



# BISON

## Invoice

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

Date	Invoice #
4/6/2014	12137

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Wells Ranch <del>At 35-62-1A1NC</del>	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%				
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	399	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	3	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	8	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: 4/6/2014  
Invoice #: 12137  
API#:   
Foreman: LEE SHARP

Customer: NOBLE  
Well Name: WELL RANCH AA35-62-1AHNC

County: WELD  
State: Colorado

Sec: 36  
Twp: 6N  
Range: 63W

Consultant:  
Rig Name & Number: H&P 277  
Distance To Location: 33  
Units On Location: 4027-3106; 4031-3204  
Time Requested: 2:00 PM  
Time Arrived On Location: 1:05  
Time Left Location:

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.) : 598	Cement Yield (cuft) : 1.27
Total Depth (ft) : 604	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 42%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.5	BBL to Pit: 0.0
Shoe Joint Length (ft) : 40	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 24	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	KCL30 BBL= 10F+10 DYE+10F

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement:</b>	<b>44.97 bbls</b>
<b>cuft of Shoe</b> 17.34 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor</b> 80.51 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of cement in annulus</b>	
<b>cuft of Casing</b> 261.68 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		<b>Hydrostatic Pressure:</b> 471.86 PSI	
<b>Total Slurry Volume</b> 359.53 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Pressure of the fluids inside casing</b>	
<b>bbls of Slurry</b> 90.93 bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)		<b>Displacement:</b> 240.44 psi	
<b>Sacks Needed</b> 402 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		<b>Shoe Joint:</b> 31.55 psi	
<b>Mix Water</b> 56.38 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		<b>Total</b> 272.00 psi	
		<b>Differential Pressure:</b> 199.87 psi	
		<b>Collapse PSI:</b> #N/A psi	
		<b>Burst PSI:</b> #N/A psi	
		<b>Total Water Needed:</b> 151.34 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.





INVOICE #	LOCATION	FOREMAN	Date
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Customer  
Well Name

NOBLE  
WELL RANCH AA35-62-1AHNC

Treatment Report Page 2

12137  
WELD  
LEE SHAR  
4/6/201

## DESCRIPTION OF JOB EVENTS

[illegible]

The day JOB WENT WELL... COMPANY MANY GOT MORE BARRELS BACK THAN HE WANTED. 30 bbl SHOULD HAVE BEEN 40bbl 10 10DYE 10 10

X *[Signature]*  
Work Performed

X 455

X 4-6-14