

HALLIBURTON

iCem[®] Service

BONANZA CREEK ENERGY

For:

Date: Friday, December 26, 2014

STATE SEVENTY HOLES K21-024-4HNB

Case 1

Sincerely,

Derek Trier

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **State Seventy Holes K21-024-4HNB** cement **Surface** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton [Brighton]

Job Times

	Date	Time	Time Zone
Called Out	12/11/2014	1200	MTN
On Location		1730	
Job Started		2334	
Job Completed	12/12/2014	0040	
Departed Location		0130	

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 324725		Ship To #: 3463667		Quote #:		Sales Order #: 0901879154					
Customer: BONANZA CREEK ENERGY				Customer Rep:							
Well Name: STATE SEVENTY HOLES			Well #: K21-024-4 HNB			API/UWI #: 05-123-39211-00					
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO					
Legal Description: NE NW-4-4N-62W-370FNL-1382FWL											
Contractor:				Rig/Platform Name/Num: Frontier 4							
Job BOM: 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\H117930					Srvc Supervisor: Joseph Romero						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		460ft			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	450		0
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625			450		Top Plug	9.625		HES		
Float Shoe	9.625					Bottom Plug	9.625		HES		
Float Collar	9.625					SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625		HES		
Stage Tool	9.625					Centralizers	9.625		HES		
Miscellaneous Materials											
Gelling Agt		Conc	Surfactant	Conc	Acid Type	Qty	Conc				
Treatment Fid		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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	FRESH WATER	FRESH WATER			20	bbl	8.3			6	
42 gal/bbl		FRESH WATER									
Fluid #	Stage Type	Fluid Name			Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /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	31	bbl	8.33			6		
Cement Left in Pipe	Amount	40 ft						Reason	Shoe Joint	
Mix Water: pH	##	Mix Water Chloride:	## ppm			Mix Water Temperature: ## °F °C				
Cement Temperature:	## °F °C	Plug Displaced by:	## lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C				
Plug Bumped?	Yes/No	Bump Pressure:	#### psi MPa			Floats Held? Yes/No				
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3			Returns Temperature: ## °F °C				
Comment										

1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	34
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	
9	Time from end mud circulation to start of job	HH:MM	
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	31
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	N

1.4 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	<200	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness		ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium		ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	71	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: _____ **JOSEPH ROMERO** _____

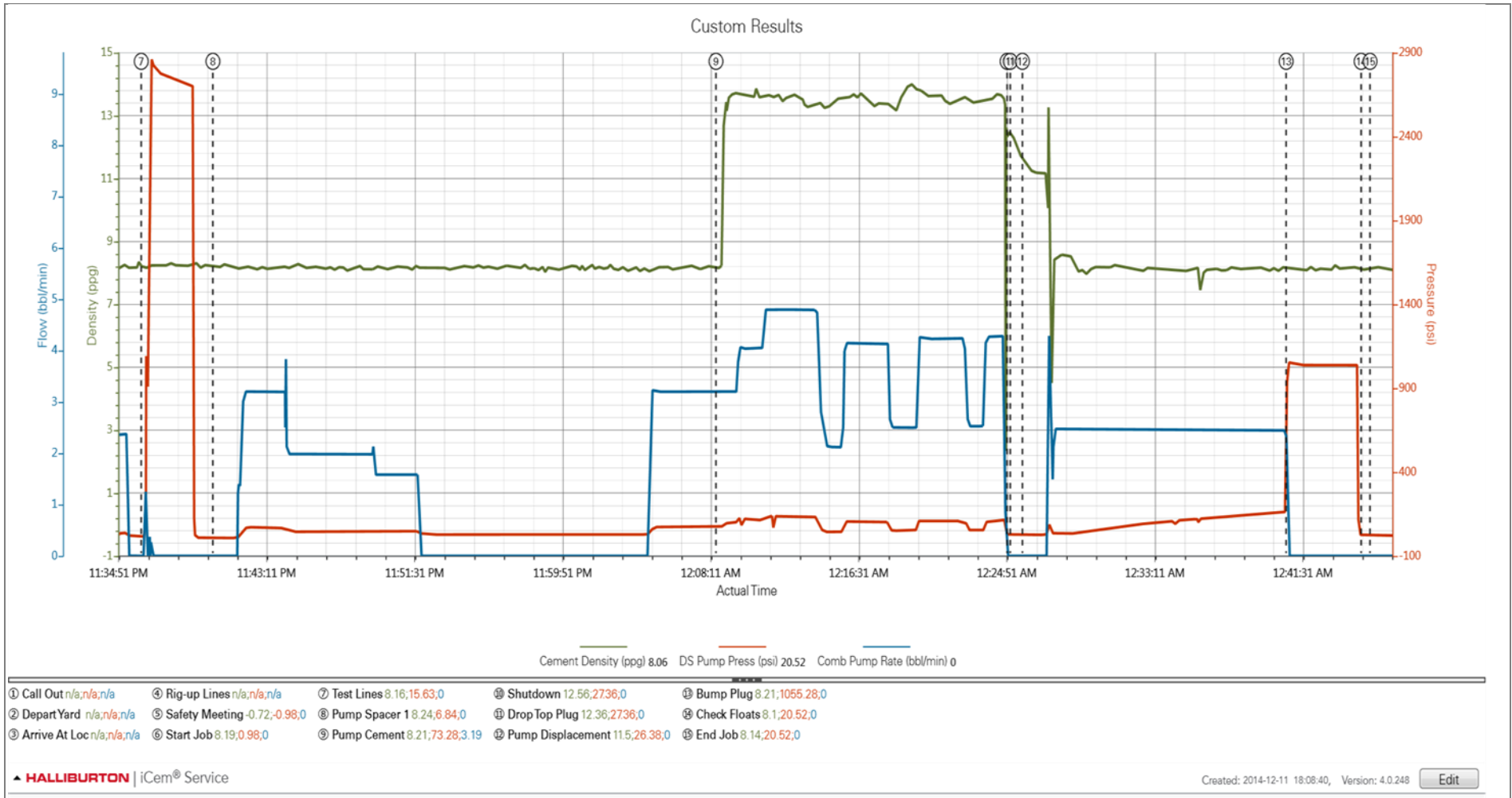
1.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Cement Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	12/11/2014	12:00:00	USER				
Event	2	Depart Yard Safety Meeting	Depart Yard	12/11/2014	16:00:00	USER				
Event	3	Arrive At Loc	Arrive At Loc	12/11/2014	17:30:00	USER				RIG WAS JUST STARTING TO RUN CASING WHEN WE ARRIVED.
Event	4	Rig-up Lines	Rig-up Lines	12/11/2014	22:30:00	USER				HELD JSA WITH CREW
Event	5	Safety Meeting	Safety Meeting	12/11/2014	22:37:21	USER	-0.72	-0.98	0.00	HELD JSA WITH ALL INVOLVED PERSONAL. PRELOADED PLUG IN CEMENT HEAD WITH COMPANY REP.
Event	6	Start Job	Start Job	12/11/2014	23:34:12	COM4	8.19	0.98	0.00	
Event	7	Test Lines	Test Lines	12/11/2014	23:36:14	COM4	8.16	15.63	0.00	TESTED LINES TO 2846PSI AND HELD FOR 2MIN WITH NO VISABLE LEAKS.
Event	8	Pump Spacer 1	Pump Spacer 1	12/11/2014	23:40:16	COM4	8.24	6.84	0.00	PUMPED 30BBLs OF FRESH WATER AT 3BPM WITH 24PSI. SHUTDOWN ONCE BECAUSE WE HAD TO CLEAR OUR CEMENT LINE.
Event	9	Pump Cement	Pump Cement	12/12/2014	00:08:35	COM4	8.21	73.28	3.19	PUMPED 623.BBLS OR 200SKS OF 13.5PPG SWIFTCEM AT 5BPM WITH 96PSI.
Event	10	Shutdown	Shutdown	12/12/2014	00:24:58	COM4	12.56	27.36	0.00	
Event	11	Drop Top Plug	Drop Top Plug	12/12/2014	00:25:09	COM4	12.36	27.36	0.00	RELEASED PLUG WITH COMPANY REP.
Event	12	Pump Displacement	Pump Displacement	12/12/2014	00:25:50	COM4	11.50	26.38	0.00	PUMPED 31BBLs OF FRESH WATER AT 2BPM WITH 100PSI. GOT 198BBLs OF CEMENT BACK TO SURFACE.

Event	13	Bump Plug	Bump Plug	12/12/2014	00:40:41	USER	8.21	1055.28	0.00	BUMPED PLUG AT 168PSI AND BROUGHT PRESSURE UP TO 1055PSI AND HELD FOR 3MIN.
Event	14	Check Floats	Check Floats	12/12/2014	00:44:54	USER	8.10	20.52	0.00	RELEASED PRESSURE TO CHECK FLOATS. FLOATS HELD.
Event	15	End Job	End Job	12/12/2014	00:45:24	USER	8.14	20.52	0.00	

2.0 Attachments

2.1 Case 1-Custom Results.png



3.0 Appendix
