



# Bison Oil Well Cementing Tail & Lead

**Customer:** Noble Energy Inc.  
**Well Name:** Riley LD19-738

**Date:** 10/23/2016  
**Invoice #** 666024  
**API#** 05-123-43481  
**Foreman:** Nick Vigil

**County:** Weld  
**State:** Colorado  
**Sec:** 19  
**Twp:** 9N  
**Range:** 58W

**Consultant:** Justin  
**Rig Name & Number:** H&P 524  
**Distance To Location:** 66 miles  
**Units On Location:** 3104/3215/3214  
**Time Requested:** 14:00  
**Time Arrived On Location:** 14:00  
**Time Left Location:** 18:30

## WELL DATA

Casing Size (in) : 9.625  
Casing Weight (lb) : 40  
Casing Depth (ft.) : 1,945  
Total Depth (ft) : 1955  
Open Hole Diameter (in) : 13.50  
Conductor Length (ft) : 80  
Conductor ID : 15.25  
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:** 8  
**Max Pressure:** 2000

## Cement Data

### Lead

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

### Tail

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

**Fluid Ahead (bbls)** 50.0  
**H2O Wash Up (bbls)** 20.0

**Spacer Ahead Makeup**  
Dye in second 10 bbl

Casing ID

8.835

Casing Grade

J-55 only used

## Lead Calculated Results

**HOC of Lead** 1609.34 ft  
Casing Depth - HOC Tail  
**Volume of Lead Cement** 786.53 cuft  
**HOC of Lead X Open Hole Ann**  
**Volume of Conductor** 61.05 cuft  
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X  
(Conductor Length ft)  
**Total Volume of Lead Cement** 847.58 cuft  
(cuft of Lead Cement) + (Cuft of Conductor)  
**bbls of Lead Cement** 173.60 bbls  
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)  
**Sacks of Lead Cement** 573.37 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
**bbls of Lead Mix Water** 122.86 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42  
**Displacement** 146.67 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)  
**Total Water Needed:** 353.56 bbls

## Tail Calculated Results

**Tail Cement Volume In Ann** 127.00 cuft  
(HOC Tail) X (OH Ann)  
**Total Volume of Tail Cement** 107.84 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** 220.66 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:** 2570.00 psi  
**Burst PSI:** 3950.00 psi

X

Authorization To Proceed

