

Cementing Treatment



Start Date 12/20/2017 **Well** STATE-KRAUSE 1
End Date 12/20/2017 **County** WELD
Client BILL BARRETT CORPORATION **State/Province** CO
Service Supervisor Wesley Bell **API** 05-123-65212
District Cheyenne, WY **Type of Job** Surface

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	8.10	8.63	24.00	209.00	209.00			
Open Hole	7.88			320.00	320.00	100.00		
Casing	4.00	4.50	11.60	320.00	320.00		P-110	LTC

Shoe Length (ft):

HARDWARE

Bottom Plug Used? No **Max Casing Pressure - Rated (psi)** 10690
Top Plug Used? Yes **Max Casing Pressure - Operated (psi)** 2500
Top Plug Provided By BJ Services **Pipe Movement** No
Top Plug Size 4.5" **Job Pumped Through** Casing
Centralizers Used No **Top Connection Thread** LTC
Landing Collar Depth (ft) 320 **Top Connection Size** 4.5"

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	NA	Solids Present at End of Circulation	No
Circulation Prior to Job	No	10 sec SGS	NA
Circulation Time (min)	0	10 min SGS	NA
Circulation Rate (bpm)	0	30 min SGS	NA
Circulation Volume (bbls)	0	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	NA		
Mud Density Out (ppg)	NA		
PV Mud In	NA		
PV Mud Out	NA		
YP Mud In	NA		
YP Mud Out	NA		

TEMPERATURE

Ambient Temperature (°F)	45	Slurry Cement Temperature (°F)	60
Mix Water Temperature (°F)	60	Flow Line Temperature (°F)	NA

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water	8.3300					10.0000
Tail Slurry	S100-12	12.5000	2.2256	12.59	76	169.0000	30.0000
Displacement Final	Water	8.3300				0.0000	5.0000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Tail Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Tail Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.00	LBS/SK
Tail Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Tail Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB
Tail Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A- 7P, PELLETS	2.00	LBS/SK

TREATMENT SUMMARY

Fluid	Rate (bpm)	Fluid Vol. (bbls)
Water	5.00	10.00
S100-12	5.00	18.20
Water	5.00	5.00

	Min	Max	Avg
Pressure (psi)	0	2500	1250
Rate (bpm)	0	3	1.5

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ Services	Amount of Cement Returned/Reversed	7
Calculated Displacement Volume (bbls)	5	Method Used to Verify Returns	Displacement
Actual Displacement Volume (bbls)	5	Amount of Spacer to Surface	0
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0
Bump Plug	Yes	Amount Bled Back After Job	.25bbls
Bump Plug Pressure (psi)	2500	Total Volume Pumped (bbls)	47
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Yes	Lost Circulation During Cement Job	No