



# BISON

## Invoice

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

Date	Invoice #
7/11/2014	55000

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	NCLP AA06-65-1AHNC	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	478	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: 7/11/2014  
 Invoice # 55000  
 API# \_\_\_\_\_  
 Foreman: monte

Customer: Noble Energy Inc.  
 Well Name: NCLP AA06-65-1AHNC

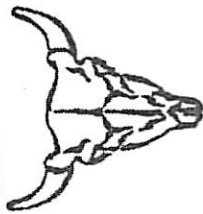
County: Weld Consultant: ROBERT  
 State: Colorado Rig Name & Number: h&p 277  
 Distance To Location: 31.6  
 Sec: 4 Units On Location: 4022-3102 4007-3210  
 Twp: 6n Time Requested: 2:30am  
 Range: 63w Time Arrived On Location: 12:30  
 Time Left Location: 5:30

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>15.2</u>
Casing Depth (ft.) : <u>744</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>832</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>13.75</u>	% Excess: <u>49%</u>
Conductor Length (ft) : <u>124</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.6</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>44</u>	Fluid Ahead (bbls): <u>50.0</u>
Landing Joint (ft) : <u>28</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>5</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>10 fresh 10 dye 30 fresh</u>

Calculated Results	Pressure of cement in annulus
Displacement: <u>56.28 bbls</u> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	Hydrostatic Pressure: <u>587.46 PSI</u>
cuft of Shoe <u>19.10</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of the fluids inside casing
cuft of Conductor <u>101.93</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Displacement: <u>301.83 psi</u>
cuft of Casing <u>485.81</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Shoe Joint: <u>34.74 psi</u>
Total Slurry Volume <u>606.84</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Total <u>336.57 psi</u>
bbls of Slurry <u>108.08</u> bbls (Total Slurry Volume) X (.1781)	Differential Pressure: <u>250.89 psi</u>
Sacks Needed <u>478</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: <u>2020.00 psi</u>
Mix Water <u>67.01</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>193.29 bbls</u>

X Robert Nichols  
 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 # 55000  
 LOCATION Weld monte  
 FOREMAN  
 Date 7/11/2014

Customer  
 Well Name  
 Noble Energy Inc.  
 NCLP AA06-65-1AHNC

Treatment Report Page 2

**DESCRIPTION OF JOB EVENTS**

	3:00	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5		
		BBSL	Time	PSI	BBSL	Time	PSI	BBSL	Time	PSI	BBSL	Time
Safety Meeting	3:00	0	4:08	0	0	0	0	0	0	0	0	
MIRU	2:15	10	4:10	40	10	10	10	10	10	10	10	
CIRCULATE	3:20	20	4:12	120	20	20	20	20	20	20	20	
Drop Plug	4:05	30	4:14	150	30	30	30	30	30	30	30	
		40	4:16	230	40	40	40	40	40	40	40	
M & P		50	4:18	260	50	50	50	50	50	50	50	
Time		60	4:21	460	60	60	60	60	60	60	60	
3:35-4:05	Sacks	70			70	70	70	70	70	70	70	
		80			80	80	80	80	80	80	80	
		90			90	90	90	90	90	90	90	
		100			100	100	100	100	100	100	100	
		110			110	110	110	110	110	110	110	
% Excess	49%	120			120	120	120	120	120	120	120	
Mixed bbls	67.01	130			130	130	130	130	130	130	130	
Total Sacks	478	140			140	140	140	140	140	140	140	
bbl Returns		150			150	150	150	150	150	150	150	
Water Temp	72.5											

Notes:

safety meeting, miru, pressure test per company man, circulate 50 bbls ahead with dye in 2nd 10, mix and pump 478 sks cement, drop plug and displace 57.5 bbls h2o

X *Robert Adams*  
 Work Performed

X *WSS*  
 Title

X *7-11-14*  
 Date