



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/1/2015
 Invoice # 80000
 API# 05-123-40980
 Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation
Well Name: Skim State 34N-28HZ

County: Weld
 State: Colorado
 Sec: 21
 Twp: 3N
 Range: 65W

Consultant: Toby/Ellis
 Rig Name & Number: Advanced 10
 Distance To Location: 10 Miles
 Units On Location: 4023-3104/4030-3203
 Time Requested: 400am
 Time Arrived On Location: 150am
 Time Left Location: 6:00 AM

WELL DATA		Cement Data	
Casing Size OD (in) :	<u>9.625</u>	Cement Name:	<u>BFN III</u>
Casing Weight (lb) :	<u>36.00</u>	Cement Density (lb/gal) :	<u>14.2</u>
Casing Depth (ft.) :	<u>1,222</u>	Cement Yield (cuft) :	<u>1.49</u>
Total Depth (ft) :	<u>1236</u>	Gallons Per Sack:	<u>7.48</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>15%</u>
Conductor Length (ft) :	<u>45</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>16</u>	BBL to Pit:	<u>18</u>
Shoe Joint Length (ft) :	<u>43</u>	Fluid Ahead (bbls):	<u>30.0</u>
Landing Joint (ft) :	<u>8</u>	H2O Wash Up (bbls):	<u>20.0</u>
Max Rate:	<u>5</u>	Spacer Ahead Makeup	
Max Pressure:	<u>2500</u>	<u>30bbls H2O+Dye in 2nd 10bbls</u>	

Calculated Results	Displacement:	91.72 bbls
cuft of Shoe <u>18.77</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Conductor <u>40.09</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus	
cuft of Casing <u>661.33</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure:	<u>901.23 PSI</u>
Total Slurry Volume <u>720.20</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing	
bbls of Slurry <u>128.27</u> bbls (Total Slurry Volume) X (.1781)	Displacement:	<u>508.12 psi</u>
Sacks Needed <u>483</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint:	<u>31.90 psi</u>
Mix Water <u>86.08</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total	<u>540.01 psi</u>
	Differential Pressure:	<u>361.21 psi</u>
	Collapse PSI:	<u>2020.00 psi</u>
	Burst PSI:	<u>3520.00 psi</u>
	Total Water Needed:	<u>227.80 bbls</u>

X [Signature]
 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.



DISP ON WELL CEMENTING
Single Cement Surface Pipe

Customer
 Well Name

Anadarko Petroleum Corporation
 Skim State 34N-28HZ

INVOICE #
 LOCATION
 FOREMAN
 Date

80000
 Weld
 Calvin Reimers
 3/1/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	350am	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU	155am	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE	423am	0	457am	90	0			0			0			0		
Drop Plug		10	500am	50	10			10			10			10		
456am		20	502am	90	20			20			20			20		
		30	504am	130	30			30			30			30		
		40	505am	210	40			40			40			40		
M & P		50	507am	270	50			50			50			50		
Time	Sacks	60	509am	330	60			60			60			60		
429am	483	70	511am	360	70			70			70			70		
453am		80	513am	400	80			80			80			80		
		90	516am	340	90			90			90			90		
		100	517am	340	100			100			100			100		
		110	Bump	830	110			110			110			110		
% Excess	15%	120			120			120			120			120		
Mixed bbls	86.08	130			130			130			130			130		
Total Sacks	483	140			140			140			140			140		
bbl Returns	18	150			150			150			150			150		
Water Temp	75.8															

Notes:

The day

1/2 bbl Back on Bleed Off

X Ellis Reimers
 Work Performed

X _____
 Title

X 3-1-15
 Date

SERIES 2000

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume

