



Great Western Operating Company, LLC

Ottesen LE 09-372HNX

API # 05-123-49307

Surface

April 4, 2020

Quote #: QUO-44539-J0Z2V1

Execution #: EXC-25651-H1B9L602



Great Western Operating Company, LLC

Great Western Operating Company, LLC | 1801 Broadway, Suite 500 | Denver, CO 80202

Dear Great Western Operating Company, LLC,

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,
Jason Creel
Field Engineer I | (307) 256-0306 | Jason.Creel@BJServices.com

Field Office
1716 East Allison Rd., Cheyenne WY. 82007 | (307) 638-5585

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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Eric Dewit	RIG	WM 454
CLIENT FIELD REPRESENTATIVE	Shane	COUNTY	WELD
DISTRICT	Cheyenne, WY	STATE / PROVINCE	CO
SERVICE	Cementing		

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	2,020.00	2,020.00	50.00		
Casing	8.92	9.63	36.00	2,020.00	2,020.00		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,974.59
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	2,830.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	1,600.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	19.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,974.59	Top Connection Size	9.625

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Mud Density In (ppg)	8.40
Circulation Prior to Job	Yes	Mud Density Out (ppg)	8.40
Circulation Time (min)	30.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	8.00	Flare Prior to / during the Cement Job	No
Circulation Volume (bbls)	240.00	Gas Present	No
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	46.00	Slurry Cement Temperature (°F)	56.00
Mix Water Temperature (°F)	55.00		

Client: Great Western Operating Company, LLC

Well: OTTESEN LE #09-372HXX

Well API: 05-123-49307

Start Date: 4/4/2020

End Date: 4/4/2020



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	8.3300			0.00				20.0000
Tail Slurry	BJCem S100.3.XC	14.5000	1.3902	6.81	0.00	2,000.00	1070	1488.0000	264.9000
Displacement Final	Water	8.3300			0.00			0.0000	151.4000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Tail Slurry	BJCem S100.3.XC	CEMENT, ASTM TYPE III	100.0000	PCT

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	72.00
Calculated Displacement Vol (bbls)	153.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	153.00	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)	1,520.00	Total Volume Pumped (bbls)	438.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Yes	Lost Circulation During Cement Job	No

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	04/04/2020 07:30	Callout					Customer calls with an OL time of 13:00 on 4/4/20 Crew gets equipment and materials ready to travel to location
2	04/04/2020 10:00	Depart for Location					Crew leaves yard to travel to location
3	04/04/2020 12:00	Arrive on Location					Arrive on location (rig is running casing) Have a pre-rig up safety meeting before spotting trucks
4	04/04/2020 12:10	Spot Units					Spot trucks
5	04/04/2020 12:20	Rig Up					Rig up everything except for the rig floor
6	04/04/2020 13:30	STEACS Briefing					Pre-job safety meeting with BJ crew, Rig crew, and Company man
7	04/04/2020 13:45	Rig Up					Rig up cement head
8	04/04/2020 13:54	Other (See comment)	8.3400	2.00	2.00	79.00	Load lines with 2 bbls of fresh water ahead
9	04/04/2020 13:55	Pressure Test	8.3400	0.00	0.00	3679.00	Test pumps and lines
10	04/04/2020 13:59	Pump Spacer	8.3400	4.00	18.00	84.00	Pump 18 bbls of fresh water ahead of cement
11	04/04/2020 14:04	Pumping Cement	14.5000	5.30	265.00	115.00	Pump 1070 sks of cement @14.5 ppg (Silo 673, and both pods on CTF-408)
12	04/04/2020 14:55	Drop Top Plug					Shut down wash pump, and drop the top plug
13	04/04/2020 14:59	Pump Displacement	8.3400	5.00	0.00	61.00	Send plug, start freshwater displacement + Biocide (provided by customer)
14	04/04/2020 15:09	Pump Displacement	8.3400	5.00	50.00	290.00	
15	04/04/2020 15:15	Cement Back-to-Surface	8.3400	5.00	81.00	560.00	Getting good cement to surface (72 bbls of cement to surface)
16	04/04/2020 15:19	Pump Displacement	8.3400	5.00	100.00	630.00	
17	04/04/2020 15:26	Pump Displacement	8.3400	3.00	135.00	717.00	Drop rate to land the plug
18	04/04/2020 15:32	Land Plug	8.3400	3.00	153.00	1520.00	Land plug (FCP 746) Bumped up to 1520 psi and hold for a 30 min casing test
19	04/04/2020 15:42	Pressure Test	8.3400	0.00	0.00	1503.00	10 min into casing test
20	04/04/2020 15:52	Pressure Test	8.3400	0.00	0.00	1514.00	20 min into casing test
21	04/04/2020 16:02	Check Floats	8.3400	0.00	0.00	1526.00	Floats held (.5 bbls back) Final casing test pressure was 1,526 psi
22	04/04/2020 16:04	STEACS Briefing					Pre-rig down safety meeting
23	04/04/2020 16:14	Rig Down					Rig everything down
24	04/04/2020 16:45	Leave Location					crew ready to depart from location to head back to the yard

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Quote #: QUO-44539-J0Z2V1

Plan #: ORD-25651-H1B9L6

Execution #: EXC-25651-H1B9L602



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Ottesen LC 09-372HNX

