



# **Caerus Operating LLC**

## **TWO-STAGE/MULTI-STAGE CEMENT POST JOB**

### **REPORT**

**BJU G35 FED #12B-35-496 05-045-24334**  
**S:35 T:4S R:96W Garfield CO**

CallSheet #: 80305  
Proposal #: 58070



**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

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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,

**Michael Harold**

Field Engineer II | (970) 773-3636 | michael.harold@americacementing.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	3000	0
Casing	Inner	9.625	8.921	36	n/a	0	3000	0

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1
Field Storage Silo	FSS(CTS)-469		
Field Storage Silo	FSS(CTS)-468		
AS Cement Trailer	CTF-901	TRC(TRB)-195	Hansen, James
AS Cement Trailer	CTF-9898	TRC(TRB)-090	McPherson, Garth
Cement Trailer	CTF-249	TRC(TRB)-195	Hansen, James
Cement Pump	CPF-058	TRH-959	Hale, Jason
Light Duty Vehicles	LDV-082		Kelsey, John

### Timing

Event	Date/Time
Call Out	2/21/2022 03:00
Depart Facility	2/21/2022 03:30
On Location	2/21/2022 05:30
Rig Up Iron	2/21/2022 15:30
Job Started	2/21/2022 17:00
Job Completed	2/22/2022 07:08
Rig Down Iron	2/22/2022 07:25
Depart Location	2/22/2022 08:45

### General Job Information

Metrics	Value
Well Fluid Density	9.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	800 bbls
Rig Circulation Time	1 hours
Calculated Displacement	226 bbls
Actual Displacement	226 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	25 bbls
Well Topped Out	Yes
Top Out Volume	30 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	90 °F
BHST	129 °F

### Water Analysis

Metrics	Value	Recommended
Water Source	Flat Tank	
Temperature	45 °F	50-80 °F
pH Level	5	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	80	0-1000
Total Hardness	>450 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

Returns were gained and lost consistently through the 1st stage cement job. Final gain was @ 105 away on Displacement until bump. Second stage had full returns, cement fell out at bump and there was a top out job

### Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /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	786
2	Stage-1 Lead	Lead	12.00	2.52	14.80		490.00	220.14	1050
3	Stage-1 Tail	Tail	12.50	2.23	12.56		161.00	63.94	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		379.00	172.13	0
3	Water	DisplacementFinal	8.34			42.00		82.00	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-7P	Accelerator	2.00	lb/sk
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)	Comment
1	Callout	2/21/2022	03:00					Crew called to prepare for a 2 stage surface job with an RTS time of 12:00
2	Safety Meeting	2/21/2022	03:15					Journey Management meeting
3	Depart Yard	2/21/2022	03:30					Leave Rifle, CO yard for location
4	Arrive on Location	2/21/2022	05:30					Arrive on location, Speak with customer to verify all proper equipment and products needed are on location, verify job procedure
5	Standby	2/21/2022	05:40					Crew on standby while rig finishes drilling and runs casing
6	Safety Meeting	2/21/2022	15:00					Rig up safety meeting
7	Spot Units	2/21/2022	15:15					spot all equipment for rig up
8	Rig up	2/21/2022	15:30					Rig up all equipment
9	Standby	2/21/2022	16:00					Crew on standby while rig finishes running casing
10	Safety Meeting	2/21/2022	16:45					Pre job meeting with all crews involved with cement job
11	Load Lines	2/21/2022	17:00	8.34	2	5	70	Load lines for psi test
12	Pressure Test	2/21/2022	17:02	8.34	1	1	3500	Pressure test pump and lines to wellhead
13	Fresh Flush	2/21/2022	17:09	8.34	5.5	40	350	40 bbls fresh water spacer, shutdown a couple times during for seconds due to a needle valve leak on the rigs crossover
14	Lead Cement	2/21/2022	17:25	12	6	10	720	220 BBLS Lead CMT – 12 # 2.52 Y 14.8 MW 490 sks 10 bbls away
15	Lead Cement	2/21/2022	17:39	12	5	40	450	50 bbls away
16	Lead Cement	2/21/2022	17:46	12	5	50	385	100 bbls away
17	Lead Cement	2/21/2022	17:57	12	5	50	500	150 bbls away
18	Lead Cement	2/21/2022	18:05	12	3.7	70	300	220 bbls away swap to tail cement
19	Tail Cement	2/21/2022	18:06	12.5	5	10	600	64 BBLS Tail CMT – 12.5 # 2.23 Y 12.6 MW 161 sks 10 bbls away
20	Tail Cement	2/21/2022	18:12	12.5	5	20	742	30 bbls away
21	Tail Cement	2/21/2022	18:18	12.5	4	34	300	64 bbls away shutdown for washup
22	Washup	2/21/2022	18:19					Washup pump mix system and drop the plug
23	Displacement	2/21/2022	18:25	8.34	4	10	370	Send the plug and begin displacement 10 bbls away
24	Displacement	2/21/2022	18:31	8.34	5.6	20	232	30 bbls away
25	Displacement	2/21/2022	18:37	8.34	4	30	175	60 bbls away
26	Displacement	2/21/2022	18:40	8.34	5.6	10	300	70 bbls away slow rate to go through tool
27	Displacement	2/21/2022	18:43	8.34	5.6	20	294	90 bbls away bring rate up after going through tool
28	Displacement	2/21/2022	18:48	8.34	5.6	30	264	120 bbls away Gained returns @ 105 Away
29	Displacement	2/21/2022	18:53	8.34	5.6	30	412	150 bbls away
30	Displacement	2/21/2022	18:59	8.34	5.6	30	571	180 bbls away
31	Displacement	2/21/2022	19:02	8.34	5.6	30	534	210 bbls away
32	Land Plug	2/21/2022	19:08	8.34	4.1	16	630	226 bbls away land plug and hold,
33	Check Floats	2/21/2022	19:10					check floats, floats held with 1 bbl back
34	Drop Bomb	2/21/2022	19:11					Drop bomb and wait 10 mins to open dv tool circulate 10 bbls sugar water into parasite hole
35	Open Tool	2/21/2022	19:25	8.34	3	20	60	Open dv tool, circulate 20 bbls fresh tool opened at 7 bbls away and 400 psi

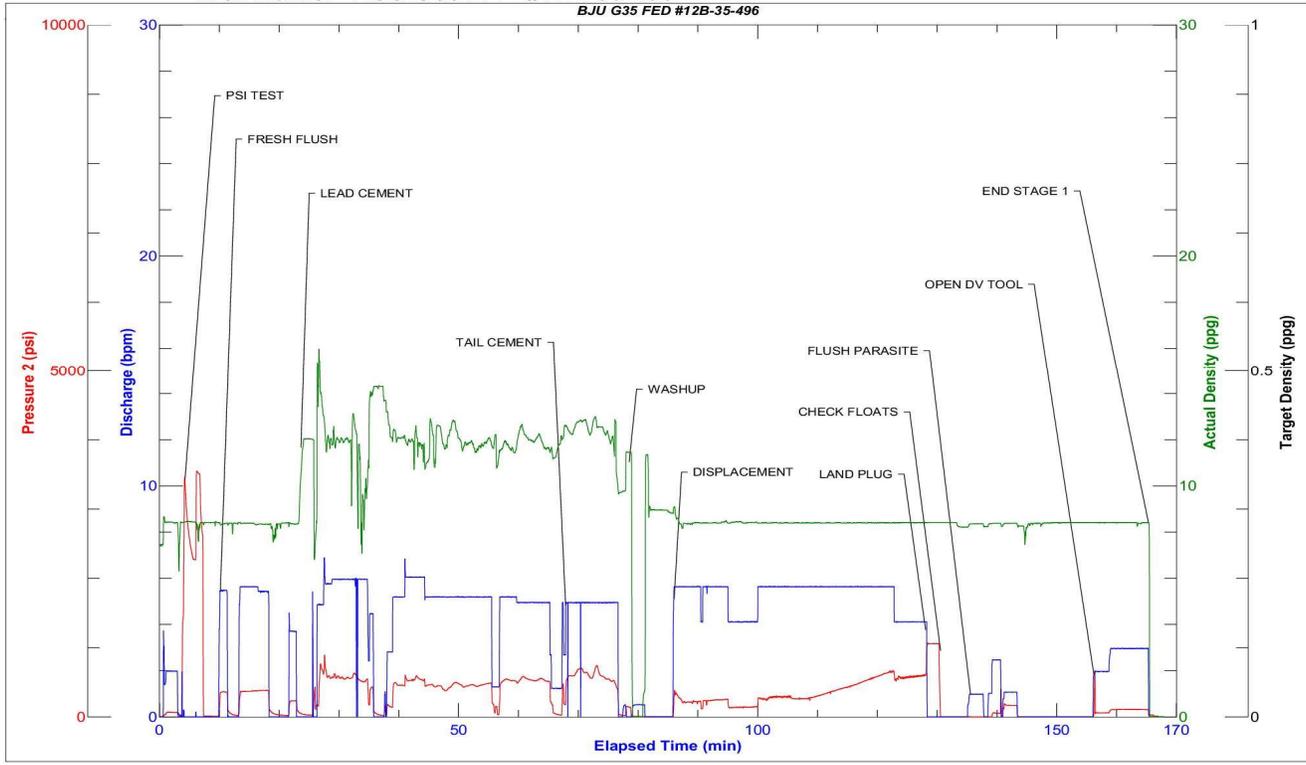


Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
36	Standby	2/21/2022	19:40					Turn well over to rig to circulate for 1 hr, or one total capacity
37	Fresh Flush	2/21/2022	21:13	8.34	5	40	220	40 BBLs fresh flush with a couple small shutdowns due to leaking needle valve on rigs crossover
38	Primary Cement	2/21/2022	21:23	12	4	10	290	172 BBLs Lead CMT – 12 # 2.55 Y 14.95 MW 379 sks 10 bbls away
39	Primary Cement	2/21/2022	21:36			40		50 bbls away
40	Primary Cement	2/21/2022	21:50			50		100 bbls away
41	Primary Cement	2/21/2022	22:02			40		140 bbls away, pump trucks slurry pump system failed and the decision was made with the customer and American Cementing to go into displacement
42	Washup	2/21/2022	22:03					Washup pump and drop plug
43	Displacement	2/21/2022	22:05	8.34	4	10	100	begin displacement 10 bbls away
44	Displacement	2/21/2022	22:14	8.34	4	15	120	25 bbls away
45	Displacement	2/21/2022	22:23	8.34	4	35	300	60 bbls away
46	Displacement	2/21/2022	22:25	8.34	4	6.4	300	66.4 bbls away, land plug
47	Check Floats	2/21/2022	22:27					Check floats, floats held with .75 bbl back Estimated 25 bbls cement to surface, At bump the cement was falling out
48	Safety Meeting	2/21/2022	22:30					Rig down meeting and journey management, The customer is requesting topout job be done asap so a new pump truck is coming to replace the one on location, also rig down meeting for the partial rig down
49	Standby	2/22/2022	00:00					Crew on standby waiting for the new pump truck to arrive for a topout job. Estimated no cement to surface on first stage and 25 bbls cement to surface on second stage.
53	Safety Meeting	2/22/2022	06:15					Pre job meeting, tie in new pump truck and discuss plan, pumping topout job with last of primary 2nd stage cement
54	Load Lines	2/22/2022	06:30	8.34	2.5	2.5	30	Prime pump and lines to verify flow
55	Topout Cement	2/22/2022	06:35	12.5	2.5	28	50	Pump 28 bbls of topout cement @ 12.5 # and receive 1 bbl to surface stage cement for 5 mins
56	Topout Cement	2/22/2022	07:06	12.5	2.5	2	57	Pump 2 bbls of topout cement @ 12.5 # and shutdown for washup with 2 bbls cement to surface
57	Washup	2/22/2022	07:08					Washup pump and mix system to cellar, pickle pump and blow lines out with air to cellar
58	Safety Meeting	2/22/2022	07:20					Rig down safet meeting
59	Rig Down	2/22/2022	07:25					Rig down all equipment
60	Safety Meeting	2/22/2022	08:30					Journey management meeting
61	Depart location	2/22/2022	08:45					Crew departs location. Total estimated 3 bbls cement to surface, topout was holding in place with minimal drop

# Pump Diagrams



JobMaster Program Version 5.01C1  
Job Number: 80305  
Customer: Cearus  
Well Name: BJU G35 FED #12B-35-496

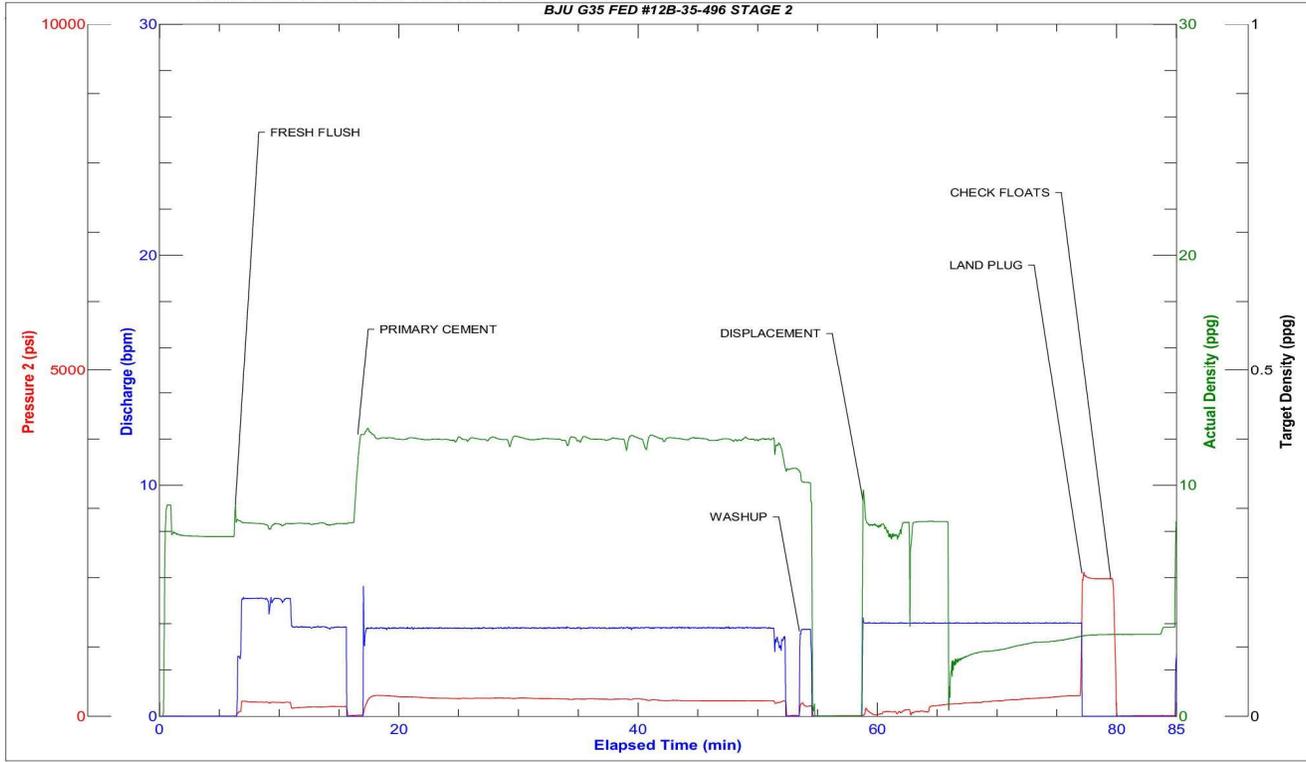


BJ Services

Job Start: Monday, February 21, 2022



JobMaster Program Version 5.01C1  
Job Number: 80305  
Customer: Cearus  
Well Name: BJU G35 FED #12B-35-496

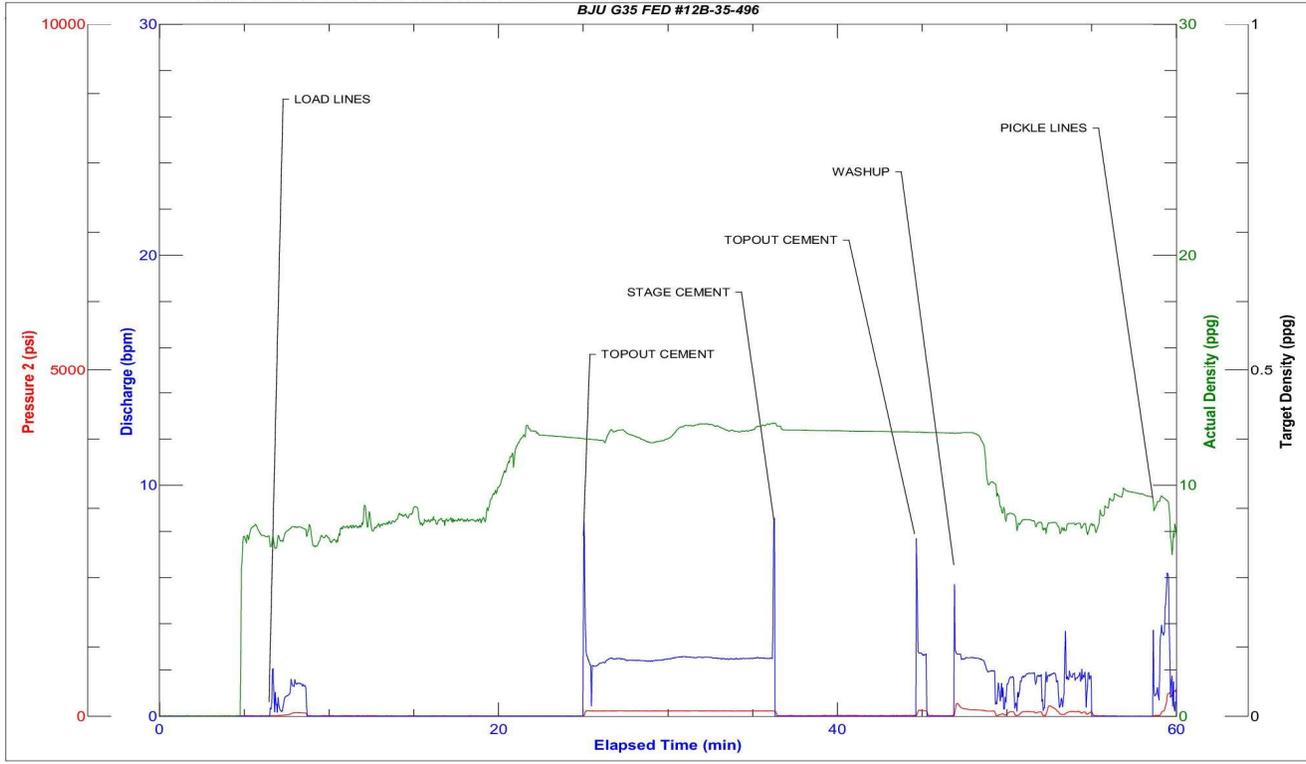


BJ Services

Job Start: Monday, February 21, 2022



JobMaster Program Version 5.01C1  
Job Number: 80305  
Customer: Cearus  
Well Name: BJU G35 FED #12B-35-496



BJ Services

Job Start: Tuesday, February 22, 2022