BISON

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

Invoice

Date	Invoice #
6/17/2014	12070a

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

Location	Well Name & No.	Terms	Job Type
Weld CO	Trisha LC29-75HNB	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%				
HOURS	Wait Time	2			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	402	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	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 D	

Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 6/18/2014
Invoice # 12070
API# 05-123-38780
Foreman: JASON

Customer: NOBLE
Well Name: TRISHA LC 29-75HNB

County: Weld County
State: Colorado
Sec: 29
Twp: 9N
Range: 59W

Consultant: DAVE
Rig Name & Number: H&P 273
Distance To Location: 68
Units On Location: 4027-3106, 4031-3203
Time Requested: 930
Time Arrived On Location: 900
Time Left Location: 1530

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	598
Total Depth (ft) :	632
Open Hole Diameter (in.) :	13.75
Conductor Length (ft) :	100
Conductor ID :	15.25
Shoe Joint Length (ft) :	45
Landing Joint (ft) :	29
Max Rate:	7
Max Pressure:	2500

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	59%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	19.0
Fluid Ahead (bbls):	40.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
40 BBL H2O+KCL+DYE IN 2ND 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.49 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 76.31 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 415.27 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 511.07 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 91.6 ~~144.27~~ bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 402 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 56.43 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 45.03 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 472.35 PSI

Pressure of the fluids inside casing
Displacement: 238.58 psi
Shoe Joint: 35.45 psi
Total 274.03 psi

Differential Pressure: 198.32 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 161.47 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

INVOICE #	12070
LOCATION	Weld County
FOREMAN	JASON
Date	6/18/2014

Customer	NOBLE
Well Name	TRISHA LC 29-75HNB

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	1310	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	1230	0	1423	0	0			0			0			0		
CIRCULATE		10	1425	70	10			10			10			10		
Drop Plug		20	1428	200	20			20			20			20		
1423		30	1430	270	30			30			30			30		
		40	1432	320	40			40			40			40		
M & P		50	1435	250	50			50			50			50		
Time	Sacks	60	BUMP	610	60			60			60			60		
1343-1420	402	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		
% Excess	0%	120			120			120			120			120		
Mixed bbls	56.4	130			130			130			130			130		
Total Sacks	402	140			140			140			140			140		
bbl Returns	19	150			150			150			150			150		
Water Temp	68															

Notes:

The day

PUMPED 40 BBL H2O AHEAD, SECOND 10 WITH DYE, MIX AND PUMP 402 SKS AT 15.2, 91.6 BBLS OF SLURRY, RELEASED PRESSURE AND GOT .25 BBL BACK

X [signature]	X CO-Man	X 6-18-14
Work Preformed	Title	Date