Treatment



## TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
13:07	Water	5.00	20.00	79.00	
13:23	Sodium Silicate	5.00	20.00	105.00	
13:28	Water	5.00	20.00	98.00	
13:39	S100-12 Lead	5.00	315.90	104.00	
14:35	S100-12 Tail	5.00	63.70	75.00	
14:57	Displacement	8.00	192.76	129.00	
19:51	S100-12 Top Out	4.00	27.78	26.00	

	Min	Max	Avg
Pressure (psi)	0.00	402	156.00
Rate (bpm)	4.00	8.00	4.57

## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0
Calculated Displacement Volume (bbls)	192.76	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	192	Amount of Spacer to Surface	0
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0
Bump Plug	Yes	Amount Bled Back After Job	0.75
Bump Plug Pressure (psi)	305	Total Volume Pumped (bbls)	675.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	Yes
Cement returns During Job	No	Lost Circulation During Cement Job	No

## CEMENT PLUG

Bottom of Cement Plug?	No	Wiper Balls Used?	No
Wiper Ball Quantity	-	Plug Catcher	No
Number of Plugs	1		

Customer Name CAERUS  
Well Name PUCKETT 15B-23  
Job Type SURFACE

District Rifle  
Supervisor ANDREW LINN  
Engineer Gage Putnam



Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	10/29/2017 6:00	Mobilization	Callout		1					ON LOCATION TIME OF 12:00
2	10/29/2017 7:45		STEACS							PRE CONVOY SAFETY MEETING
3	10/29/2017 8:30		DEPART RIFLE YARD							DEPART FROM RIFLE YARD FOR H&P 330
4	10/29/2017 10:30		ARRIVE ON LOCATION		48					ARRIVE ON LOCATION. RIG WAS ON BOTTOM WITH CASING WAITING TO LAND CASING
5	10/29/2017 10:45		AAR							AFTER ACTION REVIEW FOR THE JOURNEY
6	10/29/2017 11:00		SITE ASSESMENT							SITE ASSESMENT
7	10/29/2017 11:30		STEACS							PRE RIG UP SAFETY MEETING
8	10/29/2017 11:45		RIG UP		50					SPOT IN EQUIPMENT AND RIG UP
9	10/29/2017 12:15		STEACS							PRE JOB SAFETY MEETING WITH RIG CREW, COMPANY MAN, AND ALL BJ CEMENT CREW.
10	10/29/2017 12:30		RIG UP		50					STAB PLUG CONTAINER, LOAD PLUG CONTAINER, AND HOOK UP LINES.
11	10/29/2017 13:07		FILL LINE			8.33	2	5	51	FILL LINES WITH 5 BBLs OF FRESH WATER
12	10/29/2017 13:11		PRESSURE TEST		54					PRESSURE TEST TO 4400 PSI PRESSURE HELD
13	10/29/2017 13:15		SPACER			8.33	5	20	79	FINISHED PUMPING THE LAST 15 BBLs OF FRESH WATER.
14	10/29/2017 13:23		SPACETR			10	5	20	105	20 BBLs OF SODIUM SILICATE
15	10/29/2017 13:28		SPACER			8.33	5	20	98	20 BBLs OF FRESH WATER
16	10/29/2017 13:39		LEAD CEMENT			12	5	50	104	LEAD CEMENT 704 SKS 12 PPG 2.53 FT3/SK 14.89 GAL/SK FOR A TOTAL OF 317.23 BBLs OF LEAD, REQUIRING 249.58 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES.
17	10/29/2017 13:49		LEAD CEMENT			12	5	100	100	LEAD CEMENT
18	10/29/2017 13:57		LEAD CEMENT			12	5	150	103	LEAD CEMENT
19	10/29/2017 14:04		LEAD CEMENT			12	5	200	98	LEAD CEMENT
20	10/29/2017 14:17		LEAD CEMENT			12	5	250	102	LEAD CEMENT
21	10/29/2017 14:27		LEAD CEMENT			12	5	300	99	LEAD CEMENT
22	10/29/2017 14:31		LEAD CEMENT			12	5	317.1	107	FINISHED PUMPING LEAD CEMENT WITH 317.1 BBLs AWAY
23	10/29/2017 14:35		TAIL CEMENT			12.5	4	30	75	TAIL CEMENT 162 SKS 12.5 PPG 2.23 FT3/SK 12.62 GAL/SK FOR A TOTAL OF 64.23 BBLs OF TAIL, REQUIRING 48.68 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES.
24	10/29/2017 14:41		TAIL CEMENT			12.5	4	50	72	TAIL CEMENT
25	10/29/2017 14:42		TAIL CEMENT			12.5	4	57	68	TAIL CEMENT
26	10/29/2017 14:44		SHUT DOWN							SHUT DOWN
27	10/29/2017 14:45		DROP TOP PLUG		63	8.33	5	10	60	DROP TOP PLUG VERIFIED BY COMPANY MAN
28	10/29/2017 14:57		DISPLACEMENT			8.33	8	50	129	WASHED UP ON TOP OF THE PLUG WITH 2 BBLs OF TAIL CEMENT
29	10/29/2017 15:03		DISPLACEMENT			8.33	8	100	213	DISPLACEMENT
30	10/29/2017 15:07		DISPLACEMENT			8.33	6	130	254	DISPLACEMENT
31	10/29/2017 15:15		DISPLACEMENT			8.33	4	175	301	DISPLACEMENT
32	10/29/2017 15:18		DISPLACEMENT			8.33	2	182	300	DISPLACEMENT
33	10/29/2017 15:19		LAND PLUG		67		2	192	307	LANDED THE PLUG AT 192 BBLs AWAY AT 307 PSI
34	10/29/2017 15:20		CASING TEST						1024	CASING TEST OF 1024 PSI FOR 5 MINUTES
35	10/29/2017 15:26		CHECK FLOATS		68					FLOATS HELD 0.75 BBL BACK TO THE TRUCK
36			RIG DOWN/ UP							BREAK OFF OF PLUG CONTAINER AND HOOK UP TO PARASITE STRING
37	10/29/2017 15:48		PUMP ON PARASITE STING			8.33	1		26	PUMPED FRESH WATER WITH 50 LBS OF SUGAR IN IT.
38	10/29/2017 15:53	BREAK CIRCULATION ON PARASITE STING				8.33	1	6	105	TOOK 105 PSI TO BREAK CIRCULATION ON PARASITE STING WITH 6 BBLs AWAY
39	10/29/2017 16:02		WASH PUMPS AND LINES							WASH PUMPS AND LINES INTO THE CELLAR
40	10/29/2017 16:20		AAR							AFTER ACTION REVIEW FOR THE PRIMARY JOB
41	10/29/2017 16:30		WAIT TO TOP OUT							WAIT FOR RIG CREW TO DO B.O.P. TEST
42	10/29/2017 19:15		STEACS							PRE TOP OUT SAFETY MEETING
43	10/29/2017 19:30		RIG UP		50					RIG UP TO TOP OUT
44	10/29/2017 19:51		SPACER							2 BBLs OF WATER WITH 200 LBS OF CALCIUM CHLORIDE
45	10/29/2017 19:53		SPACER							350 GALS OF SODIUM SILICATE
46	10/29/2017 19:58		TOP OUT							TOP OUT CEMENT 70 SKS 12.5 PPG 2.23 FT3/SK 12.62 GAL/SK FOR A TOTAL OF 27.80 BBLs OF TOP OUT, REQUIRING 21.03 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES.
47	10/29/2017 20:09		CEMENT TO SURFACE							CEMENT TO SURFACE
48	10/29/2017 20:12	PUMP CEMENT ON LAST PARASITE STING								PUMPED 2 BBLs OF TOP OUT DOWN THE LAST PARASITE STING
49	10/29/2017 20:18		TOP OUT							TOPPED OUT AGAIN
50	10/29/2017 20:20		CEMENT TO SURFACE							CEMENT TO SURFACE
51	10/29/2017 20:25		STEACS							PRE RIG DOWN SAFETY MEETING
52	10/29/2017 20:30		WASH PUMPS AND LINES							WASH PUMPS AND LINES INTO THE CELLAR
53	10/29/2017 20:44		RIG DOWN							RIG DOWN ALL EQUIPMENT. CURTAIN SIDE TAKEN TO H&P 329 AND LEFT ON THE MOUNTAIN.
54	10/29/2017 20:44		BLOW DOWN							BLOW DOWN SILO 11 INTO SILO 25 AND UNLOAD TOP OUT INTO SILO 25
55	10/29/2017 21:20		AAR							AFTER ACTION REVIEW
56	10/29/2017 21:30		STEACS							PRE CONVOY SAFETY MEETING

Customer Name CAERUS  
 Well Name PUCKETT 15B-23  
 Job Type SURFACE

District Rifle  
 Supervisor ANDREW LINN  
 Engineer Gage Putnam



Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
57	10/29/2017 21:40		LEAVE LOCATION		74					THANK YOU FOR USING BJ SERVICES, ANDREW LINN AND CREW
58	10/29/2017 23:30		ARRIVE AT YARD							ARRIVE AT RIFLE YARD
59	10/29/2017 23:45		AAR							AFTER ACTION REVIEW





PUCKETT 15B-23 SURFACE



