



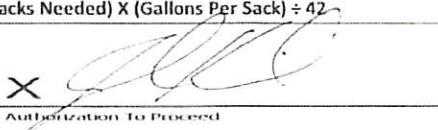
# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/9/2014  
Invoice #: 12205  
API#: 05-123-38646  
Foreman: Calvin Reimers

Customer: Noble  
Well Name: Wells Ranch AE 30-65-1HNC

County: Weld  
State: Colorado  
Sec: 29  
Twp: 6N  
Range: 62W  
Consultant: Josh  
Rig Name & Number: H&P 321  
Distance To Location: 34 Miles  
Units On Location: 3104/3204  
Time Requested: 700pm  
Time Arrived On Location: 550pm  
Time Left Location: 1015pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 35.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 629	Cement Yield (cuft) : 1.27
Total Depth (ft) : 668	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 20%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 24.0
Shoe Joint Length (ft) : 42	Fluid Ahead (bbls): 45.0
Landing Joint (ft) : 34	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	15bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement:</b> 48.02 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Shoe</b> 18.22 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>		
<b>cuft of Conductor</b> 89.10 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Hydrostatic Pressure:</b> 496.52 PSI		
<b>cuft of Casing</b> 278.10 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>		
<b>Total Slurry Volume</b> 385.42 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement:</b> 253.03 psi		
<b>bbls of Slurry</b> 82.37 bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	<b>Shoe Joint:</b> 33.15 psi		
<b>Sacks Needed</b> 364 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total</b> 286.18 psi		
<b>Mix Water</b> 51.07 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure:</b> 210.33 psi		
 X Authorization To Proceed		<b>Collapse PSI:</b> #N/A psi	
		<b>Burst PSI:</b> #N/A psi	
		<b>Total Water Needed:</b> 164.09 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.			



INVOICE #	LOCATION	FOREMAN	Date
1000	1000	1000	1000

12205	Weld	Calvin Reim	4/9/2014
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Customer  
Well Name

Noble  
Wells Ranch AE 30-65-1HNC

Treatment Report Page 2

## DESCRIPTION OF JOB EVENTS

[illegible]

Notes:

## The day

Float Held

1/2 bbl back on bleed off

Casing PSI Test 909pm 1050psi to 924pm 1070psi

X

Work Performed

x 555

Title

21/2/7 x

Date \_\_\_\_\_