



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/11/2016  
Invoice # 80496  
API# 05-123-42885  
Foreman: Matthew Rosales

Customer: Noble Energy Inc.

Well Name: Shadow A26-663

County: Weld  
State: Colorado  
Sec: NWSE  
Twp: 306N  
Range: 63W

Consultant: LANCE  
Rig Name & Number: H&P524  
Distance To Location: 15miles  
Units On Location: 3106, 3203  
Time Requested: 5:30pm  
Time Arrived On Location: 4:00pm  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,923  
Total Depth (ft) : 1928  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 80  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 50  
Landing Joint (ft) : 33

Max Rate: 8  
Max Pressure: 1700

## 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: 8.7  
Fluid Ahead (bbls): 50.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
50h20

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 21.50 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 61.05 cuft  
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 894.00 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1111.00 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 198.00 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 745 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 133.00 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 144.80 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1418.89 PSI

## Pressure of the fluids inside casing

**Displacement:** 846.82 psi

**Shoe Joint:** 36.52 psi

**Total** 883.33 psi

**Differential Pressure:** 535.56 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 200.00 bbls

X *[Signature]*  
Authorization To Proceed



Noble Energy Inc.  
Shadow A26-663

80496
Weld
Matthew Rosales
5/25/2016

X 4/11/16  
Date