



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/10/2016

Invoice # 90064

API# 05-123-40592

Supervisor Nick

Customer: Noble Energy Inc.

Well Name: Remora LC 34-715

County: Weld

State: Colorado

Sec: 34

Twp: 9N

Range: 59W

Consultant: Dave Nielsen

Rig Name & Number: H&P 273

Distance To Location: 55

Units On Location: 3102/4016/4022/3215

Time Requested: 7:00

Time Arrived On Location: 4:00

Time Left Location: 13:45

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 633  
Total Depth (ft) : 643  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 80  
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: 20%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 20.0  
Fluid Ahead (bbls): 40.0  
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** 61.05 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 270.00 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 420.18 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 74.80 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 282 sk

**Mix Water** 50.22 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 45.40 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 466.96 PSI

## Pressure of the fluids inside casing

**Displacement:** 253.97 psi

**Shoe Joint:** 32.46 psi

**Total** 286.42 psi

**Differential Pressure:** 180.54 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 155.62 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.



Noble Energy Inc.  
Remora LC 34-715

90064
Weld
Nick
1/10/2016

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### DESCRIPTION OF JOB EVENTS

X DAVE NIGLSEN  
Work Performed

X 1-10-16  
Date