



Bison Oil Well Cementing Tail & Lead

Date: 9/23/2018
 Invoice #: 200339
 API#
 Foreman: kirk kallhoff

Customer: Crestone Peak Resources
 Well Name: melborn ranch 4k-17h

County: Weld
 State: Colorado
 Consultant: buddy
 Rig Name & Number: ENSIGN 153
 Distance To Location: 30
 Units On Location: 4028/4032/4041
 Time Requested: 700 pm
 Time Arrived On Location: 500 pm
 Sec: 19
 Twp: 6n
 Range: 63w
 Time Left Location:

WELL DATA	
Casing Size (in) :	9.625
Casing Weight (lb) :	40
Casing Depth (ft.) :	2,389
Total Depth (ft) :	2439
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	98
Conductor ID :	15.25
Shoe Joint Length (ft) :	45
Landing Joint (ft) :	35
Sacks of Tail Requested	405
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) :	1.68
Gallons Per Sack	8.90
% Excess	38%
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

Lead Calculated Results	
HOC of Lead	1242.78 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	607.38 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	74.79 cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	682.17 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	167.66 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	560.35 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	118.74 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	180.33 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	425.87 bbls

Tail Calculated Results	
Tail Cement Volume In Ann	514.35 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	495.19 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	91.61 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	1013.22 ft
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	405.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	56.80 bbls
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
Pressure of cement in annulus	
Hydrostatic Pressure	585.23 PSI
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.

