



# BISON

Bison Oil Well Cementing Inc.  
1547 Gaylord Street  
Denver, CO 80206  
303-296-3010

## Invoice

Date	Invoice #
8/10/2014	55012

Bill To
Noble Energy Inc. Attn: Accounting 1625 Broadway Ste 2000 Denver, CO 80202

Location	Well Name & No.	Terms	Job Type		
Weld CO	Heartland C30-79HN	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			
Discount 15%	Discount 15%				
MILEAGE	Mileage charge	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	PSI Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	347	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
	Subtotal of Materials				

Please Remit Payment To:

Bison Oil Well Cementing, Inc.  
P.O. Box 29671  
Thornton, CO 80229

Subtotal

Sales Tax

Total

Balance Due



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/10/2014  
Invoice #: 55012  
API#:   
Foreman: monte

Customer: Noble Energy Inc.

Well Name: heartland c30-79hn

County: Weld  
State: Colorado  
Sec: 25  
Twp: 4n  
Range: 65w

Consultant: Devan  
Rig Name & Number: pd 828  
Distance To Location: 9.1  
Units On Location: 4028-3102 4020-3212  
Time Requested: 12:00am  
Time Arrived On Location: 11:00pm  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 691  
Total Depth (ft) : 734  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 90  
Conductor ID : 15.6  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 23

Max Rate: 5  
Max Pressure: 2000

## Cement Data

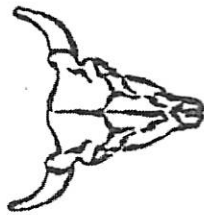
Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 10%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 50.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
10 fresh 10 dye 30 fresh

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement:</b> 51.72 bbls	
cuft of Shoe	19.53	cuft	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
(Casing ID Squared) X (.005454) X (Shoe Joint ft)			
cuft of Conductor	73.98	cuft	(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing	347.66	cuft	(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume	441.18	cuft	(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry	78.57	bbls	(Total Slurry Volume) X (.1781)
Sacks Needed	347	sk	(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water	48.72	bbls	(Sacks Needed) X (Gallons Per Sack) ÷ 42
		<b>Pressure of cement in annulus</b>	
		Hydrostatic Pressure: 545.61 PSI	
		<b>Pressure of the fluids inside casing</b>	
		Displacement: 278.54 psi	
		Shoe Joint: 35.53 psi	
		Total 314.07 psi	
		Differential Pressure: 231.54 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed: 170.44 bbls	

X *[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 #  
LOCATION  
FOREMAN  
Date

55012  
Weld  
monte  
8/10/2014

Customer  
Well Name

Noble Energy Inc.  
heartland c30-79hn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	12:35 12:00 1:03	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		0	1:28	0	0			0			0			0		
MIRU		10	1:30	70	10			10			10			10		
CIRCULATE		20	1:32	160	20			20			20			20		
Drop Plug		30	1:35	220	30			30			30			30		
1:28		40	1:40	310	40			40			40			40		
M & P		50	1:42	270	50			50			50			50		
Time	Sacks	60	1:44	510	60			60			60			60		
1:10-1:28		70			70			70			70			70		
		80			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	48.72	130			130			130			130			130		
Total Sacks	347	140			140			140			140			140		
bbl Returns	8	150			150			150			150			150		
Water Temp	65															

Notes:

Safety Meeting, miru, pressure test per company man circulate 50 bbls ahead with dye in 2nd 10,

mix and pump 347 sksat 10 % excess. drop plug and displace 51.72 bbls h2o

Cassing tese 1000 psi for 15 min

*D. M. Mudd*

X *WSS*

X *8/10/14*

Work Performed

Title

Date