



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/7/2014
Invoice # 55011
API#
Foreman: monte

Customer: Noble Energy Inc.


Well Name: NCLP AA06-64-1HNC

County: Weld
State: Colorado

Sec: 4
Twp: 6n
Range: 63w

Consultant: ROBERT
Rig Name & Number: h&p 277
Distance To Location: 30.2
Units On Location: 4028-3102 4020-3212
Time Requested: 1:30am
Time Arrived On Location: 12:40
Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 757	Cement Yield (cuft) : 1.27
Total Depth (ft) : 837	Gallons Per Sack: 5.69
Open Hole Diameter (in.) : 13.75	% Excess: 20%
Conductor Length (ft) : 124	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit:
Shoe Joint Length (ft) : 46	Fluid Ahead (bbls): 50.0
Landing Joint (ft) : 28	H2O Wash Up (bbls): 20.0
Max Rate: 5	Spacer Ahead Makeup
Max Pressure: 2000	10 fresh 10 dye 30 fresh

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 57.13 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	19.97	cuft	Pressure of cement in annulus
(Casing ID Squared) X (.005454) X (Shoe Joint ft)			Hydrostatic Pressure: 597.73 PSI
cuft of Conductor	101.93	cuft	Pressure of the fluids inside casing
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)			Displacement: 306.57 psi
cuft of Casing	399.46	cuft	Shoe Joint: 36.32 psi
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)			Total 342.89 psi
Total Slurry Volume	521.36	cuft	Differential Pressure: 254.84 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)			Collapse PSI: 2020.00 psi
bbls of Slurry	92.85	bbls	Burst PSI: 3520.00 psi
(Total Slurry Volume) X (.1781)			Total Water Needed: 184.70 bbls
Sacks Needed	411	sk	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	57.57	bbls	
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
 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

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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	3:00															
MIRU	2:15															
CIRCULATE	3:23	0	3:58	0	0			0			0			0		
Drop Plug		10	4:03	80	10			10			10			10		
3:58		20	4:05	110	20			20			20			20		
		30	4:07	150	30			30			30			30		
		40	4:09	270	40			40			40			40		
M & P		50	4:12	320	50			50			50			50		
Time	Sacks	60	4:14	630	60			60			60			60		
3:34-3:55	411	70			70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	20%	120			120			120			120			120		
Mixed bbls	57.57	130			130			130			130			130		
Total Sacks	411	140			140			140			140			140		
bbl Returns	10	150			150			150			150			150		
Water Temp	66															

Notes:

Safety Meeting, miru, pressure test per company man circulate 50 bbls ahead with dye in 2nd 10, mix and pump 411 SKS cement at 20% excess, drop plug and displace 57.57 bbls at 4:14 Am, at 630 psi, 10 bbls to pit. Casing test 1000 psi 15 min

X Robert Mills
Work Performed

X WSS
Title

X 8-7-14
Date