

## 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	1523	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1533	12355	18
Casing	Inner	5.5	4.892	17	n/a	0	12341	0

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	505	Garcia, Anthony		152
Silo	657			
Silo	658			
Light Duty Pickups	6	Chambers, Andrew		152
Cement Pump	101	Vasquez, Mike	Montoya, Hector	152

### 1.3 Timing

Event	Date/Time
Call Out	9/4/2017 11:30
Depart Facility	9/4/2017 12:45
On Location	9/4/2017 15:45
Rig Up Iron	9/4/2017 16:15
Job Started	9/4/2017 18:30
Job Completed	9/4/2017 22:33
Rig Down Iron	9/4/2017 23:12
Depart Location	9/5/2017 13:10

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	10.6 lb/gal
Well Fluid Type	OBM
Rig Circulation Vol	250 bbls
Rig Circulation Time	1.5 hours
Calculated Displacement	285.7 bbls
Actual Displacement	302 bbls
Total Spacer to Surface	60 bbls
Total CMT to Surface	2 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	12
Yield Point	8
10 sec. SGS	4
10 min. SGS	16
30 min. SGS	15
Filtrate	5.4
Flow Line Temp.	130

### 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	10.6 lb/gal
Well Fluid Density Out of Well	10.6 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 <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		40.00	0
1	2	CD Spacer	Spacer	11.00			33.78		40.00	0
1	3	P100-X2	Lead	12.50	2.06	11.77		200.00	73.47	17
1	4	P100-X2	Lead	12.50	2.07	11.81		720.00	265.44	1550
1	5	P50-X1	Tail	13.50	1.47	7.43		975.00	256.07	7060
1	6	Water & MMCR	Displacement	8.33			41.90		10.00	11959
1	7	Water w/ Clay Protection and Biocide	Displacement Final	8.33			41.91		279.00	0

## 1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Spacer	CD Spacer	ASR-20	Strength Retrogression	179.59	lb/bbl
1	2	Spacer	CD Spacer	AVS-10	Viscosifier	1.00	lb/bbl
1	3	Lead	P100-X2	AC3-10	Cement	100.00	%
1	3	Lead	P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	3	Lead	P100-X2	AFL-10	Fluid Loss	0.30	%BWOB
1	3	Lead	P100-X2	AR-31	Retarder	0.15	%BWOB
1	3	Lead	P100-X2	AVS-20	Viscosifier	0.10	%BWOB
1	4	Lead	P100-X2	AC3-10	Cement	100.00	%
1	4	Lead	P100-X2	ABX-30	Bond Enhancer	0.40	%BWOB
1	4	Lead	P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	4	Lead	P100-X2	AFL-10	Fluid Loss	0.30	%BWOB
1	4	Lead	P100-X2	AR-31	Retarder	0.16	%BWOB
1	4	Lead	P100-X2	AVS-20	Viscosifier	0.10	%BWOB
1	5	Tail	P50-X1	ACG-10	Cement	50.00	%
1	5	Tail	P50-X1	AFA-10	Extender	50.00	%
1	5	Tail	P50-X1	ADF-11	Defoamer	0.30	%BWOB
1	5	Tail	P50-X1	AFL-50	Fluid Loss	0.20	%BWOB
1	5	Tail	P50-X1	AR-20	Retarder	0.10	%BWOB
1	5	Tail	P50-X1	AVS-10	Viscosifier	0.10	%BWOB
1	5	Tail	P50-X1	AVS-50	Viscosifier	2.00	%BWOB
1	6	Displacement	Water & MMCR	AR-61	Retarder	0.10	gal/bbl
1	7	Displacement Final	Water w/ Clay Protection and Biocide	ASF-50	Clay Protection	0.08	gal/bbl
1	7	Displacement Final	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	9/1/0417	11:30					BJ CREW CALLED OUT ON LOCATION AT 18:00
2	PRE-CONVOY	9/4/2017	12:30					DISCUSSED HAZARDS OF DRIVING
3	DEPART SHOP	9/4/2017	12:45					BJ CREW LEFT SHOP FOR LOCATION
4	ASSESSMENT OF LOCATION	9/4/2017	16:30					MET WITH CUSTOMER REP WENT OVER WHERE TO SPOT EQUIPMENT AND JOB DETAILS
5	PRE-RIG UP	9/4/2017	16:45					DISCUSSED HAZARDS OF RIGGING UP IRON
6	RIG UP	9/4/2017	17:00					BJ CREW RIGS UP LOCATION
7	RIG UP COMPLETE	9/4/2017	18:00					RIG UP COMPLETED SAFELY
8	PRE JOB	9/4/2017	18:30					CONDUCTED STEACS WITH CREW AND RIG CREW
9	SPACER	9/4/2017	19:25	8.33	5	40		PUMPED 40 BBL OF FRESH WATER SPACER
10	SPACER	9/4/2017	19:34	11	5	40		PUMPED 40 BBL OF 11/LB CD SPACER
11	LEAD CEMENT	9/4/2017	19:42	12.5	5	73.5	300	PUMPED 73.4BBL,200/SKS 12.5/LB,2.06/YLD,11.77GAL/SK
12	LEAD CEMENT	9/4/2017	20:15	12.5	5	265.4	320	PUMPED 720/SKS,265.4/BBL,2.07YLD,11.81GAL/ SK
13	TAIL CEMENT	9/4/2017	20:40	13.5	5	256.1	300	PUMPED 975/SKS,256.1/BBL,1.47YLD,7.43GAL/S K OF TAIL CEMENT
14	SHUT DOWN	9/4/2017	21:25					ALL CEMENT PUMPING COMPLETE
15	WASH PUMPS AND LINES	9/4/2017	21:26					WASHED PUMPS AND LINES
16	DROP FIRST PLUG	9/4/2017	21:35					FIRST PLUG LEFT CEMENTING HEAD
17	DISPLACE 10/BBL	9/4/2017	21:36	8.33	6			DISPLACED 10 BBL WITH RETARDER
18	DROP SECOND PLUG	9/4/2017	21:39					SECOND PLUG LEFT CEMENTING HEAD
19	DISPLACEMEN T	9/4/2017	21:44	8.33	8			DISPLACED 275.7 MORE BBL OF DISPLACEMENT
20	SPACER TO SURFACE	9/4/2017	22:14	11	7		2100	SPACER TO SURFACE AT 240 BBL DISPLACED
21	SLOW RATE	9/4/2017	22:24		3	275	1500	SLOWED RATE TO 3/BBL/MIN AT 275 DISPLACED TO BUMP
22	FIRST PLUG	9/4/2017	22:29			294	2500	BURS T FIRD T PLUG AT 294 DISPLACED CALCULATED WAS 294/BBL
23	CEMENT TO SURFACE	9/4/2017	22:32	15.8	2		2100	2/BBL CEMENT TOSURFACE



24	SECOND PLUG	9/4/2017	22:33		8		2200	8/BBL IN BETWEEN PLUGS SECOND PLUG AT 302 BBL
25	CHECK FLOATS	9/4/2017	22:35		2.75			FLOATS HELD 2.75 BBL BACK
26	PRE-RIG DOWN	9/4/2017	22:50					DISCUSSED HAZRDS OF RIG DOWN
27	RIG DOWN EQUIPMENT	9/4/2017	23:12					BJ CREW RIGGED DOWN
28	RIG DOWN COMPLETE	9/4/2017	12:30					RIG DOWN COMPLETED SAFELY
29	PRE-CONVOY	9/4/2017	13:00					DISCUSSED HAZARDS OF DRIVING
30	DEPART LOCATION	9/4/2017	13:10					BJ CREW LEAVES LOCATION
31	PRESSURE TEST	9/4/2017	19:23				1500	TESTED LINES TO 1500

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	°F	50-80 °F
pH Level		5.5-8.5
Chlorides	mg/L	0-3000 mg/L
Total Alkalinity		0-1000
Total Hardness	mg/L	0-500 mg/L
Carbonates	mg/L	0-100 mg/L
Sulfates	mg/L	0-1500 mg/L
Potassium	mg/L	0-3000 mg/L
Iron	mg/L	0-300 mg/L

### 4 Pump Diagrams

