



BISON

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

Invoice

Date	Invoice #
11/20/2013	12555

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Timbro State LD16-6611N	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	420			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	506	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	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 (2.87%)	
Total	
Balance Due	

BISON OIL WELL CEMENTING, INC.

1738 Wynkoop St., Ste. 102
Denver, Colorado 80202
Phone: 303-296-3010
Fax: 303-298-8143
E-mail: bisonoil1@qwestoffice.net



SERVICE INVOICE

Nº 12555

WELL NO. AND FARM <i>Timbro State LD 16-LLH</i>	COUNTY <i>Weld</i>	STATE <i>CO</i>	DATE <i>11-20-13</i>
CHARGE TO <i>Noble</i>	WELL LOCATION SEC. <i>16</i> TWP. <i>9N</i> RANGE <i>5E</i>		CONTRACTOR <i>H&P 326</i>
DELIVERED TO <i>127 104</i>		LOCATION <i>1 shop</i>	CODE
SHIPPED VIA <i>3163-3263</i>		LOCATION <i>2/27-104</i>	CODE
TYPE AND PURPOSE OF JOB <i>Surf Face Pipe</i>		LOCATION <i>3 shop</i>	CODE
		WELL TYPE <i>CAS</i>	CODE

PRICE REFERENCE	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
	Pump charge	1	each		
	BFA ID 3 1/2 RCA 1 1/2 Sbs per sk BFLT-1	506	Sbs		
	BLLT-1	5	QTS		
	mileage 1 1/2 per mile 70 mile men round trip	3	mi		
	Prod Dye	10	oz		
	Date Acc				

RIG NAME & NUMBER <i>H&P 326</i>
WELL NAME & NUMBER <i>Timbro State LD 16-LLH</i>
AGE NUMBER <i>139486</i>
TASK (DRL, COMP, WID, P&A) <i>DPL</i>
EXP TYPE
ACTG CODE <i>1.1 0017</i>
DOLLAR TOTAL BEING APPVD <i>812107.10</i>
FIELD APPROVAL <i>[Signature]</i>
DATE <i>11/20/13</i>
ROUTE TO APPROVER <i>[Signature]</i>
TAX REFERENCES
MAIL TO NOBLE ENERGY INC. ATTN: ACCOUNTS PAYABLE 1625 BROADWAY, SUITE 2200 DENVER, CO 80202

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

"TAXES WILL BE ADDED TO THE TOTAL AMOUNT DUE" ATTACHED SIGNED FIELD TICKETS

[Signature]
Customer or His Agent

[Signature]
Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse side hereof which include the release and indemnity.

SUBJECT TO CORRECTION



Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy
Well Name: timbro state ld 16-66

Date: 11/19/2013
Invoice #: 12555
API#:
Foreman: kirk

County: Weld
State: Colorado
Sec: 16
Twp: 9n
Range: 58w

Consultant: chris
Rig Name & Number: h&p 326
Distance To Location:
Units On Location: 3103-3203
Time Requested: 430 am
Time Arrived On Location: 330 am
Time Left Location: 1:30 pm

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft) : 1,195 Total Depth (ft) : 1235 Open Hole Diameter (in) : 13.75 Conductor Length (ft) : 90 Conductor ID : 15.5 Shoe Joint Length (ft) : 40 Landing Joint (ft) : 30</p> <p>Sacks of Tail Requested : 100 HOC Tail (ft) : 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: Max Pressure: </p>	<p>Lead</p> <p>Cement Name: Cement Density (lb/gal) : 13.1 Cement Yield (cuft) : 1.69 Gallons Per Sack : 8.64 % Excess : 30%</p> <p>Tail</p> <p>Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack : 5.89 % Excess : 20%</p> <p>Fluid Ahead (bbls) : 91.6 H2O Wash Up (bbls) : 20.0</p> <p>Spacer Ahead Makeup</p>

Casing ID	8 921	Casing Grade	1-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	866.52 ft	Tail Cement Volume In Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	455.69 cuft	Total Volume of Tail Cement	109.64 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	72.46 cuft	bbls of Tail Cement	27.14 bbls
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
Total Volume of Lead Cement	528.14 cuft	HOC Tail	208.48 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	122.28 bbls	Sacks of Tail Cement	100.00 sk
(Total cuft of Lead Cement) X (.1781) X (1+Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement	406.26 sk	bbls of Tail Mix Water	14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water	83.57 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	813.20 PSI
Displacement	91.60 bbls		
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Collapse PSI:	2020.00 psi
Total Water Needed:	195.17 bbls	Burst PSI:	3520.00 psi

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.