



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/4/2014

Invoice # 55009

API#

Foreman: monte

Customer: Noble Energy Inc.

Well Name: NCLP AA07-69-1AHNC

County: Weld

State: Colorado

Sec: 4

Twp: 6N

Range: 63W

Consultant: SHANE

Rig Name & Number: h&p 322

Distance To Location: 31.9

Units On Location: 4028-3102 4007-3210

Time Requested: 11:30PM

Time Arrived On Location: 10:35

Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 801
Total Depth (ft) : 881
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 124
Conductor ID : 15.6
Shoe Joint Length (ft) : 46
Landing Joint (ft) : 30

Max Rate: 5

Max Pressure: 2000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 15%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 60.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

10 fresh 10 dye 40 fresh

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.97 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 101.93 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 409.43 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 531.33 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 94.63 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 418 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 58.67 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 60.69 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 632.47 PSI

Pressure of the fluids inside casing

Displacement: 325.54 psi

Shoe Joint: 36.32 psi

Total 361.86 psi

Differential Pressure: 270.61 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 199.36 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.



Bison Oil Well Cementing
Single Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
NCLP AA07-69-1AHNC

INVOICE #
LOCATION
FOREMAN
Date

Tr

DESCRIPTION OF JOB EVENTS

Safety Meeting	12:15	Displace 1			Displace 2			Displace 3			Displace 4	
	11:45	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time
MIRU	12:54	0	131	0	0			0			0	
CIRCULATE		10	133	40	10			10			10	
Drop Plug		20	135	120	20			20			20	
1:31		30	137	170	30			30			30	
		40	140	270	40			40			40	
		50	142	300	50			50			50	
M & P		60	145	320	60			60			60	
Time	Sacks	60	148	520	70			70			70	
1:05-1:28	418	80			80			80			80	
		90			90			90			90	
		100			100			100			100	
		110			110			110			110	
% Excess	15%	120			120			120			120	
Mixed bbls	58.63	130			130			130			130	
Total Sacks	418	140			140			140			140	
bbl Returns	10	150			150			150			150	
Water Temp	69											

Notes:

Safety Meeting, miru, pressure test per company man circulate 60 bbls ahead with dye in 2nd 10, mix and pump 418 sks cement at bumped at 1:48 Am, at 520 psi, 10 bbls to pit .

crossing test 1000 - 15 min

X

Work Performed

X

Title