



BISON

Invoice

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

Date	Invoice #
2/23/2014	12069

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 AA35-67-1AHNA	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			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	342	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: 2/23/2014
Invoice #: 12069
API#: 05-123-38654
Foreman: Calvin Reimers

Customer: Noble
Well Name: Wells Ranch AA 35-67-1AHNA

County: Weld
State: Colorado
Sec: 36
Twp: 6N
Range: 63W

Consultant: Mike
Rig Name & Number: H&P 322
Distance To Location: 32 Miles
Units On Location: 3103/3210
Time Requested: 130am
Time Arrived On Location: 1230am
Time Left Location: 500am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 644
Total Depth (ft) : 678
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 28

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 10%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 5.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.32 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 89.10 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 286.14 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 394.56 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 77.30 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)
Sacks Needed 342 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 47.93 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 48.52 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 508.60 PSI

Pressure of the fluids inside casing

Displacement: 258.54 psi

Shoe Joint: 35.14 psi

Total 293.68 psi

Differential Pressure: 214.92 psi

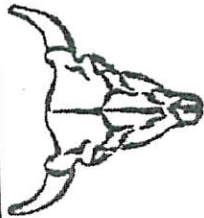
Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 166.45 bbls

X *Chas*
Authorized 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 35-67-1AHNA

INVOICE #
LOCATION
FOREMAN
Date

12069
Weld
Calvin Reimers
2/23/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	259am 230am 343am	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	415am	80	0			0			0			0		
MIRU		10	418am	90	10			10			10			10		
CIRCULATE		20	419am	160	20			20			20			20		
Drop Plug		30	421am	230	30			30			30			30		
414am		40	423am	250	40			40			40			40		
		50	428am	240	50			50			50			50		
M & P		60	Bump	530	60			60			60			60		
Time		70			70			70			70			70		
353am		80			80			80			80			80		
410am		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	10%	130			130			130			130			130		
Mixed bbls	47.93	140			140			140			140			140		
Total Sacks	342	150			150			150			150			150		
bbl Returns	5															
Water Temp	28.4															

Notes:

The day

Float Held

1/2 bbl back on bleed off

Casing PSI Test 429am 1010psi to 444am 970psi

Calvin Reimers

X *WRS*
Title

X *2/23/14*
Date

Work Performed