



# Bison Oil Well Cementing Single Cement Surface Pipe

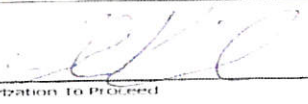
Date: 2/15/2014  
Invoice #: 12286  
API#:   
Foreman: Kirk

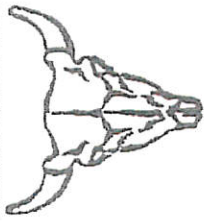
Customer: noble  
Well Name: wells ranch aa 35-69-1hnb

County: weld  
State: Colorado  
Sec: 36  
Twp: 6n  
Range: 63w

Consultant: jim t  
Rig Name & Number: h&p 321  
Distance To Location:   
Units On Location: 3103-3210  
Time Requested: 630 pm  
Time Arrived On Location: 515 pm  
Time Left Location: 10:00 pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.6250	Cement Name: BFN III
Casing Weight (lb) : 36	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 613	Cement Yield (cuft) : 1.27
Total Depth (ft) : 648	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 30%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.5	BBL to Pit:
Shoe Joint Length (ft) : 42	Fluid Ahead (bbls):
Landing Joint (ft) : 25	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID	8.921	Casing Grade	I-55 only used
Calculated Results		Displacement: 46.08 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe 18.23 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus		
cuft of Conductor 80.51 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 484.02 PSI		
cuft of Casing 269.78 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	Pressure of the fluids inside casing		
Total Slurry Volume 368.52 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 246.20 psi		
bbls of Slurry 85.32 bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	Shoe Joint: 33.16 psi		
Sacks Needed 377 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 279.37 psi		
Mix Water 52.90 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 204.66 psi		
<div>X </div> <div>Authorization To Proceed</div>		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed 72.90 bbls	
Customers hereby acknowledge and specifically agree to the terms and condition on this work order, including, without limitation, the provisions on this work order.			



Bison Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

noble  
wells ranch aa 35-69-1hnb

INVOICE #  
LOCATION  
FOREMAN  
Date

12286  
weld  
Kirk  
2/15/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	737pm 640pm 823pm	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
Safety Meeting		0	854	10	0			0			0			0		
MIRU		10	856	110	10			10			10			10		
CIRCULATE		20	858	170	20			20			20			20		
Drop Plug		30	900	230	30			30			30			30		
854 pm		40	902	240	40			40			40			40		
M & P		50			50			50			50			50		
Time		60			60			60			60			60		
832 pm	Sacks	70			70			70			70			70		
851 pm stop		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		130			130			130			130			130		
Mixed bbls		140			140			140			140			140		
Total Sacks		150			150			150			150			150		
bbl Returns																

Notes:

bumped plug at 906 pm 410 psi 85.3 bbls slurry casing test 1000 psi for 15 min

X

X WSS

X 2-15-14

Work Performed