



# Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources  
Well Name: HERREN 1C-33H-H367

Date: 11/23/2018  
Invoice # 300225  
API# 05-123-47733  
Foreman: JASON KELEHER

County: Weld Consultant: BUDDY  
State: Colorado Rig Name & Number: Ensign 153  
Distance To Location: 24  
Units On Location: 3  
Time Requested: 730  
Time Arrived On Location: 600  
Time Left Location: 1500  
Sec: 33  
Twp: 3N  
Range: 67W

WELL DATA	Cement Data
<p>Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>40</u> Casing Depth (ft.) : <u>2,008</u> Total Depth (ft) : <u>2023</u> Open Hole Diameter (in) : <u>13.50</u> Conductor Length (ft) : <u>121</u> Conductor ID : <u>15.5</u> Shoe Joint Length (ft) : <u>45</u> Landing Joint (ft) : <u>5</u></p> <p>Sacks of Tail Requested HOC Tail (ft): <u>1,000</u></p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: <u>8</u> Max Pressure: <u>2000</u></p>	<p>Lead N-Gel-12 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>30%</u></p> <p>Tail Type III 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:</p> <p>Fluid Ahead (bbls) <u>60.0</u> H2O Wash Up (bbls) <u>10.0</u></p> <p>Spacer Ahead Makeup <u>60 BBL WATER DYE IN LAST 10</u></p>

Casing ID	8.835	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead <u>1008.00 ft</u>		Tail Cement Volume In Ann <u>488.70 cuft</u>	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement <u>563.52 cuft</u>		Total Volume of Tail Cement <u>507.79 Cuft</u>	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor <u>97.40 cuft</u>		bbls of Tail Cement <u>90.40 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)	
Total Volume of Lead Cement <u>661.30 cuft</u>		HOC Tail <u>1000.00 ft</u>	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement <u>117.70 bbls</u>		Sacks of Tail Cement <u>400.00 sk</u>	
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement <u>389.00 sk</u>		bbls of Tail Mix Water <u>56.10 bbls</u>	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water <u>83.36 bbls</u>		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure <u>612.00 PSI</u>	
Displacement <u>148.70 bbls</u>		Collapse PSI: <u>2570.00 psi</u>	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI: <u>3950.00 psi</u>	
Total Water Needed: <u>360.00 bbls</u>			

X

Authorization To Proceed

*David Burke*

## Bison Oil Well Cementing Two Cement Surface Pipe

Customer  
Well Name

Crestone Peak Resources  
HERREN 1C-33H-H367

Date \_\_\_\_\_

11/23/2018

INVOICE #

300225

LOCATION

Weld

FOREMAN

JASON KELEHER

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### DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	83.36	600	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess	30%	800	MIRU	SPOT EQUIPMENT AND RIG UP			
Lead Sacks	389	830	PRE JOB SAFETY MEETING				
		903	PRESSURE TEST	PRESSURE TEST TO 2000 PSI			2000
		937	FRESH WATER SPACER	PUMP STARTED LEAKING WATER			
Tail mixed bbls	56.1	940	SHUT DOWN	REPLACED PUMP			
Tail % Excess	0%	1144	PRESSURE TEST	PRESSURE TEST TO 2000 PSI			2000
Tail Sacks	400	1145	FRESH WATER SPACER	60 BBL WATER DYE IN LAST 10	6.5	60	210
		1155	LEAD CEMENT	389 SKS MIXED 13.5 PPG	6.3	117.7	270
Total Sacks	789	1217	TAIL CEMENT	400 SKS MIXED 15.2 PPG	7	90.4	380
Water Temp	54	1235	SHUT DOWN				
bbl Returns	18	1237	DROP PLUG	PLUG PRE LOADED			
		1237	DISPLACEMENT	WATER SUPPLIED BY RIG	3	148.7	730
Notes:		1304	BUMP PLUG				1280
		1310	CHECK FLOATS	FLOATS DID NOT HOLD			
		1313	PRESSURE UP WELL	REPRESSURE WELL			1300
		1320	CHECK FLOATS	FLOATS DID NOT HOLD			
		1326	PRESSURE UP WELL	REPRESSURE WELL			1310
		1401	CHECK FLOATS	FLOATS HELD. 1 BBL BACK			
		1410	RIG DOWN				
		1500	LEAVE LOCATION				

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CUSTOMER SIGNATURE

Joe Burke

X

Title

X

Date \_\_\_\_\_