



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/6/2015

Invoice # 80539

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: wells ranch ae 32-630

County: Weld

State: Colorado

Sec: 25

Twp: 6n

Range: 68w

Consultant: mike p

Rig Name & Number: H&P 273

Distance To Location:

Units On Location: 4029-3106/4032-3210

Time Requested: 200 am

Time Arrived On Location: 1200 am

Time Left Location: 5:00 pm

## WELL DATA

Casing Size OD (in) : 9.625

Casing Weight (lb) : 36.00

Casing Depth (ft) : 666

Total Depth (ft) : 676

Open Hole Diameter (in.) : 13.50

Conductor Length (ft) : 100

Conductor ID : 16

Shoe Joint Length (ft) : 41

Landing Joint (ft) : 35

Max Rate:

Max Pressure:

## Cement Data

Cement Name: BFN III

Cement Density (lb/gal) : 142

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 17.80 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 359.61 cuft

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

Total Slurry Volume 466.50 cuft

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

bbls of Slurry 83.08 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 313 sk

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

Mix Water 55.76 bbls

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

Displacement: 51.02 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 491.31 PSI

## Pressure of the fluids inside casing

Displacement: 269.49 psi

Shoe Joint: 30.25 psi

Total 299.73 psi

Differential Pressure: 191.57 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 166.78 bbls

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.



X 10-6-15  
Date