



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/10/2014  
Invoice # 65004  
API# 05 123 37614  
Foreman: LEE SHARP

Customer: EnCana Oil & Gas (USA) Inc.  
Well Name: DRIETH 4B-6H-I368

County: Weld  
State: Colorado

Sec: 6  
Twp: 3N  
Range: 68W

Consultant: KEVIN  
Rig Name & Number: H&P 522  
Distance To Location: 27  
Units On Location: 4031-3106;3105-3210  
Time Requested: 8:00  
Time Arrived On Location: 8:00  
Time Left Location: 11:25

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 40.00  
Casing Depth (ft) : 828  
Total Depth (ft) : 880  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 110  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 40  
Landing Joint (ft) : 45

Max Rate:

Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 20%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 9.0  
Fluid Ahead (bbls): 15.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

10F+10D+10=30

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 17.03 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 83.94 cuft  
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 269.78 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 370.75 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 66.03 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 292 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 40.94 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 63.16 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 653.67 PSI

## Pressure of the fluids inside casing

**Displacement:** 339.71 psi

**Shoe Joint:** 31.58 psi

**Total** 371.29 psi

**Differential Pressure:** 282.38 psi

**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 139.10 bbls

X *Kevin Boyer*  
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.