



BISON

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

Invoice

Date	Invoice #
4/2/2014	12352

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Oscar Y10-77-1HC	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	525	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	3	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 Due



Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy
Well Name: oscar y 10-77-1hc

Date: 4/2/2014
Invoice # 12352
API#
Foreman: kirk

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

Consultant: bo
Rig Name & Number: pd 828
Distance To Location:
Units On Location: 3103-3203
Time Requested: 500 am
Time Arrived On Location: 330 am
Time Left Location: 12:30 pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft) : 1,150
Total Depth (ft) : 1180
Open Hole Diameter (in) : 13.75
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 20

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:
Cement Density (lb/gal) : 13.1
Cement Yield (cuft) : 1.69
Gallons Per Sack : 8.64
% Excess : 40%

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

Fluid Ahead (bbls) : 87.2
H2O Wash Up (bbls) : 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

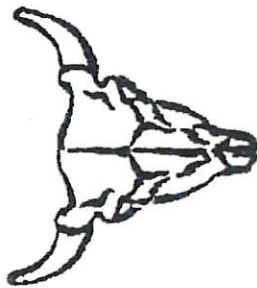
HOC of Lead : 823.58 ft
Casing Depth - HOC Tail
Volume of Lead Cement : 433.11 cuft
HOC of Lead X Open Hole Ann
Volume of Conductor : 80.51 cuft
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
Total Volume of Lead Cement : 513.61 cuft
(cuft of Lead Cement) + (Cuft of Conductor)
bbls of Lead Cement : 128.06 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
Sacks of Lead Cement : 425.48 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
bbls of Lead Mix Water : 87.53 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42
Displacement : 87.16 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
Total Water Needed : 194.68 bbls

Tail Calculated Results

Tail Cement Volume in Ann : 127.00 cuft
(HOC Tail) X (OH Ann)
Total Volume of Tail Cement : 108.55 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 : 206.42 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 : 782.58 PSI
Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

X Mary Stopleton
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

Customer
Well Name

Noble Energy
oscar y 10-77-1hc

Date
INVOICE #
LOCATION
FOREMAN

4/2/2014

12352

Weld

kirk

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting	1025am	0	1131a	0		0		0		0	
MIRU	1003am	10	1134a	10		10		10		10	
CIRCULATE	1048am	20	1135a	20		20		20		20	
Drop Plug		30	1137a	30		30		30		30	
1131 am		40	1139a	40		40		40		40	
		50	1141a	50		50		50		50	
M & P		60	1142a	60		60		60		60	
Time	Sacks	70	1144a	70		70		70		70	
1054 am	525	80	1146a	80		80		80		80	
1129 amstop		90		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	

Notes:

Tail mixed bbls	14	BUMPED PLUG at 1150 am 470 PSI	128 bbls slurry lead	22.6 bbls slurry tail
Tail % Excess	0%	water from rig was soapy had algicide in it		
Tail Sacks	100			
Total Sacks	525			
bbl Returns	12			

X Navy Stetson
Work Performed

X WSS
Title

X 4-2-14
Date