



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/19/2014

Invoice # 45004

API# 05-123-38131

Foreman: JASON

**Customer:** EnCana Oil & Gas (USA) Inc.

**Well Name:** GRANT HURT 1F-14H

County: Weld

State: Colorado

Sec: 14

Twp: 2N

Range: 68W

Consultant:

Rig Name & Number: PATTERSON 326

Distance To Location: 23

Units On Location: 4033-3106/ 4007-3210

Time Requested: 1330

Time Arrived On Location: 1245

Time Left Location: 1630

## WELL DATA

Casing Size OD (in) : 9.625  
 Casing Weight (lb) : 40.00  
 Casing Depth (ft) : 841  
 Total Depth (ft) : 890  
 Open Hole Diameter (in.) : 12.25  
 Conductor Length (ft) : 85  
 Conductor ID : 15.25  
 Shoe Joint Length (ft) : 47  
 Landing Joint (ft) : 35

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: 17.0  
 Fluid Ahead (bbls): 30.0  
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
 30 BBL H2O, 2ND 10 WITH DYE

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 20.02 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 64.87 cuft

(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 355.23 cuft

(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 440.12 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 78.39 bbls

(Total Slurry Volume) X (.1781)

**Sacks Needed** 347 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 48.60 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 62.87 bbls  
 (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 664.20 PSI

## Pressure of the fluids inside casing

**Displacement:** 342.43 psi

**Shoe Joint:** 37.13 psi

**Total** 379.56 psi

**Differential Pressure:** 284.65 psi

**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 161.47 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.



**Bison Oil Well Cementing  
Single Cement Surface Pipe**

Customer  
Well Name

EnCana Oil & Gas (USA) Inc.
GRANT HURT 1F-14H

INVOICE #  
LOCATION  
FOREMAN  
Date

45004
Weld
JASON
7/19/2014

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**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	1340															
MIRU	1300															
CIRCULATE	1357	0	1441	0	0			0			0			0		
Drop Plug		10	1446	50	10			10			10			10		
1441		20	1449	150	20			20			20			20		
		30	1451	290	30			30			30			30		
		40	1454	400	40			40			40			40		
M & P		50	1456	400	50			50			50			50		
Time	Sacks	60	1459	490	60			60			60			60		
1407-1437	347	70	1501	470	70			70			70			70		
		80	BUMP	1010	80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	48.6	130			130			130			130			130		
Total Sacks	347	140			140			140			140			140		
bbl Returns	17	150			150			150			150			150		
Water Temp	68															

Notes:

The day

PRESSURE TESTED TO 1500 PSI @ 1353, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 @ 1357, MIX AND PUMPED 347 SKS AT 15.2, 78.3 BBLS AT 1407, PLUG LANDED AT 40 PSI AT 1501 AND PRESSURED UP TO 1010 PSI AND HELD FOR 10 MINUTES @ 1525, RELEASED PRESSURE AND GOT .5 BBL BACK,

X  
Work Performed

X  
Title

X  
Date