



Great Western Operating Company

B-Farm LD 18-392HC

API # 05-001-10094

Surface

12/01/2018

Quote #: 23612

Execution #: 13573



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

Cementing Treatment



Start Date	12/1/2018	Well	B-Farm LD 18-392HC
End Date	12/1/2018	API#	05-001-10094
Client	Great Western Operating Company LLC	County	ADAMS
Client Field Rep.	Jason Haines	State/Province	CO
Service Sup.	Roger Acuna	Formation	
District	Cheyenne, WY	Rig	Ikon 12
Type of Job	Surface	Project ID	PRJ1013087
Execution ID	EXC-13573-F4S3F302		

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Open Hole	13.50	0.00	0.00	1,756.00	1,756.00	25.00		
Casing	8.92	9.63	36.00	1,756.00	1,756.00		J-55	LTC

Shoe Length (ft): 43.00

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,711.65
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	18.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,712	Top Connection Size	9.625

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	Flare Prior to/during the Cement Job	No
Circulation Time (min)	15.00	Gas Present	No
Circulation Rate (bpm)	10.00	Mud Density In (ppg)	8.40
Circulation Volume (bbls)	150.00	Lost Circulation Prior to Cement Job	No

Cementing Treatment



TEMPERATURE

Ambient Temperature (°F)	45.00	Slurry Cement Temperature (°F)	45.00
Mix Water Temperature (°F)	45.00		

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (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	1700	760	1,056.0000	188.0000
Displacement Final	Water	8.3300			0.00			0.0000	131.5000

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	Amount of Cement Returned/Reversed	31.50
Calculated Displacement Volume (bbls)	131.50	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	131.50	Amount of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	0.50
Bump Plug Pressure (psi)	1,200.00	Total Volume Pumped (bbls)	339.50
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Yes	Lost Circulation During Cement Job	No

EVENT LOG



Customer Name: Great Western Operating Company
LLC

Well Name: B-Farm LD 18-392HC

Job Type: Surface

Quote ID: QUO-23612-D6X4H8

Plan ID: ORD-13573-F4S3F3

District: Cheyenne, WY

Execution ID: EXC-13573-F4S3F302

BJ Supervisor: Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	12/01/2018 06:00	Callout					CALLED OUT RTS 1200
2	12/01/2018 07:30	Depart for Location					DEPART CHEYENNE WY CAMP
3	12/01/2018 11:00	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMPANY MAN
4	12/01/2018 11:00	STEACS Briefing					STEACS RIG UP
5	12/01/2018 11:15	Rig Up					RIG UP IRON AND HOSES
6	12/01/2018 12:00	Client					WAITING ON RIG TO FINISH RUNNING CASING AND CIRCULATE
7	12/01/2018 12:45	STEACS Briefing					PRE-JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	12/01/2018 13:03	Pump Spacer	8.3300	3.00	3.00	400.00	PUMP 3BBLS DYE WATER
9	12/01/2018 13:09	Pressure Test				2,000.00	TEST LINES
10	12/01/2018 13:12	Pump Spacer	8.3300	5.00	17.00	400.00	PUMP 17BBLS FRESH WATER
11	12/01/2018 13:19	Pump Tail Cement	14.5000	6.00	188.00	600.00	PUMP 188BBLS BJCEM S100.3.XC @ 14.5PPG (760SKS 1.39YLD 6.81GPS) CALCULATED TO SURFACE
12	12/01/2018 13:55	End Pumping					SHUTDOWN
13	12/01/2018 13:56	Drop Top Plug					DROP TOP PLUG
14	12/01/2018 13:57	Pump Displacement	8.3300	6.00	120.00	500.00	PUMP FRESH WATER DISPLACEMENT
15	12/01/2018 14:14	Cement Back-to-Surface					CEMENT TO SURFACE @ 100BBLS INTO DISPLACEMENT
16	12/01/2018 14:16	Pump Displacement	8.3300	3.00	12.00	700.00	SLOW RATE TO LAND PLUG. 31.5 BBLS CMT TO SURFACE
17	12/01/2018 14:21	Land Plug				1,200.00	LAND PLUG 500PSI OVER FINAL CIRCULATING PRESSURE

EVENT LOG

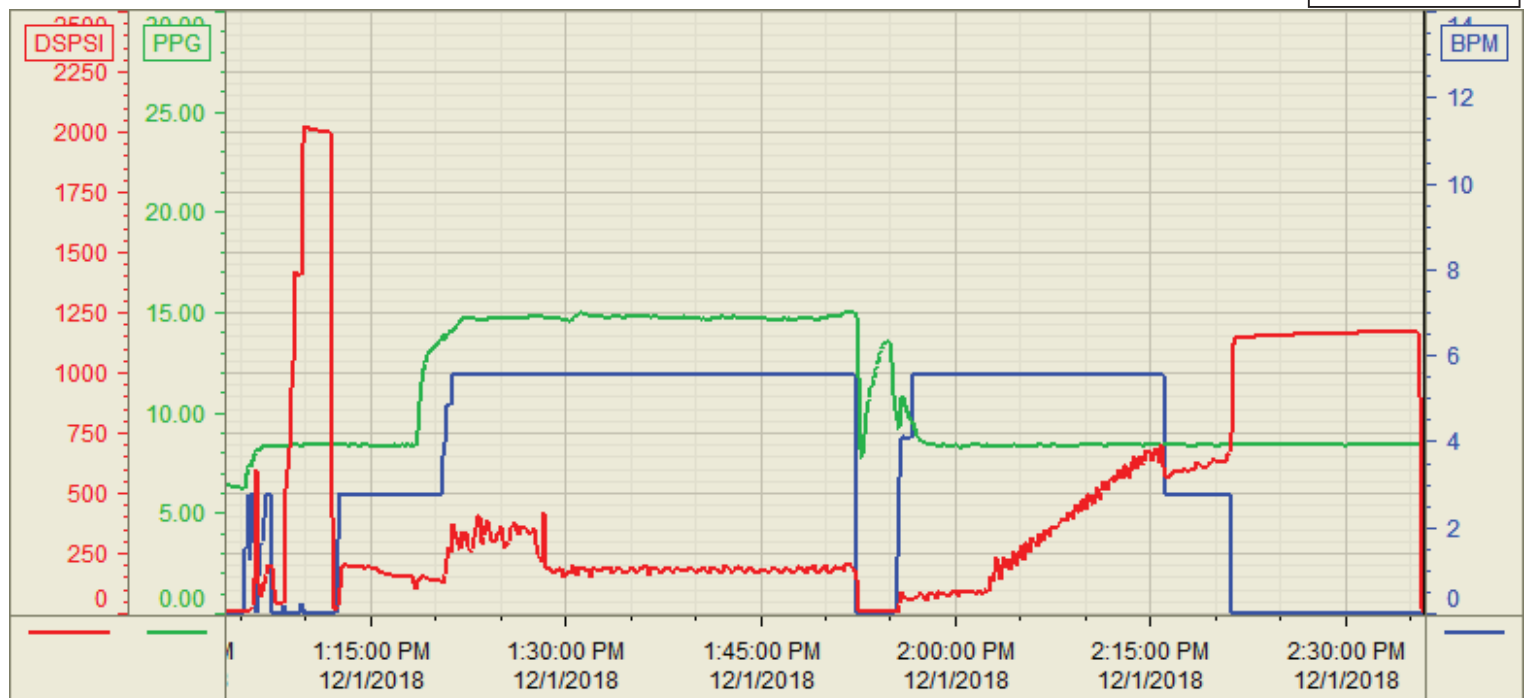


18	12/01/2018 14:21	Pressure Test				1,200.00	CASING TEST 1150 PSI CLIMBED TO 1172 PSI AFTER 15MIN
19	12/01/2018 14:35	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 0.5BBLS BACK TO THE PUMP
20	12/01/2018 14:36	End Pumping					END JOB
21	12/01/2018 14:36	STEACS Briefing					STEACS RIG DOWN
22	12/01/2018 14:45	Rig Down					RIG DOWN IRON AND HOSES
23	12/01/2018 15:00	Leave Location					DEPART LOCATION

Customer: Great Western
Well Number: 18-392HC
Lease Info: B-Farms LD



Print Date/Time
12/1/2018 2:46:26 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press(Psi)	8.5	12/1/2018 2:36:02 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	8.41	12/1/2018 2:36:02 PM	Cementer\DENSITY2_ACTUAL_RATE
3	Combined rate (BPM)	0.00	12/1/2018 2:36:02 PM	Cementer\Flow_Combined
4				
5				

Source: Control1 2:46:21 PM