Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 6/3/2017
Invoice # 200100
API#
Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation

Well Name: fl greens federal 35n-8hz

County: Weld
State: Colorado

Sec: 22
Twp: 3n
Range: 68w

Consultant: matt
Rig Name & Number: wmo 252
Distance To Location: 36
Units On Location: 4028/4034/4024
Time Requested: 400 pm
Time Arrived On Location: 300 pm
Time Left Location:

WELL DATA

Casing Size OD (in) :	_9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,819
Total Depth (ft) :	1844
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.6
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	15
Max Rate:	8
Max Pressure:	2000

Cement Data

Cement Name: BFN III

Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.40
% Excess:	15%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	10.0

Spacer Ahead Makeup

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.66 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 65.76 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 977.39 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1061.81 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 189.11 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 713 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 125.56 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 138.46 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1341.88 PSI

Pressure of the fluids inside casing

Displacement: 765.78 psi
Shoe Joint: 31.72 psi
Total 797.50 psi

Differential Pressure: 544.38 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 304.02 bbls

X _____ Cmer
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
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Customer	Anadarko Petroleum Corporation
Well Name	fl greens federal 35n-8hz

INVOICE #	200100
LOCATION	Weld
FOREMAN	Kirk Kallhoff
Date	6/3/2017

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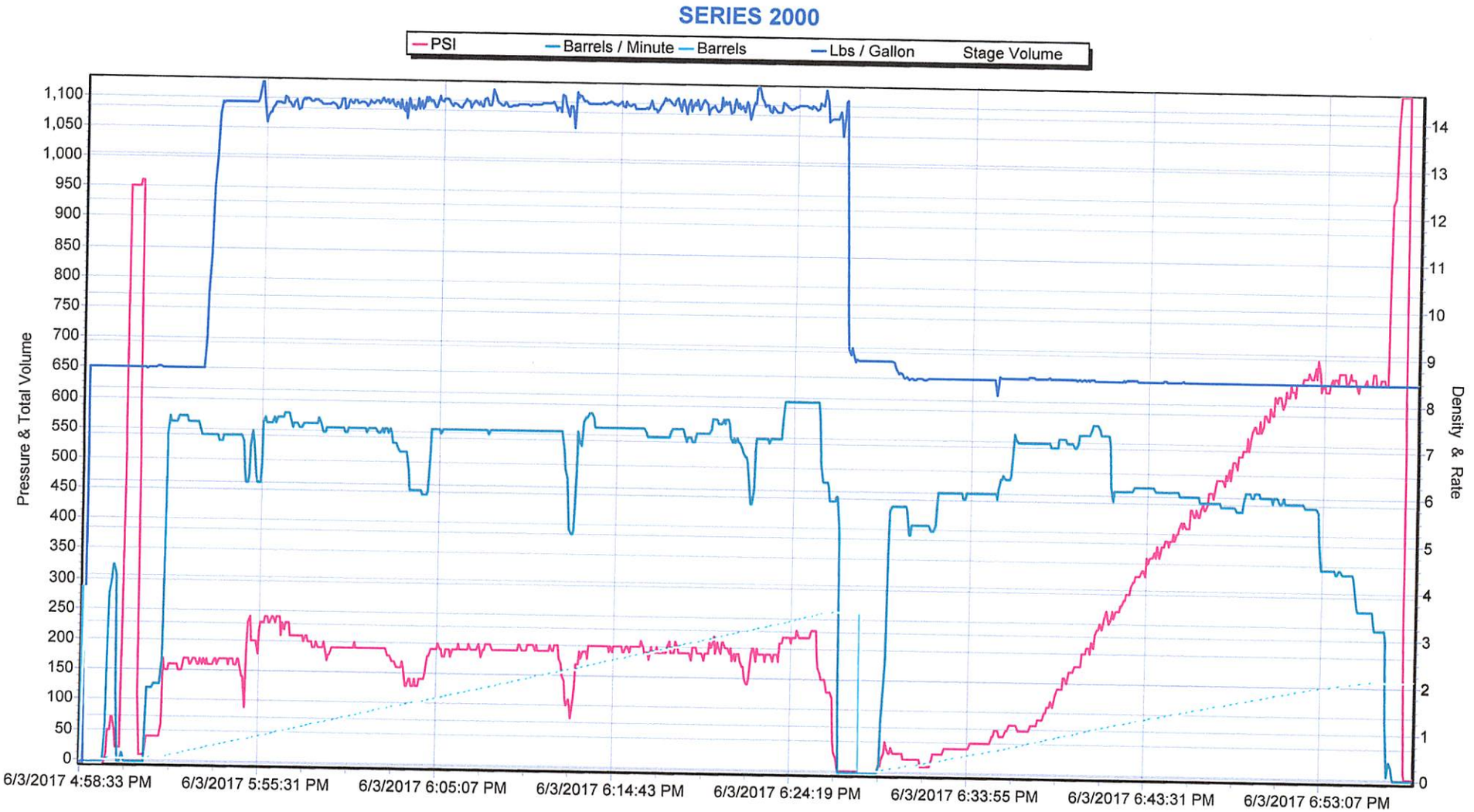
DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	15%	315 pm	arived on location				
Mixed bbls	125.6	330 pm	MIRU				
Total Sacks	713	525 pm	JSA				
bbl Returns	21	546 pm	Pressure Test	1300 psi	0.5	1	1320
Water Temp	60	548 pm	Spacer Ahead	30bbls h20 dye in 2nd 10	6	30	200
		554 pm	Lead Cement	713 sks cement 189.1 bbls slurry	6	189.1	300
Notes:		626 pm	Shutdown				0
		628 pm	Drop Plug				
		628 pm	Start Displacement	138.4 bbls h2o	6	138.4	300
		656 pm	Bump Plug	650 lift psi	2	138.4	1110
		657 pm	Test Floats				0
		700 pm	End Job				
		700 pm	Rig Down				
		715 pm	Leave Location				

X _____
Work Preformed

X _____
Title

X 6-3-17
Date


SERIES 2000
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
1,100
1,050
1,000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
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14
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6/3/2017 6:14:43 PM
6/3/2017 6:24:19 PM
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