



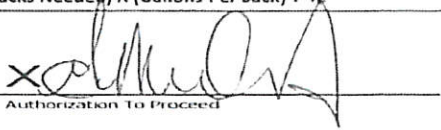
Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/25/2014
Invoice #: 25002
API#: 05-123-38776
Foreman: Calvin Reimers

Customer: Noble Energy Inc.
Well Name: Trisha LC 29-73 HNB

County: Weld
State: Colorado
Sec: 29
Twp: 9N
Range: 59W
Consultant: Shane
Rig Name & Number: H&P 326
Distance To Location: 67 Miles
Units On Location: 4023-3104/4017-3205
Time Requested: 530pm
Time Arrived On Location: 350pm
Time Left Location: 7:45pm 1000pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 599	Cement Yield (cuft) : 1.27
Total Depth (ft) : 639	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 10%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 11.0
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 40.0
Landing Joint (ft) : 34	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 45.47 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	19.35	cuft	Pressure of cement in annulus
(Casing ID Squared) X (.005454) X (Shoe Joint ft)			
cuft of Conductor	89.10	cuft	Hydrostatic Pressure: 472.99 PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)			
cuft of Casing	288.67	cuft	Pressure of the fluids inside casing
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)			
Total Slurry Volume	397.12	cuft	Displacement: 239.06 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)			
bbls of Slurry	70.73	bbls	Shoe Joint: 35.21 psi
(Total Slurry Volume) X (.1781)			
Sacks Needed	313	sk	Total 274.27 psi
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	43.85	bbls	Differential Pressure: 198.72 psi
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
		Collapse PSI: 2020.00 psi	
Authorization To Proceed		Burst PSI: 3520.00 psi	
		Total Water Needed: 149.32 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.			

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Bison Oil Well Cementing
Single Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
Trisha LC 29-73 HNB

INVOICE #
LOCATION
FOREMAN
Date

25002
Weld
Calvin Reimers
5/25/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	735pm	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU	715pm	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE	807pm	0	844pm	80	0			0			0			0		
Drop Plug		10	847pm	120	10			10			10			10		
	834pm	20	849pm	180	20			20			20			20		
		30	850pm	230	30			30			30			30		
		40	853pm	250	40			40			40			40		
	M & P	50	856pm	220	50			50			50			50		
	Time	Sacks	60	Bump	350	60		60			60			60		
	825pm	313	70			70		70			70			70		
	840pm		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		
% Excess	10%															
Mixed bbls	43.85															
Total Sacks	313															
bbl Returns	11															
Water Temp	76.8															

Notes:

The day

1/2 bbl back on bleed off

Work Performed

x luss
Title

5/25/14
Date