



BISON

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

Invoice

Date	Invoice #
5/23/2014	25001

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Trisha LC29-74HNB	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	402			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	363	Sack		
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 Due



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/23/2014
Invoice #: 25001
API#: 05-123-38778
Foreman: Calvin Reimers

Customer: Noble Energy Inc.
Well Name: Trisha LC 29-74 HNB

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

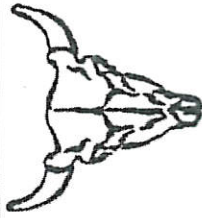
Consultant: Mike
Rig Name & Number: H&P 273
Distance To Location: 67 Miles
Units On Location: 4023-3104/4027-3212
Time Requested: 1200am
Time Arrived On Location: 1035pm
Time Left Location: 415am

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) :	593	Cement Yield (cuft) :	1.27
Total Depth (ft) :	626	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	13.75	% Excess:	36%
Conductor Length (ft) :	100	Displacement Fluid lb/gal:	8.3
Conductor ID :	16	BBL to Pit:	17.0
Shoe Joint Length (ft) :	45	Fluid Ahead (bbls):	40.0
Landing Joint (ft) :	30	H2O Wash Up (bbls):	20.0
Max Rate:	7	Spacer Ahead Makeup	
Max Pressure:	2500	10bbls H2O+KCL+Dye in 2nd 10bbls	

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 44.66 bbls	
cuft of Shoe	19.50	(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	89.10	Hydrostatic Pressure: 467.96 PSI	
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	352.34	Displacement: 236.17 psi	
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint: 35.47 psi	
Total Slurry Volume	460.94	Total 271.64 psi	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure: 196.32 psi	
bbls of Slurry	82.09	Collapse PSI: 2020.00 psi	
(Total Slurry Volume) X (.1781)		Burst PSI: 3520.00 psi	
Sacks Needed	363	Total Water Needed: 155.56 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	50.90		
(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

INVOICE # 25001
LOCATION Weld
FOREMAN Calvin Reimers
Date 5/23/2014

Customer Noble Energy Inc.
Well Name Trisha LC 29-74 HNB

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	233am 145am 241am	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI
Safety Meeting		0	311am	70	0			0			0			0		
MIRU		10	314am	140	10			10			10			10		
CIRCULATE		20	316am	190	20			20			20			20		
Drop Plug		30	317am	240	30			30			30			30		
310am		40	320am	240	40			40			40			40		
		50	323am	220	50			50			50			50		
M & P		60	Bump	380	60			60			60			60		
Time	Sacks	70			70			70			70			70		
248am		80			80			80			80			80		
307am		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	36%	130			130			130			130			130		
Mixed bbls	50.9	140			140			140			140			140		
Total Sacks	363	150			150			150			150			150		
bbl Returns	17															
Water Temp	62.8															

Notes:

The day

1/2 bbl back on bleed off

X

X

X 5-23-14
Date

Work Performed