



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/27/2015  
Invoice #: 80066  
API#:   
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.  
Well Name: aggie state aa 17-645

County: Weld  
State: Colorado  
Sec: 17  
Twp: 6n  
Range: 63w

Consultant: bo  
Rig Name & Number: h&p 343  
Distance To Location:   
Units On Location: 4038-3103/4034-3211  
Time Requested: 930 pm  
Time Arrived On Location: 830 pm  
Time Left Location: 11:00pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625 Casing Weight (lb) : 36.00 Casing Depth (ft.) : 894 Total Depth (ft) : 937 Open Hole Diameter (in.) : 13.50 Conductor Length (ft) : 100 Conductor ID : 16 Shoe Joint Length (ft) : 43 Landing Joint (ft) : 35  Max Rate: Max Pressure:	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): 60.0 H2O Wash Up (bbls): 10.0  Spacer Ahead Makeup

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b> cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft) cuft of Conductor 89.10 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft) cuft of Casing 504.47 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length ) Total Slurry Volume 612.23 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing) bbls of Slurry 109.04 bbls (Total Slurry Volume) X (.1781) Sacks Needed 411 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement) Mix Water 73.18 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		Displacement: 68.50 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) <b>Pressure of cement in annulus</b> Hydrostatic Pressure: 659.50 PSI <b>Pressure of the fluids inside casing</b> Displacement: 366.94 psi Shoe Joint: 31.72 psi Total 398.66 psi Differential Pressure: 260.85 psi Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi Total Water Needed: 211.67 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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DESCRIPTION OF JOB EVENTS

	Time	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI
Safety Meeting	10pm	0	1011p	10	0			0			0			0		
MIRU	1050pm	10	1014p	40	10			10			10			10		
CIRCULATE	1026pm	20	1016p	40	20			20			20			20		
Drop Plug		30	1018p	110	30			30			30			30		
		40	1020p	180	40			40			40			40		
		50	1022p	250	50			50			50			50		
M & P		60	1024p	280	60			60			60			60		
Time		70			70			70			70			70		
941 pm		80			80			80			80			80		
1008 pm stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	10%	120			120			120			120			120		
Mixed bbls	65	130			130			130			130			130		
Total Sacks	365	140			140			140			140			140		
bbl Returns	16	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 1028 pm 450 psi

casing test 1000 psi 15 min

X

X W. S. S.  
Title

X 3-27-15  
Date

Work Performed