



# BISON

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

## Invoice

Date	Invoice #
6/24/2014	12050a

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	NCLP AA06-66-1HNC	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%				
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	438	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

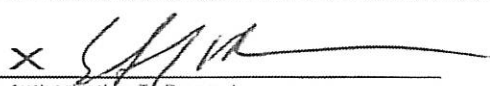
Date: 6/25/2014  
Invoice # 12050  
API#  
Foreman: JASON

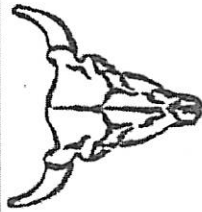
Customer: NOBLE  
Well Name: NCLP AA06-66-1HNC

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

Consultant: SETH  
Rig Name & Number: H&P 343  
Distance To Location: 32  
Units On Location: 4024-3106, 4007-3210  
Time Requested: 2000  
Time Arrived On Location: 1840  
Time Left Location: 330

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 819	Cement Yield (cuft) : 1.27
Total Depth (ft) : 830	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 19%
Conductor Length (ft) : 124	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit: 8.0
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 59.0
Landing Joint (ft) : 24	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	59 BBL H2O+KCL+DYE IN 2ND 10

Casing ID 8.921	Casing Grade J-55 only used
<b>Calculated Results</b>	Displacement: 61.72 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 19.35 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>
cuft of Conductor 101.93 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 646.68 PSI
cuft of Casing 434.93 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	<b>Pressure of the fluids inside casing</b>
Total Slurry Volume 556.21 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 333.92 psi
bbls of Slurry 117.88 qd bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	Shoe Joint: 35.20 psi
Sacks Needed 438 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 369.12 psi
Mix Water 61.42 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 277.57 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 202.14 bbls
<div>X  Authorization To Proceed</div> <p>Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.</p>	



Bison Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

NOBLE  
NCLP AA06-66-1HNC

INVOICE #  
LOCATION  
FOREMAN  
Date

12050  
Weld County  
JASON  
6/25/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	45	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	0	206	0	0			0			0			0		
MIRU		10	208	100	10			10			10			10		
CIRCULATE		20	210	150	20			20			20			20		
Drop Plug		30	212	260	30			30			30			30		
205		40	214	320	40			40			40			40		
		50	216	380	50			50			50			50		
M & P		60	219	380	60			60			60			60		
Time	Sacks	70	BUMP	670	70			70			70			70		
0136-0203	438	80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	0%	120			120			120			120			120		
Mixed bbls	61.4	130			130			130			130			130		
Total Sacks	438	140			140			140			140			140		
bbl Returns	8	150			150			150			150			150		
Water Temp	69															

Notes:

The day

PUMPED 59 BBL H2O AHEAD, 2ND 10 WITH DYE, MIX AND PUMP 438 SKS AT 15.2, 99 BBLs OF SLURRY, RELEASED PRESSURE AND GOT .25 BBLs BACK

ARRIVED ON LOCATION RELEAVING OTHER PUMP TRUCK WHICH WENT DOWN AT 2200. STARTED PUMPING AT 0100. APPROXIMATELY 3 HOUR NPT

*[Signature]*

X *WSS*

X

Work Performed

Title

Date