



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: Ruegge 3F-4H-N165

Date: 5/2/2018
Invoice # 300121
API# 05-123-46570
Foreman: JASON KELEHER

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

Consultant: ROBERT
Rig Name & Number: Ensign 122
Distance To Location: 36
Units On Location: 3
Time Requested: 700
Time Arrived On Location: 600
Time Left Location: 1400

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 40
Casing Depth (ft.) : 2,486
Total Depth (ft) : 2505
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 98
Conductor ID : 15.5
Shoe Joint Length (ft) : 76
Landing Joint (ft) : 12

Sacks of Tail Requested 190
HOC Tail (ft):

One or the other, cannot have quantity in both

Max Rate: 8
Max Pressure: 2000

Cement Data

Lead N-Gel-12
Cement Name:
Cement Density (lb/gal) : 13.5
Cement Yield (cuft) : 1.7
Gallons Per Sack 9.00
% Excess 15%

Tail Type III
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
Lead Calculated Results		Tail Calculated Results	
HOC of Lead 1964.00 ft		Tail Cement Volume In Ann 244.35 cuft	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement 1185.50 cuft		Total Volume of Tail Cement 210.30 Cuft	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor 79.90 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 1265.40 cuft		HOC Tail 500.00 ft	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement 225.30 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 744.00 sk		bbls of Tail Mix Water 28.58 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water 159.43 bbls		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure 585.23 PSI	
Displacement 183.57 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: 444.00 bbls			

X

Authorization To Proceed

X
Date