



Petroshare Corporation

Brighton Lakes 20-17-1CDH

API #05-001-10127

Surface

July 27, 2019

Quote #: QUO-34350-H3V1Q0

Execution #: EXC-19881-K7X4P1O2



Petroshare Corporation

Attention: Mr. Greg Thorlaksen | (719) 963-0714 | gregthorlaksen@yahoo.com

Dear Mr. Greg Thorlaksen,

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 II | (307) 365-8254 | Gage.Putnam@bjservices.com

Field Office 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 459-6487

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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Eric Dewit	FORMATION	
CLIENT FIELD REPRESENTATIVE	Greg	RIG	
DISTRICT	Cheyenne, WY	COUNTY	ADAMS
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	13.50	0.00	0.00	1,877.00	1,877.00	15.00		
Casing	8.92	9.63	36.00	1,877.00	1,877.00		J-55	LTC

HARDWARE

Bottom Plug Used?	Yes	Landing Collar Depth (ft)	1,835
Bottom Plug Provided By	Non BJ	Tool Type	Float Collar
Bottom Plug Size	9.625	Tool Depth (ft)	1,835.00
Top Plug Used?	Yes	Max Casing Pressure - Rated (psi)	2816.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Operated (psi)	1500.00
Top Plug Size	9.625	Pipe Movement	None
Centralizers Used	Yes	Job Pumped Through	Manifold
Centralizers Quantity	12.00	Top Connection Thread	LTC
Centralizers Type	Bow	Top Connection Size	9.625

CIRCULATION PRIOR TO JOB

Circulation Prior to Job	No	Solids Present at End of Circulation	No
Lost Circulation Prior to Cement Job	No	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	8.33	Gas Present	No

TEMPERATURE

Ambient Temperature (°F)	81.00	Slurry Cement Temperature (°F)	70.00
Mix Water Temperature (°F)	69.00		

Client: Petroshare Corporation

Well: BRIGHTON LAKES 20-17 1CDH

Well API: 05-001-10127

Start Date: 7/27/2019

End Date: 7/27/2019

Field Ticket #:



FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	PLN TOP FLD (ft)	LENGTH (ft)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water	8.3337			0.00				20.0000
Lead Slurry	BJCem S100.03.1C	12.0000	2.5298	14.86	0.00	1,450.00	320	810.0000	144.2000
Tail Slurry	BJCem S100.03.1C	12.5000	2.2255	12.59	1,450.00	500.00	135	299.0000	53.2000
Displacement Final	Water	8.3337			0.00			0.0000	147.5000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	Water	Fresh Water	100.0000	PCT
Lead Slurry	BJCem S100.03.1C	IntegraSeal POLI	0.1300	LBS/SK
Lead Slurry	BJCem S100.03.1C	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.03.1C	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Lead Slurry	BJCem S100.03.1C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.03.1C	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.03.1C	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.03.1C	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.03.1C	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.03.1C	Cement Additive, Sodium Metasilicate A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.03.1C	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100.03.1C	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.03.1C	IntegraSeal POLI	0.1300	LBS/SK
Displacement Final	Water	Fresh Water	100.0000	PCT

Client: Petroshare Corporation

Well: BRIGHTON LAKES 20-17 1CDH

Well 05-001-10127

API:

Start 7/27/2019

Date:

End 7/27/2019

Date:

Field Ticket

#:



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	142.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	142.00	Amt of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	1047.00	Total Volume Pumped (bbls)	386.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	Yes
Cement Returns During Job	None	Lost Circulation During Cement Job	No

Comments

JOB SUMMARY

Had to top out with 15 bbls of cement @12.5 ppg

Client: Petroshare Corporation

Well: BRIGHTON LAKES 20-17 1CDH Well API: 05-001-10127

Start Date: 7/27/2019

End Date: 7/27/2019

Field Ticket #:



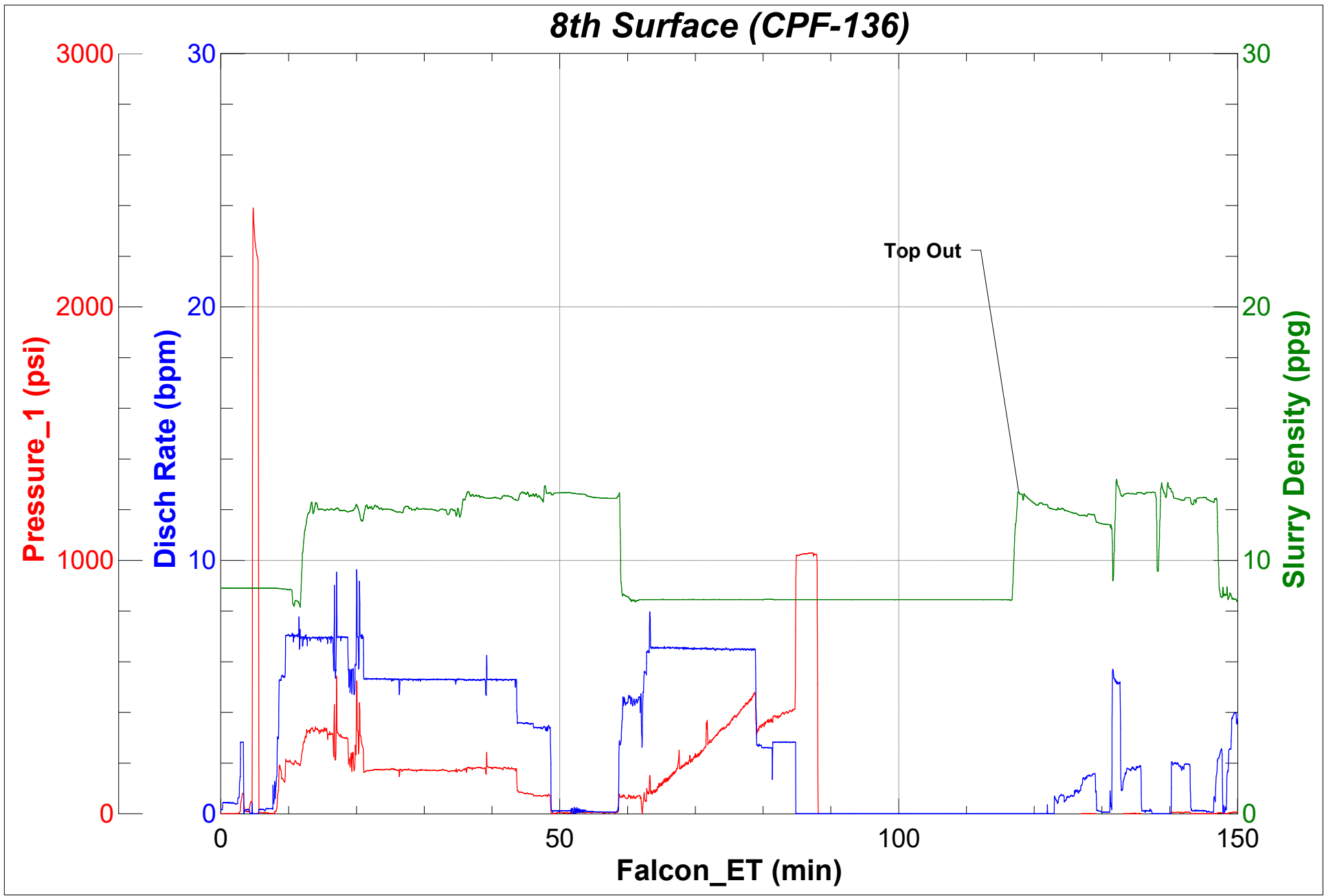
BJ Cementing Event Log

Surface - Cheyenne, WY - Eric Dewit

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	07/26/2019 22:00	Callout					Customer calls with an RTS of 4:00 7/27/19
2	07/26/2019 22:00	Other					Get ready to leave for location
3	07/27/2019 00:00	Depart for Location					
4	07/27/2019 02:00	Rig					Waiting on rig to finish running casing
5	07/27/2019 06:00	Late - Delay To Client Operations					Waiting on cement to get delivered (casing is on bottom rig is circulating)
6	07/27/2019 07:30	STEACS Briefing					Pre-rig up safety meeting
7	07/27/2019 07:40	Rig Up					Rig up (load bottom plug into casing)
8	07/27/2019 07:55	STEACS Briefing					Pre-job safety meeting
9	07/27/2019 08:03	Other	8.3400	2.90	2.00	81.00	Load pumps and lines
10	07/27/2019 08:05	Pressure Test	8.3400	0.00	0.00	2400.00	Test pumps and lines
11	07/27/2019 08:08	Pump Spacer	8.3400	5.20	20.00	189.00	20 bbls of fresh water ahead
12	07/27/2019 08:13	Pump Lead Cement	12.0000	5.30	144.00	183.00	Pump 320 sks of lead cement @12 ppg
13	07/27/2019 08:37	Pump Tail Cement	12.5000	5.20	53.00	179.00	Pump 135 sks of tail cement @12.5 ppg
14	07/27/2019 08:49	Drop Top Plug		0.00	0.00	0.00	Shut down and drop the top plug
15	07/27/2019 09:00	Pump Displacement	8.3400	6.50	0.00	84.00	Send plug, start fresh water displacement
16	07/27/2019 09:10	Pump Displacement	8.3400	6.50	50.00	200.00	
17	07/27/2019 09:20	Other	8.3400	2.80	120.00	360.00	Drop rate to land the plug
18	07/27/2019 09:27	Land Plug	8.3400	2.80	142.00	1045.00	Land plug with 412 psi, Bump up to 1045 psi (did not get cement to surface)
19	07/27/2019 09:30	Check Floats	8.3400	0.00	0.00	0.00	Floats held .5 bbls back
20	07/27/2019 09:32	Other					Get ready to top out (run one 20' stick of 1")
21	07/27/2019 09:55	Top Out	12.5000	1.00	15.00	0.00	Batch, mix and pump top out @12.5 ppg (pump a total of 38 sks of cement)
22	07/27/2019 10:24	Wash Pumps and Lines					Wash up pump
23	07/27/2019 10:30	STEACS Briefing					Pre-rig down safety meeting
24	07/27/2019 10:40	Rig Down					Rig everything down
25	07/27/2019 12:20	Leave Location					Leave location



8th Surface (CPF-136)





POCO LLC

Lab Report

Test/Iteration 910-6
ACem P100.3.01C

11/22/2020

**Lab Report**

POCO LLC

PO Box 70183 | Houston, TX 77270

11/22/2020

Dear POCO LLC,

Thank you for the opportunity to submit a lab report for cementing services on the attached wellbore. American Cementing's priority is providing premium customer service while operating in a safe, efficient manner. If you have any questions regarding the proposal or services offered, please contact American Cementing at any time.
Sincerely,

Jason Creel

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

Field Office

1716 E Allison Rd, Cheyenne, WY 82007

Phone: (307) 638-5585

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1 General Lab Test Information

Date:	11/22/2020
Well Name:	BRIGHTON LAKES 20-17 1CDH
Well API #:	05-001-10127
Fluid Type:	Lead
Job Type:	Long String
Test Type	Pilot
TMD:	7000 ft
TVD:	17907 ft
BHCT:	230 °F
BHST:	230 °F
Temperature Gradient:	2.00 °F/100ft
Surface Temperature:	80 °F
Density:	12.50 lb/gal
Yield:	2.21 ft ³ /sk
Water Requirement:	12.54 gal/sk
Sack Weight:	94.00 lbs
Fluid SG:	1.50
Service District:	Cheyenne

2 Material Weigh-up Information

No	Material	Function	Type	Form	Concen.	Uom	SG	Weight (g)	Volume (mL)
1	ASTM TYPE III	Cement	Base	Dry	100.00	%	3.14	408.95	130.24
2	GW-86	Viscosifier	Additive	Dry	0.20	%BWOB	1.40	0.82	0.58
3	FL-24	FluidLoss	Additive	Dry	0.30	%BWOB	1.22	1.23	1.01
4	IntegraSeal POLI	LostCirculation	Additive	Dry	0.13	lb/sk	1.40	0.57	0.40
5	FP-24	Defoamer	Additive	Dry	0.30	%BWOB	1.72	1.23	0.71
6	BENTONITE	Viscosifier	Additive	Dry	4.00	%BWOB	2.65	16.36	6.17
7	SR-20	Retarder	Additive	Dry	0.60	%BWOB	1.42	2.45	1.73
8	EC-2	BondEnhancer	Additive	Dry	3.00	%BWOB	3.19	12.27	3.85
9	R-6	Retarder	Additive	Dry	0.10	%BWOB	1.36	0.41	0.30
	Water	-	-	-	-	-	1.00	455.01	455.01
								899.28	600.00

Density: 12.50 lb/gal Yield: 2.21 ft³/sk SG: 1.50 Water Req.: 12.54 gal/sk Water Src: Tap Water SG: 1.00

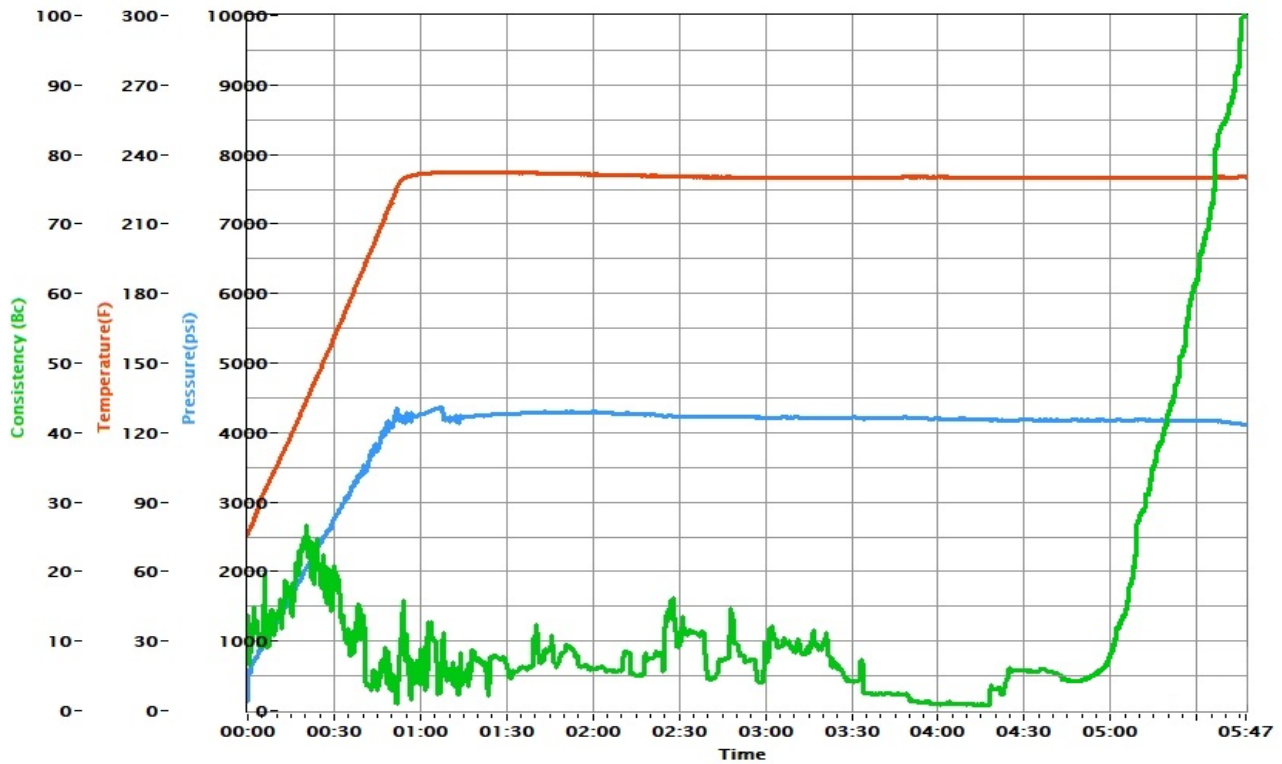
3 Test Analysis/Results

Mixability Analysis

	#1
Vortex:	Nickle Size @ 12,000 RPM

Thickening Time Analysis

	#1
Initial Consistency:	7.13 bc
30 bc:	05:12 (HH:MM)
50 bc:	05:24 (HH:MM)
70 bc:	05:34 (HH:MM)
100 bc:	05:47 (HH:MM)
Termination Time:	05:47 (HH:MM)
Termination Consistency:	100 bc



4 Conditioning Schedules

Thickening Time #1

No	Time (min)	Temp (°F)	Pressure (psi)	Conditioning	Static
1	0	80	535	Yes	No
2	51	230	4200	Yes	No
3	999	230	4200	Yes	No