



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/14/2015  
Invoice #: 35107  
API#:   
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: gradishar state Id 11-72-1bhn

County: Weld  
State: Colorado  
Sec:   
Twp:   
Range:

Consultant: steve  
Rig Name & Number: h&p 343  
Distance To Location:   
Units On Location: 4030-3103/4020-3212  
Time Requested: 100 am  
Time Arrived On Location: 1115 pm  
Time Left Location: 4:30 pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,168  
Total Depth (ft) : 1208  
Open Hole Diameter (in) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 35

Max Rate:

Max Pressure:

## Cement Data

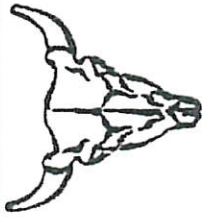
Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 20%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement: 89.68 bbls</b>	
<b>cuft of Shoe 18.66 cuft</b>		<b>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)</b>	
<b>(Casing ID Squared) X (.005454) X (Shoe Joint ft)</b>		<b>Pressure of cement in annulus</b>	
<b>cuft of Conductor 89.10 cuft</b>		<b>Hydrostatic Pressure: 861.63 PSI</b>	
<b>(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)</b>		<b>Pressure of the fluids inside casing</b>	
<b>cuft of Casing 626.36 cuft</b>		<b>Displacement: 485.08 psi</b>	
<b>(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )</b>		<b>Shoe Joint: 31.72 psi</b>	
<b>Total Slurry Volume 734.12 cuft</b>		<b>Total 516.80 psi</b>	
<b>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)</b>		<b>Differential Pressure: 344.83 psi</b>	
<b>bbls of Slurry 130.75 bbls</b>		<b>Collapse PSI: 2020.00 psi</b>	
<b>(Total Slurry Volume) X (.1781)</b>		<b>Burst PSI: 3520.00 psi</b>	
<b>Sacks Needed 493 sk</b>		<b>Total Water Needed: 217.42 bbls</b>	
<b>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)</b>			
<b>Mix Water 87.75 bbls</b>			
<b>(Sacks Needed) X (Gallons Per Sack) ÷ 42</b>			

*[Signature]*  
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 # 35107  
LOCATION Weld  
FOREMAN Kirk Kallhoff  
Date 1/15/2015

Customer  
Well Name  
Noble Energy Inc.  
gradishar state Id 11-72-1bhn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Safety Meeting MIRU CIRCULATE Drop Plug 312 am M & P	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
	205am	0	312am	10	0			0			0			0		
	135am	10	315am	130	10			10			10			10		
	234am	20	317am	100	20			20			20			20		
		30	319am	150	30			30			30			30		
		40	321am	210	40			40			40			40		
		50	323am	270	50			50			50			50		
		60	325am	330	60			60			60			60		
		70	327am	400	70			70			70			70		
		80	329am	440	80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		
% Excess				20%												
Mixed bbls				87.8												
Total Sacks				493												
bbl Returns				22												
Water Temp																

Notes:

bumped plug at 333 am 560 psi

casing test 1000 psi 15 min

X *Steve Reed*

X *W.S.S*  
Title

X *1-15-15*  
Date

Work Performed