Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 7/3/2014
Invoice # 12055
API#
Foreman: Kirk Kallhoff

Customer: Noble
Well Name: nclp aa 06-69hnc

County: weld
State: Colorado
Sec: 4
Twp: 6n
Range: 63w

Consultant: josh
Rig Name & Number: h&p321
Distance To Location: 30
Units On Location: 3103-3212
Time Requested: 530 am
Time Arrived On Location: 540 am
Time Left Location: 8:00 am

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	819
Total Depth (ft) :	854
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	100
Conductor ID :	16
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	30
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	40.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.10 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 456.50 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 564.69 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 100.57 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 445 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 62.36 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.19 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 646.29 PSI

Pressure of the fluids inside casing

Displacement: 333.95 psi
Shoe Joint: 34.74 psi
Total 368.69 psi

Differential Pressure: 277.60 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 184.55 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

INVOICE #	12055
LOCATION	weld
FOREMAN	Kirk Kallhoff
Date	7/3/2014

Customer	Noble
Well Name	nclp aa 06-69hnc

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DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	613am	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	545am	0	708am	10	0			0			0			0		
CIRCULATE	629am	10	711am	40	10			10			10			10		
Drop Plug		20	713am	80	20			20			20			20		
708 am		30	715am	170	30			30			30			30		
		40	718am	230	40			40			40			40		
M & P		50	721am	300	50			50			50			50		
Time	**Sacks**	60	724am	300	60			60			60			60		
645 am	414	70			70			70			70			70		
705 am stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	14%	120			120			120			120			120		
Mixed bbls	58	130			130			130			130			130		
Total Sacks	414	140			140			140			140			140		
bbl Returns	15	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 726 am 470 psi 93.6 bbls slurry

X _____ Work Performed

X WSS Title

X 7-3-14 Date