



Great Western Operating Company, LLC

Tollway LC 24-379HN

API # 05-001-10440

Surface

August 17, 2019

Quote #: QUO-35186-H9W3B4

Execution #: EXC-20354-X4Z4S502



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	Chad Johnson	RIG	Ikon 12
DISTRICT	Rifle, CO	COUNTY	ADAMS
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	13.50	0.00	0.00	1,803.00	1,788.00	30.00		
Casing	8.92	9.63	36.00	1,803.00	1,788.00		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Centralizers Type	Bow
Top Plug Used?	Yes	Landing Collar Depth (ft)	1,755.86
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	9.630	Job Pumped Through	Manifold
Centralizers Used	Yes	Top Connection Size	9.63
Centralizers Quantity	17.00		

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Mud Density Out (ppg)	8.34
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Lost Circulation Prior to Cement Job	No	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	8.34	Gas Present	No

TEMPERATURE

Ambient Temperature (°F)	75.00	Mix Water Temperature (°F)	60.00
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Client: Great Western Operating Company, LLC

Well: TOLLWAY LC #24-379HN

Well API: 05-001-10440

Start Date: 8/17/2019

End Date: 8/17/2019

Field Ticket #: FT-20354-X4Z4S50202-14483



FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O 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	1,750.00	830	1134.0000	205.4000
Displacement 1	Water	8.3300					0.0000	114.7000

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	Amt of Cement Returned / Reversed	35.00
Calculated Displacement Vol (bbls)	136.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	136.00	Amt of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	1300.00	Total Volume Pumped (bbls)	366.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Yes	Lost Circulation During Cement Job	No

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BJ Cementing Event Log

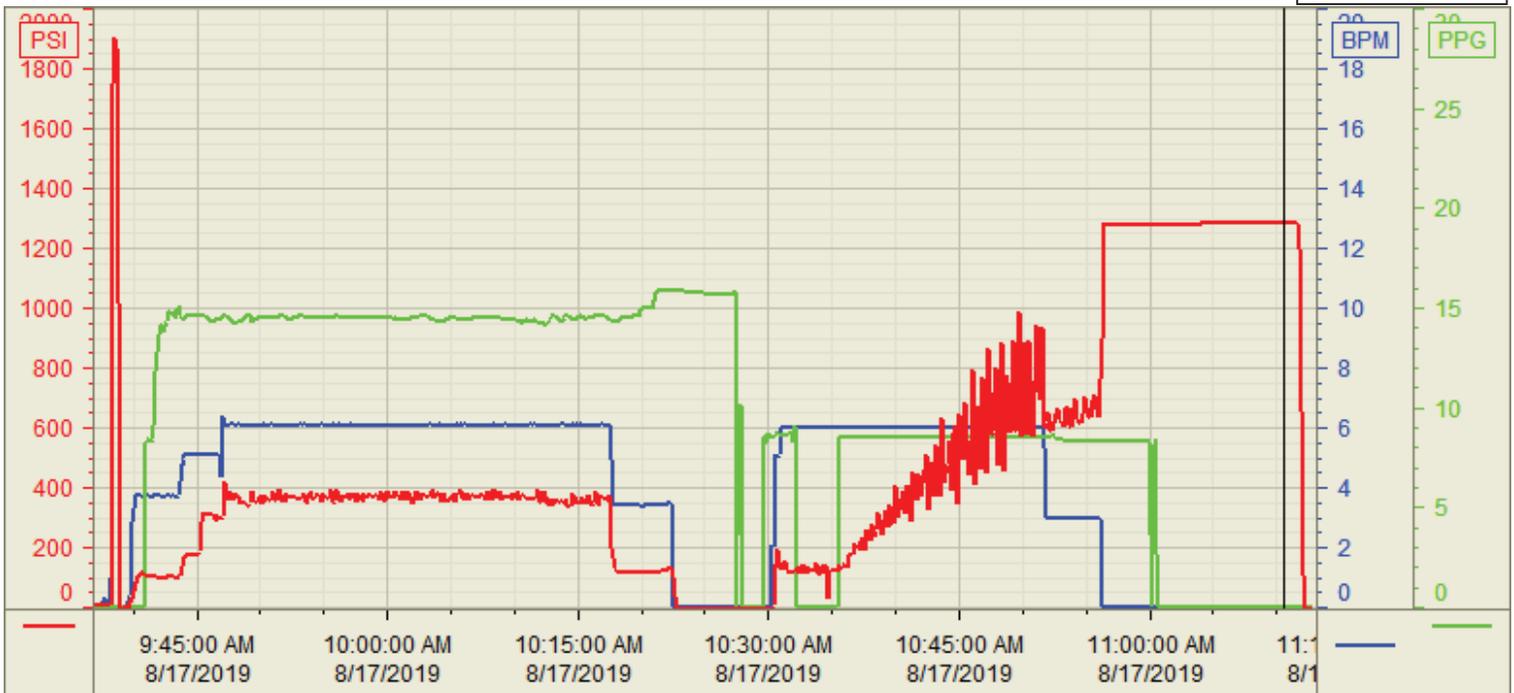
Surface - Rifle, CO - Chad Johnson

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	08/17/2019 01:00	Callout					Crew called out requested on location for 0700
2	08/17/2019 04:00	Arrive on Location					Crew arrived on location
3	08/17/2019 04:05	STEACS Briefing					Safety meeting
4	08/17/2019 04:20	Spot Units					Spotted all units
5	08/17/2019 04:30	Rig Up					Rigged up all equipment
6	08/17/2019 05:30	Client					Waiting on rig to finish running casing
7	08/17/2019 09:00	STEACS Briefing					Safety meeting
8	08/17/2019 09:38	Prime Up	8.3400	3.00	5.00	100.00	Fill lines
9	08/17/2019 09:41	Pressure Test					Pressure test lines to 2000 psi
10	08/17/2019 09:45	Pump Spacer	8.3400	5.00	20.00	200.00	Pump water spacer
11	08/17/2019 09:50	Pump Tail Cement	14.5000	6.00	205.00	250.00	Pump cement (830 sks, 1.39Y, 6.81 gal/sk)
12	08/17/2019 10:28	Other (See comment)					Shutdown
13	08/17/2019 10:35	Drop Top Plug					Drop top plug
14	08/17/2019 10:36	Pump Displacement	8.3400	6.00	120.00	500.00	Pump displacement
15	08/17/2019 10:53	Cement Back-to-Surface					Cement back to surface, 35 bbls cement to surface
16	08/17/2019 10:57	Other (See comment)	8.3400	3.00	16.00	600.00	Slow pump rate
17	08/17/2019 11:01	Land Plug					Land plug. 15 min csg test: start 1275 psi, end 1284 psi.
18	08/17/2019 11:17	Check Floats					Check floats, floats holding, 0.5 bbls back
19	08/17/2019 11:20	STEACS Briefing					Safety meeting
20	08/17/2019 11:35	Rig Down					Rigged down all equipment
21	08/17/2019 13:00	Leave Location					Crew departed location

Customer: Great Western
 Well Number: 24-379HN
 Lease Info: Tollway LC



Print Date/Time
 8/17/2019 11:12:52 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	1284.7 i.	8/17/2019 11:10:37 AM i.	CementerDS_DISCHARGE_PRESS_DIAL
2	Recirc - Density (PPG)	0.01 i.	8/17/2019 11:10:37 AM i.	CementerDENSITY_ACTUAL_RATE
3	Combined Rate	0.00 i.	8/17/2019 11:10:37 AM i.	CementerFlow_Combined
4				
5				

Source: Control1 11:12:48 AM