



BISON

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

Invoice

Date	Invoice #
8/22/2014	35022

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Five Rivers K09-65-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	PSI Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	321	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	4	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

Total

Balance



Bison Oil Well Cementing
1547 Gaylord Street
Denver, CO 80206

FIELD INVOICE #

35022

FIELD INVOICE

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor
five rivers k09-65-1hn	Weld	Colorado	8/22/2014	h&p 315
CHARGE TO	WELL LOCATION			
Noble Energy Inc.	Section	TWP	RANGE	
	9	4n	66w	
Attn: Accounting	DELIVERED TO		LOCATION 1	CODE
1625 Broadway Ste 2000	46-29		shop	
Denver, CO 80202	SHIPPED VIA		LOCATION 2	CODE
	4030-3103/4018-3204		46-29	
	TYPE AND PURPOSE OF JOB		LOCATION 3	CODE
	SURFACE		shop	
			WELL TYPE	CODE
			gas	

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					\$
SURFACE		1	ea		
MILLEAGE CHARGE					
Pickup	\$1.50 per Mile	360	ea		
CEMENT CHARGE:					
BEN III		321	sack		
ADDITIVES CHARGE:					
Red Dye		16	oz		
KCL		4	qts		
Float Equipment:					
PSI Test		1	ea		
DATA ACQUISITION FEE		1	ea		

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%.

TAX

SUBJECT TO CORRECTION

Customer or Agent

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 hereof which include the release and indemnity.



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/22/2014
 Invoice # 35022
 API#
 Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: five rivers k09-65-1hn

County: Weld
 State: Colorado
 Sec: 9
 Twp: 4n
 Range: 66w

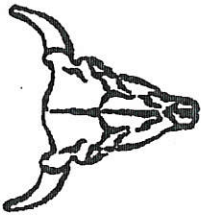
Consultant: john t
 Rig Name & Number: h&p 315
 Distance To Location: 10
 Units On Location: 4030-3103/4018-3204
 Time Requested: 830pm
 Time Arrived On Location: 745 pm
 Time Left Location: 12:00 9/5

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>597</u>	Cement Yield (cuft) :	<u>1.27</u>
Total Depth (ft) :	<u>632</u>	Gallons Per Sack:	<u>5.89</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>30%</u>
Conductor Length (ft) :	<u>100</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>16</u>	BBL to Pit:	
Shoe Joint Length (ft) :	<u>45</u>	Fluid Ahead (bbls):	<u>40.0</u>
Landing Joint (ft) :	<u>30</u>	H2O Wash Up (bbls):	<u>20.0</u>
Max Rate:		Spacer Ahead Makeup	
Max Pressure:			

Casing ID	<u>8.921</u>	Casing Grade	<u>J-55 only used</u>
Calculated Results		Displacement: <u>44.99</u> bbls	
cuft of Shoe	<u>19.53</u> cuft	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor	<u>89.10</u> cuft	Hydrostatic Pressure:	<u>471.39</u> PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	<u>315.77</u> cuft	Displacement:	<u>238.01</u> psi
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	<u>35.53</u> psi
Total Slurry Volume	<u>424.40</u> cuft	Total	<u>273.54</u> psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	<u>197.85</u> psi
bbls of Slurry	<u>75.59</u> bbls	Collapse PSI:	<u>2020.00</u> psi
(Total Slurry Volume) X (.1781)		Burst PSI:	<u>3520.00</u> psi
Sacks Needed	<u>334</u> sk	Total Water Needed:	<u>151.86</u> bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	<u>46.86</u> bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

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 Energy Inc.
five rivers k09-65-1hn

INVOICE #
LOCATION
FOREMAN
Date

35022
Weld
Kirk Kallhoff
8/22/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	1005pm 930pm 1025pm	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		0	1056pm	10	0			0			0			0		
MIRU		10	1059pm	70	10			10			10			10		
CIRCULATE		20	1101pm	140	20			20			20			20		
Drop Plug		30	1103pm	200	30			30			30			30		
1056pm		40	1106pm	250	40			40			40			40		
		50			50			50			50			50		
M & P		60			60			60			60			60		
Time		70			70			70			70			70		
1035pm	Sacks	80			80			80			80			80		
1053 pm stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	25%	120			120			120			120			120		
Mixed bbls	45	130			130			130			130			130		
Total Sacks	321	140			140			140			140			140		
bbl Returns	12	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 1110 pm 450 psi 72.6 bbls slurry

casing test 1500 psi 15 min

cement avg 4.0 bbls min

disp avg 3.2 bbls min

X *John M Taylor*

X *Co. Man*

X *8-22-14*

WorkPerformed