



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/22/2015

Invoice # 80534

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: wells ranch ae 32-650

County: Weld

State: Colorado

Sec: 25

Twp: 6n

Range: 68w

Consultant: cliff

Rig Name & Number: H&P 321

Distance To Location:

Units On Location: 4029-3106/4020-3205

Time Requested: 600 pm

Time Arrived On Location: 500 pm

Time Left Location: 8:15 pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 618  
Total Depth (ft) : 623  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 39  
Landing Joint (ft) : 35

Max Rate:

Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 30%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 50.0  
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 16.93 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 89.10 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 329.11 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 435.13 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 77.50 bbls  
(Total Slurry Volume) X (.1781)

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

**Mix Water** 52.01 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 47.47 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 455.90 PSI

## Pressure of the fluids inside casing

**Displacement:** 249.65 psi

**Shoe Joint:** 28.77 psi

**Total** 278.42 psi

**Differential Pressure:** 177.47 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 159.48 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.



Date \_\_\_\_\_