



Bison Oil Well Cementing Tail & Lead

Date: 5/10/2018
 Invoice #: 900293
 API#: 05-123-46516
 Foreman: Corey Barras

Customer: Crestone Peak Resources
 Well Name: Davis 1T-9H-G266

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

Consultant: Jerry Thorstad
 Rig Name & Number: Ensign 135
 Distance To Location: 26 Miles
 Units On Location: 4027-3103/4041-3205/4039-3214
 Time Requested: 1730
 Time Arrived On Location: 1650
 Time Left Location: 2130

WELL DATA	Cement Data
Casing Size (in) : 9.625 Casing Weight (lb) : 40 Casing Depth (ft.) : 2,141 Total Depth (ft) : 2162 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 98 Conductor ID : 15.5 Shoe Joint Length (ft) : 82 Landing Joint (ft) : 10 Sacks of Tail Requested 190 HOC Tail (ft): 0 <input type="checkbox"/> One or the other, cannot have quantity in both Max Rate: Max Pressure:	Lead Cement Name: Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack 8.90 % Excess 30% Tail Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.89 % Excess: 0% Fluid Ahead (bbls) 60.0 H2O Wash Up (bbls) 20.0 Spacer Ahead Makeup 60 BBL with Die in Last 10

Casing ID 8.835 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1610.70 ft	Tail Cement Volume In Ann 241.30 cuft (HOC Tail) X (OH Ann)
Volume of Lead Cement 787.20 cuft HOC of Lead X Open Hole Ann	Total Volume of Tail Cement 206.39 Cuft (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 78.90 cuft (Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	bbls of Tail Cement 42.98 bbls (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement 866.09 cuft (cuft of Lead Cement) + (Cuft of Conductor)	HOC Tail 422.30 ft (Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 200.53 bbls (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	Sacks of Tail Cement 190.00 sk (Total Volume of Tail Cement) ÷ (Cement Yield)
Sacks of Lead Cement 670.19 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	bbls of Tail Mix Water 26.65 bbls (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water 142.02 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Pressure of cement in annulus
Displacement 156.83 bbls (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Hydrostatic Pressure 585.23 PSI
Total Water Needed: 405.49 bbls	Collapse PSI: 2570.00 psi Burst PSI: 3950.00 psi

X
 Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing
Two Cement Surface Pipe**

Date	5/10/2018
INVOICE #	900293
LOCATION	Weld
FOREMAN	Corey Barras

Customer	Crestone Peak Resources
Well Name	Davis 1T-9H-G266

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DESCRIPTION OF JOB EVENTS

Amount Pumped	Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	142.29	1640	Arrive on Location			
Lead % Excess	30%	1800	Rig Up			
Lead Sacks	671	1830	Safety Meeting			
			Bison and Rig Crew			
		1924	Start Job			
Tail mixed bbls	26.6	1925	Test Lines	1500 IPSI	1.5	2 1500
Tail % Excess	0%	1927	Pump Spacer	Water	7	60 130
Tail Sacks	190					
		1935	Lead Cement	13.5 PPG	7	200 140
Total Sacks	861	2010	Tail Cement	15.2 PPG	5	43 130
Water Temp	52					
bbl Returns	36	2015	Shut Down			
		2016	Drop Plug	Preloaded in Plug Container		
Notes:						
		2018	Pump Displacement	Water	7	90 340
		2054	Bump Plug	500 PSI over Final Lift (1170 PSI)	2	180 600
		2056	Check Floats	With 1.5 bbl Back to surface		
		2100	Rig Down			
		2130	Leave Location			

X _____
Work Preformed

X _____
Title

X _____
Date