



Bison Oil Well Cementing Tail & Lead

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

Date: 5/15/2018
Invoice # 900296
API# 05-123-46511
Foreman: Corey Barras

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: 4027-3103/4035-3213/4039-3214
Time Requested: 2200
Time Arrived On Location: 2045
Time Left Location: 215

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 40</p> <p>Casing Depth (ft.) : 2,189</p> <p>Total Depth (ft) : 2209</p> <p>Open Hole Diameter (in) : 13.50</p> <p>Conductor Length (ft) : 98</p> <p>Conductor ID : 15.5</p> <p>Shoe Joint Length (ft) : 84</p> <p>Landing Joint (ft) : 10</p> <p>Sacks of Tail Requested 190</p> <p>HOC Tail (ft): 0</p> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> One or the other, cannot have quantity in both </div> <p>Max Rate:</p> <p>Max Pressure:</p>	<p>Lead</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 13.5</p> <p>Cement Yield (cuft) : 1.68</p> <p>Gallons Per Sack 8.90</p> <p>% Excess 25%</p> <p>Tail</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack: 5.89</p> <p>% Excess: 0%</p> <p>Fluid Ahead (bbls) 60.0</p> <p>H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup</p> <p>60 BBL with Die in 3rd 10</p>

Casing ID	8.835	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	1660.44 ft	Tail Cement Volume In Ann	241.30 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	811.51 cuft	Total Volume of Tail Cement	205.54 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	78.90 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	890.40 cuft	HOC Tail	420.56 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	198.23 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	662.50 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	140.39 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	
Displacement		585.23 PSI	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Collapse PSI:	
Total Water Needed:		2570.00 psi	
407.35 bbls		Burst PSI:	
		3950.00 psi	

X

Authorization To Proceed



Bison Oil Well Cementing
Two Cement Surface Pipe

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

Date 5/15/2018
INVOICE # 900296
LOCATION Weld
FOREMAN Corey Barras

DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	140.39	2045	Arrive on Location				
Lead % Excess	25%	2200	Rig Up				
Lead Sacks	663	2245	Safety Meeting	Bison and Rig Crew			
		2235	Start Job				
Tail mixed bbls	26.6	2336	Test Lines	1500 IPSI	1.5	2	1500
Tail % Excess	0%	2338	Pump Spacer	Water	7	60	150
Tail Sacks	190						
		2350	Lead Cement	13.5 PPG	7	198	140
Total Sacks	852	1220	Tail Cement	15.2 PPG	5	43	130
Water Temp	52						
bbl Returns	32	1230	Shut Down				
		1232	Drop Plug	Preloaded in Plug Container			
Notes:							
Floats did not want to hold		1234	Pump Displacement	Water	7	90	320
pressured up on well 3		100	Bump Plug	500 PSI over Final Lift (1580 PSI)	2	160	580
times before floats would		105	Check Floats	With 1.5 bbl Back to surface			
hold		130	Rig Down				
		215	Leave Location				

X
Work Preformed

X
Title

X
Date