



BISON

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

Invoice

Date	Invoice #
5/6/2014	12252

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	STORIS E24-78-1HN	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			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	434	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
Sugar	Sugar	100	lb		
	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

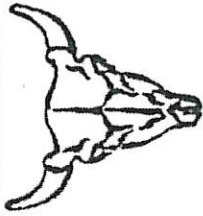
Date: 5/6/2014
Invoice # 12252
API#
Foreman: monte

Customer: noble
Well Name: stories E24-78-1hn

County: weld
State: Colorado
Sec: 24
Twp: 6n
Range: 65w
Consultant: hewey
Rig Name & Number: H&P 330
Distance To Location: 24.9
Units On Location: 4028-3202/4031-3210
Time Requested: 5:30
Time Arrived On Location: 4:00
Time Left Location: 10:00

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) : 759	Cement Yield (cuft) : 1.27
Total Depth (ft) : 769	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 30%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit: 0.0
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 60.0
Landing Joint (ft) : 33	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	10 fresh 10 dye 40 fresh

Casing ID 8.921	Casing Grade J-55 only used
Calculated Results	Displacement: 57.92 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 18.58 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 82.20 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 599.31 PSI
cuft of Casing 450.53 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 551.31 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 308.81 psi
bbls of Slurry 98.19 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.79 psi
Sacks Needed 434 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 342.61 psi
Mix Water 60.88 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 256.70 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 198.80 bbls
<div>Signature: [Signature] Authorization To Proceed</div> <p>Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.</p>	



Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #
LOCATION
FOREMAN
Date

12252
weld
monte
5/6/2014

Customer
Well Name

noble
stories E24-78-1hn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	8:10 7:45 8:26	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	9:05	0	0			0			0			0		
MIRU		10	9:08	50	10			10			10			10		
CIRCULATE		20	9:10	100	20			20			20			20		
Drop Plug		30	9:13	220	30			30			30			30		
9:02		40	9:16	240	40			40			40			40		
M & P		50	9:18	270	50			50			50			50		
Time		60	9:20	630	60			60			60			60		
8:40-9:02	Sacks	70			70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	0%	130			130			130			130			130		
Mixed bbls	60.88	140			140			140			140			140		
Total Sacks	434	150			150			150			150			150		
bbl Returns	22															
Water Temp	71															

Notes:

safty meeting, miru. Pressure test per company man. Circulate 60 bbls ahead with dye in 2nd 10, mix and pump 434 sks at 30 % excess, drop plug and displace 57.9 b

X

X

X

Work Prepared

Title

Date