

HALLIBURTON

iCem[®] Service

EnCana Vogl McCoy 2B-5H-E267

Production

For: «CustomerRepresentative»

Date: «ReportDate»

Vogl McCoy 2B-5H-E267

Production

Sincerely,

Sebastian Estensoro



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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Vogl McCoy 2B-5H-E267** 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

	Date	Time	Time Zone
Called Out			MST
On Location			MST
Job Started	5/10/14	1949	MST
Job Completed	5/10/14	2124	MST
Departed Location			MST

1.2 Cementing Job Summary

HALLIBURTON**Cementing Job Summary***The Road to Excellence Starts with Safety*

Sold To #: 340078	Ship To #: 3113298	Quote #:	Sales Order #: 0901321789							
Customer: ENCANA OIL & GAS (USA) INC. - EBUS		Customer Rep:								
Well Name: VOGL-MCCOY	Well #: 2B-5 H-E267	API/UWI #: 05-123-37815-00								
Field: WATTENBERG	City (SAP): LON	County/Parish: WELD	State: COLORADO							
Legal Description: SW NW-5-2N-67W-2602FNL-321FWL										
Contractor:		Rig/Platform Name/Num: H&P 522								
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB50180		Srvc Supervisor: Wesley Whipple								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	12000ft	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	6.366	23		N-80	0	7360	0	7100
Casing		4.5	3.92	13.5		P-110	0	11600	0	7100
Open Hole Section			6.125				7500	11600		
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	4.5			11600	Top Plug	4.5		HES		
Float Shoe	4.5				Bottom Plug	4.5		HES		
Float Collar	4.5				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 ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	0	bbl	10.5	6.26	37.4	5		
90.31 lbm/bbl		BARITE, 100 LB SK (100003680)								
36 gal/bbl		FRESH WATER								

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	Expandacem B2	EXPANDACEM (TM) SYSTEM		sack	13.8	1.67		5	7.72
7.74 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Fresh Water	Fresh Water	0	bbl	8.3				
Cement Left In Pipe		Amount	ft	Reason			Shoe Joint		
Comment									

1.3 Planned Pumping Schedule

- 1. Fill Lines with Water**
 - a. Density = 8.33ppg
 - b. Volume = 2bbl
- 2. Pressure Test Lines to psi**
- 3. Pump Tuned Spacer**
 - a. Density = 11.5 lb/gal
 - b. Volume = 40 bbl
- 4. Pump ExpandaCem (Lead)**
 - a. Density = 13.8
 - b. Yield = 1.67
 - c. Water Requirement = 7.72
 - d. Volume = 561 sks (166 bbls)
- 5. Drop Top Plug**
- 6. Start Displacement**
- 7. Pump Displacement Water**
 - a. Density = 9 lb/gal
 - b. Volume = 221.5 bbls
- 8. Land Plug – Anticipated Final Circulation Pressure 2150 psi**

Calculated Total Displacement = 221.5 bbls

1.4 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	
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	
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	
11	Calculated displacement	Bbls	
12	Job displaced by	Rig/HES	
13	Annular before job)?	Y/N	
14	Annular flow after job	Y/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	

1.5 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH		----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides		ppm	3000 ppm	Can shorten thickening time of cement
Sulfates		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		ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature		°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: _____

1.6 «BeginGroup:RealTimeJobSummary»Job Event Log

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ENCANA OIL & GAS (USA) INC. - EBUS
 Encana Vogl-McCoy 2B-5 H-E267 Production
 Case 1

3.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	PS Pump Press (psi)	Comment
Event	1	Start Job	Start Job	5/10/2014	19:33:32	COM5	8.35	0.00	10.9	-2.00	Start Job
Event	2	Test Lines	Test Lines	5/10/2014	19:38:06	COM5	8.36	0.00	0.0	6.00	Pressure test pumps and lines to 4000 psi, found no leaks in iron and pressure held.
Event	3	Pump Spacer 1	Pump Spacer 1	5/10/2014	19:49:55	COM5	10.54	4.50	2.4	887.00	Mix and pump 40 bbls of Tuned Spacer @ 11.5ppg. Density verified by pressurized mud scales.
Event	4	Pump Cement	Pump Cement	5/10/2014	20:01:16	COM5	14.04	6.20	7.7	1298.00	Mix and pump 561 sks of ExpandaCem @ 13.8ppg. Density verified by pressurized mud scales.
Event	5	Shutdown	Shutdown	5/10/2014	20:31:59	COM5	13.52	1.10	158.5	32.00	Shutdown to wash pumps and lines
Event	6	Drop Top Plug	Drop Top Plug	5/10/2014	20:33:47	COM5	9.36	0.00	161.5	11.00	Drop top plug from Blackhawk rotating cement head. Witnessed by Company rep, Blackhawk tool Rep and HES tool rep.
Event	7	Drop Ball	Drop Ball	5/10/2014	20:39:22	COM5	8.89	0.00	9.3	-5.00	Drop ball from Blackhawk rotating cement head. Witnessed by Company rep, Blackhawk tool rep and HES tool rep
Event	8	Pump Displacement	Pump Displacement	5/10/2014	20:40:24	COM5	8.97	0.90	9.3	2.00	Pump brine water displacement
Event	9	Bump Plug	Bump Plug	5/10/2014	21:16:08	COM5	9.01	0.00	213.4	2114.00	Bump plug at 221.5bbls away. brought pressure up to 2150 and held
Event	10	Other	Other	5/10/2014	21:20:57	COM5	9.07	0.00	213.4	2337.00	Released pressure back to pump truck. Recieved 1.5bbls back and floats held



«BeginGroup:JobInfo»«CompanyName»
«ProjectName»
«JobName»«EndGroup:JobInfo»

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ENCANA OIL & GAS (USA) INC. - EBUS
Encana Vogl-McCoy 2B-5 H-E267 Production
Case 1

Event	11	End Job	End Job	5/10/2014	21:24:47	COM5	8.96	0.00	213.4	0.00	End Job
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«BeginGroup:JobInfo»«CompanyName»
«ProjectName»
«JobName»«EndGroup:JobInfo»

2.0 Appendix
