

Job Details & Summary

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	1548	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1548	6810	30
Casing	Inner	5.5	4.778	20	n/a	0	17513	0
Open Hole	Outer	n/a	8.5	n/a	n/a	6810	17523	15

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2	Mileage
Field Bin	602				124
Field Bin	604		Pena, James		124
Bulk Trailer	509	302	Bueghly, Steve		124
Cement Pump	102	202	Hyde, Zack	Bell, Wesley	124
Light Duty Pickups	5		Hyde, Andrew		124
Plug Container	1312196				124
Swage	150529				124

Timing

Event	Date/Time
Call Out	1/3/2017 13:00
Depart Facility	1/3/2017 14:30
On Location	1/3/2017 16:30
Rig Up Iron	1/3/2017 17:00
Job Started	1/3/2017 20:00
Job Completed	1/4/2017 01:04
Rig Down Iron	1/4/2017 01:20
Depart Location	1/4/2017 02:30

General Job Information

Metrics	Value
Well Fluid Density	10 lb/gal
Well Fluid Type	WBM
Rig Circulation Time	3 hours
Calculated Displacement	388 bbls
Actual Displacement	380 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	48 bbls
Well Topped Out	No

Well Fluid Details

Metrics	Value
Plastic Viscosity	11
Yield Point	8
10 sec. SGS	4
10 min. SGS	8
30 min. SGS	11
Filtrate	75
Flow Line Temp.	75

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 lb/gal
Well Fluid Density Out of Well	10 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	220 °F
BHST	220 °F

Circulation

Lost Circulation Experienced
No



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	Water	Flush	8.33			42.00		60.00	0
1	2	CD Spacer	Spacer	11.00			33.77		40.00	0
1	3	ALTCem P100-X2	Lead	12.50	2.07	11.80		960.00	353.95	0
1	4	ALTCem P50-X1	Tail	13.50	1.47	7.41		1925.00	505.61	6810
1	5	MMCR Water	Displacement	8.33			41.90		5.00	17290
1	6	Water w/ Clay Protection and Biocide	DisplacementFinal	8.33			41.91		384.00	0

Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.38	lb/bbl
1	2	Spacer	CD Spacer	AR-31	Retarder	0.51	lb/bbl
1	2	Spacer	CD Spacer	AVS-10	Viscosifier	0.80	lb/bbl
1	3	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%
1	3	Lead	ALTCem P100-X2	ABX-30	BondEnhancer	0.40	%BWOB
1	3	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.20	%BWOB
1	3	Lead	ALTCem P100-X2	AFL-10	FluidLoss	0.30	%BWOB
1	3	Lead	ALTCem P100-X2	ALC-10	LostCirculation	0.13	lb/sk
1	3	Lead	ALTCem P100-X2	AR-31	Retarder	0.20	%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	0.20	%BWOB
1	4	Tail	ALTCem P50-X1	AFL-50	FluidLoss	0.20	%BWOB
1	4	Tail	ALTCem P50-X1	AR-10	Retarder	0.40	%BWOB
1	4	Tail	ALTCem P50-X1	AR-31	Retarder	0.05	%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	5	Displacement	MMCR Water	AR-61	Retarder	0.10	gal/bbl
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



Job Logs

Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
1		Call Out	1/3/2017	13:00						ALTCem crew got called out
2		Depart Yard	1/3/2017	14:30						Depart location
3		Arrive On Location	1/3/2017	16:30						Arrive on location
4		Safety Meeting	1/3/2017	16:45						ALTCem crew talked about the hazards of spotting in equipment and rigging up
5		Rig Up	1/3/2017	17:00						Rig Up
6		Safety Meeting	1/3/2017	19:30						ALTCem crew and rig crew talked about the hazards of pumping the job, Rig was on bottom at 1500, 1030psi
7		Fill Lines	1/3/2017	20:00	8.33	2	3			Pump 3 bbls to fill lines
8		Pressure Test	1/3/2017	20:03						Pressure test pumps and lines to 6500 psi
9		Pump Water	1/3/2017	20:06	8.33	6	60	530		Pump 60 bbls of water
10		Pump Spacer	1/3/2017	20:16	11	6	40	800		Pump 40 bbls of CD spacer at 11 ppg
11		Pump Lead	1/3/2017	20:23	12.5	6	354	900		Mix up and pump 960 sks of ALTCem P100-X2 lead cement at 12.5 ppg, yield 2.07, 11.8 gal/sk, 354 bbls,
12		Pump Tail	1/3/2017	21:22	13.5	6	504	316		Mix up and pump 1925 sks of ALTCem P50-X1 tail cement at 13.5 ppg, yield 1.47, 7.41 gal/sk, 504 bbls,
13		Shutdown	1/3/2017	22:33						Had to shutdown had issue getting cement
14		Pump Tail	1/3/2017	22:39	13.5	6		400		Started getting good cement to the truck again
15		Shutdown	1/3/2017	22:56						Shutdown to line out head to drop bottom plug
16		Pump Water	1/3/2017	23:00	8.33	2	5	200		Pump 5 bbls of water with 1 gal of AR-61
17		Shutdown	1/3/2017	23:04						Shutdown to drop top plug company withness plug leave manifold
18		Pump Displacement	1/3/2017	23:06	8.33	10	388	2300		Pump 388 bbls of water with clay protection and biocide
19		Slow Rate	1/3/2017	23:52	8.33	2		2000		Slow rate the last 20 bbls to 2 bpm to bump plug
20		Bump Plug	1/4/2017	00:01	8.33	2		2350		Bump plug took it 500 psi over, F.C.P was 2350 psi took it up to 2880 psi
21		Check Floats	1/4/2017	00:04						Check floats got 6 bbls back
22		Pressure Up	1/4/2017	00:10						Pressure back up to 2900 psi
23		Check Floats	1/4/2017	00:13						Check floats got 6 bbls back still leaking water
24		Pressure Up	1/4/2017	00:31						Pressure up to 3500 psi got 6 bbls back, watched it for awhile, Customer decided to put 1500 psi on it and shut in the well
25		Pressure up	1/4/2017	01:04						Pressure up to 1500 psi and shut in the well
26		Safety Meeting	1/4/2017	01:10						ALTCem crew talked about the hazards of rigging down
27		Rig Down	1/4/2017	01:20						Rig down
28		Depart Location	1/4/2017	02:30						ALTCem crew Left location
29		Other	1/4/2017	02:31						Estimated top of tail 5161ft, Got 48 bbls cement to surface,

Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	75 °F	50-80 °F
pH Level	5	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	40	0-1000
Total Hardness	<55 mg/L	0-500 mg/L
Carbonates	70 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

Pump Diagrams

