



# BISON

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

## Invoice

Date	Invoice #
5/6/2014	12192

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Steadfast E27-63-IHN	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	Casing Psi Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	342	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	4	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	10	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: 5/6/2014  
Invoice # 12192  
API#  
Foreman: Kirk Kallhoff

Customer: Noble  
Well Name: steadfast e24-75-1hc

County: weld  
State: Colorado  
Sec: 26  
Twp: 6n  
Range: 65w

Consultant: gary  
Rig Name & Number: pd 828  
Distance To Location: 25  
Units On Location: 3103-3206  
Time Requested: 800 am  
Time Arrived On Location: 700 am  
Time Left Location: 10:00 am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 564  
Total Depth (ft) : 597  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 42  
Landing Joint (ft) : 23

Max Rate:  
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 30%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 40.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 18.23 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 317.21 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 424.54 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 75.61 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 334 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 46.88 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 42.13 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 445.33 PSI

## Pressure of the fluids inside casing

Displacement: 225.08 psi  
Shoe Joint: 33.16 psi  
Total 258.24 psi

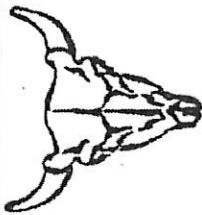
Differential Pressure: 187.09 psi

Collapse PSI: 2020.00 psi  
Burst PSI: 3520.00 psi

Total Water Needed: 149.01 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  
steadfast e24-75-1hc

INVOICE #  
LOCATION  
FOREMAN  
Date

12192  
weld  
Kirk Kallhoff  
5/6/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI
Safety Meeting	808am														
MIRU	737am														
CIRCULATE	832am														
Drop Plug															
900 am															
M & P															
Time	Sacks														
840 am	342														
858 am stop															
% Excess	2%														
Mixed bbls	48														
Total Sacks	342														
bbl Returns	16														
Water Temp															

Notes:

bumped plug at 911 am 470 psi

casing test 1000 psi for 15 min

77.3 bbls slurry

X *Handwritten Signature*

X WSS

X 5-6-14

Work Performed

Title

Date