



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/20/2015
Invoice #: 80063
API#
Foreman: Kirk Kallhoff


Customer: Noble Energy Inc.
Well Name: colt a13-633

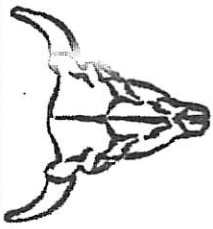
County: Weld
State: Colorado
Sec: 17
Twp: 6n
Range: 63w

Consultant: charles
Rig Name & Number: h&p 273
Distance To Location:
Units On Location: 4038-3103/4034-3211
Time Requested: 800 am
Time Arrived On Location: 730 am
Time Left Location: 11:00 am

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft) : 882	Cement Yield (cuft) : 1.49
Total Depth (ft) : 924	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 30%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit:
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 60.0
Landing Joint (ft) : 35	H2O Wash Up (bbls): 10.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 67.57 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor 89.10 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Hydrostatic Pressure: 650.65 PSI	
cuft of Casing 496.84 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Pressure of the fluids inside casing	
Total Slurry Volume 604.60 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Displacement: 361.76 psi	
bbls of Slurry 107.68 bbls (Total Slurry Volume) X (.1781)		Shoe Joint: 31.72 psi	
Sacks Needed 406 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		Total 393.48 psi	
Mix Water 72.27 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		Differential Pressure: 257.17 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed: 209.83 bbls	


Authorization To Proceed



Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #
LOCATION
FOREMAN
Date

80063
Weld
Kirk Kallhoff
3/20/2015

Customer
Well Name

Noble Energy Inc.
colt a13-633

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	855am 830am 912am	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	948am	10	0			0			0			0		
MIRU		10	951am	20	10			10			10			10		
CIRCULATE		20	953am	120	20			20			20			20		
Drop Plug		30	955am	210	30			30			30			30		
948 am		40	957am	260	40			40			40			40		
M & P		50	959am	270	50			50			50			50		
Time	Sacks	60	1001a	270	60			60			60			60		
924 am		70			70			70			70			70		
944 am stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	8%	120			120			120			120			120		
Mixed bbls	63	130			130			130			130			130		
Total Sacks	354	140			140			140			140			140		
bbl Returns	16	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 1005 am 520 psi

casing test 1000 psi 15 min

X *Charles Cobb*

X *WSS*

X *3-20-15*

Work Performed

Title

Date