



BISON

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

Invoice

Date	Invoice #
5/8/2014	12194

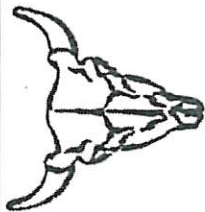
Bill To
Noble Energy Inc. Attn: Accounting 1625 Broadway Ste 2000 Denver, CO 80202

Location	Well Name & No.	Terms	Job Type		
Weld CO	Rico LC29-74-1HNA	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	420			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	Casing Psi Test	1			
HOURS	Wait Time	1.5			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	371	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	4	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	10	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



Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE # 12194
LOCATION weld
FOREMAN Kirk Kallhoff
Date 5/8/2014

Customer
Well Name

Noble
rico lc29-74-1hna

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	315am 250am 340am	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI
Safety Meeting		0	418am	10	0			0			0			0		
MIRU		10	421am	50	10			10			10			10		
CIRCULATE		20	423am	140	20			20			20			20		
Drop Plug		30	425am	210	30			30			30			30		
418 am		40	427am	240	40			40			40			40		
M & P		50			50			50			50			50		
Time	Sacks	60			60			60			60			60		
348 am	371	70			70			70			70			70		
415 am stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	4%	120			120			120			120			120		
Mixed bbls	52	130			130			130			130			130		
Total Sacks	371	140			140			140			140			140		
bbl Returns	10	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 431 am 420 psi

83.9 bbls slurry

casing test 1000 psi for 15 min

[Signature]
Work Performed

X *NEF WSS*
Title

X 5-8-14
Date



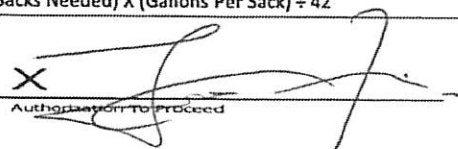
Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/8/2014
Invoice #: 12194
API#:
Foreman: Kirk Kallhoff

Customer: Noble
Well Name: rico lc29-74-1hna

County: weld
State: Colorado
Sec: 26
Twp: 6n
Range: 65w
Consultant: justin
Rig Name & Number: h&p 273
Distance To Location: 35
Units On Location: 3103-3204
Time Requested: 1200 am
Time Arrived On Location: 1200 am
Time Left Location: 5:30 pm

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) : 603	Cement Yield (cuft) : 1.27
Total Depth (ft) : 640	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 : 16	BBL to Pit:
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 40.0
Landing Joint (ft) : 30	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID 8.921	Casing Grade J-55 only used
Calculated Results	Displacement: 45.61 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 89.10 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 476.13 PSI
cuft of Casing 343.88 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 451.64 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 241.46 psi
bbls of Slurry 80.44 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.95 psi
Sacks Needed 356 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 275.41 psi
Mix Water 49.87 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 200.71 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 155.48 bbls
 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.	