



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/25/2014
Invoice # 25042
API# 05-123-39558
Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: Shable K08-69HN

County: Weld
State: Colorado
Sec: 7
Twp: 4N
Range: 66W

Consultant: Stetson
Rig Name & Number: H&P 321
Distance To Location: 8 Miles
Units On Location: 4034-3104/4020-3212
Time Requested: 400pm
Time Arrived On Location: 145pm
Time Left Location: 530pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 604
Total Depth (ft) : 644
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 34

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 13.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
30 bbls H2O+Dye in 2nd 10 bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.42 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 89.10 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X
(Conductor Length ft)
cuft of Casing 317.97 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing
Depth - Conductor Length)
Total Slurry Volume 426.49 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 75.96 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 336 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 47.09 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 45.87 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 476.82 PSI

Pressure of the fluids inside casing

Displacement: 241.09 psi

Shoe Joint: 35.33 psi

Total 276.41 psi

Differential Pressure: 200.40 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 152.97 bbls

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
Single Cement Surface Pipe**

Customer
Well Name

Noble Energy Inc.
Shable K08-69HN

INVOICE #
LOCATION
FOREMAN
Date

25042
Weld
Calvin Reimers
8/25/2014

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DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 426pm M & P Time 405pm 424pm % Excess Mixed bbls Total Sacks bbl Returns Water Temp	335pm	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	250pm	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
	355pm	0	427pm	90	0			0			0			0		
		10	430pm	120	10			10			10			10		
		20	431pm	190	20			20			20			20		
		30	433pm	250	30			30			30			30		
		40	435pm	250	40			40			40			40		
		50	439pm	220	50			50			50			50		
		60	Bump	450	60			60			60			60		
	336	70			70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
	20%	120			120			120			120			120		
	47.09	130			130			130			130			130		
	336	140			140			140			140			140		
	13	150			150			150			150			150		
	85.3															

Notes:

The day

1/2 BBL Back on Bleed Off

X 
Work Performed

X WSS
Title

X 8-25-14
Date