



Bison Oil Well Cementing

Tail & Lead

Date: 11/16/2018

Invoice # 200365

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: INDEPENDENCE D30-743

County: Weld

State: Colorado

Sec: 8

Twp: 5N

Range: 62W

Consultant:

gary

Rig Name & Number:

H&P 517

Distance To Location:

22

Units On Location:

4028/4030/4023

Time Requested:

200 pm

Time Arrived On Location:

1130 am

Time Left Location:

6:30 pm

WELL DATA

Casing Size (in) : 9.625
 Casing Weight (lb) : 36
 Casing Depth (ft.) : 1,894
 Total Depth (ft) : 1939
 Open Hole Diameter (in) : 13.50
 Conductor Length (ft) : 110
 Conductor ID : 15.6
 Shoe Joint Length (ft) : 41
 Landing Joint (ft) : 35

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

One or the other, cannot have quantity in both

Max Rate: 8
 Max Pressure: 2500

Cement Data

Lead

Cement Name: BFN III
 Cement Density (lb/gal) : 13.5
 Cement Yield (cuft) : 1.68
 Gallons Per Sack 8.90
 % Excess 15%

Tail Type III

Cement Name:
 Cement Density (lb/gal) : 15.2
 Cement Yield (cuft) : 1.27
 Gallons Per Sack: 5.80
 % Excess: 0%

Fluid Ahead (bbls) 30.0
 H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup

30 BBL ahead with Die in 2nd 10

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 1525.56 ft
 Casing Depth - HOC Tail
 Volume of Lead Cement 745.58 cuft
 HOC of Lead X Open Hole Ann
 Volume of Conductor 90.42 cuft
 (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X
 (Conductor Length ft)
 Total Volume of Lead Cement 836.01 cuft
 (cuft of Lead Cement) + (Cuft of Conductor)
 bbls of Lead Cement 171.23 bbls
 (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
 Sacks of Lead Cement 572.27 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
 bbls of Lead Mix Water 121.27 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42
 Displacement 145.94 bbls
 (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
 Total Water Needed: 331.02 bbls

Tail Calculated Results

Tail Cement Volume In Ann 127.00 cuft
 (HOC Tail) X (OH Ann)
 Total Volume of Tail Cement 109.20 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 223.44 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 13.81 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 *Mary Stokton*
 Authorization To Proceed

