



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/4/2014  
Invoice #: 25016  
API#: 05-123-38604  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: ~~Noble #105-62-1A HNE~~ *Cutthroat LC28-73 HNB*

County: Weld  
State: Colorado  
Sec: 4  
Twp: 6N  
Range: 63W

Consultant: JW/Chris  
Rig Name & Number: H&P 326  
Distance To Location: 66 Miles  
Units On Location: 4023-3104/4027-3204  
Time Requested: 1030pm  
Time Arrived On Location: 925pm  
Time Left Location: 230am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 594  
Total Depth (ft) : 634  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 34

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 30%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 16.0  
Fluid Ahead (bbls): 40.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.54 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 89.10 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 337.76 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 445.40 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 79.33 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 351 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 49.18 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 45.25 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 469.06 PSI

## Pressure of the fluids inside casing

**Displacement:** 237.72 psi

**Shoe Joint:** 33.73 psi

**Total** 271.45 psi

**Differential Pressure:** 197.61 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 154.43 bbls

X

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.



Bison Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

Noble Energy Inc.  
NGLPAA-06-62-1ANN

Cutthroat LC 28-73 HND

INVOICE #  
LOCATION  
FOREMAN  
Date

25016  
Weld  
Calvin Reimers  
7/4/2014

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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	1218am															
MIRU	1140pm															
CIRCULATE	1252am	0	122am	90	0			0			0			0		
Drop Plug		10	125am	150	10			10			10			10		
	121am	20	127am	220	20			20			20			20		
		30	129am	270	30			30			30			30		
		40	131am	280	40			40			40			40		
M & P		50	133am	230	50			50			50			50		
Time	Sacks	60	Bump	450	60			60			60			60		
100am	351	70			70			70			70			70		
117am		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	30%	120			120			120			120			120		
Mixed bbls	49.18	130			130			130			130			130		
Total Sacks	351	140			140			140			140			140		
bbl Returns	16	150			150			150			150			150		
Water Temp	79.1															

Notes:

The day,

Casing PSI Test 134am 1040psi to 149am 990psi

1/2 bbl Back on Bleed off

X WSS  
Work Performed

X WSS  
Title

X July 4, 2014  
Date