

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	n/a	0	1552	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1555	17865	18
Casing	Inner	5.5	4.892	17	Buttress	0	14732	18

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	660			
Silo	656			
Bulk Trailer	E467	Philman, Douglas		120
Pneumatic Trailer	703			
Pneumatic Trailer	704			
Light Duty Pickups		Agosto, Miguel		120
Light Duty Pickups	5	Fuentes, Orlando		120
Cement Pump	101	Chaparro, Hector	Montoya, Hector	120

1.3 Timing

Event	Date/Time
Call Out	7/24/2017 16:30
Depart Facility	7/24/2017 19:00
On Location	7/24/2017 21:00
Rig Up Iron	7/24/2017 21:30
Job Started	7/24/2017 23:30
Job Completed	7/25/2017 04:10
Rig Down Iron	7/25/2017 04:30
Depart Location	7/25/2017 07:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	8.5 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	900 bbls
Rig Circulation Time	2 hours
Calculated Displacement	325.9 bbls
Actual Displacement	311 bbls
Total Spacer to Surface	60 bbls
Total CMT to Surface	5 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	11
Yield Point	8
10 sec. SGS	3
10 min. SGS	8
30 min. SGS	15
Filtrate	5.8

1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	8.5 lb/gal
Well Fluid Density Out of Well	8.5 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	220 °F
BHST	220 °F



1.8 Circulation

Lost Circulation Experienced
No

Circulation Details:

1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Mud Flush	Flush	8.33			42.00		60.00	0
1	2	CD Spacer	Spacer	11.00			33.78		60.00	0
1	3	ALTCem P100-X2	Lead	13.20	1.82	9.89		990.00	321.00	0
1	4	ALTCem P50-X1	Tail	13.50	1.47	7.43		1900.00	498.00	2568
1	6	Water w/ Clay Protection and Biocide	DisplacementFinal	8.33			41.91		326.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Spacer	CD Spacer	ASR-20	StrengthRetraction	179.59	lb/bbl
1	2	Spacer	CD Spacer	AVS-10	Viscosifier	1.00	lb/bbl
1	3	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%
1	3	Lead	ALTCem P100-X2	ABX-20	BondEnhancer	3.00	%BWOB
1	3	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	3	Lead	ALTCem P100-X2	AFL-50	FluidLoss	0.50	%BWOB
1	3	Lead	ALTCem P100-X2	AR-31	Retarder	0.17	%BWOB
1	3	Lead	ALTCem P100-X2	AVS-20	Viscosifier	0.10	%BWOB
1	4	Tail	ALTCem P50-X1	ACG-10	Cement	50.00	%
1	4	Tail	ALTCem P50-X1	AFA-10	Extender	50.00	%
1	4	Tail	ALTCem P50-X1	ADF-11	Defoamer	0.30	%BWOB
1	4	Tail	ALTCem P50-X1	AFL-50	FluidLoss	0.20	%BWOB
1	4	Tail	ALTCem P50-X1	AR-20	Retarder	0.10	%BWOB
1	4	Tail	ALTCem P50-X1	AVS-10	Viscosifier	0.10	%BWOB
1	4	Tail	ALTCem P50-X1	AVS-50	Viscosifier	2.00	%BWOB
1	6	DisplacementFinal	Water w/ Clay Protection and Biocide	ASF-50	ClayProtection	0.08	gal/bbl
1	6	DisplacementFinal	Water w/ Clay Protection and Biocide	Biocide	Other	0.01	gal/bbl



2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Call Out	7/24/2017	16:30					BJ Services Crew Gets Called Out
2	Depart Facility	7/24/2017	19:00					BJ Services Crew Depart Facility Cheyenne WY
3	Arrive On Location	7/24/2017	21:00					BJ Services Crew Arrives On Location
4	Pre Rig Up Meeting	7/24/2017	21:30					BJ Services Crew Had A Pre Rig up Meeting
5	Rig Up	7/24/2017	21:30					BJ Services Crew Rigs Up Pump and Iron
6	Safety Meeting	7/24/2017	22:30					BJ Services Crew Had A Safety Meeting With Rig Hands And CoMan - Went Over Job Procedure
7	Pressure Test	7/24/2017	23:53				5500	Pressure Test Lines To 5500 Psi
8	Pump Flush	7/25/2017	00:15	8.33	6	60	500	Pumped 60 BBL Of H2o Flush At 6 BPM W/500 psi
9	Pump CD Spacer	7/25/2017	00:25	11	6	60	700	Pumped 60 BBL Of 11 PPG Cd Spacer At 6 BPM W/700 psi
10	Pump Lead Cement	7/25/2017	00:36	13.2	6	321	750	Pumped 321 BBL (990sk 13.2ppg 1.82yld 9.89g/sk) Of Lead Cement At 6 BPM W/750 Psi
11	Pump Tail Cement	7/25/2017	01:39	13.5	6	498	400	Pumped 498 BBL (1900sk 13.5ppg 1.47yld 7.43g/sk) Of Tail Cement At 6 BPM W/400 psi
12	Shut Down	7/25/2017	03:12					Shut Down Pumping Cement
13	Wash Pump/Lines	7/25/2017	03:14					Wash Pump And Lines To pit
14	Drop Plugs	7/25/2017	03:19					Drop top And Bottom Plug
15	Start Disp.	7/25/2017	03:19	8.33	8		500	Start H2o Disp. W/ Chems At 8 BPM W/500psi
16	Spacer To Surface	7/25/2017	03:51	8.33	8	246	2400	At 246 BBL away into Disp. Got Spacer To Surface At 8 BPM W/2400 Psi
17	Shut Down	7/25/2017	03:52	8.33		250		Shut Down Rig Diverted Returns To Cement Tanks
18	Start Pumping	7/25/2017	03:54	8.33	8	250	2500	Came Back On Line At 8 BPM W/2500 Psi
19	Slow Rate	7/25/2017	04:04	8.33	3	300	2000	Slow Down Rate To 3 BPM W/2000 psi
20	Cement To Surface	7/25/2017	04:06	8.33	3	306	2100	At 306 BBL Away Got Cement Back to Surface At 3 BPM W/2100 Psi
21	Land Plug	7/25/2017	04:08	8.33	3	311	3400	Land Plug At 311 BBL away Final Circ. Pressure Was 2200 Psi , Bumped Plug To 3400 Psi
22	Check Floats	7/25/2017	04:10					Check Floats Got 3 bbl Back
23	Pre Rig Down Meeting	7/25/2017	04:30					BJ Services Crew Had A Pre Rig Down Meeting
24	Rig Down	7/25/2017	04:30					BJ Services Crew Rigs Down Pump And Iron
25	Depart Location	7/25/2017	07:00					BJ Services Crew Departs Location

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	756 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	200 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	0 mg/L	0-500 mg/L
Carbonates	75 mg/L	0-100 mg/L
Sulfates	>200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0.15 mg/L	0-300 mg/L

4 Pump Diagrams

