



# BISON

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

## Invoice

Date	Invoice #
11/8/2013	12734

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

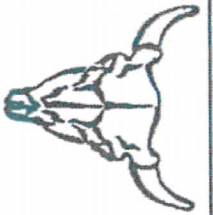
Location	Well Name & No.	Terms	Job Type		
Weld CO	Crow Creek St. AC36-72-HN	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			
Discount 15%	Discount 15%				
MILEAGE	Mileage charge	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	341	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%				
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 (2.0%)	
Total	
Balance Due	

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement:</b> 47.99 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	17.05	cuft	<b>Pressure of cement in annulus</b>
(Casing ID Squared) X ( .005454) X (Shoe Joint ft)			
cuft of Conductor	99.83	cuft	<b>Hydrostatic Pressure:</b> 498.24 PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)			
cuft of Casing	266.62	cuft	<b>Pressure of the fluids inside casing</b>
(Open Hole Squared)-(Casing Size Squared) X ( .005454) X (Casing Depth - Conductor Length )			
Total Slurry Volume	383.50	cuft	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)			
bbls of Slurry	77.18	bbls	<b>Displacement:</b> #N/A psi  <b>Shoe Joint:</b> 31.02 psi
(Total Slurry Volume) X (.1781) X (% Excess Cement)			
Sacks Needed	341	sk	<b>Total</b> #N/A psi  <b>Differential Pressure:</b> #N/A psi
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	47.85	bbls	<b>Collapse PSI:</b> 2020.00 psi  <b>Burst PSI:</b> 3520.00 psi
(Sacks Needed) X (Gallons Per Sack) ÷ 42			<b>Total Water Needed:</b> 67.85 bbls



**Bison Oil Well Cementing**  
**Single Cement Surface Pipe**

Customer  
Well Name

noble  
cow creek state 36-72-hn

INVOICE #  
LOCATION  
FOREMAN

12734  
weld  
monte

Treatment Report Page 2

**DESCRIPTION OF JOB EVENTS**

Safety Meeting	5:20am	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	4:30	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	6:05	0	6:44	10	0			0			0			0		
CIRCULATE		10	6:47	10	10			10			10			10		
Drop Plug		20	6:50	100	20			20			20			20		
		30	6:52	150	30			30			30			30		
		40	6:54	200	40			40			40			40		
M & P		50	6:55	700	50			50			50			50		
Time		60			60			60			60			60		
	6:12	70			70			70			70			70		
		80			80			80			80			80		
6:39 stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	13%	120			120			120			120			120		
Mixed bbls	48	130			130			130			130			130		
Total Sacks	342	140			140			140			140			140		
		150			150			150			150			150		
bbl Returns	8-Jan															

Notes:

8 back to pit, 13 % excess, bumped at 6:55 am at 700 psi, casing tese to 1000 for 15 min

X *[Signature]*

X *WSS*

X *11-9-13*



# M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume

