

HALLIBURTON

iCem[®] Service

BONANZA CREEK ENERGY

Date: Friday, January 23, 2015

STATE SEVENTY HOLES 21-24-4 HNB

Surface

Job Date: Thursday, December 25, 2014

Sincerely,

Justin Lansdale

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1 Timeline

1.1 Timeline

	Date	Time (24hr)
Callout:	12/24/2014	1430
On Location:	12/24/2014	1915
Job Started:	12/25/2014	725
Job Completed:	12/25/2014	828
Departed Location:	12/25/2014	930
Verified Ticket With:	12/25/2014	

2 Job Summary

2.1 Job Summary



Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 324725		Ship To #: 3463655		Quote #:		Sales Order #: 0901971531				
Customer: BONANZA CREEK ENERGY				Customer Rep:						
Well Name: STATE SEVENTY HOLES			Well #: 21-24-4 HNB			API/UWI #: 05-123-39209-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO				
Legal Description: NE NW-4-4N-62W-350FNL-1383FWL										
Contractor: FRONTIER DRLG				Rig/Platform Name/Num: FRONTIER 04						
Job BOM: 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB21661				Srvc Supervisor: Kendall Broom						
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type		BHST								
Job depth MD		455ft			Job Depth TVD					
Water Depth		Wk Ht Above Floor								
Perforation Depth (MD)		From			To					
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36	STC	J-55	0	450		0
Open Hole Section			13.5				0	460		0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625	1		455	Top Plug	9.625	1	HES		
Float Shoe	9.625	1			Bottom Plug	9.625	1	HES		
Float Collar	9.625	1			SSR plug set	9.625	1	HES		
Insert Float	9.625	1			Plug Container	9.625	1	HES		
Stage Tool	9.625	1			Centralizers	9.625	1	HES		
Miscellaneous Materials										
Gelling Agt	Conc		Surfactant	Conc	Acid Type		Qty	Conc		
Treatment Fld	Conc		Inhibitor	Conc	Sand Type		Size	Qty		
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Powder)	Mud Flush III	20	bbl	8.4			6		
42 gal/bbl		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	

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Cementing Job Summary

2	Lead Cement	SWIFTCEM (TM) SYSTEM	200	sack	13.5	1.75		6	9.25
9.25 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	34	bbl	8.33			6	
Cement Left In Pipe	Amount	40 ft		Reason	Shoe Joint				
Comment									

3 Job Overview

3.1 Job Overview

Job OverView			
		Units	Description
1	Surface temperature at time of job	°F	27
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	10.6
4	Time circulated before job	HH:MM	100
5	Mud volume circulated	bbls	
6	Rate at which well was circulated	bpm	
7	Pipe movement during circulation	Y/N	no
8	Rig pressure while circulating	psi	
9	Time from end mud circulation to start of job	HH:MM	0
10	Pipe movement during cementing	Y/N	no
11	Calculated displacement	bbls	
12	Job displaced by	Rig/HES	HES
13	Annular before Job	Y/N	no
14	Annular flow after job	Y/N	no
15	Length of rat hole	ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time?	Y/N	no

4 Water Analysis

4.1 Water Analysis

Cement Mix Water Requirements

Item	Recorded Test Value	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	5 to 8.5	Chemicals in water can cause severe retardation
Chlorides	0	3000 mg/L	Can accelerate the set time on cement 1% ~ 4800 mg/L
Sulfates	<200	1500 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Total Hardness or Alkalinity	7	500 mg/L	Will retard cement and decrease its strength (only occurs @ pH ≥ 8.3)
Calcium		500 mg/L	High concentrations will accelerate the set of cement
Bicarbonates		1000 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Iron	0	300 mg/L	High concentrations will accelerate the set of cement
Potassium		5000 ppm	High concentrations will accelerate the set of cement
Water Temp	53.6	50F to 80F	High temps will accelerate; Low temps may risk freezing in cold weather

5 Pump Schedule

5.1 Pump Schedule

1.3 Pump Schedule

Description	Stage No.	Density (ppg)	Rate (bbl/min)	Yield (ft ³ /sack)	Water Req. (gal/sack)	Volume (bbl)	Bulk Cement (sacks)	Duration (min)
Bonanza Creek MUD	1	9.20	5.00			0.00		0.00
Mud Flush	2	8.40	5.00			20.00		4.00
Bonanza Creek 13.5ppg 2104157	3	13.50	5.00	1.7512	9.238	62.38	200.00	12.48
Top Plug/Start Displacement								
Bonanza Creek MUD	4-1	9.20	4.50			25.00		5.56
Bonanza Creek MUD	4-2	9.20	3.50			8.09		2.31
Total:						115.47		24.34

**Pump schedule may include additional rows for displacement if "Automatic Rate Adjustment" was enabled and ECDs approached the fracture gradient.*

6 Real-Time Job Summary

6.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	12/24/2014	14:30:00	USER				Called out crew to be on location at 200
Event	2	Depart Shop for Location	Depart Shop for Location	12/24/2014	18:00:00	USER				Held a safety huddle before leaving for location
Event	3	Arrive At Loc	Arrive At Loc	12/24/2014	19:15:00	USER				Arrived on location and met with the company man. The rig was broke down, the pumpwas not working. at 2400 a new pump was brought in . The casing crew began running the joints
Event	4	Rig-up Lines	Rig-up Lines	12/25/2014	05:15:00	USER				Held a hazard hunt before spotting in the trucks and rigging up
Event	5	Safety Meeting	Safety Meeting	12/25/2014	06:30:00	USER	-0.06	2.00	0.00	Held a safety meeting with the rig crew to discuss the operation and safety
Event	6	Start Job	Start Job	12/25/2014	07:25:20	COM4	8.45	165.00	0.10	Filled lines with 2 bbl water
Event	7	Test Lines	Test Lines	12/25/2014	07:27:48	COM4	8.54	12.00	0.00	Tested lines to 2500 psi
Event	8	Pump Spacer 1	Pump Spacer 1	12/25/2014	07:32:30	COM4	8.46	15.00	0.00	Pumped 10 bbl water
Event	9	Pump Spacer 2	Pump Spacer 2	12/25/2014	07:38:14	COM4	8.47	41.00	2.60	Pumpd 20 bbl mud flush
Event	10	Pump Spacer 1	Pump Spacer 1	12/25/2014	07:44:12	COM4	8.44	41.00	3.50	Pumped 10 bbl water
Event	11	Pump Cement	Pump Cement	12/25/2014	07:50:56	COM4	8.39	54.00	4.10	Pumped 62.33 bbl

										swiftcem 13.5#, 1.75 yield, 9.25 gal/sks
Event	12	Drop Top Plug	Drop Top Plug	12/25/2014	08:07:54	COM4	13.45	-10.00	0.00	Dropped plug preloaded and witnessed by the driller
Event	13	Pump Displacement	Pump Displacement	12/25/2014	08:08:06	COM4	13.52	-10.00	0.00	Pumped 34 bbl water and got 9 bbl cement back to surface
Event	14	Bump Plug	Bump Plug	12/25/2014	08:24:05	COM4	7.52	824.00	0.00	Bumped at 700 psi. climbed to 823. checked floats
Event	15	End Job	End Job	12/25/2014	08:28:27	COM4	7.56	-21.00	0.00	
Event	16	Rig Down Lines	Rig Down Lines	12/25/2014	08:29:00	USER	7.55	-23.00	0.00	Held a safety meeting before rigging down
Event	17	Depart Location	Depart Location	12/25/2014	09:30:00	USER				Had a safety huddle before leaving location

6.2 Custom Graph

