



Caerus Operating LLC

TWO-STAGE/MULTI-STAGE CEMENT POST JOB REPORT

BJU B26 FED #13B-26-496 05-045-24435
S:26 T:4S R:96W Garfield CO

CallSheet #: 84701
Proposal #: 65235



TWO-STAGE/MULTI-STAGE CEMENT Post Job Report

Attention: Mr. Cole Walton | (720) 880-6325 | cwalton@caerusoilandgas.com
Caerus Operating LLC
1001 17TH STREET | DENVER, CO 80202

Dear Mr. Cole Walton,

Thank you for the opportunity to provide cementing services on this well. American Cementing strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact American Cementing at any time.

Sincerely,

Holly Mbugua

Field Engineer II | (720) 505-1300 | holly.mbugua@americancementing.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 657-1157

Job Details & Summary

Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	20	19.5	53	n/a	0	100	0
Open Hole	Outer	n/a	14.75	n/a	n/a	100	2500	25
Open Hole	Outer	n/a	14.75	n/a	n/a	2500	3058	0
Casing	Inner	9.625	8.921	36	n/a	0	3044	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Cement Trailer Float	CTF-286	TRC-188	Ridgeway, Danny	Mendoza, Victor
Field Storage Silo	FSS-469			
Field Storage Silo	FSS-468			
Field Storage Silo	FSS-475			
Light Duty Vehicles	LDV-061		Billman, Robert	
Cement Pump Float	CPF-136	TRH-855	Woronovitch, Collin	

Timing

Event	Date/Time
Call Out	11/30/2022 09:00
Depart Facility	11/30/2022 17:00
On Location	11/30/2022 19:00
Rig Up Iron	11/30/2022 19:30
Job Started	11/30/2022 23:18
Job Completed	12/2/2022 00:30
Rig Down Iron	12/2/2022 01:00
Depart Location	12/2/2022 02:30

General Job Information

Metrics	Value
Well Fluid Density	9.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	240 bbls
Rig Circulation Time	0.25 hours
Calculated Displacement	229/ 70 bbls
Actual Displacement	229/ 70 bbls
Total Spacer to Surface	0/ 40 bbls
Total CMT to Surface	0/ 30 bbls
Well Topped Out	Yes
Top Out Volume	318 bbls

Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	0 units
Flare During Job	No
Flare During Job	0 units
Flare at End of Job	No
Flare at End of Job	0 units
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

Job Details (cont.)

Metrics	Value
BHCT	87 °F
BHST	123 °F

Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	55 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	500 mg/L	0-3000 mg/L
Total Alkalinity	0	0-1000
Total Hardness	0 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	0 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	0	0

Circulation Details

Rig had no returns while circulating. Got returns 55bbls lead gone on 1st stage, lost them again 120bbls lead gone. Got returns back 115bbls into displacement. Fluid in annulus fell as soon as we bumped plug. We pumped 20bbls fresh water after opening tool with no returns, swapped to rig to pump 49bbls 9.4# WBM with no returns. Started 2nd stage with no returns.

Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Designed Top (ft)
1	Water	Flush	8.34			42.00		40.00	686
2	Stage-1 Lead	Lead	12.00	2.52	14.80		524.00	235.42	950
3	Stage-1 Tail	Tail	13.00	2.06	11.21		175.00	64.08	2500
4	Water	DisplacementFinal	8.34			42.00		229.00	0
1	Water	Flush	8.34			42.00		40.00	0
2	Stage-2 Primary	Primary	12.00	2.55	14.95		346.00	157.14	0
3	Water	DisplacementFinal	8.34			42.00		70.00	0

Job Fluid Details

Fluid	Type	Fluid	Product	Function	Conc.	Uom
2	Lead	Stage-1 Lead	ASTM TYPE I/II	Cement	100.00	%
2	Lead	Stage-1 Lead	A-10	Accelerator	5.00	%BWOB
2	Lead	Stage-1 Lead	A-2	Accelerator	3.00	lb/sk
2	Lead	Stage-1 Lead	FP-24	Defoamer	0.30	%BWOB
2	Lead	Stage-1 Lead	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
2	Lead	Stage-1 Lead	IntegraSeal POLI	LostCirculation	0.25	lb/sk
2	Lead	Stage-1 Lead	R-7C	Retarder	0.30	%BWOB
2	Lead	Stage-1 Lead	STATIC FREE	Other	0.01	lb/sk
3	Tail	Stage-1 Tail	ASTM TYPE I/II	Cement	100.00	%
3	Tail	Stage-1 Tail	A-10	Accelerator	5.00	%BWOB
3	Tail	Stage-1 Tail	A-2	Accelerator	2.00	lb/sk
3	Tail	Stage-1 Tail	A-5	Accelerator	5.00	%BWOW
3	Tail	Stage-1 Tail	FP-24	Defoamer	0.30	%BWOB
3	Tail	Stage-1 Tail	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
3	Tail	Stage-1 Tail	IntegraSeal POLI	LostCirculation	0.25	lb/sk
3	Tail	Stage-1 Tail	STATIC FREE	Other	0.01	lb/sk
2	Primary	Stage-2 Primary	ASTM TYPE I/II	Cement	100.00	%
2	Primary	Stage-2 Primary	A-10	Accelerator	5.00	%BWOB
2	Primary	Stage-2 Primary	A-2	Accelerator	3.00	lb/sk
2	Primary	Stage-2 Primary	A-7P	Accelerator	2.00	lb/sk
2	Primary	Stage-2 Primary	FP-24	Defoamer	0.30	%BWOB
2	Primary	Stage-2 Primary	IntegraSeal POLI	LostCirculation	0.25	lb/sk
2	Primary	Stage-2 Primary	STATIC FREE	Other	0.01	lb/sk

Job Logs

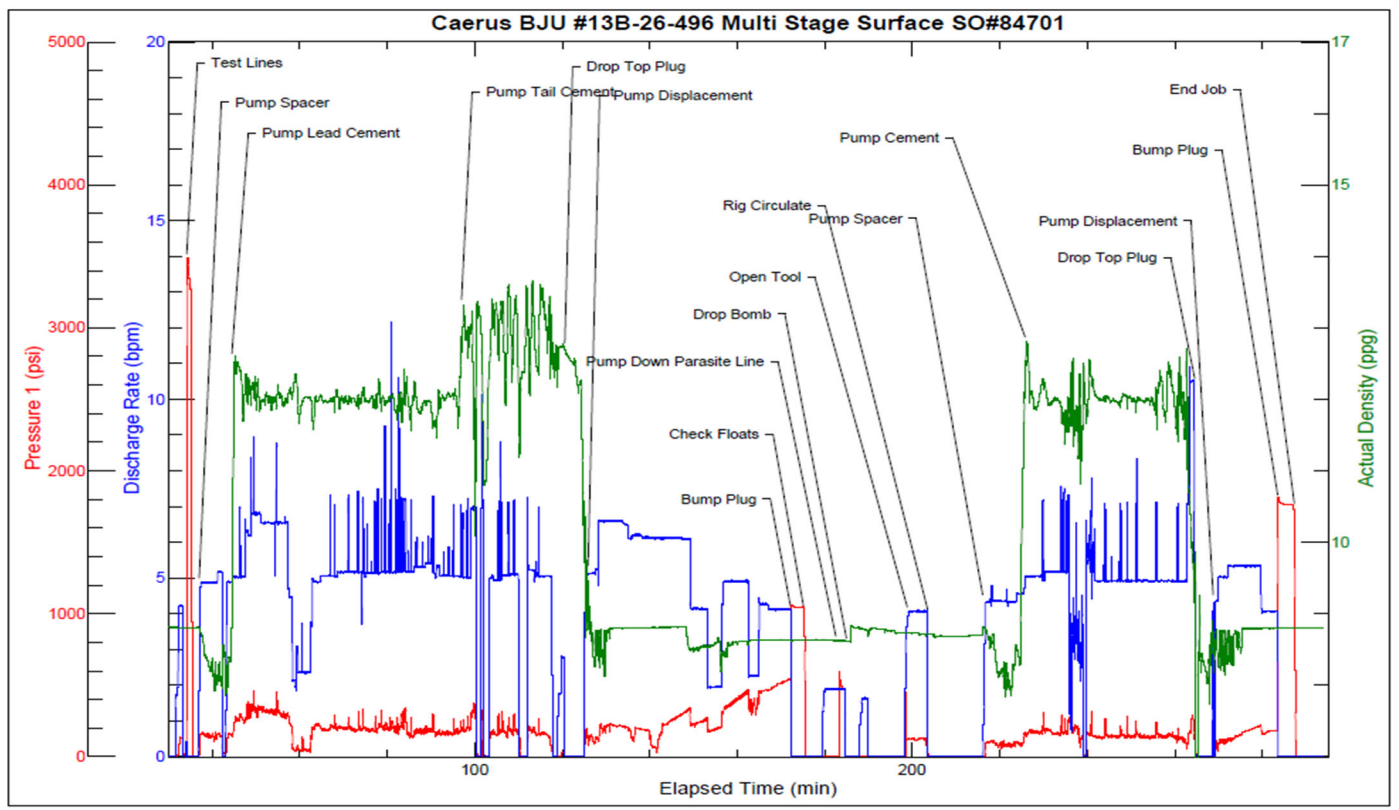
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
1	Call Out	11/30/2022	09:00						
2	Safety Meeting	11/30/2022	16:30						Pre Convoy Safety Meeting
3	Depart Service Center	11/30/2022	17:00						
4	Arrive At Location	11/30/2022	19:00						Requested on location @ 19:00
5	Safety Meeting	11/30/2022	19:15						Pre Rig- Up Safety Meeting
6	Rig- Up Equipment	11/30/2022	19:30						
7	Standby	11/30/2022	20:00						Wait for rig to finish running 3013.80' of 9 5/8 36# casing with a 45' shoe trac and Multi Stage Tool set @ 902.70'
8	Other	11/30/2022	22:30						Casing on bottom, rig start circulating through CRT with 9.4# WBM 3bbl/min @ 40psi. Pumped 240bbls
9	Safety Meeting	11/30/2022	22:45						Pre Job Safety Meeting
10	Start Job	11/30/2022	23:18						
11	Test Lines	11/30/2022	23:21						3000psi
12	Pump Spacer	11/30/2022	23:24	8.33	5	40	190		Pump 40bbls Fresh Water 5bbl/min @ 190psi
13	Pump Lead Cement	11/30/2022	23:32	12	5	235	320		Pump 235bbls Type I/II Cement 12# 5bbl/min @ 320psi, 11.9# Verified on mud scale. Got returns 55bbls lead gone, lost returns again at 120bbls lead gone
14	Pump Tail Cement	12/1/2022	00:24	13	5	64	200		Pump 64bbls Type I/II Cement 13# 5bbl/min @ 200 psi. 13# Verified on mud scale
15	Drop Top Plug	12/1/2022	00:49						Weatherford Multi Stage Top Plug
16	Pump Displacement	12/1/2022	00:50	8.33		229			Pump 229bbls Fresh Water. Got returns back 115bbls into displacement
17	Other	12/1/2022	01:01	8.33	6.5	50	250		50bbls gone 6.5bbl/min @ 250psi
18	Other	12/1/2022	01:10	8.33	6	100	250		100bbls gone 6bbl/min @ 250psi
19	Other	12/1/2022	01:19	8.33	4	150	280		150bbls gone 4bbl/min @ 280psi
20	Other	12/1/2022	01:33	8.33	4	200	480		200bbls gone 4bbl/min @ 480psi
21	Bump Plug	12/1/2022	01:40	8.33	4	229	1100		590-1100psi. Fluid in annulus fell as soon as we bumped plug
22	Check Floats	12/1/2022	01:43						Bled back 1bbl, floats holding. Pump 10bbls sugar water down parasite line. Pressure broke over @ 610psi 7bbls gone
23	Drop Bomb	12/1/2022	01:54						Weatherford Multi Stage Opening Bomb, wait 10 minutes for it to fall
24	Pressure Up Well	12/1/2022	02:05						460psi to open tool. Pumped 20bbls fresh water with no returns

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
25	Other	12/1/2022	02:11						Swap over to rig to circulate. Pumped 49bbls 9.4# WBM with no returns
26	Pump Spacer	12/1/2022	02:23	8.33	4.5	40	140		Pump 40bbls Fresh Water 4.5bbl/min @ 140psi
27	Pump Cement	12/1/2022	02:33	12	5	157	220		Pump 157bbls Type I/II Cement 12# 5bbl/min @ 220psi, 12.1# Verified on mud scale. Started getting returns 130bbls into cement
28	Drop Top Plug	12/1/2022	03:13						Weatherford Multi Stage Closing Plug
29	Pump Displacement	12/1/2022	03:14	8.33		70			Pump 70bbls Fresh Water. Got 30bbls, 66sks of cement back to surface
30	Other	12/1/2022	03:20	8.33	5	20	150		20bbls gone 5bbl/min @ 150psi
31	Other	12/1/2022	03:24	8.33	5	40	220		40bbls gone 5bbl/min @ 220psi
32	Other	12/1/2022	03:28	8.33	4	60	200		60bbls gone 4bbl/min @ 200psi
33	Bump Plug	12/1/2022	03:31	8.33	4	70	1860		210-1860psi to close tool
34	Check Floats	12/1/2022	03:35						Bled back .25bbl, tool closed
35	Other	12/1/2022	03:45						Wash up, pump pickle, and blow down lines. Wait 2hrs to top out
36	Pump Spacer	12/1/2022	06:36	8.33	2	5	15		Pump 5bbls Fresh Water 2bbl/min @ 15psi
37	Pump Cement	12/1/2022	06:42	15.6	2.5	68	20		Pump 68bbls, 324sks Class G Cement 15.6# 2bbl/min @ 20psi. 15.4# Verified on mud scale. Did not get any cement to surface
38	Shut Down	12/1/2022	07:37						Wash up, pump pickle, blow down lines, and wait 2hrs to top out again
39	Pump Cement	12/1/2022	10:30	15.6	2.5	210	20		Pump 210bbls, 999sks of Class G Cement 15.6# 2bbl/min @ 20psi. 15.6# Verified on mud scale. Did not get any cement to surface. Called and ordered more cement.
40	Other	12/1/2022	19:30						Extra Top Out Cement arrived on location. 77bbls, 375sks
41	Pump Cement	12/1/2022	20:51	15.8	3	40	160		Pump 40bbls, 195sks Class G Cement 15.8# 3bbl/min @ 160psi. 15.7# Verified on mud scale. Got cement to surface 38bbls gone, pumped 2bbls into cellar
42	Other	12/1/2022	21:05						Wash up, pump pickle, blow down lines, and monitor for 2hrs to see if cement is going to fall
43	End Job	12/2/2022	00:30						Cement fell about 3'. Release crew
44	Safety Meeting	12/2/2022	00:45						Pre Rig- Down Safety Meeting
45	Rig- Down Equipment	12/2/2022	01:00						
46	Safety Meeting	12/2/2022	02:00						Pre Convoy Safety Meeting
47	Depart Location	12/2/2022	02:30						

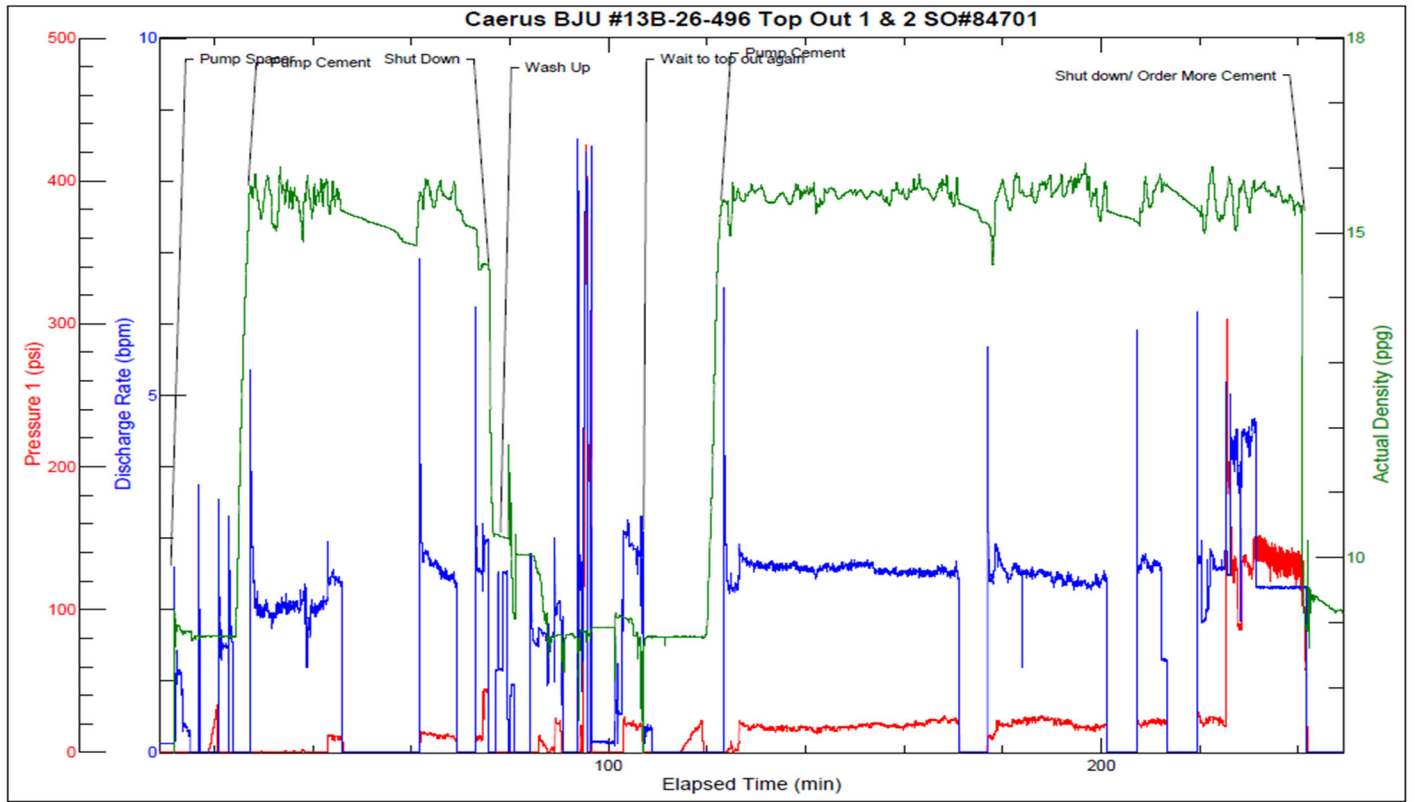
Pump Diagrams



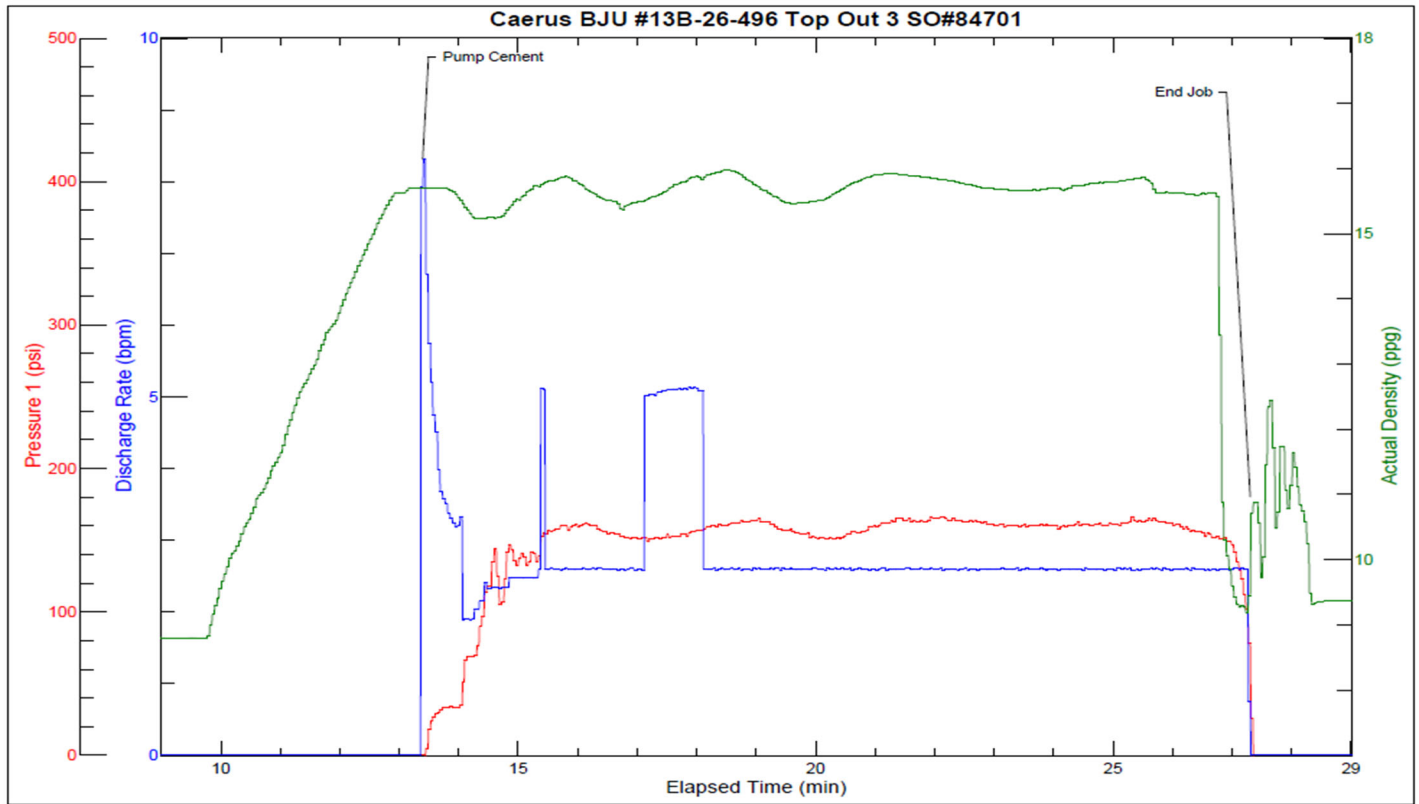
JobMaster Program Version 5.01C1
Job Number: Multi Stage Surface
Customer: Caerus
Well Name: BJU B26 Fed 13B-26-496



Job Start: Wednesday, November 30, 2022



Job Start: Thursday, December 01, 2022



Job Start: Thursday, December 01, 2022