



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/26/2015
Invoice #: 80066
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: colt a13-652

County: Weld

State: Colorado

Sec: 17

Twps: 6n

Range: 63w

Consultant: jim

Rig Name & Number: h&p 321

Distance To Location:

Units On Location: 4038-3103/4020-3210

Time Requested: 430 pm

Time Arrived On Location: 330 pm

Time Left Location: 7:00 pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 895
Total Depth (ft) : 940
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 41
Landing Joint (ft) : 35

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: 30%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 60.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.80 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 505.10 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 611.99 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 109.00 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 411 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 73.15 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 68.73 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 660.24 PSI

Pressure of the fluids inside casing

Displacement: 368.23 psi

Shoe Joint: 30.25 psi

Total 398.47 psi

Differential Pressure: 261.77 psi

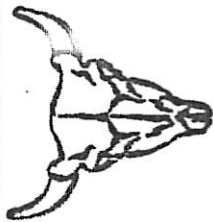
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 211.88 bbls

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.



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Single Cement Surface Pipe

INVOICE #
LOCATION
FOREMAN
Date

80066
Weld
Kirk Kallhoff
3/26/2015

Customer
Well Name

Noble Energy Inc.
colt a13-652

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Time	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	5:15pm	0	626pm	10	0			0			0			0		
MIRU	4:15pm	10	628pm	60	10			10			10			10		
CIRCULATE	5:18pm	20	630pm	90	20			20			20			20		
Drop Plug		30	632pm	140	30			30			30			30		
626 pm		40	634pm	220	40			40			40			40		
		50	636pm	290	50			50			50			50		
M & P		60	639pm	300	60			60			60			60		
Time	Sacks	70			70			70			70			70		
554 pm		80			80			80			80			80		
623 pm stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	6%	130			130			130			130			130		
Mixed bbls	65	140			140			140			140			140		
Total Sacks	365	150			150			150			150			150		
bbl Returns	25															
Water Temp																

Notes:

bumped plug at 643 pm 510 psi

casing test 1000 psi 15 min

X WSS
Title

X 3-26-15
Date

X
Work Performed