



# Great Western Operating Company, LLC

Ottesen LE 09-379HN

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API # 05-123-49305

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## Surface

April 07, 2020

Quote #: QUO-44107-C5R2R3

Execution #: EXC-25664-B4Z7W302



# Great Western Operating Company, LLC

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

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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

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# 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
Casing	8.92	9.63	36.00	2,027.00	2,027.00		J-55	LTC
Open Hole	13.50	0.00	0.00	2,027.00	2,027.00	50.00		

## HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,982.79
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	2,820.00
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)	1,982.79	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)	68.00	Slurry Cement Temperature (°F)	57.00
Mix Water Temperature (°F)	56.00		

Client: Great Western Operating Company, LLC

Well: OTTESEN LE #09-379HN

Well API: 05-123-49305

Start Date: 4/7/2020

End Date: 4/7/2020



## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> 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

<b>Displaced By</b>	BJ	<b>Amt of Cement Returned / Reversed</b>	70.00
<b>Calculated Displacement Vol (bbls)</b>	153.00	<b>Method Used to Verify Returns</b>	Visual
<b>Actual Displacement Vol (bbls)</b>	153.00	<b>Amt of Spacer to Surface</b>	20.00
<b>Did Float Hold?</b>	Yes	<b>Pressure Left on Casing (psi)</b>	0.00
<b>Bump Plug</b>	Yes	<b>Amt Bled Back After Job</b>	0.50
<b>Bump Plug Pressure (psi)</b>	1530.00	<b>Top Out Cement Spotted</b>	No
<b>Were Returns Planned at Surface</b>	Yes	<b>Lost Circulation During Cement Job</b>	No
<b>Cement Returns During Job</b>	Yes		

# 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	04/07/2020 07:00	Callout					Customer calls with an O/L time of 12:30 on 4/7/20 Crew gets equipment, and materials ready to travel to location
2	04/07/2020 10:30	Depart for Location					Crew leaves yard to travel to location
3	04/07/2020 12:30	Arrive on Location					Arrive on location (rig is running casing) Pre-rig up safety meeting before spotting equipment
4	04/07/2020 12:35	Spot Units					
5	04/07/2020 12:45	Rig Up					Rig up everything except for the rig floor
6	04/07/2020 13:33	STEACS Briefing					Pre-job safety meeting with BJ crew, Rig crew, and Company man
7	04/07/2020 13:41	Rig Up					Rig up cement head
8	04/07/2020 13:50	Other (See comment)	8.3400	2.80	3.00		Load lines with 3 bbls of fresh water
9	04/07/2020 13:52	Pressure Test	8.3400	0.00	0.00		Test pumps and lines
10	04/07/2020 13:56	Pump Spacer	8.3400	5.20	17.00	135.00	Pump 17 bbls of fresh water (20 bbls total) ahead of cement
11	04/07/2020 13:59	Pumping Cement	14.5000	5.10	0.00	349.00	Pump 1,070 sks of cement @14.5 ppg (silo 664)
12	04/07/2020 14:17	Pumping Cement	14.5000	2.80	93.00	224.00	Had to slow rate to try and hold density
13	04/07/2020 14:22	Pumping Cement	14.5000	5.10	108.00	322.00	Swapped over to Bulk Truck CTF-408 Rear Pod
14	04/07/2020 14:29	Pumping Cement	14.5000	2.90	143.00	207.00	Swapped back to silo 664 to ensure we got enough cement pumped required for the job
15	04/07/2020 14:45	Pumping Cement	14.5000	5.10	190.00	275.00	Swapped to rear pod on CTF-215 (able to increase rate)
16	04/07/2020 14:56	Pumping Cement	14.5000	2.90	245.00	160.00	Dropped rate to swap to the front pod on CTF-215
17	04/07/2020 14:57	Service Issue	14.5000	0.00	248.00	0.00	Had to shut down for 1 min to bring density back up
18	04/07/2020 14:58	Pumping Cement	14.5000	2.70		156.00	Start going down hole with the rest of cement
19	04/07/2020 15:04	Drop Top Plug	14.5000	0.00	265.00		Shut down, wash pump, and drop the top plug
20	04/07/2020 15:08	Pump Displacement	8.3400	5.00	0.00	94.00	Send plug, start freshwater displacement + Biocide (provided by customer)
21	04/07/2020 15:18	Pump Displacement	8.3400	5.00	50.00	430.00	Fresh water + Biocide displacement

Client: Great Western Operating Company, LLC

Well Name / API: OTTESEN LE #09-379HN / 05-123-49305



Quote #: QUO-44107-C5R2R3

Plan #: ORD-25664-B4Z7W3

Execution #: EXC-25664-B4Z7W302

22	04/07/2020 15:25	Cement Back-to-Surface	8.3400	5.00	83.00	783.00	Getting good cement to surface (70 bbls back to surface)
23	04/07/2020 15:27	Pump Displacement	8.3400	5.00	100.00	771.00	Fresh water + Biocide displacement
24	04/07/2020 15:34	Pump Displacement	8.3400	2.80	135.00	833.00	Drop rate to land the plug
25	04/07/2020 15:41	Land Plug	8.3400	2.80	153.00	1530.00	Land plug with 911 FCP, bumped up to 1,530 psi and hold for 30 min. casing test
26	04/07/2020 15:51	Pressure Test	8.3400	0.00	0.00	1615.00	10 min. into casing test
27	04/07/2020 16:01	Pressure Test	8.3400	0.00	0.00	1631.00	20 min into casing test
28	04/07/2020 16:11	Check Floats	8.3400	0.00	0.00	1631.00	Floats held (.5 bbls back) 1,631 final casing test pressure
29	04/07/2020 16:13	STEACS Briefing					Pre-rig down safety meeting
30	04/07/2020 16:20	Rig Down					Rig everything down



JobMaster Program Version 5.00C1

Job Number: 22167

Customer: Great Western

Well Name: Ottesen LC 09-379HN

