



# BISON

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

## Invoice

Date	Invoice #
10/18/2013	12724

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 AE20-68-1HN	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%				
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	513	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	7	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 (2.5%)	
Total	
Balance Due	



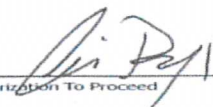
# Bison Oil Well Cementing Single Cement Surface Pipe

Invoice # 12724  
API# 445564  
Foreman: monte

Customer: noble  
Well Name: wells ranch ae20-65-1hn

County: Weld County  
State: Colorado  
Sec: 20  
Twp: 6n  
Range: 62w  
Consultant: johnny  
Rig Name & Number: major  
Distance To Location: 33  
Units On Location: 3106-2312  
Time Requested: 300pm  
Time Arrived On Location: 400  
Time Left Location: 1130

WELL DATA		Cement Data	
Casing Size OD (in) :	9.6250	Cement Name:	BFN III
Casing Weight (lb) :	36	Cement Density (lb/gal) :	15.2
Casing Depth (ft) :	929	Cement Yield (cuft) :	1.27
Total Depth (ft) :	964.2	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	13.75	% Excess:	22%
Conductor Length (ft) :	100	Displacement Fluid lb/gal:	
Conductor ID :	15.5	BBL to Pit:	
Shoe Joint Length (ft) :	41	Fluid Ahead (bbls):	
Landing Joint (ft) :		H2O Wash Up (bbls):	20.0
Max Rate:		Spacer Ahead Makeup	
Max Pressure:		10 fresh 10 dye 50 fresh	

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement:	68.67 bbls
cuft of Shoe 17.78 cuft		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor 80.51 cuft		Hydrostatic Pressure:	733.74 PSI
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing 436.10 cuft		Displacement:	#N/A psi
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	32.34 psi
Total Slurry Volume 534.38 cuft		Total	#N/A psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	#N/A psi
bbls of Slurry 116.11 bbls		Collapse PSI:	2020.00 psi
(Total Slurry Volume) X (.1781) X (% Excess Cement)		Burst PSI:	3520.00 psi
Sacks Needed 513 sk		Total Water Needed:	91.99 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water 71.99 bbls			
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
<div>X  Authorization To Proceed</div>			
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, INC.

1547 Gaylord Street  
Denver, Colorado 80206  
Phone: 303-296-3010  
Fax: 303-298-8143  
E-mail: bisonoil1@qwestoffice.net



INVOICE #  
LOCATION  
FOREMAN

12724  
68+69  
monte

## TREATMENT REPORT

DATE	WELL NAME	SECTION	TWP	RGE	COUNTY
10-19-13	Wells Ranch AE20-6S-1H	20	6N	62W	Weld
BILL TO		CONSULTANT			
Noble		Johnny			
OWNER		RIG NAME & NUMBER			
		HAP343			
MAILING ADDRESS		DISTANCE TO LOCATION		UNITS ON LOCATION	
		33		3156-3212	
CITY		TIME REQUESTED		TIME ARRIVED ON LOCATION	
		3:00 PM		4:00 PM	
STATE, ZIP		TIME LEFT LOCATION			
		11:45 PM			
WELL DATA			Cement Makeup		
HOLE SIZE	TUBING SIZE	PERFORATIONS	Cement Blend		
13 3/4			BFN# 390 BCC-1 2556 BFLA-1		
TOTAL DEPTH	TUBING DEPTH	SHOTS/FT	Cement - Specs	lbs	Yield
964				15.2	1.27
CASING SIZE	TUBING WEIGHT	OPEN HOLE	Annulus Factor	Capacity Factor	
9 5/8			65259	10773	
CASING DEPTH	TUBING CONDITION	TREATMENT VIA	TYPE OF TREATMENT		
929			<input checked="" type="checkbox"/> Surface Pipe <input type="checkbox"/> Production <input type="checkbox"/> Squeeze <input type="checkbox"/> MISC Pump <input type="checkbox"/> P&A		
CASING WEIGHT	PACKER DEPTH		HYD HHP = RATE X PRESSURE / 40.8		
36			% Excess    22 BBL to Pit    2		
CASING CONDITION	good				
Max Rate					
Max Pressure					

## DESCRIPTION OF JOB EVENTS

safety meeting mFRU Pressure test Per Company man Circulate 200bbls Ahead  
with Dye in 2nd 10 min + Pump 484 SKS drop plug + Disp 68.6 bbls H<sub>2</sub>O  
Pump plug 150 PSI above 1.0 ft Pressure Casing test 40 1000 PSI for  
15 min Release Pressure wash up Rig down

x Monte  
Authorization To Proceed

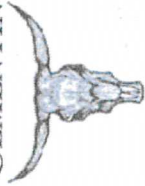
Title

x 10-19-13  
Date

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse side hereof which include the release and indemnity.



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## Treatment Report Page 2

### DESCRIPTION OF JOB EVENTS

Safety Meeting	445 P 420	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
MIRU		0	042	110	0			0			0			0		
CIRCULATE		10	045	80	10			10			10			10		
Drop Plug		20	047	150	20			20			20			20		
600		30	049	220	30			30			30			30		
		40	052	280	40			40			40			40		
M & P		50	058	350	50			50			50			50		
Time	Sacks	60	057	380	60			60			60			60		
655	485	700	070	510	70			70			70			70		
645		80			80			80			80			80		
TOP OF C	11	90			90			90			90			90		
955		100			100			100			100			100		
1004 STOP		110			110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		

#### Notes:

circulate 70 bbls ahead with dye in 2nd 10  
m it r POND 495 SKS cement at 3390 excess  
drop plug + Disp 68.87 bbls H2O  
Bump Plug + Pressure to 1000 PSI Hold 15 min Release Pressure  
top off with 78 SKS to surface  
wash up Rig down

X Title

X 10-19-13 Date