



Bison Oil Well Cementing Tail & Lead

Date: 9/17/2018

Invoice # 666362

API#

Supervisor: Nick Vigil

Customer: Crestone Peak Resources

Well Name: Melbon Ranch 4G-17H

County: Weld

State: Colorado

Sec: 19

Twp: 6N

Range: 63W

Consultant: Buddy

Rig Name & Number: Ensign 153

Distance To Location: 30 miles

Units On Location: 4023/4032

Time Requested: 22:00

Time Arrived On Location: 19:40

Time Left Location: 2:00

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 40
Casing Depth (ft.) : 2,401
Total Depth (ft) : 2416
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 98
Conductor ID : 15.25
Shoe Joint Length (ft) : 45
Landing Joint (ft) :

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) : 1.7
Gallons Per Sack 9.00
% Excess 50%

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
Dye in second 10 bbl

Casing ID

8.835

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 1289.78 ft

Casing Depth - HOC Tail

Volume of Lead Cement 630.35 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 705.14 cuft

(cuft of Lead Cement) + (Cuft of Conductor)

bbls of Lead Cement 188.38 bbls

(Total cuft of Lead Cement) X (.1781) X (1+Lead Excess)

Sacks of Lead Cement 622.18 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

bbls of Lead Mix Water 133.32 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement 178.58 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)

Total Water Needed: 448.71 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.



Bison Oil Well Cementing
Two Cement Surface Pipe

Customer
Well Name

Crestone Peak Resources
Melbon Ranch 4G-17H

Date
INVOICE #
LOCATION
FOREMAN

9/17/2018
666362
Weld
Nick Vigil

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	188.3	21:40	Arrive On Location	Rig was rigging up to running casing.			
Lead % Excess	50%	21:45	Well Site Assessment	Hazard hunt, rig up safety meeting			
Lead Sacks	622	21:50	Rig Up Equipment				
		22:32	JSA	Held safety meeting with all personell involved in job.			
		23:06	Test Lines	Pressure tested lines to 2000 psi.			
Tail mixed bbls	91.6	23:08	Spacer Ahead	Fresh water with dye in second 10 bbls.	6.6	60	100
Tail % Excess	0%	23:26	Lead Cement	13.5 ppg	6	188.3	110
Tail Sacks	405	0:20	Tail Cement	15.2 ppg	4	91.6	110
		0:50	Shut Down				
Total Sacks	1027	0:51	Drop Plug	Plug was pre loaded.			
Water Temp	75	0:53	Displace	Fresh water	8.2	90	480
bbl Returns	40	1:25	Bump Plug	Bumped plug 500 psi over final lift (1620 psi)	2.5	178.5	1120
Notes:		1:32	Check Floats	Floats held (flowed back 1 bbls)			
		1:35	End Job				
		1:40	Rig Down Equipment				
		2:00	Crew Left Location				

X

Signature

X

Title

X

Date