



# BISON

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

## Invoice

Date	Invoice #
10/27/2014	12186a

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Rhon State LD10-65-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	420			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	Casing Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	510	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	3	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	10	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 Due



**Bison Oil Well Cementing  
Tail & Lead**

Customer: Noble Energy  
Well Name: rohn state Id 10-65-1hn

Date: 10/27/2014  
Invoice # 12186  
API#   
Foreman: kirk

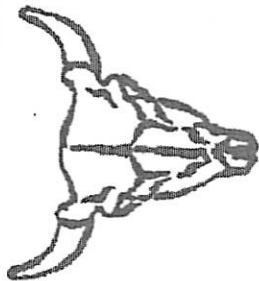
County: Weld Consultant: bo  
State: Colorado Rig Name & Number: pd 829  
Sec: 4 Distance To Location:   
Twp: 9n Units On Location: 4030-3103/4018-3204  
Range: 58w Time Requested: 800 am  
Time Arrived On Location: 700 am  
Time Left Location:

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft.) : 1,215 Total Depth (ft) : 1245 Open Hole Diameter (in) : 13.75 Conductor Length (ft) : 100 Conductor ID : 16 Shoe Joint Length (ft) : 40 Landing Joint (ft) : 20</p> <p>Sacks of Tail Requested 100 HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: Max Pressure:</p>	<p><b>Lead</b></p> <p>Cement Name: bfn III 3% Cement Density (lb/gal) : 13.1 Cement Yield (cuft) : 1.69 Gallons Per Sack 8.64 % Excess 25%</p> <p><b>Tail</b></p> <p>Cement Name: bfn III 3% Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.89 % Excess: 0%</p> <p>Fluid Ahead (bbls) 30.0 H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup</p>

Casing ID 8.921	Casing Grade J-55 only used
<b>Lead Calculated Results</b>	<b>Tail Calculated Results</b>
HOC of Lead 886.52 ft	Tail Cement Volume In Ann 127.00 cuft
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
Volume of Lead Cement 466.21 cuft	Total Volume of Tail Cement 109.64 Cuft
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 89.10 cuft	bbls of Tail Cement 22.62 bbls
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement 555.30 cuft	HOC Tail 208.48 ft
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 123.62 bbls	Sacks of Tail Cement 100.00 sk
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	(Total Volume of Tail Cement) ÷ (Cement Yield)
Sacks of Lead Cement 410.73 sk	bbls of Tail Mix Water 14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water 84.49 bbls	Pressure of cement in annulus
(Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 826.81 PSI
Displacement 92.37 bbls	Collapse PSI: 2020.00 psi
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Burst PSI: 3520.00 psi
Total Water Needed: 134.49 bbls	

X [Signature]  
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  
Two Cement Surface Pipe

Date 10/27/2014  
INVOICE # 12186  
LOCATION Weld  
FOREMAN kirk

Customer Noble Energy  
Well Name rohn state ld 10-65-1hn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	931 am 715 am 958 am	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS
Safety Meeting		0	1038am	10	0			0			0
MIRU		10	1040am	60	10			10			10
CIRCULATE		20	1043am	60	20			20			20
Drop Plug		30	1045am	80	30			30			30
1038 am		40	1047am	120	40			40			40
		50	1049am	190	50			50			50
M & P		60	1051am	250	60			60			60
Time	Sacks	70	1100am	310	70			70			70
1005 am	510	80	1110am	320	80			80			80
1035 am stop		90	1113am	360	90			90			90
		100			100			100			100
		110			110			110			110
		120			120			120			120
Lead mixed bbls	84.4	130			130			130			130
Lead % Excess	25%	140			140			140			140
Lead Sacks	410	150			150			150			150

Notes:

Tail mixed bbls	14	BUMPED PLUG at 1115 am 530 PSI	123.6 bbls slurry lead	22.6 bbls slurry tail.
Tail % Excess	0%			
Tail Sacks	100			
Total Sacks	510			
bbl Returns	26			

X *[Signature]*

X W.S.S.

X 10-27-14

Work Performed

Title

Date