



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/19/2015  
Invoice #: 90027  
API#: 05-123-41588  
Supervisor: Nick

Customer: Noble Energy Inc.

Well Name: Greyson LD 28-773

County: Weld  
State: Colorado  
Sec: 28  
Twp: 9N  
Range: 58 W

Consultant: Jim Boyd  
Rig Name & Number: H&P 343  
Distance To Location: 60  
Units On Location: 3102/4028/4022/3215  
Time Requested: 9:00  
Time Arrived On Location: 8:45  
Time Left Location: 23:00

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,100  
Total Depth (ft) : 1094  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 5  
  
Max Rate: 7  
Max Pressure: 1500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 10.0  
Fluid Ahead (bbls): 80.0  
H2O Wash Up (bbls): 20.0  
  
Spacer Ahead Makeup  
DYE IN SECOND 10 BBL

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.10 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
cuft of Conductor 76.31 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
cuft of Casing 381.84 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 548.56 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 97.70 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 368 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 65.54 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 81.50 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 811.47 PSI

## Pressure of the fluids inside casing

Displacement: 455.33 psi

Shoe Joint: 32.46 psi

Total 487.79 psi

Differential Pressure: 323.68 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 247.04 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.



INVOICE #  
LOCATION  
Supervisor  
Date

90027
Weld
Nick
8/19/201

Customer  
Well Name

Noble Energy Inc.  
Greyson LD 28-773

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### DESCRIPTION OF JOB EVENTS

[illegible] $\gamma$ 

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Work Performed

Title

Date \_\_\_\_\_