



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: Melbon Ranch 4C-17H

Date: 9/15/2018
Invoice # 666357
API#
Supervisor: Nick Vigil

County: Weld
State: Colorado
Sec: 4
Twp: 1N
Range: 65W

Consultant:
Rig Name & Number: Ensign 122
Distance To Location: 30 Miles
Units On Location: 3
Time Requested: 5:00
Time Arrived On Location: 4:30
Time Left Location: 12:30

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 40 Casing Depth (ft.) : 2,438 Total Depth (ft) : 2445 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 90 Conductor ID : 15.25 Shoe Joint Length (ft) : 44 Landing Joint (ft) :</p> <p>Sacks of Tail Requested 190 HOC Tail (ft): <div>One or the other, cannot have quantity in both</div></p> <p>Max Rate: 8 Max Pressure: 2500</p>	<p>Lead Cement Name: Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.7 Gallons Per Sack 9.00 % Excess 30%</p> <p>Tail Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.89 % Excess: 0%</p> <p>Fluid Ahead (bbls) 60.0 H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup Dye in 2nd 10 bbl.</p>

Casing ID	8.835	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead 1892.60 ft		Tail Cement Volume In Ann 241.30 cuft	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement 924.97 cuft		Total Volume of Tail Cement 222.57 Cuft	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor 68.68 cuft		bbls of Tail Cement 42.98 bbls	
(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)	
Total Volume of Lead Cement 993.65 cuft		HOC Tail 455.40 ft	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement 230.06 bbls		Sacks of Tail Cement 190.00 sk	
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement 759.85 sk		bbls of Tail Mix Water 26.65 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (%) Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water 162.83 bbls		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure 585.23 PSI	
Displacement 181.47 bbls		Collapse PSI: 2570.00 psi	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI: 3950.00 psi	
Total Water Needed: 450.94 bbls			

X

Authorization To Proceed

