



Great Western Operating Company, LLC

Tower LD #19-022HN

API # 05-001-10304

Surface

July, 16 2020

Quote #: QUO-46324-Z5V1V8

Execution #: EXC-26514-V2B9Y002



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	Richard White	RIG	Ikon 12
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 (%)
Open Hole	13.50			2,023.00	2,021.00	30.00
Casing	8.92	9.63	36.00	2,023.00	2,021.00	

Mud Density (ppg) 8.40

HARDWARE

Centralizers Used	Yes
Centralizers Quantity	19.00
Centralizers Type	Bow
Landing Collar Depth (ft)	1,977

PLANNED VOLUME

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water	8.3300				20.0000
Tail Slurry	BJCem S100.22.XC	14.5000	1.3902	930	1293.0000	230.3000
Displacement Final	Water	8.3300			0.0000	152.9000

FLUID TYPE	FLUID NAME	COMPONENT
Tail Slurry	BJCem S100.22.XC	CEMENT, ASTM TYPE III

DISPLACEMENT AND END OF JOB SUMMARY

Amt of Cement Returned / Reversed	55.00
Amt of Spacer to Surface	20.00
Method Used to Verify Returns	Visual

BJ Cementing Event Log

Surface - Cheyenne, WY - Richard White

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	07/16/2020 07:44	Callout					crew called out checked and verified equipment and materials
2	07/16/2020 10:00	Depart for Location					steacs briefing and depart for location
3	07/16/2020 12:00	Arrive on Location					arrive on location check and verify mix water
4	07/16/2020 12:15	STEACS Briefing					pre rig up safety briefing
5	07/16/2020 12:30	Rig Up					rig up all treating equipment
6	07/16/2020 13:30	Other (See comment)					wait for rig to finish running casing and circulating
7	07/16/2020 17:45	STEACS Briefing					pre job safety briefing with rig crew and customer
8	07/16/2020 18:09	Prime Up	8.3300	2.60	5.00	500.00	Fill lines with 5 bbl water
9	07/16/2020 18:12	Pressure Test					Pressure test lines to 2300 psi
10	07/16/2020 18:21	Pump Spacer	8.3300	4.00	20.00	800.00	pump 20 bbl water spacer with blue dye
11	07/16/2020 18:27	Pumping Cement	14.5000	4.50	230.30	250.00	pump 230.3 bbl cmt @14.5 ppg 1.3902y 930 sks 6.81 gps from Silo cts-450 wet and dry samples taken and verified./ had to shutdown to re-prime water pump
12	07/16/2020 19:26	Drop Top Plug					drop top plug
13	07/16/2020 19:32	Pump Displacement	8.3300	5.60	132.00	660.00	pump 132 bbl disp.
14	07/16/2020 19:58	Pump Displacement	8.3300	2.60	20.90	800.00	slow rates last 20. 9 bbl disp
15	07/16/2020 20:04	Pump Displacement			152.90		total disp 152.9 bbl got 55 bbl cmt to surface
16	07/16/2020 20:05	Land Plug					land plug @ 909 psi took to 1523 psi had to bleed some pressure off to fix wire tattle tail then

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
17	07/16/2020 20:22	Other (See comment)				1550.00	start casing test @ 1550 psi
18	07/16/2020 20:32	Other (See comment)				1500.00	10 min
19	07/16/2020 20:42	Other (See comment)				1497.00	20 min
20	07/16/2020 20:52	Other (See comment)				1504.00	30 min
21	07/16/2020 20:53	Check Floats					floats held 1 bbl back
22	07/16/2020 20:55	Rig Down					rig down all treating equipment
23	07/16/2020 21:00	Leave Location					leave location

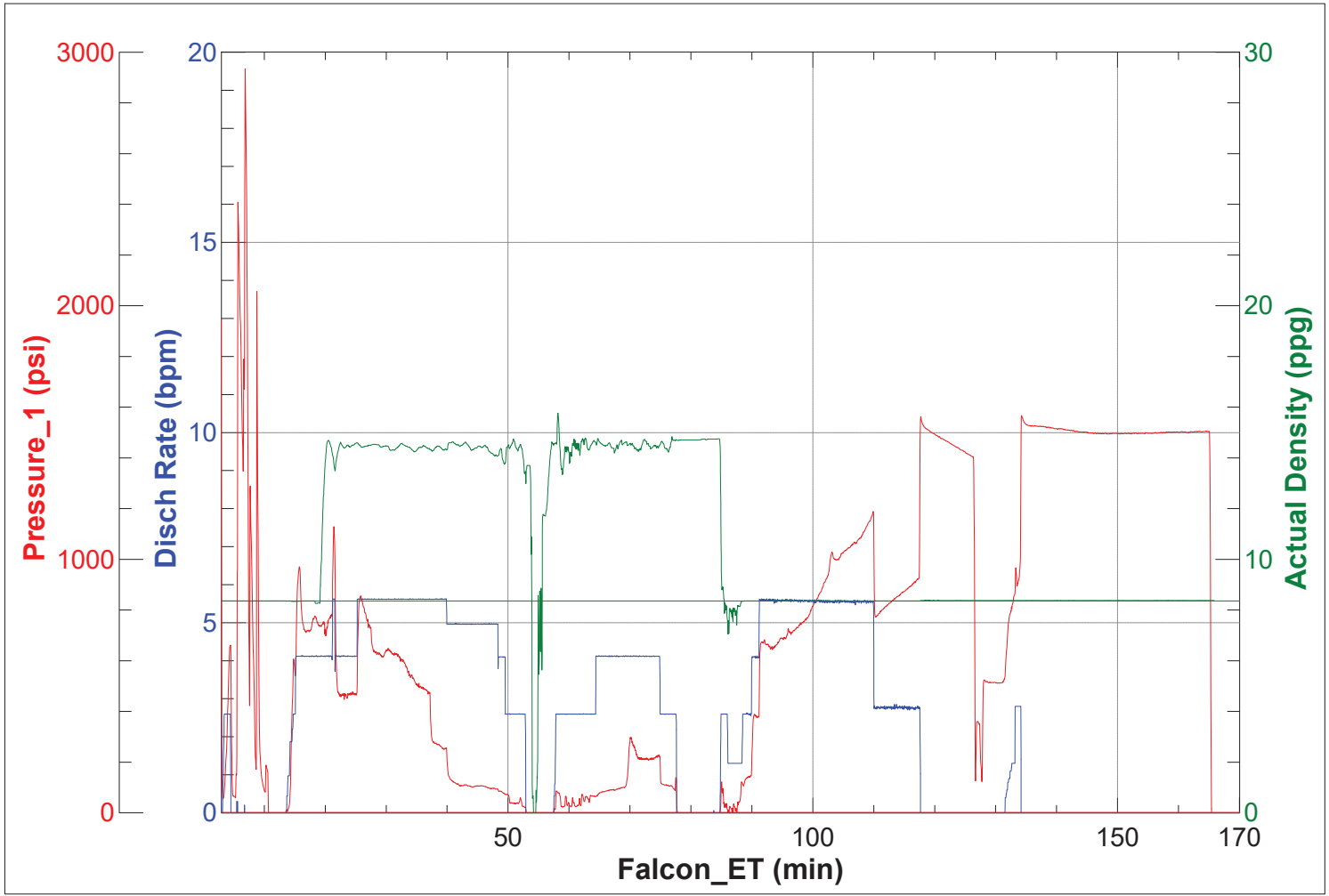


JobMaster Program Version 5.01C1

Job Number: 1234

Customer: Great Western

Well Name: Tower LD 19-022HN



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Well API: 05-001-10304