



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/29/2014
 Invoice # 12033
 API# _____
 Foreman: Kirk Kallhoff

Customer: Noble
 Well Name: wells ranch ae30-63hnc

County: weld Consultant: cliff
 State: Colorado Rig Name & Number: h&p277
 Distance To Location: 30
 Sec: 29 Units On Location: 3103-3210
 Twp: 6n Time Requested: 1230 pm
 Range: 62w Time Arrived On Location: 1045 am
 Time Left Location: 5:30 pm

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>15.2</u>
Casing Depth (ft.) : <u>598</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>938</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>13.75</u>	% Excess: <u>30%</u>
Conductor Length (ft) : <u>100</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>16</u>	BBL to Pit: _____
Shoe Joint Length (ft) : <u>42</u>	Fluid Ahead (bbls): <u>40.0</u>
Landing Joint (ft) : <u>30</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: _____	Spacer Ahead Makeup _____
Max Pressure: _____	

Casing ID: 8.921 Casing Grade: J-55 only used

Calculated Results	Pressure of cement in annulus
cuft of Shoe <u>18.23</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: <u>45.30</u> bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor <u>89.10</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: <u>472.18</u> PSI
cuft of Casing <u>340.46</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume <u>447.78</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>239.74</u> psi
bbls of Slurry <u>79.75</u> bbls (Total Slurry Volume) X (.1781)	Shoe Joint: <u>33.16</u> psi
Sacks Needed <u>353</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>272.90</u> psi
Mix Water <u>49.45</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>199.28</u> psi
	Collapse PSI: <u>2020.00</u> psi
	Burst PSI: <u>3520.00</u> psi
	Total Water Needed: <u>154.75</u> bbls

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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Single Cement Surface Pipe**

INVOICE # 12033
 LOCATION weld
 FOREMAN Kirk Kallhoff
 Date 5/29/2014

Customer Noble
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DESCRIPTION OF JOB EVENTS

	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting	130pm									
MIRU	1255pm									
CIRCULATE	159pm									
Drop Plug										
	226 pm									
M & P										
Time										
Sacks	364									
207 pm										
223 pm stop										
% Excess	3%									
Mixed bbls	51									
Total Sacks	364									
bbl Returns	16									
Water Temp										

Notes:

bumped plug at 237 pm 520 psi
 casing test 1000 psi for 15 min

82.3 bbls slurry

X *[Signature]*

X WSS
 Title

X 5-29-14
 Date