BISON

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

Invoice

Date	Invoice #
9/12/2014	35037

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

Location	Well Name & No.	Terms	Job Type
Weld CO	Coalview G02-66-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%				
Service Charge	PSI Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	342	Sack		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	15	oz		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
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 Ta	
Total	
Balance Due	

Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 9/12/2014
Invoice # 35037
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: coalview g02-66-1hn

County: Weld
State: Colorado
Sec: 1
Twp: 4n
Range: 65w

Consultant: jim
Rig Name & Number: h&p 343
Distance To Location: 10
Units On Location: 4030-3103/3105-3210
Time Requested: 300 am
Time Arrived On Location: 130 am
Time Left Location: 7:00 am

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	643
Total Depth (ft) :	684
Open Hole Diameter (in.) :	13.75
Conductor Length (ft) :	100
Conductor ID :	16
Shoe Joint Length (ft) :	40
Landing Joint (ft) :	0
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe	17.36	cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		
cuft of Conductor	89.10	cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		
cuft of Casing	371.22	cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		
Total Slurry Volume	477.68	cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		
bbls of Slurry	85.07	bbls
(Total Slurry Volume) X (.1781)		
Sacks Needed	376	sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		
Mix Water	52.75	bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42		

Displacement:	46.62 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
Pressure of cement in annulus	
Hydrostatic Pressure:	507.71 PSI
Pressure of the fluids inside casing	
Displacement:	260.00 psi
Shoe Joint:	31.58 psi
Total	291.59 psi
Differential Pressure:	216.13 psi
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi
Total Water Needed:	169.36 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.

Bison Oil Well Cementing
Single Cement Surface Pipe

Customer	Noble Energy Inc.
Well Name	coalview g02-66-1hn

INVOICE #	35037
LOCATION	Weld
FOREMAN	Kirk Kallhoff
Date	9/12/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	508am	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	440am	0	556am	10	0			0			0			0		
CIRCULATE	525am	10	559am	70	10			10			10			10		
Drop Plug		20	601am	130	20			20			20			20		
556 am		30	603am	200	30			30			30			30		
		40	606am	250	40			40			40			40		
M & P		50			50			50			50			50		
Time	Sacks	60			60			60			60			60		
535 am	342	70			70			70			70			70		
553 am stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	11%	120			120			120			120			120		
Mixed bbls	48	130			130			130			130			130		
Total Sacks	342	140			140			140			140			140		
bbl Returns	14	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 613 am 500 psi

77.3 bbls slurry

casing test 1000 psi 15 min

X _____
Work Preformed

X _____
Title

X 9-18-14
Date