Bison Oil Well Cementing
Single Cement Surface Pipe

Customer	Anadarko Petroleum Corporation
Well Name	damore 18-3hz

INVOICE #	200573
LOCATION	Weld
FOREMAN	Kirk Kallhoff
Date	2/23/2020

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Amount Pumped			Event	Description	Rate	BBLs	Pressure
% Excess	10%	1130 pm	arived on location				
Mixed bbls	122.6	100 am	MIRU				
Total Sacks	696	320 am	JSA				
bbl Returns	8	353 am	Pressure Test		0.5		1000
Water Temp	60	354 am	Spacer Ahead	30 bbls h2o dye in 2nd 10	5	30	120
		359 am	M&P	696 sks cement 14.2 lbs 183.5 bbls slurry	5	183.5	250
Notes:		441 am	Shutdown				0
		443 am	Drop Plug				
		443 am	Start Displacement	140 bbls h2o	5		300
		508 am	Bump Plug	140 bbls h2o 5230 psi lift	2	140	1060
		509 am	Test Floats				
		510 am	End Job				
		515 am	Rig Down				
		530 am	Leave Location				

X Joe Waller
Work Preformed

X Oxy Rep
Title

X 2-23-20
Date

Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 2/23/2020
Invoice # 200573
API#
Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation
Well Name: damore 18-3hz

County: Weld
State: Colorado
Sec: 18
Twp: 5n
Range: 67w

Consultant: joe
Rig Name & Number: Cartel 88
Distance To Location: 15
Units On Location: 4028/4034/4039
Time Requested: 100 am
Time Arrived On Location: 1130 pm
Time Left Location: 5' 1245pm

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,850
Total Depth (ft) :	1860
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	41
Landing Joint (ft) :	8
Max Rate:	8
Max Pressure:	2000

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.48
Gallons Per Sack:	7.40
% Excess:	10%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	10.0

Spacer Ahead Makeup
30 bbl with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 17.80 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 61.05 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 951.56 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1030.40 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 183.51 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 696 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 122.67 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 140.47 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1364.75 PSI

Pressure of the fluids inside casing

Displacement: 780.01 psi
Shoe Joint: 30.25 PSI
Total 810.25 psi

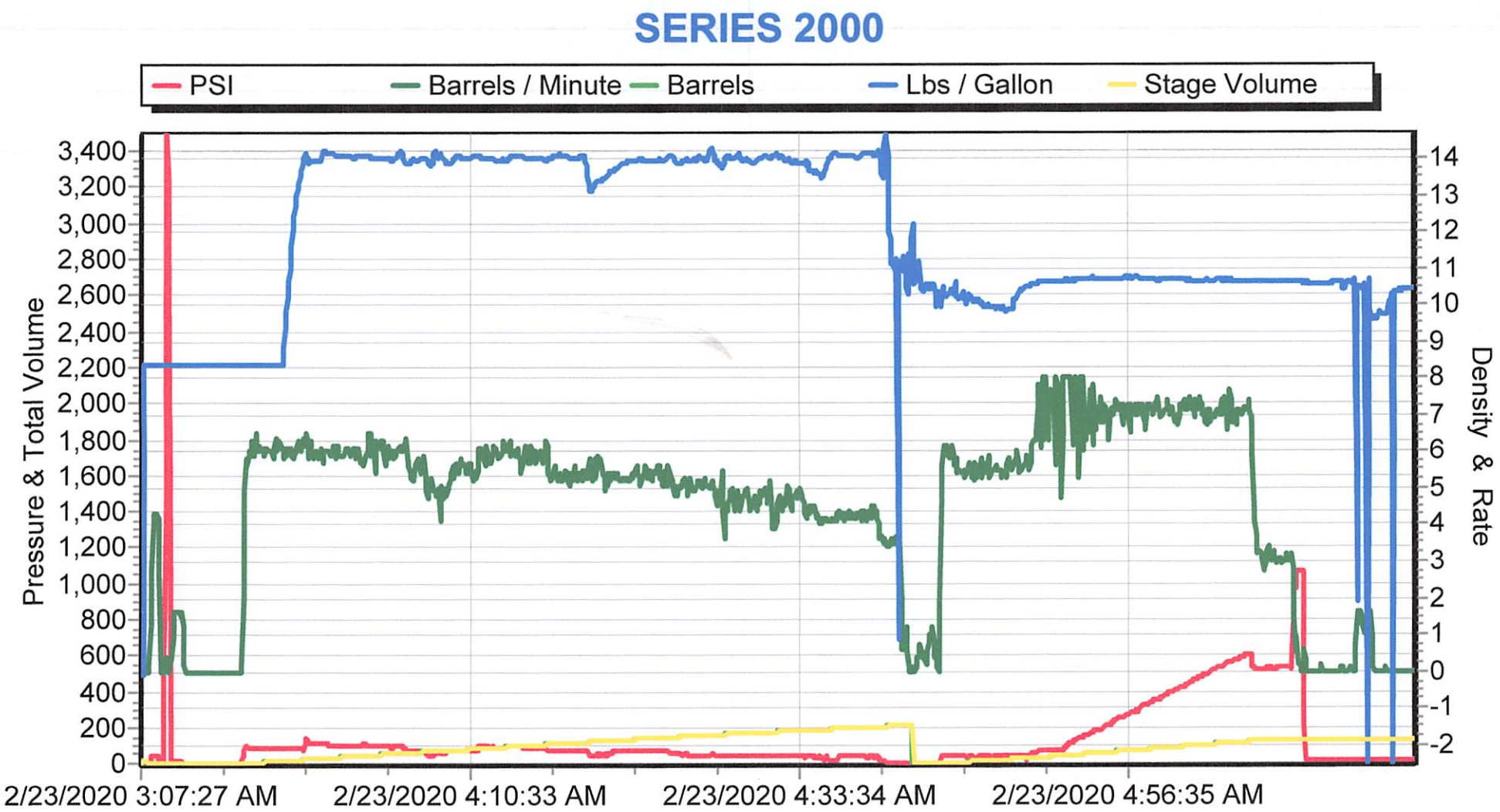
Differential Pressure: 554.49 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 303.14 bbls

X Joe Wallen
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.


SERIES 2000
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
3,400
3,200
3,000
2,800
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
14
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