



# BISON

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

## Invoice

Date	Invoice #
12/13/2013	12598

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Scooter D18-7911N	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%				
HOURS	Wait Time	2			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	418	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	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



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/13/2013

Invoice #: 12598

API#: 05-123-37980

Foreman: Calvin Reimers

Customer: Noble

Well Name: Scooter D 18-79HN

County: Weld

State: Colorado

Sec: 18

Twp: 3N

Range: 64W

Consultant: Mike

Rig Name & Number: PD 829

Distance To Location: 13 Miles

Units On Location: 3106/3210

Time Requested: 630pm

Time Arrived On Location: 500pm

Time Left Location: 1230am

## WELL DATA

Casing Size OD (in) : 9.6250  
Casing Weight (lb) : 36  
Casing Depth (ft) : 812  
Total Depth (ft) : 838  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 21

Max Rate: 7

Max Pressure: 2500

## 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: 14.0  
Fluid Ahead (bbls):  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

60bblsH2O+KCL+Dyein 2nd 10bbls

Casing ID

R 921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.45 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 374.60 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 483.15 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 94.65 bbls  
(Total Slurry Volume) X (.1781) X (% Excess Cement)  
Sacks Needed 418 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 58.69 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 60.93 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 641.42 PSI

## Pressure of the fluids inside casing

Displacement: 330.94 psi

Shoe Joint: 35.37 psi

Total 366.32 psi

Differential Pressure: 275.10 psi

Collapse PSI: 2020.00 psi

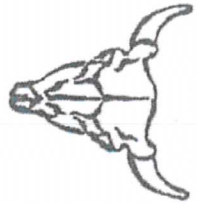
Burst PSI: 3520.00 psi

Total Water Needed: 78.69 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**

Customer  
Well Name

Noble  
Scooter D 18-79HN

INVOICE #  
LOCATION  
FOREMAN  
Date

12598  
Weld  
Calvin Reimers  
12/13/2013

Treatment Report Page 2

**DESCRIPTION OF JOB EVENTS**

Safety Meeting	941pm	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	905pm 1023pm	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI
MIRU		0	1100pm	40	0			0			0			0		
CIRCULATE		10	1102pm	140	10			10			10			10		
Drop Plug		20	1104	210	20			20			20			20		
1059pm		30	1106	280	30			30			30			30		
		40	1108	350	40			40			40			40		
		50	1110pm	400	50			50			50			50		
M & P		60	1115	310	60			60			60			60		
Time	Sacks	70	Bump	410	70			70			70			70		
1035pm	418	80			80			80			80			80		
1056pm		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	10%	130			130			130			130			130		
Mixed bbls	58.68	140			140			140			140			140		
Total Sacks	418	150			150			150			150			150		
bbl Returns	14															

Notes:

The day  
Float Held

X *Michael Maynard*

X  
Title

X  
Date