



# BISON

## Invoice

Date	Invoice #
6/6/2014	25005

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

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Eagle E14-65-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	Casing PSI test	1			
HOURS	Wait Time	2.5			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	340	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 Due



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/6/2014  
Invoice #: 25005  
API#: 05-123-38096  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.  
Well Name: Eagle E 14-65-1HN

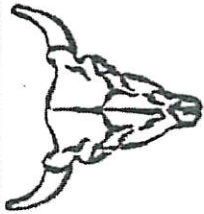
County: Weld  
State: Colorado  
Sec: 14  
Twp: 6N  
Range: 65W  
Consultant: Derick  
Rig Name & Number: H&P 330  
Distance To Location: 19 Miles  
Units On Location: 4023-3104/4022-3212  
Time Requested: 1000am  
Time Arrived On Location: 815am  
Time Left Location: 430pm

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) : 635	Cement Yield (cuft) : 1.27
Total Depth (ft) : 675	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 : 16	BBL to Pit: 8.0
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 50.0
Landing Joint (ft) : 33	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:</b>	48.21 bbls
cuft of Shoe	19.36	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		<b>Pressure of cement in annulus</b>	
cuft of Conductor	89.10	Hydrostatic Pressure:	501.36 PSI
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of the fluids inside casing</b>	
cuft of Casing	323.52	Displacement:	254.54 psi
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	35.22 psi
Total Slurry Volume	431.98	Total	289.77 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	211.59 psi
bbls of Slurry	76.94		
(Total Slurry Volume) X (.1781)		Collapse PSI:	2020.00 psi
Sacks Needed	340	Burst PSI:	3520.00 psi
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		Total Water Needed:	165.91 bbls
Mix Water	47.70		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

*John M. Taylor*  
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 # 25005  
LOCATION Weld  
FOREMAN Calvin Reimers  
Date 6/6/2014

Customer Noble Energy Inc.  
Well Name Eagle E 14-65-1HN

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	2:15pm 8:45am 2:53pm	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	323pm	110	0			0			0			0		
MIRU		10	325pm	110	10			10			10			10		
CIRCULATE		20	327pm	160	20			20			20			20		
Drop Plug		30	329pm	200	30			30			30			30		
		40	331pm	270	40			40			40			40		
		50	336pm	340	50			50			50			50		
M & P		60	Bump	450	60			60			60			60		
Time		70			70			70			70			70		
303pm		80			80			80			80			80		
319pm		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	15%	120			120			120			120			120		
Mixed bbls	47.7	130			130			130			130			130		
Total Sacks	340	140			140			140			140			140		
bbl Returns	8	150			150			150			150			150		
Water Temp	76.4															

Notes:

The day

1/2 bbl Back on Bleed off

Casing PSI Test 336pm 1060 psi to 351pm 1090 psi

X John M Taylor Title WBS Date