



# BISON

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

## Invoice

Date	Invoice #
1/29/2014	12307

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Oscar Y10-78-IHC	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	380			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
HOURS	Wait Time	7			
Service Charge	Cassing Test	1			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	512	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	3	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  
Tail & Lead**

Customer: noble  
Well Name: oscar y10-72-1hc

Date: 1/29/2014  
Invoice #: 12307  
API#: 445564  
Foreman: monte

County: weld  
State: Colorado  
Sec: 10  
Twp: 2n  
Range: 64w

Consultant: huey  
Rig Name & Number: h & p 322  
Distance To Location: 25.5  
Units On Location: 3106 - 3202  
Time Requested: 8:30  
Time Arrived On Location: 7:45  
Time Left Location:

**WELL DATA**

Casing Size (in) : 9.625  
Casing Weight (lb) : 36  
Casing Depth (ft) : 1,149  
Total Depth (ft) : 1156  
Open Hole Diameter (in) : 13.75  
Conductor Length (ft) : 130  
Conductor ID : 15.5  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 30

Sacks of Tail Requested : 100  
HOC Tail (ft) : 0

One or the other, cannot have quantity in both

Max Rate:  
Max Pressure:

**Cement Data**

**Lead**

Cement Name: bfn 111 3%bcc-1 .25%bfla-1  
Cement Density (lb/gal) : 13.1  
Cement Yield (cuft) : 1.69  
Gallons Per Sack : 6.64  
% Excess : 25%

**Tail**

Cement Name:  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack : 5.89  
% Excess : 0%

Fluid Ahead (bbls) : 30.0  
H2O Wash Up (bbls) : 20.0

Spacer Ahead Makeup  
20 fresh 10 dye

Casing ID

R 921

Casing Grade

J-55 only used

**Lead Calculated Results**

HOC of Lead : 782.99 ft  
Casing Depth - HOC Tail  
Volume of Lead Cement : 411.76 cuft  
HOC of Lead X Open Hole Ann  
Volume of Conductor : 104.66 cuft  
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
Total Volume of Lead Cement : 516.42 cuft  
(cuft of Lead Cement) + (Cuft of Conductor)  
bbls of Lead Cement : 114.97 bbls  
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)  
Sacks of Lead Cement : 381.97 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
bbls of Lead Mix Water : 60.39 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42  
Displacement : 87.81 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)  
Total Water Needed: 110.39 bbls

**Tail Calculated Results**

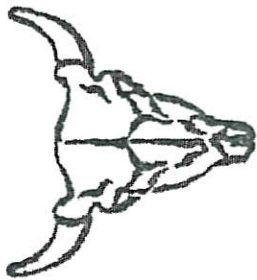
Tail Cement Volume In Ann : 127.00 cuft  
(HOC Tail) X (OH Ann)  
Total Volume of Tail Cement : 108.34 Cuft  
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)  
bbls of Tail Cement : 22.62 bbls  
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)  
HOC Tail : 206.01 ft  
(Tail Cement Volume) ÷ (OH Ann)  
Sacks of Tail Cement : 100.00 sk  
(Total Volume of Tail Cement) ÷ (Cement Yield)  
bbls of Tail Mix Water : 14.02 bbls  
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42  
Pressure of cement in annulus  
Hydrostatic Pressure : 781.89 PSI  
Collapse PSI: 2020.00 psi  
Burst PSI: 3520.00 psi

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.





Bison Oil Well Cementing  
Two Cement Surface Pipe

Date 41668  
INVOICE # 12307  
LOCATION weld  
FOREMAN monte

Customer  
Well Name

noble  
oscar y10-72-1hc

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	2:20pm	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	1:45	0	3:37	20	0			0			0			0		
MIRU	2:53	10	3:39	90	10			10			10			10		
CIRCULATE		20	3:41	90	20			20			20			20		
Drop Plug		30	3:43	100	30			30			30			30		
3:37		40	3:45	110	40			40			40			40		
		50	3:47	210	50			50			50			50		
M & P		60	3:49	270	60			60			60			60		
Time		70	3:51	340	70			70			70			70		
2:55 3:34		80	3:53	390	80			80			80			80		
		90	3:55	790	90			90			90			90		
		100			100			100			100			100		
		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		
Lead mixed bbls	60.39															
Lead % Excess	25%															
Lead Sacks	382															

Notes:

14.02 circulate 30 bbls ahead with dye in last 10, mix and pump 382 sks lead cement, 13.1, 1.69 yield, 8.64 h2o  
0% mix and pump 100 sks tail cement at 15.2, 1.27 yield, 5.89 h2o  
100 displace 87.81 bbls h2o, bump plug at 3:55 pm at 790 psi, raise to 1000 psi hold 15 min, release pressure hook up 1 stick 1" pipe.  
mix and pump 30 sks to surface 2 bbls back to pit wash up rig down  
#VALUE!

Total Sacks 482

bbl Returns 33

X  Title

X Date