Bison Oil Well Cementing
Single Cement Surface Pipe

Customer	Anadarko Petroleum Corporatio
Well Name	Ranger 7-20HZ

INVOICE #	606444
LOCATION	Weld
FOREMAN	Nick Vigil
Date	3/2/2019

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

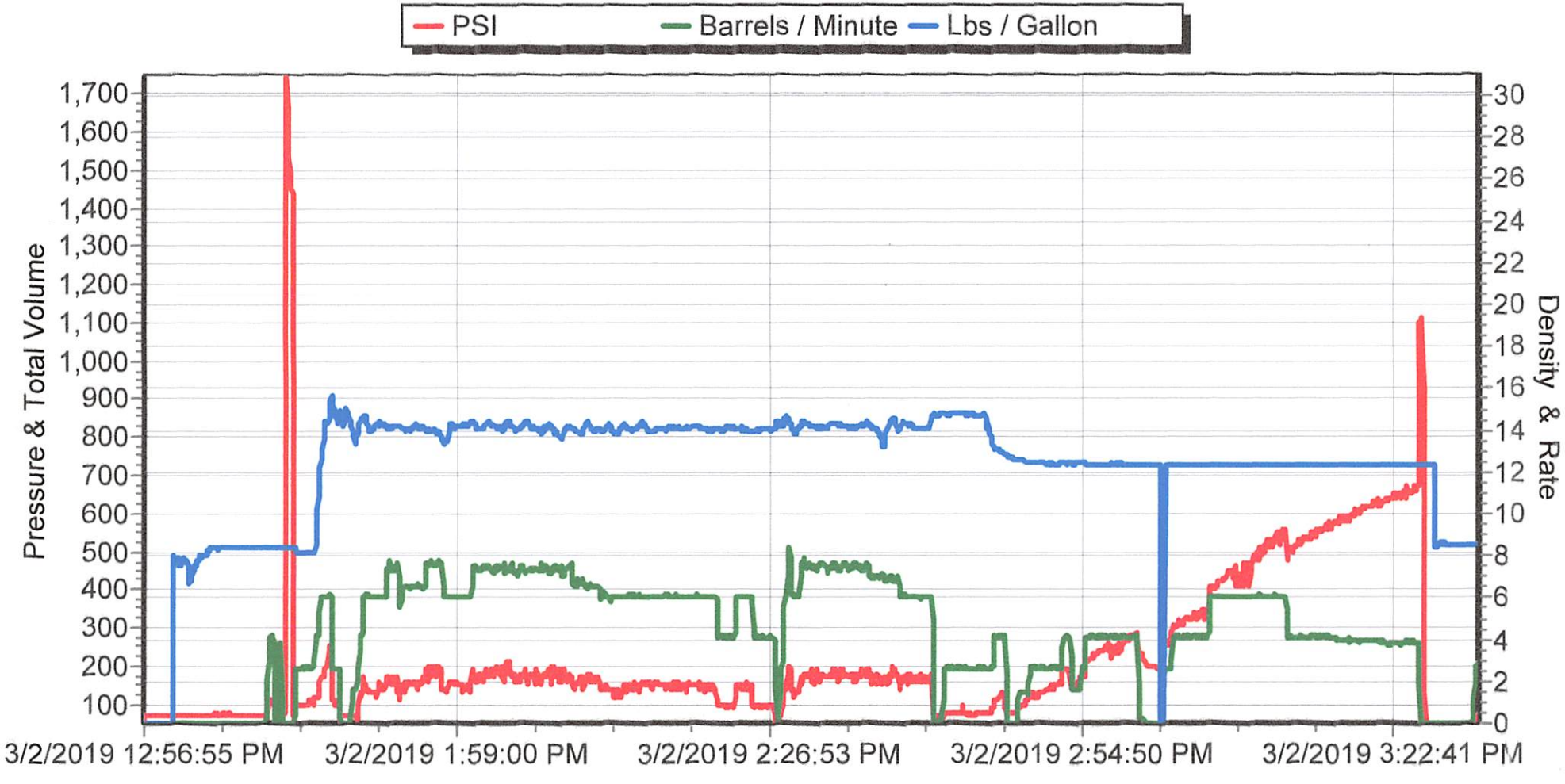
Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	150%	12:20	Arrive On Location	Rig was running casing.			
Mixed bbls	403.7	12:25	Well Site Assesment	Hazard hunt, Rig up safety meeting			
Total Sacks	1521	12:30	Rig Up Equipment				
bbl Returned	0	13:15	JSA	Held Safety meeting with all personel involved in job.			
Water Temp	45	13:40	Pressure Test Lines	Pressure tested lines to 1700 psi.			
		13:42	Spacer Ahead	Fresh water with dye in second 10 bbl.	6	30	190
Notes:		13:45	Pump Cement	14.2 ppg Cement W/ployflake	6.5	403.7	170
Had returns until plug was			Shut Down	Did not shut down			
dropped and then nothing.		14:45	Drop Plug	We dropped plug on the fly.			
		14:45	Pump Displacement	Fresh water	6	70	450
		15:25	Bump Plug	Bumped plug 430 psi over final lift (1110psi)	3.9	142	680
		15:26	Check Floats	Floats held (flowed back .5 bbl)			
		15:27	End Job				
		15:30	Rig Down Equipment				
		16:00	Leave Location				

X _____ Work Preformed

X BNSC Title

X 3-2-19 Date

Ranger 7-20HZ



Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 3/2/2019
Invoice # 606444
API# 05-123-49357
Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation
Well Name: Ranger 7-20HZ

County: Weld
State: Colorado
Sec: 8
Twp: 1N
Range: 65W

Consultant: Brett
Rig Name & Number: Cartel 88
Distance To Location: 36 Miles
Units On Location: 4045/4044/4030/4023
Time Requested: 13:00
Time Arrived On Location: 12:20
Time Left Location:

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,870
Total Depth (ft) :	1880
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	10
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:	7.48
% Excess:	150%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	10.0

Spacer Ahead Makeup
Dye in second 10 bbl

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

cuft of Casing 2187.06 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 2266.78 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 403.71 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 1521 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 270.94 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 142.02 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1379.50 PSI

Pressure of the fluids inside casing

Displacement: 787.77 psi
Shoe Joint: 31.72 psi
Total 819.49 psi

Differential Pressure: 560.01 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 452.96 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.