



# Bison Oil Well Cementing Tail & Lead

Date: 5/26/2018

Invoice # 666324

API# 05-123-

Supervisor: Nick Vigil

Customer: Crestone Peak Resources

Well Name: Sam 3J-25H M166

County: Weld  
State: Colorado

Sec: 4  
Twp: 1N  
Range: 65W

Consultant: Clarence  
Rig Name & Number: Ensign 122  
Distance To Location: 40 Miles  
Units On Location: 3  
Time Requested: 19:00  
Time Arrived On Location: 18:45  
Time Left Location: \_\_\_\_\_

WELL DATA	Cement Data
<p>Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>40</u> Casing Depth (ft) : <u>2.416</u> Total Depth (ft) : <u>2430</u> Open Hole Diameter (in) : <u>13.50</u> Conductor Length (ft) : <u>111</u> Conductor ID : <u>15.25</u> Shoe Joint Length (ft) : <u>83</u> Landing Joint (ft) : _____</p> <p>Sacks of Tail Requested <u>190</u> HOC Tail (ft): <u>0</u></p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: <u>8</u> Max Pressure: <u>2500</u></p>	<p><b>Lead</b></p> <p>Cement Name: _____ Cement Density (lb/gal) : <u>13.5</u> Cement Yield (cuft) : <u>1.7</u> Gallons Per Sack <u>9.00</u> % Excess <u>25%</u></p> <p><b>Tail</b></p> <p>Cement Name: _____ Cement Density (lb/gal) : <u>15.2</u> Cement Yield (cuft) : <u>1.27</u> Gallons Per Sack: <u>5.89</u> % Excess: <u>0%</u></p> <p>Fluid Ahead (bbls) <u>60.0</u> H2O Wash Up (bbls) <u>20.0</u></p> <p><b>Spacer Ahead Makeup</b> Dye in 2nd 10 bbl.</p>

Lead Calculated Results	Tail Calculated Results
<b>HOC of Lead</b> <u>1883.57 ft</u>	<b>Tail Cement Volume In Ann</b> <u>241.30 cuft</u>
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
<b>Volume of Lead Cement</b> <u>920.56 cuft</u>	<b>Total Volume of Tail Cement</b> <u>205.96 Cuft</u>
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
<b>Volume of Conductor</b> <u>84.71 cuft</u>	<b>bbls of Tail Cement</b> <u>42.98 bbls</u>
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
<b>Total Volume of Lead Cement</b> <u>1005.26 cuft</u>	<b>HOC Tail</b> <u>421.43 ft</u>
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
<b>bbls of Lead Cement</b> <u>223.80 bbls</u>	<b>Sacks of Tail Cement</b> <u>190.00 sk</u>
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	(Total Volume of Tail Cement) ÷ (Cement Yield)
<b>Sacks of Lead Cement</b> <u>739.17 sk</u>	<b>bbls of Tail Mix Water</b> <u>26.65 bbls</u>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
<b>bbls of Lead Mix Water</b> <u>158.39 bbls</u>	<b>Pressure of cement in annulus</b>
(Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Hydrostatic Pressure</b> <u>585.23 PSI</u>
<b>Displacement</b> <u>176.84 bbls</u>	<b>Collapse PSI:</b> <u>2570.00 psi</u>
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	<b>Burst PSI:</b> <u>3950.00 psi</u>
<b>Total Water Needed:</b> <u>441.88 bbls</u>	

X [Signature]  
Authorization To Proceed

