



Great Western Operating Company, LLC

Stillroven Farm 4

API #05-123-45404

Surface Cement

September 19, 2018

Quote #: QUO-19413

Execution #: EXC-11058



Great Western Operating Company, LLC

Attention: Mr. Matt Mount | (720) 595-2173 | mmount@gwogco.com

Great Western | 1001 17th Street, Suite 2000 | Denver, CO 80202

Dear Mr. Mount,

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,

Zen Keith
Field Engineer III | (307) 757-7178 | Zen.Keith@BJServices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 632-2412

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

Cementing Treatment



Start Date	9/19/2018	Field Ticket#	FT-11058-S4M4R10202-97851
End Date	9/19/2018	Well	Stillroven Farm 4
Client	GREAT WESTERN OPERATING COMPANY, LLC	API#	05-123-45404
Client Field Rep.	Satch Bowe	Well Classification	
Service Sup.	Paul Linn III	County	Weld
District	Rifle, CO	State/Province	CO
Type of Job	Surface	Formation	
Execution ID	EXC-11058-S4M4R102	Rig	
Project ID	PRJ1010768		

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Open Hole	13.50	0.00	0.00	1,523.00	25.00		
Casing	8.92	9.63	36.00	1,523.00		J-55	LTC

Shoe Length (ft): 39.93

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,483.07
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	15.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8 RND
Landing Collar Depth (ft)	1,508	Top Connection Size	9.625

Cementing Treatment



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)	30.00	Gas Present	No
Circulation Rate (bpm)	6.00		
Circulation Volume (bbls)	180.00		
Lost Circulation Prior to Cement Job	No		
Mud Density In (ppg)	8.33		
Mud Density Out (ppg)	8.33		

TEMPERATURE

Ambient Temperature (°F)	57.00	Slurry Cement Temperature (°F)	78.10
Mix Water Temperature (°F)	60.80		

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	6.80	0.00	1550	695	965.0000	171.7000
Displacement Final	Water	8.3300			0.00			0.0000	116.6000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Tail Slurry	BJCem S100.3.XC	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.XC	FOAM PREVENTER, FP-13L	0.0060	GALS/SK

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
9/19/2018 3:45:00 AM	Water	4.50	20.00	104.00
9/19/2018 3:49:00 AM	BJCem S100.3.XC	4.00	172.05	137.00
9/19/2018 4:32:00 AM	Water	7.00	113.48	325.00

	Min	Max	Avg
Pressure (psi)	53.00	698.00	137.00
Rate (bpm)	2.50	7.00	4.50

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	30.00
Calculated Displacement Volume (bbls)	113.48	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	113.00	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)	598.00	Total Volume Pumped (bbls)	304.00
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: Stillroven Farm 4

Job Type: Surface

Quote ID: QUO-19413-T9W9Y6

Plan ID: ORD-11058-S4M4R1

Execution ID: EXC-11058-S4M4R102

District: Rifle, CO

BJ Supervisor: Paul Linn III

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	09/18/2018 23:30	Callout					CALL OUT, ON LOCATION TIME OF 9/9/18 AT 03:00
2	09/19/2018 00:30	Arrive on Location					ARRIVE ON LOCATION, RIG WAS PULLING DRILL PIPE
3	09/19/2018 00:35	Spot Units					DID A SITE ASSESMENT, CONDUCTED A ROCK DRILL AND SPOTTED IN ALL EQUIPMENT
4	09/19/2018 00:48	Safety Meeting					PRE-RIG UP SAFETY MEETING WITH ALL BJ SERVICES CEMENT CREW
5	09/19/2018 00:57	Rig Up					RIGGED UP ALL EQUIPMENT
6	09/19/2018 01:20	Customer					WAIT ON RIG CREW TO FINISH RUNNING CASING
7	09/19/2018 03:00	Safety Meeting					PRE- JOB SAFETY MEETING WITH RIG CREW, COMPANY MAN, AND ALL BJ SERVICES CEMENT CREW
8	09/19/2018 03:16	Rig Up					LOAD PLUG IN PLUG CONTAINER, STAB PLUG CONTAINER, HOOK UP LINES
9	09/19/2018 03:39	Prime Up	8.3300	4.00	5.00	65.00	FILL LINES WITH 5 BBLS OF FRESH WATER

EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
10	09/19/2018 03:41	Pressure Test				4,900.00	PRESSURE TESTED TO 4900 PSI, PRESSURE HELD
11	09/19/2018 03:45	Pump Spacer	8.3300	4.50	20.00	104.00	FRESH WATER SPACER
12	09/19/2018 03:48	Pump Tail Cement	14.5000	4.00	171.00	168.00	PUMPED TAIL CEMENT 14.5 PPG 695 SKS 1.39 CUFT/SK 6.81 GALS/SK FOR A TOTAL OF 172.05 BBLs OF TAIL CEMENT REQUIRING 112.69 BBLs OF MIX WATER. WEIGHT VERIFIED WITH MUD SCALE, CALCULATED HEIGHT OF TAIL CEMENT IS 1508 FT WITH A TOP OF 0 FT.
13	09/19/2018 04:30	Drop Top Plug					DROPPED TOP PLUG, VERIFIED BY COMPANY MAN
14	09/19/2018 04:32	Pump Displacement	8.3300	7.00	103.00	698.00	PUMPED FRESH WATER DISPLACEMENT
15	09/19/2018 04:49	Cement Back to Surface					30 BBLs OF CEMENT TO SURFACE
16	09/19/2018 04:49	Pump Displacement	8.3300	2.50	113.00	598.00	PUMPED FRESH WATER DISPLACEMENT
17	09/19/2018 04:53	Land Plug				1,203.00	LANDED THE PLUG AT 598 PSI TOOK TO 1203 PSI
18	09/19/2018 04:55	Check Floats					CHECK FLOATS, FLOATS HELD 1/2 BBL BACK
19	09/19/2018 04:58	Other (See comment)				1,005.00	15 MIN CASING TEST. STARTED AT 1005 PSI CLIMBED 1025 PSI.
20	09/19/2018 05:13	Clean Pumps and Lines					WASH PUMPS AND LINES TO CELLAR
21	09/19/2018 05:28	Safety Meeting					PRE-RIG DOWN SAFETY MEETING WITH ALL BJ SERVICES CEMENT CREW
22	09/19/2018 05:39	Rig Down					RIG DOWN ALL EQUIPMENT
23	09/19/2018 06:00	Leave Location					DEPART FROM LOCATION. THANK YOU FOR USING BJ SERVICES, ANDREW LINN AND CREW

