



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/21/2014  
 Invoice # 35004  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** EnCana Oil & Gas (USA) Inc.  
**Well Name:** grant hurt 1a-14h

County: Weld Consultant: mike  
 State: Colorado Rig Name & Number: patterson 326  
 Sec: 14 Distance To Location: 25  
 Twp: 2n Units On Location: 4023-3104/4024-3203  
 Range: 68w Time Requested: 930 am  
 Time Arrived On Location: 900 am  
 Time Left Location: 1:30pm

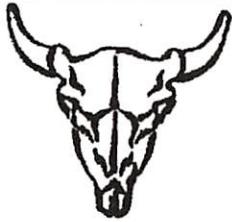
WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>40.00</u>	Cement Density (lb/gal) : <u>15.2</u>
Casing Depth (ft.) : <u>830</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>885</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>12.25</u>	% Excess: <u>50%</u>
Conductor Length (ft) : <u>100</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>16</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>35</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID 8.835 Casing Grade J-55 only used

Calculated Results	Pressure of cement in annulus
<b>cuft of Shoe</b> <u>17.88</u> <b>cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Displacement:</b> <u>62.40</u> <b>bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Conductor</b> <u>89.10</u> <b>cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Hydrostatic Pressure:</b> <u>655.37</u> <b>PSI</b>
<b>cuft of Casing</b> <u>342.93</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>
<b>Total Slurry Volume</b> <u>449.91</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement:</b> <u>339.77</u> <b>psi</b>
<b>bbls of Slurry</b> <u>80.13</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Shoe Joint:</b> <u>33.16</u> <b>psi</b>
<b>Sacks Needed</b> <u>354</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total</b> <u>372.93</u> <b>psi</b>
<b>Mix Water</b> <u>49.68</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure:</b> <u>282.43</u> <b>psi</b>
	<b>Collapse PSI:</b> <u>2570.00</u> <b>psi</b>
	<b>Burst PSI:</b> <u>3950.00</u> <b>psi</b>
	<b>Total Water Needed:</b> <u>162.08</u> <b>bbls</b>

X  
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 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 1a-14h

INVOICE #  
LOCATION  
FOREMAN  
Date

35004  
Weld  
Kirk Kallhoff  
7/21/2014

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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	1135am															
MIRU	900am															
CIRCULATE	1147am	0	1220pm	10	0			0			0			0		
Drop Plug		10	1222pm	110	10			10			10			10		
1220 pm		20	1224pm	130	20			20			20			20		
		30	1226pm	190	30			30			30			30		
		40	1228pm	290	40			40			40			40		
M & P		50	1229pm	360	50			50			50			50		
Time	Sacks	60	1232pm	320	60			60			60			60		
1153 am	354	70			70			70			70			70		
1216 pm stop		80			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	49.6	130			130			130			130			130		
Total Sacks	354	140			140			140			140			140		
bbl Returns	17	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 1235pm 860 psi 80.1 bbls slurry

X

Work Preformed

X

Title

X

Date

7-21-14