



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/19/2016  
 Invoice # 80520  
 API# 05-123-40818  
 Foreman: Matthew Rosales

**Customer:** Noble Energy Inc.  
**Well Name:** Reagen LD06-685

County: Weld Consultant: \_\_\_\_\_  
 State: Colorado Rig Name & Number: H&P 517  
 Distance To Location: 70  
 Sec: NENE 5 Units On Location: \_\_\_\_\_  
 Twp: 9N Time Requested: 8/19/2016 7:L00am  
 Range: 58W Time Arrived On Location: 6:30am  
 Time Left Location: \_\_\_\_\_

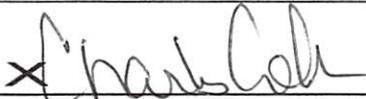
WELL DATA	
Casing Size OD (in) :	<u>9.625</u>
Casing Weight (lb) :	<u>36.00</u>
Casing Depth (ft.) :	<u>1,914</u>
Total Depth (ft) :	<u>1918</u>
Open Hole Diameter (in.) :	<u>13.50</u>
Conductor Length (ft) :	<u>80</u>
Conductor ID :	<u>15.25</u>
Shoe Joint Length (ft) :	<u>40</u>
Landing Joint (ft) :	<u>3</u>
Max Rate:	<u>8</u>
Max Pressure:	<u>1700</u>

Cement Data	
Cement Name:	<u>BFN III</u>
Cement Density (lb/gal) :	<u>14.2</u>
Cement Yield (cuft) :	<u>1.49</u>
Gallons Per Sack:	<u>7.48</u>
% Excess:	<u>15%</u>
Displacement Fluid lb/gal:	<u>8.3</u>
Fluid Ahead (bbls):	<u>50.0</u>
H2O Wash Up (bbls):	<u>20.0</u>
Spacer Ahead Makeup	<u>40h2o, 10 dye h2o</u>

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results		
cuft of Shoe	<u>18.00</u>	cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		
cuft of Conductor	<u>61.05</u>	cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		
cuft of Casing	<u>880.00</u>	cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )		
Total Slurry Volume	<u>1091.00</u>	cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		
bbls of Slurry	<u>194.00</u>	bbls
(Total Slurry Volume) X (.1781)		
Sacks Needed	<u>733</u>	sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		
Mix Water	<u>132.00</u>	bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42		

Displacement:	<u>143.60</u>	bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)		
Pressure of cement in annulus		
Hydrostatic Pressure:	<u>1411.59</u>	PSI
Pressure of the fluids inside casing		
Displacement:	<u>807.72</u>	psi
Shoe Joint:	<u>29.67</u>	psi
Total	<u>837.39</u>	psi
Differential Pressure:	<u>574.20</u>	psi
Collapse PSI:	<u>2020.00</u>	psi
Burst PSI:	<u>3520.00</u>	psi
Total Water Needed:	<u>300.00</u>	bbls

  
 \_\_\_\_\_  
 Authorization To Proceed

