



# Bison Oil Well Cementing Tail & Lead

Customer: NOBLE  
Well Name: ROHN STATE LD10-69HN

Date: 9/28/2014  
Invoice #: 45044  
API#: 05-123-37476  
Foreman: JASON KELEHER

County: Weld  
State: Colorado  
Sec: 4  
Twp: 9N  
Range: 58W

Consultant: JUSTIN  
Rig Name & Number: H&P 273  
Distance To Location: 80  
Units On Location: 3  
Time Requested: 500  
Time Arrived On Location: 500  
Time Left Location: 1030

## WELL DATA

Casing Size (in): 9.625  
Casing Weight (lb): 36  
Casing Depth (ft): 1201  
Total Depth (ft): 1212  
Open Hole Diameter (in): 13.50  
Conductor Length (ft): 109  
Conductor ID: 15.25  
Shoe Joint Length (ft): 43  
Landing Joint (ft): 29

Sacks of Tail Requested: 100  
HOC Tail (ft):

One or the other, cannot have quantity in both

Max Rate: 7  
Max Pressure: 2000

## Cement Data

### Lead

Cement Name: BFN III  
Cement Density (lb/gal): 13.1  
Cement Yield (cuft): 1.69  
Gallons Per Sack: 6.64  
% Excess: 25%

### Tail

Cement Name: BFN III  
Cement Density (lb/gal): 15.2  
Cement Yield (cuft): 1.27  
Gallons Per Sack: 5.89  
% Excess:

Fluid Ahead (bbls): 40.0  
H2O Wash Up (bbls): 20.0

### Spacer Ahead Makeup

40 BBL WATER WKCL, 2ND 10 W/DYE

Casing ID	8.921	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead	850.05 ft	Tail Cement Volume in Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail X OH Ann)	
Volume of Lead Cement	415.44 cuft	Total Volume of Tail Cement	108.23 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	76.31 cuft	bbls of Tail Cement	22.62 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	491.76 cuft	HOC Tail	221.45 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	109.30 bbls	Sacks of Tail Cement	100.00 sk
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement	363.14 sk	bbls of Tail Mix Water	14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water	74.70 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	816.94 PSI
Displacement	91.70 bbls		
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Collapse PSI:	2020.00 psi
Total Water Needed:	240.43 bbls	Burst PSI:	3520.00 psi

X   
Authorization To Proceed



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

Customer  
Well Name

NOBLE  
ROHN STATE LD10-69HN

Date

9/28/2014

INVOICE #

45044

LOCATION

Weld

FOREMAN

JASON KELEHER

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**DESCRIPTION OF JOB EVENTS**

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
Safety Meeting	810															
MIRU	730															
CIRCULATE	837	0	915	0	0			0			0			0		
Drop Plug		10	918	30	10			10			10			10		
915		20	920	40	20			20			20			20		
		30	924	20	30			30			30			30		
		40	925	150	40			40			40			40		
M & P		50	927	210	50			50			50			50		
Time	Sacks	60	929	290	60			60			60			60		
0847-0907	363	70	931	360	70			70			70			70		
0907-0913	100	80	932	420	80			80			80			80		
		90	935	380	90			90			90			90		
		100	BUMP	960	100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
Lead mixed bbls	74.6	130			130			130			130			130		
Lead % Excess	25%	140			140			140			140			140		
Lead Sacks	363	150			150			150			150			150		
<b>Notes:</b>																
Tail mixed bbls	14.02	PERFORMED PRESSURE TEST TO 2000 PSI AT 0834, PUMPED 40 BBL WATER WITH DYE IN THE 2ND 10 AT 0837, MIXED AND PUMPED 363 SKS AT 13.1,														
Tail % Excess	0%	109.3 BBL AT 0847, MIXED AND PUMPED 100 SKS AT 15.2, 22.6 BBL AT 0907, SHUT DOWN AT 0913, DROPPED PLUG AT 0915, STARTED														
Tail Sacks	100	DISPLACEMENT AT 0915, LANDED PLUG AT 380 PSI AT 0935 AND PRESSURE UP 960 PSI AND HELD FOR 2 MINUTES, RELEASED PRESSURE AND GOT														
		.5 BBL BACK														
Total Sacks	463															
Water Temp	59															
bbl Returns	20															

*[Signature]*  
Work Performed

X

Title

X

Date