



# Bison Oil Well Cementing Tail & Lead

**Customer:** Crestone Peak Resources  
**Well Name:** davis 1j-9h-g266

**Date:** 5/25/2018  
**Invoice #** 200291  
**API#**  
**Foreman:** Kirk Kallhoff

**County:** Weld  
**State:** Colorado  
**Sec:** 9  
**Twp:** 2n  
**Range:** 66w

**Consultant:** brent  
**Rig Name & Number:** ENSIGN 153  
**Distance To Location:** 26  
**Units On Location:** 4028/4040/4039  
**Time Requested:** 730 am  
**Time Arrived On Location:** 530 am  
**Time Left Location:**

## WELL DATA

Casing Size (in) : 9.625  
Casing Weight (lb) : 40  
Casing Depth (ft.) : 2,154  
Total Depth (ft) : 2195  
Open Hole Diameter (in) : 13.50  
Conductor Length (ft) : 110  
Conductor ID : 15.6  
Shoe Joint Length (ft) : 82  
Landing Joint (ft) : 25

Sacks of Tail Requested 190  
HOC Tail (ft): 0

One or the other, cannot have quantity in both

**Max Rate:** 8  
**Max Pressure:** 2000

## Cement Data

### Lead

Cement Name:  
Cement Density (lb/gal) : 13.5  
Cement Yield (cuft) : 1.7  
Gallons Per Sack 9.00  
% Excess 20%

### Tail

Cement Name:  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess:

**Fluid Ahead (bbls)** 60.0  
**H2O Wash Up (bbls)** 10.0

### Spacer Ahead Makeup

60 BBL WATER DYE IN 2ND 10

Casing ID	8.835	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
<b>HOC of Lead</b>	<b>1596.70 ft</b>	<b>Tail Cement Volume In Ann</b>	<b>241.30 cuft</b>
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
<b>Volume of Lead Cement</b>	<b>780.35 cuft</b>	<b>Total Volume of Tail Cement</b>	<b>206.39 Cuft</b>
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
<b>Volume of Conductor</b>	<b>90.42 cuft</b>	<b>bbls of Tail Cement</b>	<b>42.98 bbls</b>
(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>	<b>870.78 cuft</b>	<b>HOC Tail</b>	<b>422.30 ft</b>
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
<b>bbls of Lead Cement</b>	<b>186.10 bbls</b>	<b>Sacks of Tail Cement</b>	<b>190.00 sk</b>
(Total cuft of Lead Cement) X (.1781) X (1+Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
<b>Sacks of Lead Cement</b>	<b>614.67 sk</b>	<b>bbls of Tail Mix Water</b>	<b>26.65 bbls</b>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
<b>bbls of Lead Mix Water</b>	<b>131.71 bbls</b>	<b>Pressure of cement in annulus</b>	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		<b>Hydrostatic Pressure</b>	<b>585.23 PSI</b>
<b>Displacement</b>	<b>158.95 bbls</b>	<b>Collapse PSI:</b>	<b>2570.00 psi</b>
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		<b>Burst PSI:</b>	<b>3950.00 psi</b>
<b>Total Water Needed:</b>	<b>387.31 bbls</b>		

X

Authorization To Proceed

