



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/13/2015  
Invoice #: 25126  
API#: 05-123-40280  
Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.  
Well Name: Ruhl 1K-32H-B264

County: Weld  
State: Colorado  
Sec: 32  
Twp: 2N  
Range: 64W  
Consultant: Dennis E / Dennis Z  
Rig Name & Number: Ensign 135  
Distance To Location: 23 Miles  
Units On Location: 4023-3104/4035-3204  
Time Requested: 830pm  
Time Arrived On Location: 705pm  
Time Left Location: 5:30pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 40.00  
Casing Depth (ft.) : 1,135  
Total Depth (ft) : 1165  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 124  
Conductor ID : 16  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 18

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 50%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 22  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

### Spacer Ahead Makeup

30bbls H2O+Dye in 3rd 10bbls

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.11 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
**cuft of Conductor** 110.48 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
**cuft of Casing** 474.72 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
**Total Slurry Volume** 604.30 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
**bbls of Slurry** 107.63 bbls  
(Total Slurry Volume) X (.1781)  
**Sacks Needed** 476 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
**Mix Water** 66.73 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 83.99 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 895.82 PSI

## Pressure of the fluids inside casing

**Displacement:** 469.84 psi

**Shoe Joint:** 35.44 psi

**Total** 505.27 psi

**Differential Pressure:** 390.55 psi

**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 200.72 bbls

X   
Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



DISPERSEMENT  
Single Cement Surface Pipe

Customer  
Well Name

EnCana Oil & Gas (USA) Inc.  
Ruhl 1K-32H-B264

INVOICE #  
LOCATION  
FOREMAN  
Date

25120  
Weld  
Calvin Reimers  
1/13/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
Safety Meeting	226am															
MIRU	130am															
CIRCULATE	311am	0	404am	50	0			0			0			0		
Drop Plug		10	407am	70	10			10			10			10		
403am		20	408am	110	20			20			20			20		
		30	410am	200	30			30			30			30		
		40	412am	360	40			40			40			40		
M & P		50	414am	420	50			50			50			50		
Time	Sacks	60	416am	480	60			60			60			60		
317am	476	70	418am	510	70			70			70			70		
400am		80	420am	410	80			80			80			80		
		90	422am	420	90			90			90			90		
		100	Bump	950	100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	66.73	130			130			130			130			130		
Total Sacks	476	140			140			140			140			140		
bbl Returns	22	150			150			150			150			150		
Water Temp	62.3															

Notes:

The day

1/2 bbl Back on Bleed Off

Casing PSI Test 424am 1510psi to 439am 1490psi

X Dennis Jacob  
Work Performed

X Website Spom.  
Title

X 1/13/15  
Date