

# HALLIBURTON

iCem<sup>®</sup> Service

## Post Job Report

**ENCANA OIL & GAS (USA) INC. - EBUS**

**For: Joe Nelson**

Date: Tuesday, July 01, 2014

**Jillson-East Rinn 3J-22 H-N268 Production**

Wattenburg

Case 1

Sincerely,

**Eric Fuchs**

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## **1.1 Executive Summary**

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Halliburton appreciates the opportunity to perform the cementing services on the **Jillson East Rinn 3J-22H-N268** cement **Production** 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**

	<b>Date</b>	<b>Time</b>	<b>Time Zone</b>
<b>Requested Time On Location</b>	07/01/14	0000	
<b>Called Out</b>	06/30/14	2030	
<b>On Location</b>	06/30/14	2300	
<b>Job Started</b>	07/01/14	1200	
<b>Job Completed</b>	07/01/14	1416	
<b>Departed Location</b>	07/01/14	1530	

1.2 Cementing Job Summary

**HALLIBURTON**

*Cementing Job Summary*

*The Road to Excellence Starts with Safety*

Sold To #: 340078	Ship To #: 3113398	Quote #:	Sales Order #: 0901464902							
Customer: ENCANA OIL & GAS (USA) INC. - EBUS		Customer Rep: Randy Burke								
Well Name: JILLSON-EAST RINN		Well #: 31-22 H-N268	API/UWI #: 05-123-38005-00							
Field: WATTENBERG	City (SAP): LONGMONT	County/Parish: WELD	State: COLORADO							
Legal Description: SE SW-22-2N-68W-261FSL-2120FWL										
Contractor:		Rig/Platform Name/Num: H&P 278								
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB47901		Srvc Supervisor: Eric Fuchs								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	15288ft	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		7	6.368	23		N-80	0	7945	0	0
Casing		4.5	3.92	13.5		P-110	0	15288	0	0
Open Hole Section			6.125				7945	15304	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	4.5			15288	Top Plug	4.5		HES		
Float Shoe	4.5	1			Bottom Plug	4.5		HES		
Float Collar	4.5	1			SSR plug set	4.5		HES		
Insert Float	4.5				Plug Container	4.5		HES		
Stage Tool	4.5				Centralizers	4.5		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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	13 lb/gal Tuned Spacer III	Tuned Spacer III	30	bbl	13	8.93				
235.92 lbm/bbl			BARITE, BULK (100003681)							
33.90 gal/bbl			FRESH WATER							

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**HALLIBURTON**

*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ExpandaCem B2	EXPANDACEM (TM) SYSTEM	559	sack	13.8	1.67		5	7.7
7.70 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Fresh Water	Fresh Water	220	bbl	10				
Cement Left In Pipe		Amount	ft	Reason			Shoe Joint		
Comment									

Signature Randy Burke

### 1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	80
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	10.8
4	Actual mud Plastic Viscosity (PV)	cP	34
5	Actual mud Yield Point (YP)	lb <sub>f</sub> /100ft <sup>2</sup>	
6	Actual mud 30 min Gel Strength	lb <sub>f</sub> /100ft <sup>2</sup>	
7	Time circulated before job	HH:MM	2
8	Mud volume circulated	Bbls	5
9	Rate at which well was circulated	Bpm	600
10	Pipe movement during hole circulation	Y/N	Y
11	Rig pressure while circulating	Psi	700
12	Time from end mud circulation to start of job	HH:MM	20
13	Pipe movement during cementing	Y/N	Y
14	Calculated displacement	Bbls	228
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	
17	Annular flow after job	Y/N	
18	Length of rat hole	Ft	16
19	Units of gas detected while circulating	Units	1500
20	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	10	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	0	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	72	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

**Submitted Respectfully by:** \_\_\_\_\_

**1.5 Job Event Log**

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Pass-Side Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	6/30/2014	20:30:00	USER				CREW IS CALLED OUT
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/30/2014	21:50:00	USER				CREW HAS PRE CONVOY SAFETY MEETING
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/30/2014	22:00:00	USER				CREW LEAVES THE YARD
Event	4	Arrive At Loc	Arrive At Loc	6/30/2014	23:00:00	USER				CREW ARRIVES AT LOCATION
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	6/30/2014	23:15:00	USER				CREW ASSESSES LOCATION
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/1/2014	00:30:00	USER				CREW HAS PRE RIG UP SAFETY MEETING
Event	7	Rig-Up Equipment	Rig-Up Equipment	7/1/2014	00:45:00	USER				CREW RIGS UP
Event	8	Rig-Up Completed	Rig-Up Completed	7/1/2014	01:30:00	USER	0.00	8.98	0.00	CREW DONE RIGGING UP, THE RIG IS STILL RUNNING PIPE SO WE WILL JUST BE WAITING ON LOCATION FOR A BIT
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/1/2014	06:30:00	USER	4.00	8.99	0.00	CREW HAS PRE JOB SAFETY MEETING WITH CO REP AND RIG CREW
Event	10	Other	Fill Lines	7/1/2014	12:18:59	USER	-12.00	8.81	3.00	FILL LINES WITH 2 BBLS WATER
Event	11	Test Lines	Test Lines	7/1/2014	12:23:27	COM13	5062.00	8.92	0.00	TEST LINES TO 5000 PSI
Event	12	Pump Spacer	Pump Spacer	7/1/2014	12:31:42	USER	486.00	13.00	4.00	PUMP 30 BBLS TUNED SPACER 13 #
Event	13	Comment	Comment	7/1/2014	12:34:08	USER	622.00	9.90	4.00	HAD TO RECAL THE DOWN HOLE, IT WAS ACTING WEIRD. BUT GOT IT FIGURED OUT
Event	14	Pump Cement	Pump Cement	7/1/2014	12:39:46	USER	242.00	13.80	5.00	PUMP 166 BBLS CEMENT 559 SKS 13.8 # 1.67 YIELD 7.7 GAL/SK
Event	15	Shutdown	Shutdown	7/1/2014	13:15:19	USER	27.00	13.80	0.00	SHUTDOWN
Event	16	Drop Plug	Drop Plug	7/1/2014	13:22:44	USER	81.00	8.33	5.10	BLACK HAWK TOOL HAND DROPS DART AND BALLS
Event	17	Pump Displacement	Pump Displacement	7/1/2014	13:24:54	COM13		9.50	6.00	PUMP 227 BBLS BRINE DISPLACEMENT 9.5 #
Event	18	Slow Rate	Slow Rate	7/1/2014	14:06:52	USER	1211.00	9.26	2.90	SLOW RATE TO BUMP PLUG
Event	19	Bump Plug	Bump Plug	7/1/2014	14:10:36	COM13	1309.00	8.24	2.90	BUMP PLUG. BUMPED AT 220 BBLS AWAY

## ENCANA OIL &amp; GAS (USA) INC. - EBUS

901464902

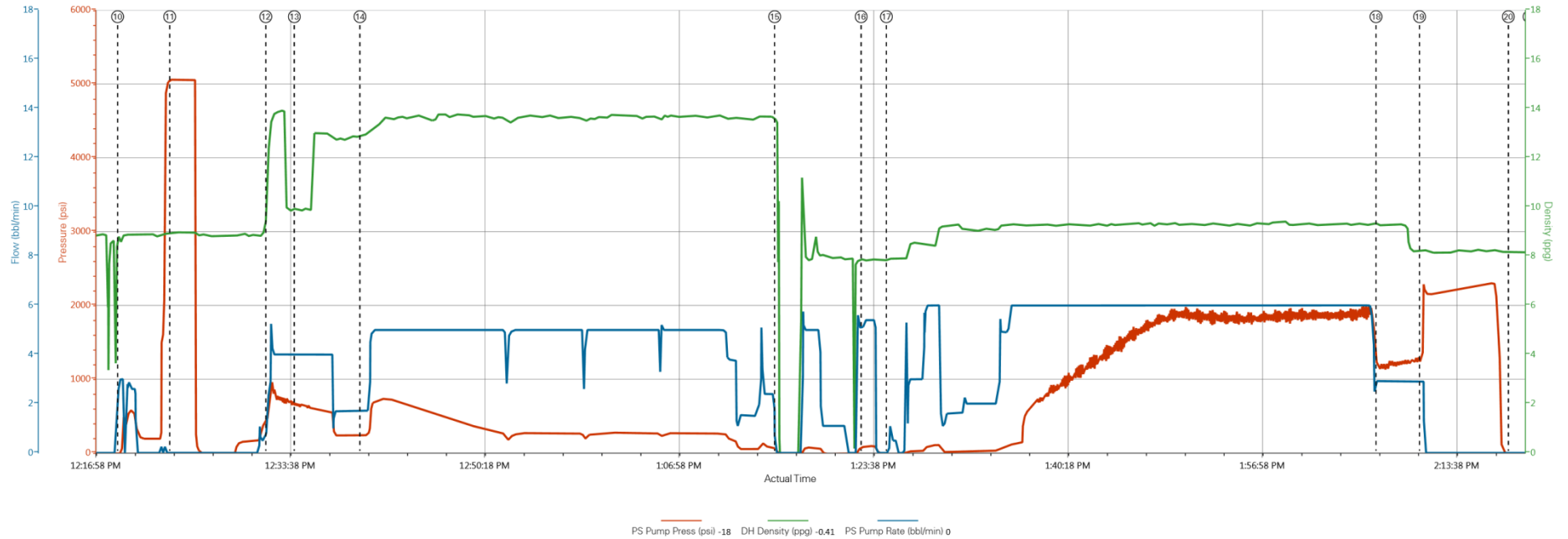
Case 1

Event	20	Check Floats	Check Floats	7/1/2014	14:18:13	USER	-16.00	8.17	0.00	CHECK FLOATS AND GOT 1.5 BBLS BACK
Event	21	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	7/1/2014	14:20:00	USER	-17.00	8.18	0.00	CREW HAS POST JOB SAFETY MEETING AND TALKS ABOUT RIGGING DOWN
Event	22	Rig-Down Equipment	Rig-Down Equipment	7/1/2014	14:30:00	USER				CREW RIGS DOWN
Event	23	Rig-Down Completed	Rig-Down Completed	7/1/2014	15:40:00	USER				CREW DONE RIGGING DOWN
Event	24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/1/2014	15:50:00	USER				CREW HAS PRE CONVOY SAFETY MEETING
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/1/2014	16:00:00	USER				CREW LEAVES LOCATION

## 2.0 Custom Graphs

### 2.1 Custom Graph

EnCana Jillson-East Rinn 3H-22 H-N268 Production



PS Pump Press (psi) -18 DH Density (ppg) -0.41 PS Pump Rate (bbl/min) 0

⑤ Assessment Of Location Safety Meeting n/a,n/a,n/a  
 ⑦ Rig-Up Equipment n/a,n/a,n/a  
 ⑧ Pre-Job Safety Meeting 4,8,99,0  
 ⑩ Test Lines 5062,8,92,0  
 ⑪ Comment 622,9,9,4  
 ⑫ Shutdown 27,13,54,0  
 ⑬ Pump Displacement -17,7,87,0  
 ⑭ Bump Plug 1309,8,24,2,9  
 ⑮ Post-Job Safety Meeting (Pre Rig-Down) -17,8,18,0  
 ⑯ Rig-Down Completed n/a,n/a,n/a  
 ⑰ Pre-Rig Up Safety Meeting n/a,n/a,n/a  
 ⑱ Rig-Up Completed 0,8,98,0  
 ⑲ Fill Lines -12,8,81,3  
 ⑳ Pump Spacer 486,11,25,2,1  
 ㉑ Pump Cement 242,12,9,1,7  
 ㉒ Drop Plug 81,7,86,5,1  
 ㉓ Slow Rate 1211,9,26,2,9  
 ㉔ Check Floats -16,8,17,0  
 ㉕ Rig-Down Equipment n/a,n/a,n/a  
 ㉖ Pre-Convoy Safety Meeting n/a,n/a,n/a

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Customer: ENCANIA OIL & GAS (USA) INC. - EBUS  
 Job Date: 7/1/2014 1:18:03 AM  
 Well: Jillson-East Rinn 3H-22 H-N268  
 Representative: Eric Fuchs  
 Sales Order #: 901464902  
 Tiger Number: 11501021

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### 3.0 Appendix

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