



BISON

Invoice

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

Date	Invoice #
2/21/2014	12068

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 AA35-64-1AHNA	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 Test	1			
HOURS	Wait Time	1			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	335	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	4	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	



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/21/2014
 Invoice # 12068
 API# 05-123-38657
 Foreman: Calvin Reimers

Customer: Noble
 Well Name: Wells Ranch AA 35-64-1AHNA

County: Weld
 State: Colorado
 Sec: 3G
 Twp: 6N
 Range: 63W

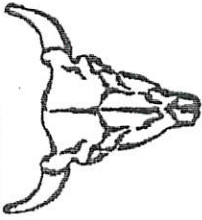
Consultant: Johnny/Seth
 Rig Name & Number: H&P 343
 Distance To Location: 33 Miles
 Units On Location: 3103/3205
 Time Requested: 1030pm
 Time Arrived On Location: 1030pm
 Time Left Location: 330am

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>15.2</u>
Casing Depth (ft.) : <u>601</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>634</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>13.75</u>	% Excess: <u>15%</u>
Conductor Length (ft) : <u>100</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>16</u>	BBL to Pit: <u>15.0</u>
Shoe Joint Length (ft) : <u>41</u>	Fluid Ahead (bbls): <u>40.0</u>
Landing Joint (ft) : <u>29</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>7</u>	Spacer Ahead Makeup
Max Pressure: <u>2500</u>	<u>10bbls H2O+KCL+Dye in 2nd 10bbls</u>

Calculated Results	Pressure of cement in annulus
Casing ID <u>8.921</u> Casing Grade <u>J-55 only used</u>	Displacement: <u>45.45 bbls</u> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe <u>17.95</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Hydrostatic Pressure: <u>474.31 PSI</u>
cuft of Conductor <u>89.10</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of the fluids inside casing
cuft of Casing <u>263.31</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Displacement: <u>241.18 psi</u>
Total Slurry Volume <u>370.35</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Shoe Joint: <u>32.65 psi</u>
bbls of Slurry <u>75.85</u> bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	Total <u>273.83 psi</u>
Sacks Needed <u>335</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Differential Pressure: <u>200.48 psi</u>
Mix Water <u>47.03</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Collapse PSI: <u>#N/A psi</u>
	Burst PSI: <u>#N/A psi</u>
	Total Water Needed: <u>152.48 bbls</u>

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
Single Cement Surface Pipe**

Customer
Well Name

Noble
Wells Ranch AA 35-64-1AHNA

INVOICE #
LOCATION
FOREMAN
Date

12068
Weld
Calvin Reimers
2/21/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	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	118am														
MIRU	1215am														
CIRCULATE	144am	0	213am	50			0			0			0		
Drop Plug		10	216am	130			10			10			10		
		20	217am	230			20			20			20		
		30	219am	290			30			30			30		
		40	221am	260			40			40			40		
		50	224am	240			50			50			50		
M & P		60	Bump	440			60			60			60		
Time		70					70			70			70		
152am		80					80			80			80		
209am		90					90			90			90		
		100					100			100			100		
		110					110			110			110		
		120					120			120			120		
% Excess	15%	130					130			130			130		
Mixed bbls	47.02	140					140			140			140		
Total Sacks	335	150					150			150			150		
bbl Returns	15														
Water Temp	36.6														

Notes:

The day

Float Held

1/2 bbl back on bleed off

Casing PSI Test 225am 1010psi to 240am 1030psi

[Signature]

X *WSS*

X

X Work Performed

Title

Date