Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 1/5/2015
Invoice # 65054
API# 445564
Foreman: lee Sharp

Customer: Noble Energy Inc.
Well Name: Mahalo State AA00974-1BHNB

County: Weld
State: Colorado

Sec: 28
Twp: 3N
Range: 68W

Consultant: John D
Rig Name & Number: 829
Distance To Location: 30
Units On Location: 4027-3106/
Time Requested: 1400
Time Arrived On Location: 1300
Time Left Location: 2230

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	836
Total Depth (ft) :	846
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	65
Conductor ID :	15.325
Shoe Joint Length (ft) :	46
Landing Joint (ft) :	0
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.49
% Excess:	0%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	0.0
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	19.75	cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		
cuft of Conductor	50.42	cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		
cuft of Casing	376.81	cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		
Total Slurry Volume	446.98	cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		
bbls of Slurry	79.61	bbls
(Total Slurry Volume) X (.1781)		
Sacks Needed	300	sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		
Mix Water	53.50	bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42		

Displacement: 61.11 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 616.72 PSI

Pressure of the fluids inside casing

Displacement:	340.85 psi
Shoe Joint:	33.57 psi
Total	374.41 psi
Differential Pressure:	242.30 psi
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi

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.

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LOCATION	Weld
FOREMAN	lee Sharp
Date	1/5/2015

Customer	Noble Energy Inc.
Well Name	Mahalo State AA00974-1BHNB

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DESCRIPTION OF JOB EVENTS

Safety Meeting	7:47
MIRU	7:30
CIRCULATE	7:50
Drop Plug	
8:34	
M & P	

Time	Sacks
8:00-8:32	300

% Excess	0%
Mixed bbls	53.5
Total Sacks	300
bbl Returns	15
Water Temp	45

Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
0	8:34	0	0			0			0			0		
10	8:36	100	10			10			10			10		
20	8:38	110	20			20			20			20		
30	8:40	190	30			30			30			30		
40	8:43	260	40			40			40			40		
50	8:45	310	50			50			50			50		
60	8:52	240	60			60			60			60		
70	8:55	710	70			70			70			70		
80			80			80			80			80		
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:

miru safty meeting pressure test per company man, cirulate 50 bbls ahead with dye in 2nd 10, mix and pump 300 sks cement, drop plug and displace 61.11 bbls h2o, bump plug at 8:54 pm, at 710 psi, raise to 1000 psi hold 15 min, release pressure, wash up rig down.

X _____
Work Preformed

X Co Man
Title

X 1/5/15
Date