Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 4/23/2015
Invoice # 80073
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: gleason lc 35-715

County: Weld
State: Colorado
Sec: 26
Twp: 9n
Range: 58w

Consultant: martin
Rig Name & Number: H&P 273
Distance To Location:
Units On Location: 4038-3103/4032-3210
Time Requested: 430 am
Time Arrived On Location: 315 am
Time Left Location: 6:30 am

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	630
Total Depth (ft) :	674
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	104
Conductor ID :	16
Shoe Joint Length (ft) :	40
Landing Joint (ft) :	35
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	10.0

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

cuft of Casing 334.19 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 444.22 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 79.11 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 298 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 53.10 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 48.32 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 464.75 PSI

Pressure of the fluids inside casing

Displacement: 254.40 psi
Shoe Joint: 29.51 psi
Total 283.90 psi

Differential Pressure: 180.85 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 161.41 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 #	80073
LOCATION	Weld
FOREMAN	Kirk Kallhoff
Date	4/23/2015

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	10%	400 am	Rig up				
Mixed bbls	47	428 am	JSA				
Total Sacks	264	447 am	Pressure Test		1	1	1000
bbl Returns	16	450 am	Spacer Ahead	10 bbls fresh h2o	5	10	90
Water Temp			Spacer Ahead	10 bbls dye h2o	5	10	
			Spacer Ahead	30 bbls fresh h2o	5	30	
Notes:		500 am	Lead Cement	264 sks 70 bbls slurry	5	69.2	120
		516 am	Shutdown				
		519 am	Drop Plug				
		519 am	Start Displacement	48.3 bbls h2o	5	48.3	150
		532 am	Bump Plug	210 psi before bump	1		370
		535 am	Pressure Test Casing	1000 psi 15 min			1000
		550 am	End Job	release psi			0
		555 am	Rig Down				
		630 am	Leave Location				

X _____
Work Preformed

X WSS
Title

X 4-23-15
Date