



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/12/2015  
Invoice #: 80624  
API#: 05-123-41565  
Foreman: JASON KELEHER

Customer: Noble Energy Inc.

Well Name: BRECKEN LD28-734

County: Weld

State: Colorado

Sec: 28

Twp: 9N

Range: 58W

Consultant: DAVE

Rig Name & Number: H&P 273

Distance To Location: 66

Units On Location: 4031-3103/ 4034-3213

Time Requested: 1800

Time Arrived On Location: 1630

Time Left Location: 2300

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,113  
Total Depth (ft) : 1145  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 24

Max Rate: 6  
Max Pressure: 1000

## 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: 23.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
30 BBL WATER/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.53 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 594.29 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 690.13 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 122.91 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 463 sk  
(Total Slurry Volume) + (Cement Yield) X (% Excess Cement)  
Mix Water 82.45 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 84.45 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 821.30 PSI

## Pressure of the fluids inside casing

Displacement: 460.64 psi

Shoe Joint: 33.20 psi

Total 493.84 psi

Differential Pressure: 327.46 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 216.93 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.





INVOICE #  
LOCATION  
FOREMAN  
Date

Noble Energy Inc.
BRECKEN LD28-734

Customer  
Well Name

Treatment Report Page 2

### DESCRIPTION OF JOB EVENTS

[illegible]

X

X	Title
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X	Date
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