



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/24/2014  
Invoice #: 65050  
API#: AFE# 200193  
Foreman: Lee Sharp

Customer: Noble Energy Inc.  
Well Name: Sharpe StateLD02-77HN

County: Weld  
State: Colorado  
Sec: 28  
Twp: 3N  
Range: 68W

Consultant:  
Rig Name & Number: H&P 273  
Distance To Location: 80  
Units On Location: 4027-3106/ 4018-3204  
Time Requested: 11:30  
Time Arrived On Location: 12/23/2014 22:00  
Time Left Location: 10/24/2014 8:30

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,235  
Total Depth (ft) : 1240  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 15.325  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 0

Max Rate:  
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 20%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 30.0  
Fluid Ahead (bbls): 15.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
10F 10D 30F

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 18.87 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
cuft of Conductor 77.56 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
cuft of Casing 665.65 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 762.09 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 135.73 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 511 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 91.09 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 92.11 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 911.06 PSI

## Pressure of the fluids inside casing

Displacement: 513.76 psi

Shoe Joint: 32.08 psi

Total 545.84 psi

Differential Pressure: 365.22 psi

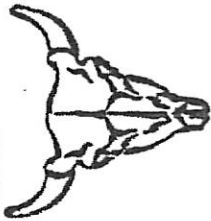
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 218.20 bbls

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

INVOICE #  
LOCATION  
FOREMAN  
Date

65050  
Weld  
Lee Sharp  
12/24/2014

Customer  
Well Name

Noble Energy Inc.  
Sharpe StateLD02-77HN

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DESCRIPTION OF JOB EVENTS

	5:20 4:30 6:00	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting	5:20	0	6:37	0		0		0		0	
MIRU	4:30	10	6:39	10		10		10		10	
CIRCULATE	6:00	20	6:42	20		20		20		20	
Drop Plug		30	6:45	30		30		30		30	
	6:37	40	6:47	40		40		40		40	
		50	6:48	50		50		50		50	
M & P		60	6:50	60		60		60		60	
Time	Sacks	70	6:52	70		70		70		70	
6:05-6:36		80	6:54	80		80		80		80	
		90	6:58	90		90		90		90	
		100	Landed	100		100		100		100	
		110		110		110		110		110	
		120		120		120		120		120	
% Excess	20%	130		130		130		130		130	
Mixed bbls	91	140		140		140		140		140	
Total Sacks	511	150		150		150		150		150	
bbl Returns	30										
Water Temp	70										

Notes:

The day

Job completed smoothly with no issues

plug landed on calculated

final lift 380 bump pressure 990 psi

Floats held 7:05 AM

Work Performed

X *WES*  
Title

X *12/24/14*  
Date