



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/10/2014  
Invoice #: 12282  
API#:   
Foreman: Kirk

Customer: noble

Well Name: wells ranch aa 21-65140  
35-674000

County: weld  
State: Colorado

Sec: 21  
Twp: 6n  
Range: 63w

Consultant: shanr  
Rig Name & Number: h&p 322  
Distance To Location:   
Units On Location: 3106-3210  
Time Requested: 230 am  
Time Arrived On Location: 100 am  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.6250  
Casing Weight (lb) : 36  
Casing Depth (ft) : 935  
Total Depth (ft) : 969  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 15.5  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 25

Max Rate:   
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 30%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:   
Fluid Ahead (bbls):   
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.53 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
**cuft of Conductor** 80.51 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
**cuft of Casing** 439.11 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
**Total Slurry Volume** 539.15 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
**bbls of Slurry** 124.83 bbls  
(Total Slurry Volume) X (.1781) X (% Excess Cement)  
**Sacks Needed** 557 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
**Mix Water** 77.40 bbls  
(Sacks Needed) X (Gallons Per Sack) : 42

**Displacement:** 70.74 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 738.28 PSI

## Pressure of the fluids inside casing

**Displacement:** 383.75 psi

**Shoe Joint:** 35.53 psi

**Total** 419.28 psi

**Differential Pressure:** 318.99 psi

**Collapse PSI:** 2020.00 psi

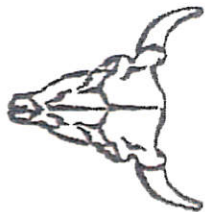
**Burst PSI:** 3520.00 psi

**Total Water Needed:** 97.40 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.





Bison Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

noble 91-65144  
wells ranch aa 3500-1000

INVOICE #  
LOCATION  
FOREMAN  
Date

12282  
weld  
Kirk  
2/10/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Time	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBS	PSI	BBS	PSI	BBS	PSI	BBS	PSI	BBS	PSI
Safety Meeting	612am										
MIRU	530am										
CIRCULATE	710am	0	50	0		0		0		0	
Drop Plug		10	50	10		10		10		10	
		20	60	20		20		20		20	
		30	50	30		30		30		30	
		40	210	40		40		40		40	
		50	210	50		50		50		50	
		60	230	60		60		60		60	
M & P		70	816	70		70		70		70	
		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	
		130		130		130		130		130	
		140		140		140		140		140	
		150		150		150		150		150	
% Excess	6%										
Mixed bbls	63										
Total Sacks	449										
bbl Returns	8										

Notes:

floats held did not bump plug

X

X Title

X Date 2/10/14

Work Performed