



BISON

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

Invoice

Date	Invoice #
12/9/2013	12560

Bill To

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Guttersen State DD17-79-1	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 Winter ...	BFN III Blend	410	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	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 (2.9%)

Total

Balance



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/9/2013
Invoice #: 12560
API#:
Foreman: Kirk

Customer: noble
Well Name: guttersen state dd17-79-1hn

County: weld
State: Colorado
Sec: 17
Twp: 3n
Range: 63w

Consultant: huey
Rig Name & Number: h&p 322
Distance To Location:
Units On Location: 3103-3210
Time Requested: 430 am
Time Arrived On Location: 230 am
Time Left Location: 12:00 pm

WELL DATA

Casing Size OD (in) : 9.6250
Casing Weight (lb) : 36
Casing Depth (ft) : 814
Total Depth (ft) : 851
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 40
Landing Joint (ft) : 27

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):
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

1-55 only used

Calculated Results

cuft of Shoe 17.36 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 80.51 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 375.48 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 473.35 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 109.59 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)
Sacks Needed 485 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 67.95 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

AUTHORIZED REPRESENTATIVE

Displacement: 61.92 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 642.73 PSI

Pressure of the fluids inside casing

Displacement: 333.73 psi

Shoe Joint: 31.58 psi

Total 365.32 psi

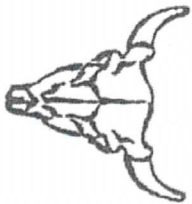
Differential Pressure: 277.42 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 87.95 bbls

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
Well Name

noble
guttersen state dd17-79-1hn

INVOICE #
LOCATION
FOREMAN
Date

12560
weld
Kirk
12/9/2013

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1104am	605am	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	445am 1020am	BBLS	Time	PSI	BBLS	Time	PSI	BLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
		0	1104	40	0			0			0			0		
		10	1107	90	10			10			10			10		
		20	1109	130	20			20			20			20		
		30	1111	150	30			30			30			30		
		40	1113	200	40			40			40			40		
M & P		50	1115	230	50			50			50			50		
		60	1118	220	60			60			60			60		
Time	Sacks	70			70			70			70			70		
1038 am	410	80			80			80			80			80		
1100 am stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	10%	130			130			130			130			130		
Mixed bbls	57.5	140			140			140			140			140		
Total Sacks	410	150			150			150			150			150		
bbl Returns	23															

Notes:

bumped plug at 1121 am 500 psi

X
Work Performed

[Signature]

X
Title

X
Date

12-9-13