



Bison Oil Well Cementing Tail & Lead

Date: 9/17/2018

Invoice #: 666362

API#

Supervisor: Nick Vigil

Customer: Crestone Peak Resources

Well Name: Melbon Ranch 4G-17H

County: Weld

State: Colorado

Sec: 19

Twp: 6N

Range: 63W

Consultant: Buddy

Rig Name & Number: Ensign 153

Distance To Location: 30 miles

Units On Location: 4023/4032

Time Requested: 22:00

Time Arrived On Location: 19:40

Time Left Location: 2:00

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 40</p> <p>Casing Depth (ft.) : 2,401</p> <p>Total Depth (ft) : 2416</p> <p>Open Hole Diameter (in) : 13.50</p> <p>Conductor Length (ft) : 98</p> <p>Conductor ID : 15.25</p> <p>Shoe Joint Length (ft) : 45</p> <p>Landing Joint (ft) :</p> <p>Sacks of Tail Requested 405</p> <p>HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: 8</p> <p>Max Pressure: 2000</p>	<p>Lead</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 13.5</p> <p>Cement Yield (cuft) : 1.7</p> <p>Gallons Per Sack 9.00</p> <p>% Excess 50%</p> <p>Tail</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack: 5.89</p> <p>% Excess: 0%</p> <p>Fluid Ahead (bbls) 60.0</p> <p>H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup</p> <p>Dye in second 10 bbl</p>

Casing ID 8.835 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1289.78 ft	Tail Cement Volume In Ann 514.35 cuft (HOC Tail) X (OH Ann)
Volume of Lead Cement 630.35 cuft HOC of Lead X Open Hole Ann	Total Volume of Tail Cement 495.19 Cuft (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 74.79 cuft (Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	bbls of Tail Cement 91.61 bbls (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement 705.14 cuft (cuft of Lead Cement) + (Cuft of Conductor)	HOC Tail 1013.22 ft (Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 188.38 bbls (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	Sacks of Tail Cement 405.00 sk (Total Volume of Tail Cement) ÷ (Cement Yield)
Sacks of Lead Cement 622.18 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	bbls of Tail Mix Water 56.80 bbls (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water 133.32 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Pressure of cement in annulus
Displacement 178.58 bbls (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Hydrostatic Pressure 585.23 PSI
Total Water Needed: 448.71 bbls	Collapse PSI: 2570.00 psi Burst PSI: 3950.00 psi

X
Authorization To Proceed

