



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/26/2015  
Invoice # 25151  
API# 05-123-40903  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.  
Well Name: Aggie State AA 17-623

County: Weld  
State: Colorado  
Sec: 17  
Twp: 6N  
Range: 63W  
Consultant: Shane  
Rig Name & Number: H&P 273  
Distance To Location: 27 Miles  
Units On Location: 4023-3104/4034-3211  
Time Requested: 1030pm  
Time Arrived On Location: 830pm  
Time Left Location: 315am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 921  
Total Depth (ft) : 951  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 41  
Landing Joint (ft) : 29

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 10%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 18.0  
Fluid Ahead (bbls): 70.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
70bbls H2O+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 17.67 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 441.34 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 548.11 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 97.62 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 368 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 65.51 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 70.31 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 679.38 PSI

## Pressure of the fluids inside casing

Displacement: 379.55 psi

Shoe Joint: 30.02 psi

Total 409.57 psi

Differential Pressure: 269.81 psi

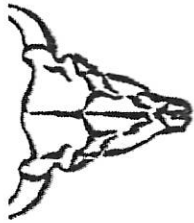
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 225.82 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.



DISCOUNT WELL CEMENTING  
Single Cement Surface Pipe

Customer  
Well Name

Noble Energy Inc.  
Aggie State AA 17-623

INVOICE #  
LOCATION  
FOREMAN  
Date

Weld  
Calvin Reimers  
2/26/2015

Treatment Report Page 2

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	1255am	0	150am	50	0			0			0			0		
MIRU	1215am	10	152am	10	10			10			10			10		
CIRCULATE Drop Plug	118am	20	154am	10	20			20			20			20		
		30	156am	40	30			30			30			30		
		40	158am	170	40			40			40			40		
		50	200am	240	50			50			50			50		
		60	202am	290	60			60			60			60		
Time		Sacks														
131am		70	207am	240	70			70			70			70		
146am		80	Bump	390	80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	10%	120			120			120			120			120		
Mixed bbls	65.5	130			130			130			130			130		
Total Sacks	368	140			140			140			140			140		
bbl Returns	18	150			150			150			150			150		
Water Temp	38.5															

Notes:

The day

1/2 bbl Back on Bleed Off

Casing PSI Test 207am 1000psi to 222am 990psi

*[Signature]*

X

Work Performed

X

Title

*[Signature]*

X

Date

2-26-15