

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	18076	8
Casing	Inner	5.5	4.778	20	Buttress	0	18060	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	509			120
Bulk Trailer	502	Gabel, Dustin		120
Silo	658			120
Silo	661			120
Silo	656	Schuebel, Kasey		120
Cement Pump	102	Seghetti, Joshua		120
Light Duty Pickups	7	Bell, Wesley	Hyde, Zack	120

1.3 Timing

Event	Date/Time
Call Out	10/18/2017 03:00
Depart Facility	10/18/2017 04:00
On Location	10/18/2017 05:30
Rig Up Iron	10/18/2017 08:30
Job Started	10/18/2017 10:41
Job Completed	10/18/2017 14:57
Rig Down Iron	10/18/2017 15:30
Depart Location	10/18/2017 16:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	10.8 lb/gal
Well Fluid Type	OBM
Rig Circulation Vol	1200 bbls
Rig Circulation Time	3 hours
Calculated Displacement	400 bbls
Actual Displacement	396 bbls
Total Spacer to Surface	80 bbls
Total CMT to Surface	130 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	16
Yield Point	8
10 sec. SGS	6
10 min. SGS	8
30 min. SGS	9
Filtrate	27
Flow Line Temp.	90

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	10.8 lb/gal
Well Fluid Density Out of Well	10.8 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	220 °F
BHST	220 °F



1.8 Circulation

Lost Circulation Experienced
No

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 (sk)	Volume (bbl)	Top (ft)
1	1	CD Spacer	Spacer	11.00			32.76		80.00	0
1	2	P100-X2	Lead	13.20	1.82	9.89		930.00	302.26	0
1	3	P50-X1	Tail	13.50	1.47	7.43		1910.00	501.74	6715
1	4	Water w/ Clay Protection and Biocide	DisplacementFinal	8.33			41.91		401.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer	ASR-20	StrengthRetrogression	180.06	lb/bbl
1	1	Spacer	CD Spacer	ASF-20	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer	ASF-80	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer	AVS-10	Viscosifier	1.00	lb/bbl
1	2	Lead	P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	P100-X2	ABX-20	BondEnhancer	3.00	%BWOB
1	2	Lead	P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	P100-X2	AFL-50	FluidLoss	0.50	%BWOB
1	2	Lead	P100-X2	AR-31	Retarder	0.17	%BWOB
1	2	Lead	P100-X2	AVS-20	Viscosifier	0.10	%BWOB
1	3	Tail	P50-X1	ACG-10	Cement	50.00	%
1	3	Tail	P50-X1	AFA-10	Extender	50.00	%
1	3	Tail	P50-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	P50-X1	AFL-50	FluidLoss	0.20	%BWOB
1	3	Tail	P50-X1	AR-20	Retarder	0.15	%BWOB
1	3	Tail	P50-X1	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	P50-X1	AVS-50	Viscosifier	2.00	%BWOB
1	4	DisplacementFinal	Water w/ Clay Protection and Biocide	ASF-50	ClayProtection	0.08	gal/bbl
1	4	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	10/18/2017	03:00					Crew gets called out, requested time was 900
2	Depart Facility	10/18/2017	04:00					Crew leaves facility
3	On Location	10/18/2017	05:30					Crew arrives on location at 5:30. I went and got numbers from customer
4	Wait	10/18/2017	05:30					Crew waits for rig to finish running casing before rigging up
5	Rig Up	10/18/2017	09:30					Crew rigs up iron and hoses
6	Safety Meeting	10/18/2017	10:20					Crew has a safety meeting with the customer and rig crew discussing the job
7	Fill Lines	10/18/2017	10:41	8.33	2	2	100	Fill lines with 2bbls
8	Pressure Test	10/18/2017	10:43					Pressure tested to 5000psi
9	CD Spacer	10/18/2017	10:51	11	4.5	80	250	80bbls of CD Spacer at 11ppg at 4.5bpm with 250psi
10	Lead	10/18/2017	11:11	13.2	7	301	540	301bbls of Lead at 13.2ppg at 7bpm with 540psi(930sk,1.82yld,9.89gal/sk)
11	Tail	10/18/2017	11:57	13.5	6	500	300	500bbls of Tail at 13.5ppg at 6bpm with 300psi(1910sk,1.47yld,7.43gal/sk)
12	Shutdown	10/18/2017	13:28					Shutdown wash pump and lines
13	Drop Plug	10/18/2017	13:39					Drop top plug
14	Displacment	10/18/2017	13:39	8.33	7	10	50	10bbls of displacement away at 6bpm with 50psi
15	Displacment	10/18/2017	13:46	8.33	7	40	975	50bbls of displacement away at 7bpm with 975psi
16	Displacment	10/18/2017	13:54	8.33	7	50	1750	100bbls of displacement awat at 7bpm with 1750psi
17	Displacment	10/18/2017	14:02	8.33	7	50	2490	150bbls of displacement away at 7bpm with 2490psi
18	Displacment	10/18/2017	14:12	8.33	7	50	2500	200bbls of displacement away at 7bpm with 2500psi
19	Displacment	10/18/2017	14:22	8.33	7	50	2500	250bbls of displacement awat at 7bpm with 2500psi
20	Displacment	10/18/2017	14:29	8.33	7	50	2700	300bbls of displacment away at 7bpm with 2700psi
21	Displacment	10/18/2017	14:37	8.33	7	50	2700	350bbls of displacement away at 7bpm with 2700psi
22	Displacment	10/18/2017	14:43	8.33	7	50	2700	380bbls of displacement away at 7bpm with 2700psi



23	Slow Rate	10/18/2017	14:43					Slow rate to 3bpm for the last 20bbls of displacement
24	Displacement	10/18/2017	14:47	8.33	3	20	2300	400bbls of displacement away at 3bpm with 2300psi
25	Land Plug	10/18/2017	14:47				3000	Landed plug at 2300psi brought it up to 3000psi for 10 minutes
26	Check Floats	10/18/2017	14:57					Check floats, got 4.5bbls back
27	Job Complete	10/18/2017	15:00					Job Complete, got 80bbls of spacer to surface and 130 bbls of cement
28	Rig Down	10/18/2017	15:30					Rig down iron and hoses
29	Depart Location	10/18/2017	16:00					Depart location

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	60 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	0 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	<20 mg/L	0-1500 mg/L
Potassium	5 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams

