



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/15/2015
Invoice #: 65056
API#: AFE 200249
Foreman: Lee Sharp

Customer: Noble Energy Inc.
Well Name: Gonsoulin State LD 11-76HN

County: Weld
State: Colorado
Sec:
Twp:
Range:

Consultant: J.W.
Rig Name & Number: HP 326
Distance To Location: 80
Units On Location: 4027-3106/ 4032-3210
Time Requested: 4:30 AM
Time Arrived On Location: 3:20 AM
Time Left Location: 1:00 PM

WELL DATA

Casing Size OD (in): 9.025
Casing Weight (lb): 38.60
Casing Depth (ft.): 1218
Total Depth (ft): 1231
Open Hole Diameter (in.): 13.50
Conductor Length (ft): 90
Conductor ID: 15.325
Shoe Joint Length (ft): 44
Landing Joint (ft): 0

Max Rate: 10F 10D 30F
Max Pressure:

Cement Data

Cement Name: BFW III
Cement Density (lb/gal): 14.2
Cement Yield (cuft): 1.49
Gallons Per Sack: 7.48
% Excess: 24%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 25.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10F 10D 30F

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.19 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 69.81 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 680.84 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 769.83 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 137.11 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 517 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 92.02 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement 90.74 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 898.52 PSI

Pressure of the fluids inside casing

Displacement 506.12 psi

Shoe Joint 32.61 psi

Total 538.73 psi

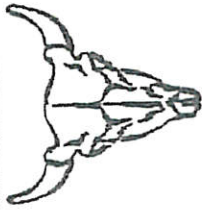
Differential Pressure 359.79 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 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
Single Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
Gonsoulin State LD 11-76HN

INVOICE # 65056
LOCATION Weld
FOREMAN Lee Sharp
Date 1/15/2015

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DESCRIPTION OF JOB EVENTS

	10:20 8:40 10:56	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	10:20	0	11:45		0			0			0			0		
MIRU	8:40	10	11:47	90	10			10			10			10		
CIRCULATE	10:56	20	11:50	120	20			20			20			20		
Drop Plug		30	11:52	180	30			30			30			30		
	11:43	40	11:53	220	40			40			40			40		
		50	11:55	280	50			50			50			50		
M & P		60	11:57	320	60			60			60			60		
Time		70	11:59	370	70			70			70			70		
11:00-11:43	517	80	12:01	350	80			80			80			80		
		90	12:03	500	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess		130			130			130			130			130		
Mixed bbls	92	140			140			140			140			140		
Total Sacks	28	150			150			150			150			150		
bbl Returns																
Water Temp	50															

Notes:

The day

Job completed with no issues

plug landed at 12:03 500 psi

casing test began at 12:06 1020 psi

test completed at 12:21 1020 psi

pressure released checked floats; floats held 12:23

rig down clean up

X Jim Savin

Work Performed

X WSS

Title

X 1/15/15

Date