



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/7/2015
Invoice #: 80026
API#: 05-123-40919
Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: Colt A13-638

County: Weld
State: Colorado
Sec: 17
Twp: 6N
Range: 63W
Consultant: Mike P.
Rig Name & Number: H&P 273
Distance To Location: 26 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 1000pm
Time Arrived On Location: 900pm
Time Left Location: 115am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 899
Total Depth (ft) : 933
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 29

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 10%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 23.0
Fluid Ahead (bbls): 60.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
60bbls+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.59 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 429.56 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 538.25 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 95.86 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 361 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 64.33 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 68.27 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 663.21 PSI

Pressure of the fluids inside casing

Displacement: 368.19 psi

Shoe Joint: 33.29 psi

Total 401.48 psi

Differential Pressure: 261.74 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 212.61 bbls

Authorization To Proceed



Bison Oil Well Cementing
Single Cement Surface Pipe

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FOREMAN
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DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1205am M & P Time Sacks 1146pm 1203am % Excess Mixed bbls Total Sacks bbl Returns Water Temp	1118pm 1045pm 1136pm 1205am M & P Time Sacks 1146pm 1203am % Excess Mixed bbls Total Sacks bbl Returns Water Temp	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
		0	1206am	60	0			0			0			0		
		10	1209am	70	10			10			10			10		
		20	1211am	70	20			20			20			20		
		30	1213am	200	30			30			30			30		
		40	1215am	270	40			40			40			40		
		50	1217am	310	50			50			50			50		
		60	1219am	310	60			60			60			60		
		70	1223am	260	70			70			70			70		
		80	Bump	460	80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		

Notes:

The day

1/2 bbl Back on Bleed Off

PSI Test 1134pm 1000psi, Cidr 1136pm 60bbls With Dye in 2nd 10bbls, Cement 1146pm 361 sks 95.86 bbls Slurry at 14.2lb 1.49 Yield, Shut Down

1203am, Drop Plug 1205am, Displace 1206am 68.27 bbls, Land Plug 1223am, Casing PSI Test 1224am 1000psi to 1239am 1000psi, Float Held,

23 bbls Slurry Back to Surface.

X

Work Performed

X

Title

X

Date