



# Bison Oil Well Cementing Tail & Lead

Date: 10/27/2014

Invoice # 13039

API# 05-123-37945

Foreman: Calvin Reimers

Customer: Noble Energy

Well Name: Oscar Y 10-73-1HN

Consultant: Kevin / Huey

Rig Name & Number: H&P 277

Distance To Location: 26 Miles

Units On Location: 4023-3104/4018-3204

Time Requested: 700pm

Time Arrived On Location: 550pm

Time Left Location: 11:45pm

County: Weld

State: Colorado

Sec: 10

Twp: 2N

Range: 64W

## WELL DATA

Casing Size (in) : 9.625  
Casing Weight (lb) : 36  
Casing Depth (ft) : 1,129  
Total Depth (ft) : 1160  
Open Hole Diameter (in) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 46  
Landing Joint (ft) : 28

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

One or the other, cannot have quantity in both

Max Rate: 7  
Max Pressure: 2500

## Cement Data

### Lead

Cement Name: BFN III  
Cement Density (lb/gal) : 13.1  
Cement Yield (cuft) : 1.69  
Gallons Per Sack : 8.64  
% Excess : 25%

### Tail

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

Fluid Ahead (bbls) : 85.9  
H2O Wash Up (bbls) : 20.0

### Spacer Ahead Makeup

40bbls H2O+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Lead Calculated Results

HOC of Lead : 781.64 ft  
Casing Depth - HOC Tail  
Volume of Lead Cement : 382.01 cuft  
HOC of Lead X Open Hole Ann  
Volume of Conductor : 89.10 cuft  
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X  
(Conductor Length ft)  
Total Volume of Lead Cement : 471.11 cuft  
(cuft of Lead Cement) + (Cuft of Conductor)  
bbls of Lead Cement : 105.04 bbls  
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)  
Sacks of Lead Cement : 349.00 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
bbls of Lead Mix Water : 71.79 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42  
Displacement : 85.91 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe  
Length)  
Total Water Needed : 277.13 bbls

## Tail Calculated Results

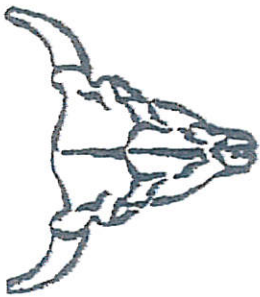
Tail Cement Volume In Ann : 127.00 cuft  
(HOC Tail) X (OH Ann)  
Total Volume of Tail Cement : 107.19 Cuft  
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)  
bbls of Tail Cement : 22.62 bbls  
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (%  
Excess)  
HOC Tail : 219.33 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 : 768.27 PSI  
Collapse PSI: 2020.00 psi  
Burst PSI: 3520.00 psi

X

Authorization To Proceed

Customers hereby acknowledge and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.





Bison Oil Well Cementing  
Two Cement Surface Pipe

Date 10/27/2014  
INVOICE # 13039  
LOCATION Weld  
FOREMAN Calvin Reimers

Customer Noble Energy  
Well Name Oscar Y 10-73-1HN

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DESCRIPTION OF JOB EVENTS

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI
Safety Meeting	914pm														
MIRU	840pm														
CIRCULATE	952pm														
Drop Plug															
1019pm															
M & P															
Time															
1000pm															
1015pm															
Lead mixed bbls	71.79														
Lead % Excess	25%														
Lead Sacks	349														

Notes:

Tail mixed bbls	14.02	1/2 bbl back on bleed off
Tail % Excess	0%	Casing PSI Test 1039pm 1010psi to 1054pm 1050psi
Tail Sacks	100	
Total Sacks	449	
Water Temp	53.1	
bbl Returns	20	

X \_\_\_\_\_  
Work Performed

X \_\_\_\_\_  
Title

X \_\_\_\_\_  
Date