



Great Western Operating Company, LLC

Schneider HD 11-059HN

API # 05-123-46415

Surface

September 02, 2019

Quote #: QUO-35935-B4G0F7

Execution #: EXC-20930-B4P0X302



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	Hector Montoya	RIG	Ikon 12
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Casing	8.92	9.63	36.00	1,584.00	1,584.00		J-55	LTC
Open Hole	13.50	0.00	0.00	1,584.00	1,584.00	30.00		

HARDWARE

Bottom Plug Used?	No	Landing Collar Depth (ft)	1,537.26
Top Plug Used?	Yes	Max Casing Pressure - Rated (psi)	3520.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Operated (psi)	2860.00
Top Plug Size	9.625	Job Pumped Through	Manifold
Centralizers Used	Yes	Top Connection Thread	LTC
Centralizers Quantity	16.00	Top Connection Size	9.625
Centralizers Type	Bow		

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	1
Circulation Prior to Job	Yes	YP Mud In	1
Circulation Time (min)	30.00	YP Mud Out	1
Circulation Rate (bpm)	6.00	Solids Present at End of Circulation	No
Circulation Volume (bbls)	180.00	10 sec SGS	1
Lost Circulation Prior to Cement Job	No	10 min SGS	1
Mud Density In (ppg)	8.50	30 min SGS	1
Mud Density Out (ppg)	8.50	Flare Prior to / during the Cement Job	No
PV Mud In	1	Gas Present	No

Client: Great Western Operating Company, LLC

Well: SCHNEIDER HD 11-059HN **Well API:** 05-123-46415

Start Date: 9/2/2019

End Date: 9/2/2019

Field Ticket #:



TEMPERATURE

Ambient Temperature (°F)	95.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	90.00

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	1,550.00	720	1001.0000	178.3000
Displacement 1	Water	8.3300					0.0000	117.0000

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	Amt of Cement Returned / Reversed	32.00
Calculated Displacement Vol (bbls)	117.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	117.00	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)	1240.00	Total Volume Pumped (bbls)	315.00
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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Operating Company, LLC

Well: SCHNEIDER HD 11-059HN Well API: 05-123-46415

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BJ Cementing Event Log

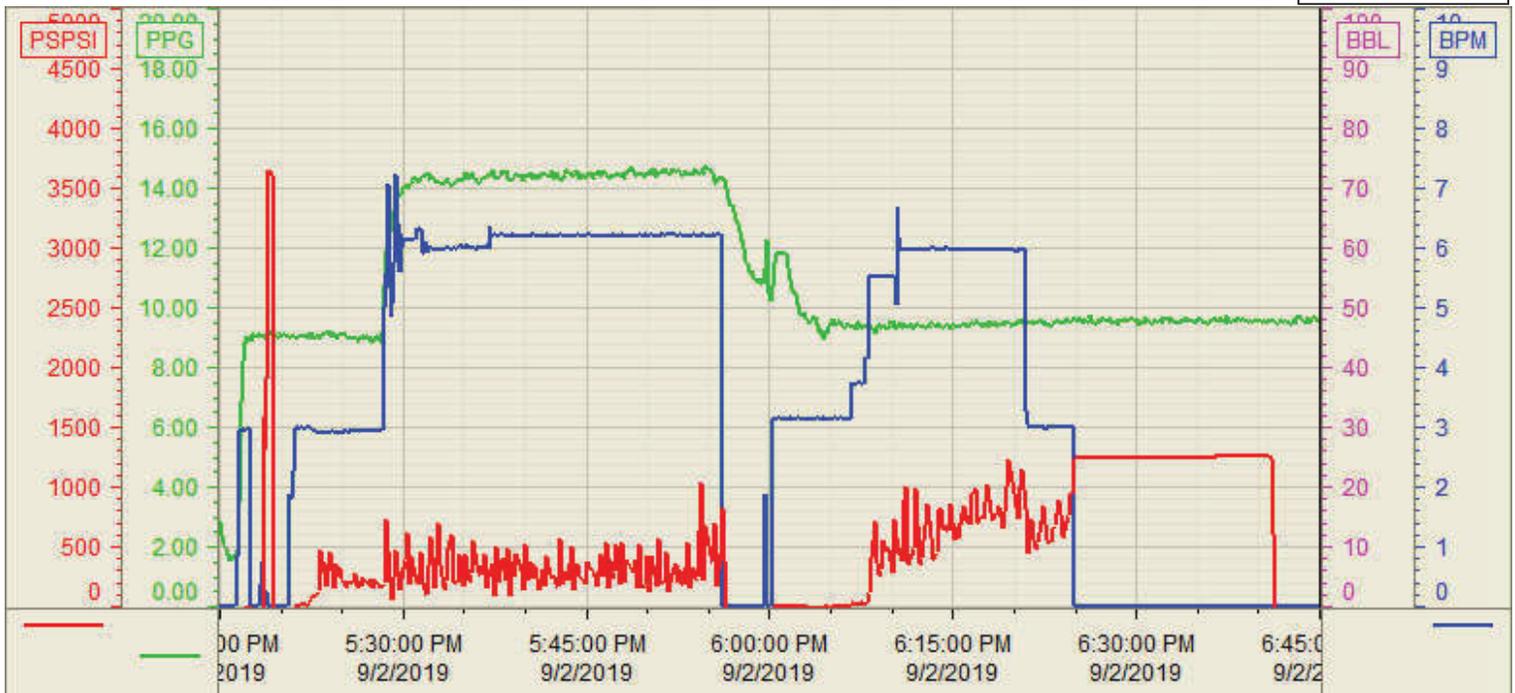
Surface - Cheyenne, WY - Hector Montoya

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	09/02/2019 10:00	Callout					BJ Crew gets called out
2	09/02/2019 12:00	STEACS Briefing					Talk about the hazards of driving to location
3	09/02/2019 12:30	Arrive on Location					BJ arrives on location
4	09/02/2019 14:30	STEACS Briefing					Discuss hazards of rigging up
5	09/02/2019 15:00	Rig Up					Rig Up
6	09/02/2019 16:45	STEACS Briefing					BJ Crew and rig Crew discuss hazards of pumping the job
7	09/02/2019 17:10	Prime Up					Fill Lines
8	09/02/2019 17:14	Pressure Test					Pressure Test to 3500psi
9	09/02/2019 17:19	Pump Spacer	8.3300	3.00	20.00	160.00	Pump 20bbl Red Dye
10	09/02/2019 17:27	Pump Tail Cement	14.5000	6.00	178.00	410.00	Primary 178bbl at 14.5ppg, γ-1.39, gpc-6.81, mix water-116bbl
11	09/02/2019 17:55	Drop Top Plug					Customer witnesses Top Plug leave
12	09/02/2019 18:00	Pump Displacement	8.3300	6.00	97.00	500.00	Total Displacement 117. 32bbl cement to surface
13	09/02/2019 18:24	Pump Displacement	8.3300	3.00	20.00	800.00	Slow rate to 3bpm
14	09/02/2019 18:25	Land Plug				1240.00	Land Plug, Final Circulating pressure was 800psi took to 1240psi
15	09/02/2019 18:40	Other (See comment)					15min Csg test: start 1240psi, end 1259psi
16	09/02/2019 19:00	Check Floats					Floats Held. .5bbl back
17	09/02/2019 19:05	Rig Down					Rig Down
18	09/02/2019 20:00	Leave Location					Depart location

Customer: GREAT WESTERN
 Well Number: 11-059HN
 Lease Info: SCHNEIDER HD



Print Date/Time
 9/2/2019 6:58:38 PM



	Name	Y value	X value/time stamp	Tag name Y
1	PPSI	-39.1 i.	9/2/2019 6:45:00 PM i.	CementerPS_DISCHARGE_PRESS_DIAL
2	BPM	0.00	9/2/2019 6:45:00 PM	CementerFlow_Combined
3	Den2 - Discharge Density (F	9.54	9/2/2019 6:45:00 PM	CementerDENSITY2_ACTUAL_RATE
4				
5				

Source: Control1 6:57:52 PM