



Bison Oil Well Cementing

Tail & Lead

Date: 9/16/2017

Invoice #: 200167

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: hullaballo state y21-775

County: Weld

State: Colorado

Sec: 20

Twp: 9n

Range: 58w

Consultant: john

Rig Name & Number: H&P 517

Distance To Location: 31

Units On Location: 4028/4031

Time Requested: 900 am

Time Arrived On Location: 730 am

Time Left Location: 1:00pm

WELL DATA

Casing Size (in) : 9.625
 Casing Weight (lb) : 36
 Casing Depth (ft) : 1,998
 Total Depth (ft) : 2043
 Open Hole Diameter (in) : 13.50
 Conductor Length (ft) : 80
 Conductor ID : 17
 Shoe Joint Length (ft) : 45
 Landing Joint (ft) : 35

Sacks of Tail Requested: 100
 HOC Tail (ft): 0

One or the other, cannot have quantity in both

Max Rate:

Max Pressure:

Cement Data

Lead

Cement Name: fn3 gel calcium
 Cement Density (lb/gal) : 13.5
 Cement Yield (cuft) : 1.7
 Gallons Per Sack : 9.00
 % Excess : 15%

Tail

Cement Name: bfn 3
 Cement Density (lb/gal) : 15.2
 Cement Yield (cuft) : 1.27
 Gallons Per Sack : 5.89
 % Excess : 0%

Fluid Ahead (bbls) : 153.7
 H2O Wash Up (bbls) : 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead : 1663.11 ft
 Casing Depth - HOC Tail
 Volume of Lead Cement : 812.81 cuft
 HOC of Lead X Open Hole Ann
 Volume of Conductor : 85.68 cuft
 (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
 Total Volume of Lead Cement : 898.49 cuft
 (cuft of Lead Cement) + (Cuft of Conductor)
 bbls of Lead Cement : 184.02 bbls
 (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
 Sacks of Lead Cement : 607.80 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
 bbls of Lead Mix Water : 130.24 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42
 Displacement : 153.67 bbls
 (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
 Total Water Needed: 471.61 bbls

Tail Calculated Results

Tail Cement Volume In Ann : 127.00 cuft
 (HOC Tail) X (OH Ann)
 Total Volume of Tail Cement : 107.47 Cuft
 (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
 bbls of Tail Cement : 22.62 bbls
 (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
 HOC Tail : 219.89 ft
 (Tail Cement Volume) ÷ (OH Ann)
 Sacks of Tail Cement : 100.00 sk
 (Total Volume of Tail Cement) ÷ (Cement Yield)
 bbls of Tail Mix Water : 14.02 bbls
 (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
 Pressure of cement in annulus
 Hydrostatic Pressure : 585.23 PSI
 Collapse PSI: 2020.00 psi
 Burst PSI: 3520.00 psi

X

Authorization To Proceed

SERIES 2000

