Bison Oil Well Cementing
Single Cement Surface Pipe

Date:	7?31/16
Invoice #	80516
API#	05-123-42812
Foreman:	Matthew Rosales

Customer: Noble Energy Inc.

Well Name: Nugent LD06-655

County:	Weld	Consultant:	Johnny S.
State:	Colorado	Rig Name & Number:	H&P 517
		Distance To Location:	70
Sec:	SENE 5	Units On Location:	
Twp:	9N	Time Requested:	7/31/16 6:00am
Range:	58W	Time Arrived On Location:	7/31/16 4:50am
		Time Left Location:	

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,928
Total Depth (ft) :	1934
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	49
Landing Joint (ft) :	3
Max Rate:	8
Max Pressure:	1700

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	15%
Displacement Fluid lb/gal:	8.7
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

40H2O, 10Dye

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 21.00 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 61.05 cuft

(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 887.00 cuft

(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1102.00 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 196.00 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 740 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 87.00 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 145.20 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1422.29 PSI

Pressure of the fluids inside casing

Displacement:	849.12 psi
Shoe Joint:	36.15 psi
Total	885.27 psi
Differential Pressure:	537.02 psi
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi
Total Water Needed:	200.00 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.

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INVOICE #	80516
LOCATION	Weld
FOREMAN	Matthew Rosales
Date	7/31/2016

Customer	Noble Energy Inc.
Well Name	Nugent LD06-655

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	15%	4:50am 7/31/16	Arrive at Rig	Running Casing			
Mixed bbls	196	7:30am	PreRig up Safety Meeting				
Total Sacks	740	7:40am	Rig Up				
bbl Returns	35	8:00am	JSA				
Water Temp	70	8:14am	Start Job				
		8:14am	Fill Lines		1	2	100
Notes:		8:16am	Water Spacer	40H2O, 10 Dye H20	7.4	50	200
		8:23am	Cement	14.2#/gal, 1.49cuft/sk, 7.49gal/sk	4-7.4	196	300
		8:57am	Shutdown	Drop Plug			
		9:04am	Displace	Oil Based Mud	6	145.2	500
		9:31am	Bump Plug	dye @ 100bbl away cmt @ 110bbl away	2		700
		9:32am	Test Casing				
		9:49am	Check Floats	Floats Held test droped 60psi			940
		10:50am	Top off well	Well droped 4ft.	1	4	100

x _____
Work Preformed

x WSS
Title

x 7-31-16
Date