



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/27/2014
 Invoice #: 45026
 API#: 05-123-39332
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
 Well Name: DOLPH 15C-1HZ

County: Weld
 State: Colorado
 Sec: 1
 Twp: 2N
 Range: 66W

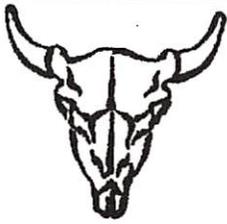
Consultant: MIKE
 Rig Name & Number: ENSIGN 145
 Distance To Location: 22
 Units On Location: 4031-3106/ 4017-3203
 Time Requested: 1830
 Time Arrived On Location: 1800
 Time Left Location: 230

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.) : 1,399	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1423	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 23%
Conductor Length (ft) :	Displacement Fluid lb/gal: 8.3
Conductor ID :	BBL to Pit: 62.0
Shoe Joint Length (ft) : 42	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 37	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	30BBL H2O W/KCL, Dye in 2nd 10

Calculated Results	Pressure of cement in annulus
cuft of Shoe 18.36 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 107.74 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 0.00 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1032.18 PSI
cuft of Casing 838.37 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 856.73 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 585.06 psi Shoe Joint: 31.21 psi Total: 616.27 psi
bbls of Slurry 152.58 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 415.91 psi
Sacks Needed 575 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Mix Water 102.40 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 260.14 bbls

X *Michael*
 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

Anadarko Petroleum Corporation
DOLPH 15C-1HZ

INVOICE #
LOCATION
FOREMAN
Date

45026
Weld
JASON KELEHER
8/27/2014

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DESCRIPTION OF JOB EVENTS

		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	1030															
MIRU	830															
CIRCULATE	1119	0	1241	0	0			0			0			0		
Drop Plug		10	1244	40	10			10			10			10		
1241		20	1247	110	20			20			20			20		
		30	1249	300	30			30			30			30		
		40	1250	360	40			40			40			40		
M & P		50	1252	400	50			50			50			50		
Time	Sacks	60	1257	330	60			60			60			60		
1127-1238	575	70	100	520	70			70			70			70		
		80	102	540	80			80			80			80		
		90	104	490	90			90			90			90		
		100	107	490	100			100			100			100		
		110	109	520	110			110			110			110		
% Excess	23%	120	BUMP	1000	120			120			120			120		
Mixed bbls	102.4	130			130			130			130			130		
Total Sacks	575	140			140			140			140			140		
bbl Returns	62	150			150			150			150			150		
Water Temp	63															

Notes:

The day

PRESSURE TESTED TO 1500 PSI AT 2315, PUMPED 30 BBL WATER 2ND 10 HAVING DYE AT 2319, MIXED AND PUMPED 575 SKS AT 14.2, 152.5 BBL AT 2327, SHUT DOWN AT 2335 DUE TO THE RIGS PUMP IN THE CELLAR GOING DOWN, STARTED BACK UP AT 0002, SHUT DOWN AT 0038, DROPPED PLUG AT 0041, STARTED DISPLACEMENT AT 0041, BUMPED PLUG AT 0109, LANDING AT 520 PSI AND PRESSURING UP TO 1000 PSI, HELD FOR 2 MINUTES AND RELEASED AND GOT .5 BBL BACK, AT 0115 REPRESSURED UP WELL TO 1000 PSI FOR 5 MINUTES AND RELEASED

X Michael Ober
Work Performed

X _____
Title

X _____
Date

DOLPH 15C-1H2

