



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/30/2015  
Invoice #: 80020  
API#: 05-123-40915  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.  
Well Name: Colt A 13-635

County: Weld  
State: Colorado  
Sec: 17  
Twp: 6N  
Range: 63W  
Consultant: Shane  
Rig Name & Number: H&P 273  
Distance To Location: 26 Miles  
Units On Location: 4027-3106/4034-3211  
Time Requested: 1000pm  
Time Arrived On Location: 825pm  
Time Left Location: 115am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 914  
Total Depth (ft) : 948  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 45  
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: 12.0  
Fluid Ahead (bbls): 60.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
60bbls+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.33 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 437.71 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 546.14 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 97.27 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 367 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 65.28 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 69.49 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 674.40 PSI

## Pressure of the fluids inside casing

Displacement: 374.98 psi

Shoe Joint: 32.85 psi

Total 407.83 psi

Differential Pressure: 266.57 psi

Collapse PSI: 2020.00 psi

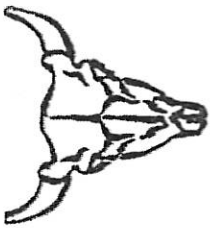
Burst PSI: 3520.00 psi

Total Water Needed: 214.77 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

INVOICE #  
LOCATION  
FOREMAN  
Date

80020  
Weld  
Calvin Reimers  
3/30/2015

Customer  
Well Name

Noble Energy Inc.  
Colt A 13-635

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DESCRIPTION OF JOB EVENTS

	1100pm 1015pm 1125pm	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting		0	1158pm	0		0		0		0	
MIRU		10	1201am	10		10		10		10	
CIRCULATE		20	1203am	20		20		20		20	
Drop Plug		30	1205am	30		30		30		30	
1157pm		40	1207am	40		40		40		40	
		50	1209am	50		50		50		50	
M & P		60	1211am	60		60		60		60	
Time	Sacks	70	1216am	70		70		70		70	
1137pm	367	80	Bump	80		80		80		80	
1155pm		90		90		90		90		90	
		100		100		100		100		100	
		110		110		110		110		110	
% Excess	10%	120		120		120		120		120	
Mixed bbls	65.2%	130		130		130		130		130	
Total Sacks	367	140		140		140		140		140	
bbl Returns	12	150		150		150		150		150	
Water Temp	55.6										

Notes:

The day

1/2 bbl Back on Bleed Off

PSI Test 1123pm 1000psi, Ctr 1125pm 60 bbls With Dye in 2nd 10bbls, Cement 1137pm 367 sks 97.27 bbls Slurry at 14.2 lb. 1.49 Yield Shut Down  
1155pm, Drop Plug 1157pm, Displace 1185pm 69.49 bbls, Land Plug 1216am, 12 bbls Slurry Back to Surface, Casing PSI Test 1217am 1000psi to 1232am

1020psi, Float Held.

X WSS

X

Date

Work Performed