Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 3/28/2015
Invoice # 80019
API# 05-123-41284
Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation
Well Name: Bat 29N1-9HZ

County: Weld
State: Colorado
Sec: 9
Twp: 1N
Range: 65W

Consultant: Toby
Rig Name & Number: Advanced 10
Distance To Location: 26 Miles
Units On Location: 4027-3106/4030-3203
Time Requested: 600am
Time Arrived On Location: 545am
Time Left Location: 9:00am

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,537
Total Depth (ft) :	1550
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	45
Conductor ID :	16
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	8
Max Rate:	6
Max Pressure:	1750

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	20%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	2 /
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
30bbls H2O+Dye in 2nd 10bbls

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.99 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 40.09 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 875.16 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 934.23 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 166.39 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 627 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 111.67 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 116.08 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1134.01 PSI

Pressure of the fluids inside casing

Displacement: 643.96 psi
Shoe Joint: 32.27 psi
Total 676.23 psi

Differential Pressure: 457.78 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 277.74 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	Anadarko Petroleum Corporation
Well Name	Bat 29N1-9HZ

INVOICE #	36019
LOCATION	Weld
FOREMAN	Calvin Reimers
Date	3/28/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	655am
MIRU	545am
CIRCULATE	716am
Drop Plug	
752am	
M & P	

Time	Sacks
722am	627
750am	

% Excess	20%
Mixed bbls	111.67
Total Sacks	627
bbl Returns	21
Water Temp	50.9

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
0	753am	70	0			0			0			0		
10	756am	40	10			10			10			10		
20	758am	70	20			20			20			20		
30	800am	80	30			30			30			30		
40	802am	140	40			40			40			40		
50	804am	200	50			50			50			50		
60	805am	250	60			60			60			60		
70	807am	300	70			70			70			70		
80	809am	370	80			80			80			80		
90	811am	420	90			90			90			90		
100	813am	450	100			100			100			100		
110	815am	450	110			110			110			110		
120	818am	410	120			120			120			120		
130	Bump	900	130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

The day

1/2 bbl Back on Bleed Off

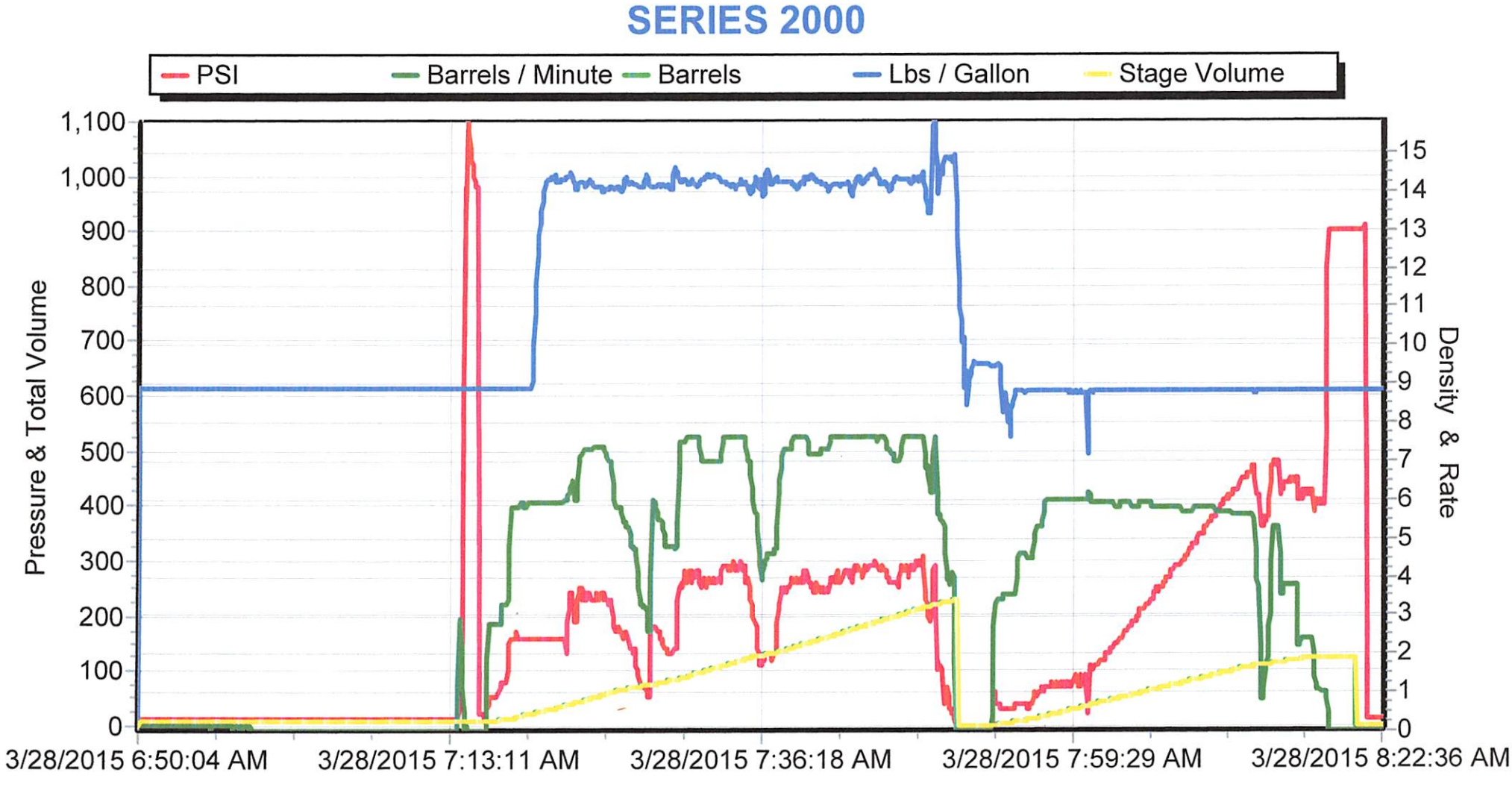
PSI Test 714am 1000 psi, Cicr 716am 30 bbls H2O With Dye in 2nd 10 bbls, Cement 722am 14.2 lb 1.49 Yield 627 sks 166.39 bbls Slurry Shut Down

750am, Drop Plug 752am, Displace 753am 116.08 bbls, Land Plug 818am Held 2 min. Float Held 1/2 bbl Back on Bleed Off, 21 bbls Slurry Back to Surface

X Toby G
Work Preformed

X
Title

X
Date


SERIES 2000
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
1,100
1,000
900
800
700
600
500
400
300
200
100
0
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
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3/28/2015 6:50:04 AM
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3/28/2015 7:59:29 AM
3/28/2015 8:22:36 AM