



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/27/16  
 Invoice # 80522  
 API# 05-123-42820  
 Foreman: Matthew Rosales

Customer: Noble Energy Inc.  
 Well Name: Lapp A15-629

County: Weld  
 State: Colorado  
 Sec: SWSW  
 Twp: 136N  
 Range: 64W

Consultant: Derrick  
 Rig Name & Number: H&P 524  
 Distance To Location: 14  
 Units On Location: 3106  
 Time Requested: 3:00am  
 Time Arrived On Location: 12:45am  
 Time Left Location: \_\_\_\_\_

## WELL DATA

Casing Size OD (in) : 9.625  
 Casing Weight (lb) : 36.00  
 Casing Depth (ft.) : 1,912  
 Total Depth (ft) : 1921  
 Open Hole Diameter (in.) : 13.50  
 Conductor Length (ft) : 80  
 Conductor ID : 15.25  
 Shoe Joint Length (ft) : 45  
 Landing Joint (ft) : 3

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: 8.3  
 Fluid Ahead (bbls): 50.0  
 H2O Wash Up (bbls): 20.0

### Spacer Ahead Makeup

10H2O, 10Dye, 30H2O

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.00 **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** 880.00 **cuft**  
 (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing  
 Depth - Conductor Length )

**Total Slurry Volume** 1091.00 **cuft**  
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 194.00 **bbls**  
 (Total Slurry Volume) X (.1781)

**Sacks Needed** 733 **sk**  
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 132.00 **bbls**  
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 144.30 **bbls**  
 (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe  
 Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1410.26 **PSI**

## Pressure of the fluids inside casing

**Displacement:** 804.89 **psi**

**Shoe Joint:** 33.20 **psi**

**Total** 838.08 **psi**

**Differential Pressure:** 572.18 **psi**

**Collapse PSI:** 2020.00 **psi**

**Burst PSI:** 3520.00 **psi**

**Total Water Needed:** 300.00 **bbls**

*Xo [Signature]*  
 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.

