



# BISON

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

## Invoice

Date	Invoice #
12/18/2013	12600

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Guttersen St.DD17-79HN	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 PSI Test	1			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	435	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	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 (2.5%)	
Total	
Balance	



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/18/2013  
Invoice #: 12600  
API#: 05-123-38012  
Foreman: Calvin Reimers

Customer: Noble  
Well Name: Gutttersen State DD 17-79HN

County: Weld  
State: Colorado

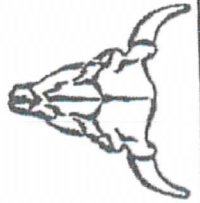
Sec: 17  
Twp: 3N  
Range: 63W

Consultant: Shane  
Rig Name & Number: H&P 322  
Distance To Location: 25 Miles  
Units On Location: 3106/3211  
Time Requested: 1200am  
Time Arrived On Location: 1130pm  
Time Left Location: 400am

WELL DATA		Cement Data	
Casing Size OD (in) :	9.6250	Cement Name:	BFN III
Casing Weight (lb) :	36	Cement Density (lb/gal) :	15.2
Casing Depth (ft.) :	806	Cement Yield (cuft) :	1.27
Total Depth (ft) :	839	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	13.75	% Excess:	15%
Conductor Length (ft) :	100	Displacement Fluid lb/gal:	8.3
Conductor ID :	18	BBL to Pit:	21.0
Shoe Joint Length (ft) :	46	Fluid Ahead (bbls):	
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
<b>Calculated Results</b>		<b>Displacement: 61.11 bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	19.78 cuft	<b>Pressure of cement in annulus</b>	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Hydrostatic Pressure:	636.37 PSI
cuft of Conductor	89.10 cuft	<b>Pressure of the fluids inside casing</b>	
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Displacement:	327.85 psi
cuft of Casing	371.24 cuft	Shoe Joint:	35.99 psi
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Total	363.84 psi
Total Slurry Volume	480.12 cuft	Differential Pressure:	272.53 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Collapse PSI:	2020.00 psi
bbls of Slurry	98.34 bbls	Burst PSI:	3520.00 psi
(Total Slurry Volume) X (.1781) X (% Excess Cement)		Total Water Needed:	80.97 bbls
Sacks Needed	435 sk		
(Total Slurry Volume) + (Cement Yield) X (% Excess Cement)			
Mix Water	60.97 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
<p>x <i>Shane Reimers</i> Authorization To Proceed</p> <p>Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.</p>			





Bison Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

Noble  
Guttersen State DD 17-79HN

INVOICE #  
LOCATION  
FOREMAN  
Date

12600  
Weld  
Calvin Reimers  
12/18/2013

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Time	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	121am															
MIRU	1240am															
CIRCULATE	202am	0	239am	80	0			0			0			0		
Drop Plug		10	242am	120	10			10			10			10		
		20	244am	210	20			20			20			20		
		30	246am	280	30			30			30			30		
		40	247am	360	40			40			40			40		
		50	249am	410	50			50			50			50		
M & P		60	252am	310	60			60			60			60		
		70	253am	320	70			70			70			70		
214am	435	80	Bump	550	80			80			80			80		
234am		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	15%	130			130			130			130			130		
Mixed bbls	60.97	140			140			140			140			140		
Total Sacks	435	150			150			150			150			150		
bbl Returns																

Notes:

The day

Float Held Casing PSI Test 255am 1020psi to 310am 1030psi

X *[Signature]*

X  
Title

X  
Date