



BISON

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

Invoice

Date	Invoice #
6/21/2014	12047

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	NCLP AA06-62-IHNA	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 Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	542	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	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

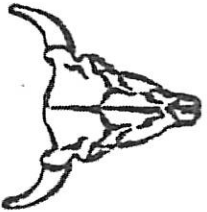
Date: 6/20/2014
Invoice #: 12047
API#
Foreman: Kirk Kallhoff

Customer: Noble
Well Name: nclp aa06-62-1hna

County: weld
State: Colorado
Sec: 4
Twp: 6n
Range: 63w
Consultant: lane
Rig Name & Number: h&p322
Distance To Location: 30
Units On Location: 3103-3205
Time Requested: 130 am
Time Arrived On Location: 1100 pm
Time Left Location:

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) : 806	Cement Yield (cuft) : 1.27
Total Depth (ft) : 846	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 30%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit:
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 60.0
Landing Joint (ft) : 30	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID 8.921	Casing Grade J-55 only used
Calculated Results	Displacement: 61.31 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 89.10 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 636.42 PSI
cuft of Casing 482.66 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 590.42 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 328.99 psi
bbls of Slurry 105.15 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.95 psi
Sacks Needed 465 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 362.94 psi
Mix Water 65.20 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 273.47 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 206.50 bbls
 X 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
nc/p aa06-62-1hna

INVOICE #
LOCATION
FOREMAN
Date

12047
weld
Kirk Kallhoff
6/21/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Safety Meeting MIRU CIRCULATE Drop Plug 253 am M & P Time	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
	110am	0	253am	10	0			0			0			0		
	135am	10	256am	120	10			10			10			10		
	210am	20	258am	160	20			20			20			20		
		30	300am	210	30			30			30			30		
		40	302am	270	40			40			40			40		
		50	304am	330	50			50			50			50		
		60	308am	310	60			60			60			60		
		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		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		
% Excess	17%															
Mixed bbls	76															
Total Sacks	542															
bbl Returns	2															
Water Temp																

Notes:

bumped plug at 309 am 520 psi 70 % excess 122.5 bbls slurry

casing test 1000 psi for 15 min

X

X MET WSS
Title

X 6-21-14
Date