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# **POCO LLC**

## **LONG STRING POST JOB REPORT**

**BRIGHTON LAKES 20-17 1CDH 05-001-10127**  
**S:20 T:1S R:66W Adams CO**

CallSheet #: 75526  
Proposal #: 50872



**LONG STRING Post Job Report**

**Attention:** Mr. Devin Brown | (303) 349-0302 | DBrown@providence-energy.com

POCO LLC

PO Box 70183 | Houston, TX 77270

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Dear Mr. Devin Brown,

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,

**Jason Creel**

Field Engineer | (307) 256-0306 | jason.creel@americacementing.com

**Field Office**      1716 E Allison Rd, Cheyenne, WY 82007  
Phone: (307) 638-5585

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## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	0	1877	0
Open Hole	Outer	n/a	8.5	n/a	1877	17907	7
Casing	Inner	5.5	4.778	20	0	17907	0

### 1.2 Equipment / People

Unit Type	Unit
Pneumatic Trailer	FTF-149
Pneumatic Trailer	FTF-152
Pneumatic Trailer	CTF-018
Pneumatic Trailer	CTF-021
Pneumatic Trailer	FUF-308
Pneumatic Trailer	FTF-031
Bulk Trailer	CTF-002
Field Storage Silo	CTS-450
Field Storage Silo	CTS-438
Field Storage Silo	CTS-455
Light Duty Pickups	LDV-5223
Cement Pump	CPF-182

### 1.3 Timing

Event	Date/Time
Call Out	11/25/2020 03:00
Depart Facility	11/25/2020 06:30
On Location	11/25/2020 08:15
Rig Up Iron	11/25/2020 08:30
Job Started	11/25/2020 15:17
Job Completed	11/25/2020 19:43
Rig Down Iron	11/25/2020 19:55
Depart Location	11/25/2020 21:30

### 1.4 Casing Equipment

Type	Description	Qty
CENTRALIZER,5-1/2"NON-WELD	Rigid	212

### 1.5 General Job Information

Metrics	Value
Well Fluid Density	9.9 lb/gal
Well Fluid Type	OBM
Rig Circulation Vol	1200 bbls
Rig Circulation Time	3 hours
Calculated Displacement	398 bbls
Actual Displacement	392 bbls
Total Spacer to Surface	80 bbls
Total CMT to Surface	43 bbls

### 1.6 Well Fluid Details

Metrics	Value
Plastic Viscosity	21
Yield Point	8
10 sec. SGS	8
10 min. SGS	14
30 min. SGS	16
Filtrate	24
Flow Line Temp.	145

### 1.7 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	9.9 lb/gal
Well Fluid Density Out of Well	9.9 lb/gal

### 1.8 Job Details (cont.)

Metrics	Value
BHCT	230 °F
BHST	230 °F

### 1.9 Circulation

<b>Lost Circulation Experienced</b>
No

### 1.10 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	EZ Spacer II	Spacer	12.00			29.90		28.00	0
1	2	EZ Spacer II	Spacer	12.00			29.90		26.00	0
1	3	EZ Spacer II	Spacer	12.00			29.90		26.00	0
1	4	ACem P100.3.1C	Lead	12.50	2.21	12.54		815.00	320.77	0
1	5	ACem P50.6.02C	Tail	13.50	1.75	8.71		1510.00	470.35	6436
1	6	Retarded Water + Chems	Displacement	8.37			41.43		10.00	17414
1	7	Displacement	DisplacementFinal	8.37			41.53		387.00	0

### 1.11 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	EZ Spacer II	WEIGHTING ADDITIVE, W-11	Heavyweight	242.70	lb/bbl
1	1	Spacer	EZ Spacer II	GW-86	Viscosifier	1.20	lb/bbl
1	1	Spacer	EZ Spacer II	R-31	Retarder	0.50	lb/bbl
1	1	Spacer	EZ Spacer II	R-7C	Retarder	2.00	lb/bbl
1	1	Spacer	EZ Spacer II	SS-267	Surfactant	1.00	gal/bbl
1	2	Spacer	EZ Spacer II	WEIGHTING ADDITIVE, W-11	Heavyweight	242.70	lb/bbl
1	2	Spacer	EZ Spacer II	GW-86	Viscosifier	1.20	lb/bbl
1	2	Spacer	EZ Spacer II	R-31	Retarder	0.50	lb/bbl
1	2	Spacer	EZ Spacer II	R-7C	Retarder	2.00	lb/bbl
1	2	Spacer	EZ Spacer II	SS-267	Surfactant	1.00	gal/bbl
1	3	Spacer	EZ Spacer II	WEIGHTING ADDITIVE, W-11	Heavyweight	242.70	lb/bbl
1	3	Spacer	EZ Spacer II	GW-86	Viscosifier	1.20	lb/bbl
1	3	Spacer	EZ Spacer II	R-31	Retarder	0.50	lb/bbl
1	3	Spacer	EZ Spacer II	R-7C	Retarder	2.00	lb/bbl
1	3	Spacer	EZ Spacer II	SS-267	Surfactant	1.00	gal/bbl
1	4	Lead	ACem P100.3.1C	ASTM TYPE III	Cement	100.00	%
1	4	Lead	ACem P100.3.1C	BENTONITE	Viscosifier	4.00	%BWOB
1	4	Lead	ACem P100.3.1C	EC-2	BondEnhancer	3.00	%BWOB
1	4	Lead	ACem P100.3.1C	FL-24	FluidLoss	0.30	%BWOB
1	4	Lead	ACem P100.3.1C	FP-24	Defoamer	0.30	%BWOB
1	4	Lead	ACem P100.3.1C	GW-86	Viscosifier	0.20	%BWOB
1	4	Lead	ACem P100.3.1C	IntegraSeal POLI	LostCirculation	0.13	lb/sk
1	4	Lead	ACem P100.3.1C	SR-20	Retarder	0.60	%BWOB
1	5	Tail	ACem P50.6.02C	CLASS G	Cement	50.00	%
1	5	Tail	ACem P50.6.02C	FLY ASH (ROCKIES)	Extender	50.00	%

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	5	Tail	ACem P50.6.02C	BENTONITE	Viscosifier	2.00	%BWOB
1	5	Tail	ACem P50.6.02C	FL-66	FluidLoss	0.20	%BWOB
1	5	Tail	ACem P50.6.02C	FP-24	Defoamer	0.30	%BWOB
1	5	Tail	ACem P50.6.02C	GW-86	Viscosifier	0.10	%BWOB
1	5	Tail	ACem P50.6.02C	S-8	StrengthRetrogression	20.00	%BWOB
1	5	Tail	ACem P50.6.02C	SR-20	Retarder	0.10	%BWOB
1	6	Displacement	Retarded Water + Chems	BIOCIDE,BIOC11139W	Biocide	0.01	gal/bbl
1	6	Displacement	Retarded Water + Chems	CI-27	Other	0.21	gal/bbl
1	6	Displacement	Retarded Water + Chems	OXYGEN SCAVENGER, OS-30	Other	0.17	gal/bbl
1	6	Displacement	Retarded Water + Chems	ResCare CS-2	ClayProtection	0.08	gal/bbl
1	6	Displacement	Retarded Water + Chems	SR-61L	Retarder	0.10	gal/bbl
1	7	DisplacementFinal	Displacement	BIOCIDE,BIOC11139W	Biocide	0.01	gal/bbl
1	7	DisplacementFinal	Displacement	CI-27	Other	0.21	gal/bbl
1	7	DisplacementFinal	Displacement	OXYGEN SCAVENGER, OS-30	Other	0.17	gal/bbl
1	7	DisplacementFinal	Displacement	ResCare CS-2	ClayProtection	0.08	gal/bbl

## 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	11/25/2020	03:00					customer requested crew to be on location at 9:00
2	Depart To Location	11/25/2020	06:30					Crew departs from shop
3	Arrive On Location	11/25/2020	08:15					Crew arrives on location and meet with customer
4	Safety Meeting	11/25/2020	08:20					American cementing crew has safety meeting over rigging up iron and hoses
5	Rig Up Iron	11/25/2020	08:30					Crew rigs up iron and hoses
6	Waiting On Rig	11/25/2020	10:00					Rigged up cement head and rigs begins to recirculate
7	Safety Meeting	11/25/2020	14:21					Safety meeting with American cementing, rig crew and company man over job and hazards
8	Fill Pumps And Lines	11/25/2020	15:17	8.33	5	5	600	Fill pumps and lines
9	Pressure Test	11/25/2020	15:19	8.33	0.5	0.5	5160	Pressure test iron and head to 5000 PSI
10	Pump Spacer	11/25/2020	15:24	12	4	28	480	Pump 28 bbls of 12 PPG spacer from CTF-002
11	Pump Spacer	11/25/2020	15:30	11.5	4	26	500	Pump 26 bbls of 11.5 PPG spacer
12	Pump Spacer	11/25/2020	15:38	11	4	26	470	Pump 26 bbls of 11 PPG spacer
13	Pump Lead Cement	11/25/2020	15:46	12.5	6		570	Pump 320 bbls of 12.5 PPG Lead Cement ( 815 Sks, 2.21 Yield, 12.54 Gals/Sks. Swap to CTF-002 RP and pump lead cement
14	Pump Lead Cement	11/25/2020	15:59	12.5	6	80	370	Pump Lead Cement Swap to Silo CTS-455
15	Pump Lead Cement	11/25/2020	16:14	12.5	6	160	270	Pump 80 bbls of Lead Cement
16	Pump Lead Cement	11/25/2020	16:27	12.5	6	240	300	Pump 160 bbls of Lead Cement
17	Pump Lead Cement	11/25/2020	16:38	12.5	6	320	360	Pump 240 bbls Of Lead cement and Swap to Silo CTS-438 Tail Cement
18	Pump Tail Cement	11/25/2020	16:42	13.5	6		310	Pump 470 bbls Of 13.5 PPG Tail Cement ( 1510 Sks, 1.75 Yield, 8.71 Gals/Sks. Swapped to CTS-438
19	Pump Tail Cement	11/25/2020	16:51	13.5	6	80	290	80 bbls into tail cement
20	Pump Tail Cement	11/25/2020	17:08	13.5	6	160	380	160 bbls into tail cement
21	Pump Tail Cement	11/25/2020	17:16	13.5	6	240	350	235 bbls into tail cement and swap to Silo Cts-450
22	Pump Tail Cement	11/25/2020	17:18	13.5	6	320	220	Swapped to Silo CTS-450 Pump Tail cement
23	Pump Tail Cement	11/25/2020	17:44	13.5	6	400	390	160 bbls into tail cement
24	Pump Tail Cement	11/25/2020	18:03	13.5	6	470	450	Pump total of 470 bbls of tail cement
25	Shut Down	11/25/2020	18:03					Shut down pumping
26	Wash Pumps And Line	11/25/2020	18:05	8.33	4	15	45	Wash pumps and lines
27	Drop Top Plug	11/25/2020	18:11					Drop top plug with company man to verify plug went downhole
28	Pump Displacement	11/25/2020	18:11	8.33	10		650	Pump total of 393 bbls of fresh water displacement

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
29	Pump Displacement	11/25/2020	18:22	8.33	10	100	1900	100 bbls into displacement
30	Pump Displacement	11/25/2020	18:31	8.33	9	187	2500	187 bbls into displacement slow rate to 9 bpm
31	Pump Displacement	11/25/2020	18:34	8.33	9	200	2700	200 bbls into displacement
32	Pump Displacement	11/25/2020	18:40	8.33	7	250	2600	250 bbls into displacement slow to 7 bpm
33	Pump Displacement	11/25/2020	18:43	8.33	6	270	2500	270 bbls into displacement slow rate to 6 bpm
34	Spacer to Surface	11/25/2020	18:45	8.33	6	283	2670	283 bbls got spacer to surface
35	Shut Down	11/25/2020	18:45					Shut down for rig to swap valves to 3 way tanks
36	Pump Displacement	11/25/2020	18:48	8.33	6	283	2100	Come back online
37	Pump Displacement	11/25/2020	18:52	8.33	6	300	2500	300 bbls into displacement
38	Shut Down	11/25/2020	18:53			304		Company man requested to shut down due to rigs bypass going over the shackers and rig crew swapped valves
39	Pump Displacement	11/25/2020	18:59	8.33	6	304	1900	Come back online
40	Cement To Surface	11/25/2020	19:07	8.33	6	350	2500	350 bbls into displacement got cement to surface for total of 43 bbls of cement to surface
41	Slow Rate	11/25/2020	19:11	8.33	5	378	2000	378 bbls into displacement slow rate to 5 bpm
42	Land Plug	11/25/2020	19:15			392	3000	Bump plug to 3000 PSI, FCP of 2000 PSI total displacement of 392 bbls
43	Check Floats	11/25/2020	19:20					Bleed back 3.5 bbls and floats did not hold plug was unseating itself and kept getting returns to truck
44	Pressure Up	11/25/2020	19:22	8.33	2	3.5	3000	Pump 3.5 bbls back in and pressured up plug to 3150 PSI
45	Check Floats	11/25/2020	19:30					As requested by IPT, floats did not hold and truck got back 3.5 bbls and shut in
46	Pressure Up	11/25/2020	19:37	8.33	5	3.5	3000	Pump 3.5 bbls back in and pressured up plug to 3000 PSI
47	Check Floats	11/25/2020	19:40					Floats not holding and truck got back 3.5 bbls and shut back in
48	Pressure Up	11/25/2020	19:43	8.33	2	3.5	2900	Pressure back up to 2900 PSI from 1400 PSI and leave pressure on cement head. Notified office earlier and office notified IPT to recommend leave head on for 8 hours and checks floats
49	Safety Meeting	11/25/2020	19:50					Crew has safety meeting over rigging down iron
50	Rig down Iron	11/25/2020	19:55					Crew rigs down iron and hoses
51	Depart from location	11/25/2020	21:30					Crew depart from location



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	77 °F	50-80 °F
pH Level	8	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	125 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	1 mg/L	0-300 mg/L

## 4 Pump Diagrams

### Summary Trend



11/25/2020 8:31:18 P