

Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/18/2014

Invoice # 65007

API# 05-123-40090

Foreman: LEE SHARP

Customer: Anadarko Petroleum Corporation

Well Name: WARDELL 2G-19HZ

County: Weld

State: Colorado

Sec: 19

Twp: 3N

Range: 65W

Consultant: ELLIS

Rig Name & Number: MAJORS 29

Distance To Location: 9

Units On Location: 4031-3106/ 4019-3213

Time Requested: 2000

Time Arrived On Location: 1900

Time Left Location: 330

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 1,314
Total Depth (ft) : 1330.25
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) :
Conductor ID :
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 6

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 21%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 15.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30 BBL WATER, DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.61 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 0.00 cuft

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

cuft of Casing 775.77 cuft

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

Total Slurry Volume 794.38 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 141.48 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 533 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 94.95 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 98.73 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 969.34 PSI

Pressure of the fluids inside casing

Displacement: 548.08 psi

Shoe Joint: 31.63 psi

Total 579.72 psi

Differential Pressure: 389.62 psi

Collapse PSI: 2020.00 psi

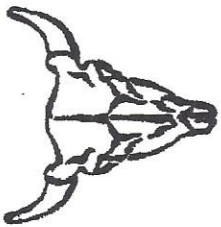
Burst PSI: 3520.00 psi

Total Water Needed: 243.68 bbls

X *Ellis*

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**

INVOICE #
LOCATION
FOREMAN
Date

65007
Weld
LEE SHARP
9/18/2014

Customer
Well Name

Anadarko Petroleum Corporation
WARDELL 2G-19HZ

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	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
Safety Meeting	2135														
MIRU	2105														
CIRCULATE	2202														
Drop Plug															
2251															
M & P															
Time	Sacks														
2210-2248	510														
0130-0150	23														
% Excess	21%														
Mixed bbls	94.95														
Total Sacks	533														
bbl Returns	15														
Water Temp	73														

Notes:

PERFORMED PRESSURE TEST TO 2000 PSI AT 2205, PUMPED 30 BBL WATER W/ DYE IN 2ND 10 AT 2207, MIXED AND PUMPED 510 SKS AT 14.2, 135.3
BBL AT 2210, SHUT DOWN AT 2247, STARTED DISPLACEMENT AT 2251, LANDED PLUG AT 460 PSI AT 2319 AND PRESSURED UP TO 1450 PSI, HELD FOR
2 MINUTES AND CHECKED FLOATS, GOT .25 BBL BACK, REPRESSURED WELL TO 1000 PSI FOR 2 MINUTES AND RELEASED.
MIXED AND PUMPED 23 SKS AT 14.2, 6.1 BBLs TO TOP OUT WELL

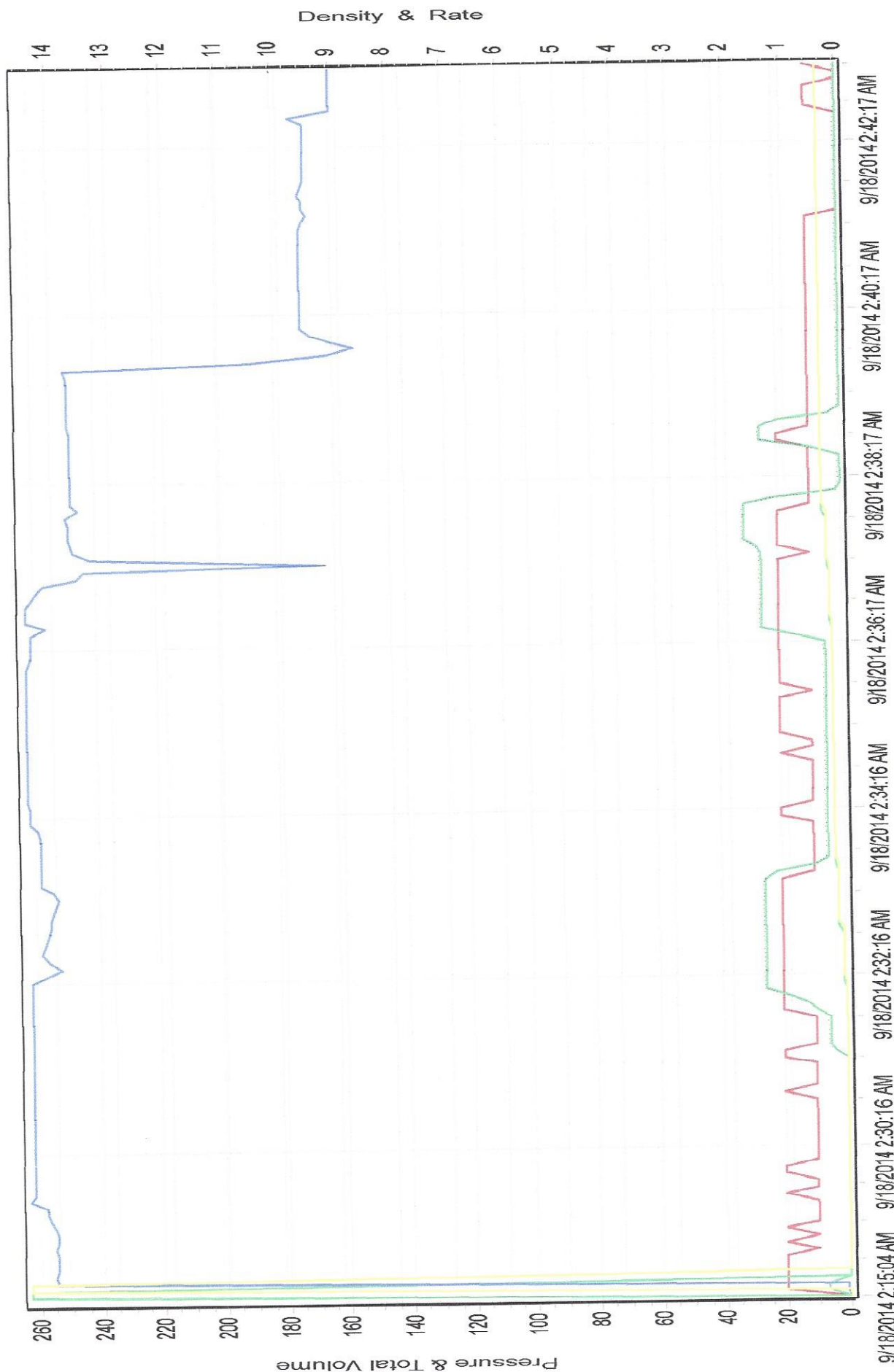
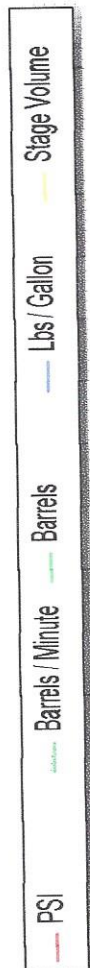
Ellis Foreman 11/9/29

X Title

X Date

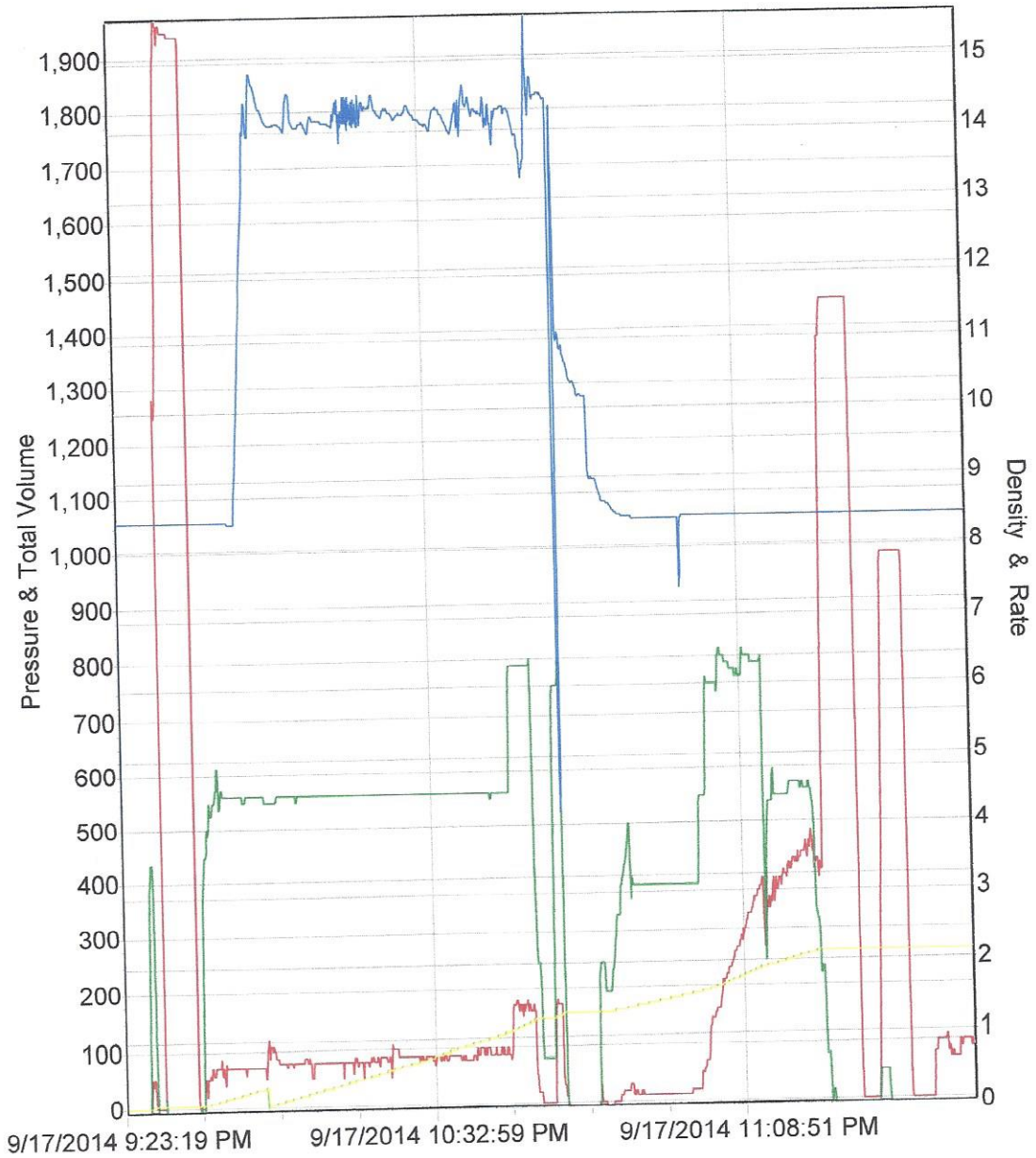
Work Performed

WARDELL 2G-19HZ TOP OUT



SERIES 2000

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





Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/17/2014
Invoice #: 65007
API#: 05-123-400900
Foreman: LEE SHARP

Customer: Anadarko Petroleum Corporation
Well Name: WARDELL 26-19HZ

County: Weld
State: Colorado

Sec: 19
Twp: 3N
Range: 65W

Consultant: ELLIS L
Rig Name & Number: MAJOR 29
Distance To Location: 9
Units On Location: 4031-3106;
Time Requested: 8:00
Time Arrived On Location: 6:55
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,314
Total Depth (ft) : 1330.25
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 0
Conductor ID : 0
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 6

Max Rate:
Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 15%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 0.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30BBL= 10F+10D+10F

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.61 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 0.00 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 741.23 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 759.84 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 135.33 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 510 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 90.82 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 98.75 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 969.52 PSI

Pressure of the fluids inside casing

Displacement: 548.19 psi

Shoe Joint: 31.63 psi

Total 579.82 psi

Differential Pressure: 389.70 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 239.57 bbls

X Major 29
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.