



Great Western Operating Company

B-Farm LD 18-394HNX

API # 05-001-10093

Surface

12/3/2018

Quote #: 23697

Execution #: 13661



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	12/3/2018	Well	B-Farm LD 18-394HNX
End Date	12/3/2018	API#	05-001-10093
Client	Great Western Operating Company LLC	County	ADAMS
Service Sup.	Roger Acuna	State/Province	CO
District	Cheyenne, WY	Execution ID	EXC-13661-M0Q7X402
Type of Job	Surface	Project ID	PRJ1013174

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	1,781.00	1,781.00	25.00		
Casing	8.92	9.63	36.00	1,781.00	1,781.00		J-55	LTC

Shoe Length (ft): 44.00

HARDWARE

Top Plug Used?	Yes	Tool Type	Float Collar
Top Plug Provided By	Non BJ	Tool Depth (ft)	1,736.67
Top Plug Size	9.630	Max Casing Pressure - Rated (psi)	3,520.00
Centralizers Used	Yes	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Quantity	18.00	Pipe Movement	None
Centralizers Type	Bow	Job Pumped Through	Manifold
Landing Collar Depth (ft)	1,737	Top Connection Thread	LTC
		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)	15.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	10.00	Flare Prior to/during the Cement Job	No
Circulation Volume (bbls)	150.00	Gas Present	No
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	30.00	Slurry Cement Temperature (°F)	30.00
Mix Water Temperature (°F)	50.00		

Cementing Treatment



BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water	8.3300						20.0000
Tail Slurry	BJCem S100.3.XC	14.5000	1.3902	6.81	1700	760	1,056.0000	188.0000
Displacement Final	Water	8.3300					0.0000	133.0000

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 Services	Amount of Cement Returned/Reversed	13.00
Calculated Displacement Volume (bbls)	133.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	133.00	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)	1,500.00	Total Volume Pumped (bbls)	331.00
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 18-394HNX

Job Type: Surface

Quote ID: QUO-23697-F6K8V6

Plan ID: ORD-13661-M0Q7X4

District: Cheyenne, WY

Execution ID: EXC-13661-M0Q7X402

BJ Supervisor: Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	12/03/2018 01:30	Callout					CALLED OUT RTS 0730
2	12/03/2018 03:00	Depart for Location					DEPART CHEYENNE WY CAMP
3	12/03/2018 05:30	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMAPNY MAN
4	12/03/2018 05:30	STEACS Briefing					STEACS RIG UP
5	12/03/2018 05:45	Rig Up					RIG UP IRON AND HOSES
6	12/03/2018 06:00	Client	8.4000	10.00	150.00	200.00	WAITING ON RIG TO RUN CASING AND CIRCULATE WELL
7	12/03/2018 08:00	STEACS Briefing					PRE JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	12/03/2018 08:12	Pump Spacer	8.3300	3.00	3.00	200.00	FILL LINES 3BBLS DYE WATER
9	12/03/2018 08:13	Pressure Test				2,000.00	TEST LINES
10	12/03/2018 08:15	Pump Spacer	8.3300	4.00	17.00	250.00	PUMP 17BBLS FRESH WATER
11	12/03/2018 08:21	Pump Tail Cement	14.5000	6.00	188.00	400.00	PUMP 188BBLS BJCEM S100.3.XC @ 14.5PPG (760SKS 1.39YLD 6.81GPS)
12	12/03/2018 08:57	End Pumping					SHUTDOWN
13	12/03/2018 09:02	Drop Top Plug					DROP TOP PLUG
14	12/03/2018 09:24	Pump Displacement	8.3300	6.00	110.00	900.00	PUMP FRESH WATER DISPLACEMENT
15	12/03/2018 09:26	Cement Back-to-Surface					CEMENT TO SURFACE 120BBLS INTO DISPLACEMENT
16	12/03/2018 09:32	Pump Displacement	8.3300	3.00	13.00	1,000.00	SLOW RATE TO LAND PLUG
17	12/03/2018 09:32	Land Plug				1,500.00	LAND PLUG 500PSI OVER FINAL CIRC PRESSURE. 13 BBLs TOTAL CMT TO SURFACE.
18	12/03/2018 09:32	Pressure Test				1,500.00	CASING TEST FOR 15MIN
19	12/03/2018 09:48	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 0.5BBLS BACK TO THE PUMP
20	12/03/2018 09:50	End Pumping					END JOB
21	12/03/2018 09:50	STEACS Briefing					STEACS RIG DOWN

EVENT LOG

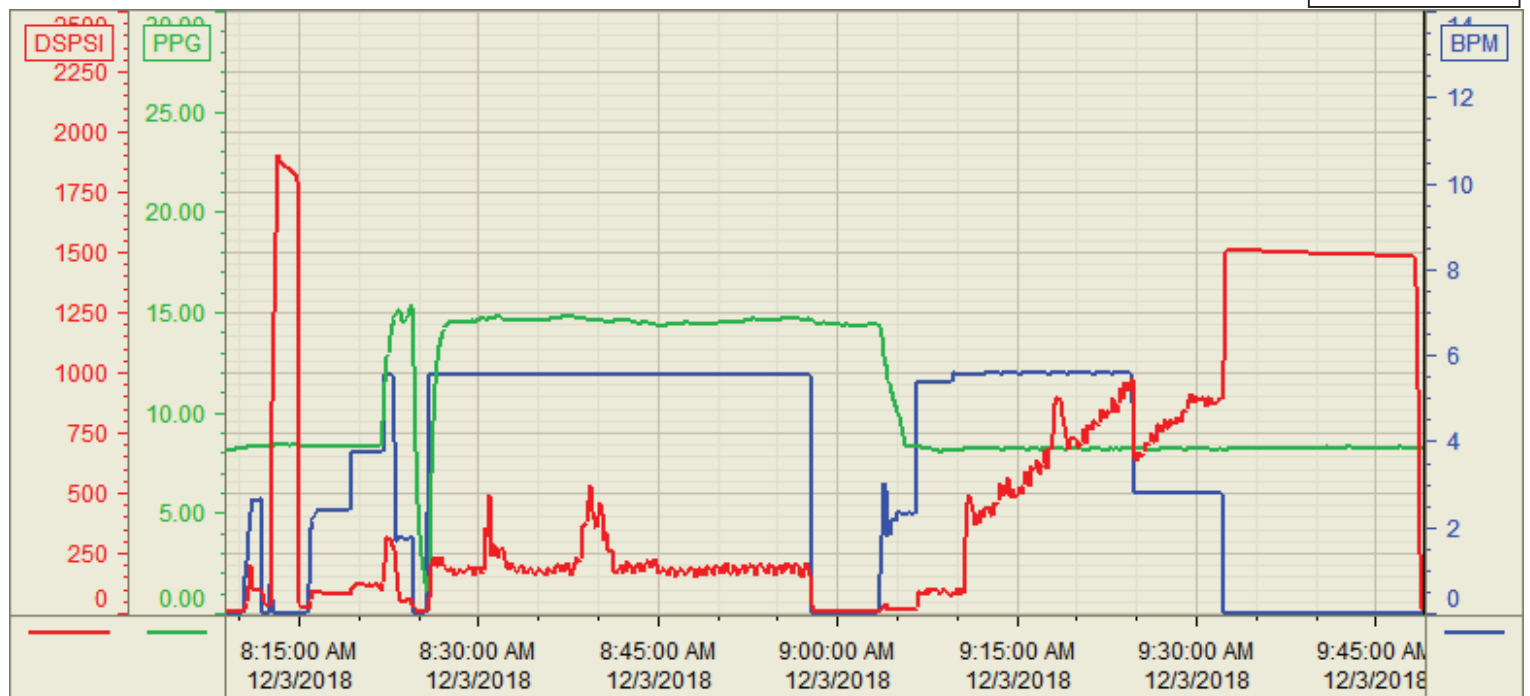


22	12/03/2018 10:00	Rig Down					RIG DOWN IRON AND HOSES
23	12/03/2018 10:30	Leave Location					DEPART LOCATION

Customer: Great Western
Well Number: 18-394HNX
Lease Info: B-Farms LD



Print Date/Time
12/3/2018 9:53:58 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press(PSI)	16.3 i.	12/3/2018 9:49:00 AM i.	CementerDS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	8.21 i.	12/3/2018 9:49:00 AM i.	CementerDENSITY2_ACTUAL_RATE
3	Combined rate (BPM)	0.00 i.	12/3/2018 9:49:00 AM i.	CementerFlow_Combined
4				
5				

Source: Control1 9:53:53 AM