



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/30/2014
Invoice #: 65051
API#: AFE 200464
Foreman: Lee Sharp

Customer: Noble Energy Inc.
Well Name: Well Ranch AE19-636

County: Weld
State: Colorado
Sec: 20
Twp: 6N
Range: 62W

Consultant: *Devel*
Rig Name & Number: H&P 330
Distance To Location:
Units On Location: 4015 & 4022
Time Requested: 11:30 PM
Time Arrived On Location: 10:15
Time Left Location: 11:00

WELL DATA

Casing Size OD (in): 9.625
Casing Weight (lb): 36.00
Casing Depth (ft): 715
Total Depth (ft): 729
Open Hole Diameter (in.): 13.50
Conductor Length (ft): 100
Conductor ID: 15.326
Shoe Joint Length (ft): 45
Landing Joint (ft): 0

Max Rate:
Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal): 14.2
Cement Yield (cuft): 1.49
Gallons Per Sack: 7.48
% Excess: 32%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 24.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10 10D 30

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.70 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 77.56 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 396.75 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 494.03 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 37.99 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 332 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 59.05 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 51.77 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 527.46 PSI

Pressure of the fluids inside casing

Displacement: 288.72 psi

Shoe Joint: 33.48 psi

Total: 322.21 psi

Differential Pressure: 205.25 psi

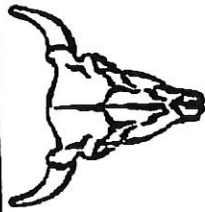
Collapse PSI: 2020.00 psi

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.
Well Ranch AE19-636

INVOICE # 65051
LOCATION Weld
FOREMAN Lee Sharp
Date 12/30/2014

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DESCRIPTION OF JOB EVENTS

	5:30 4:30 8:30	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		0	9:25	-30	0			0			0			0		
MIRU		10	9:28	10	10			10			10			10		
CIRCULATE		20	9:30	80	20			20			20			20		
Drop Plug		30	9:33	200	30			30			30			30		
9:22		40	9:37	240	40			40			40			40		
		50	9:40	180	50			50			50			50		
M & P		60	LAND	750	60			60			60			60		
Time	Sacks	70			70			70			70			70		
8:50-9:22	332	80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	33%	130			130			130			130			130		
Mixed bbls	59.5	140			140			140			140			140		
Total Sacks	334	150			150			150			150			150		
bbl Returns	10															
Water Temp	100															

Notes:

The day

Job completed with no issues.

Plug landed on calculated

casing test completed floats held

casing test 9:44 1000 ended 9:57 1020

X

X
Title

X
Date

Work Prepared