

REPORT NO.  
115632

PAGE NO. 1

TEST DATE:  
11-Nov-1988

STAR<sup>TM</sup>

A Schlumberger Transient Analysis Report

A Production System Analysis (NODAL<sup>TM</sup>)

Of A Schlumberger Drillstem Test



Company: SANTA FE ENERGY

Well: Shinnery 14 Fed #1

TEST IDENTIFICATION

Test Type ..... MFE OH

Test No. .... two

Formation ..... Lower Bone Springs

Test Interval (ft) ... 9738 to 9787

Reference Depth ..... Kelly Bushing

WELL LOCATION

Field ..... n/a

County ..... Lea

State ..... New Mexico

Sec/Twn/Rng ..... 14/18S/32E

Elevation (ft) ..... 3738

HOLE CONDITIONS

Total Depth (MD/TUD)(ft) . 9787 / 9787

Hole Size (in) ..... 7.875

Casing/Liner O.D. (in) ... 8 5/8

Perf'd Interv./Nt Pay(ft). --/11

Shot Density/Diameter(in).

MUD PROPERTIES

Mud Type ..... Cut Brine

Mud Weight (lb/gal) ..... 9.2

Mud Resistivity (ohm.m) .. .09 @ 60F

Filtrate Resistiv.(ohm.m).

Filtrate Chlorides (ppm) . 102000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi). 4788

Gas Cushion Type ..... None

Surface Pressure (psi) ...

Liquid Cushion Type ..... None

Cushion Length (ft) .....

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D.(in). 9076 / 3.83 5.7

Collar Length ft/I.D.(in). 623 / 2.25 3.26

Packer Depths (ft) ..... 9733,9738

Bottomhole Choke Size(in). 15/16

Gauge Depth (ft)/Type .... 9781 / J-2104

NET PIPE RECOVERY

| Volume   | Fluid Type | Properties   |
|----------|------------|--------------|
| 1021 ft. | Oil        | 36 API @ 60F |
| 220 ft.  | Mud        | Rm=.09 @ 60F |
|          |            | 101000 PPM   |
|          |            |              |
|          |            |              |

NET SAMPLE CHAMBER RECOVERY

| Volume     | Fluid Type | Properties   |
|------------|------------|--------------|
| .95 cu.ft. | Gas        |              |
| 400 cc.    | Oil        | 36 API @ 60F |
| 1500 cc.   | Mud        | Rm=.09 @ 60F |
|            |            | 101000 PPM   |
| Press. 430 | GOR: 375   | GLR: 71      |

VALIDATION RESULTS

Model of Behavior ..... Dual Porosity

Fluid Type Used ..... Liquid

Reservoir Pressure (psi) . 3597

Transmissivity (md.ft/cp) 50.54

Permeability (md) ..... 3.64

Skin Factor/Damage Ratio . -1.34 / .73

Storativity Ratio .....

Interporosity Flow Coeff..

Distance to Anomaly (ft).

Investigation Radius (ft). 76

Potentiometric Surf. (ft).

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API) ... 36

Basic Solids (%) .....

Gas Gravity .....

Water Cut (%) ..... 0

Viscosity (cp) ..... 1.26

Tot. Compress. (1/psi) ... 9.45 E-06

Porosity (%) ..... 6

Reservoir Temperature (F). 140

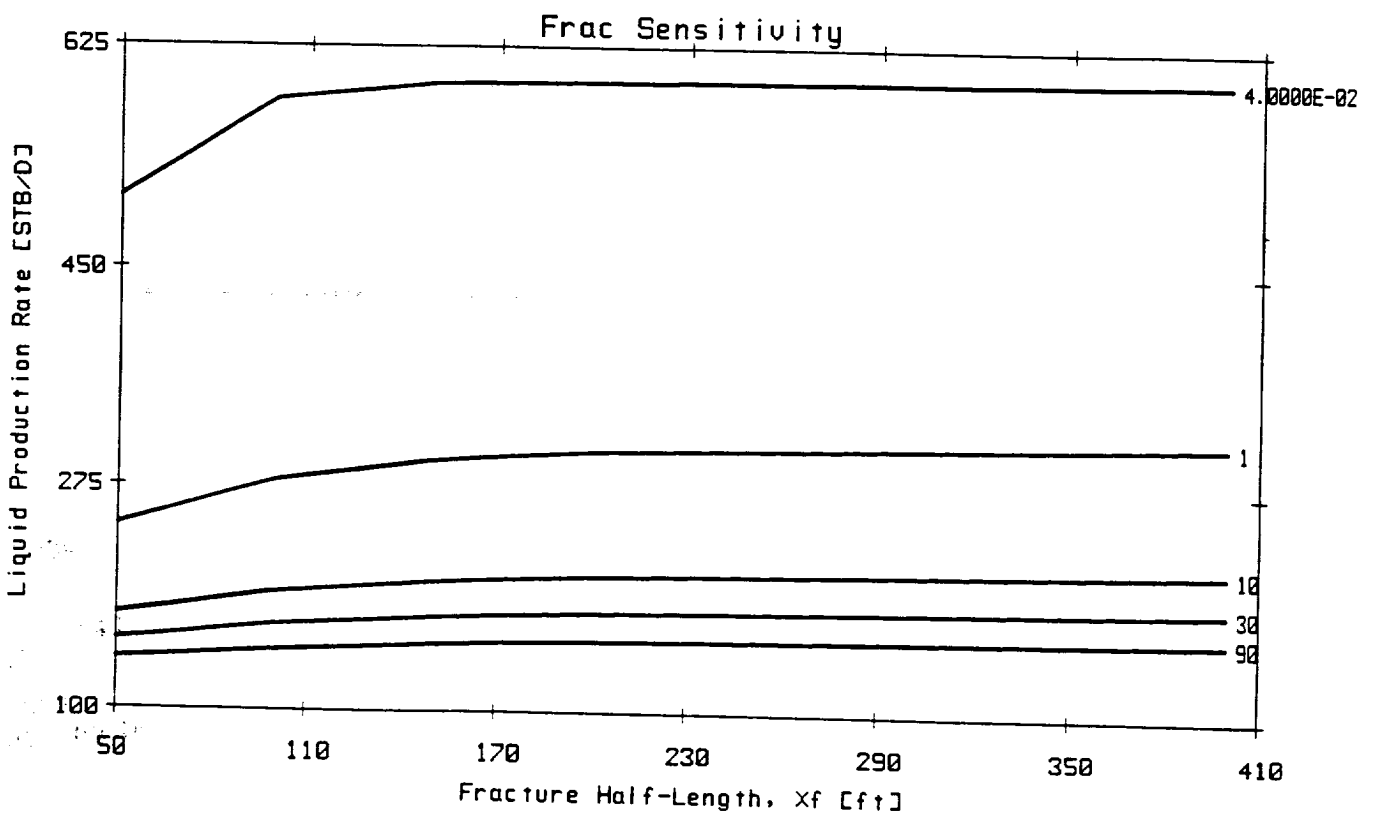
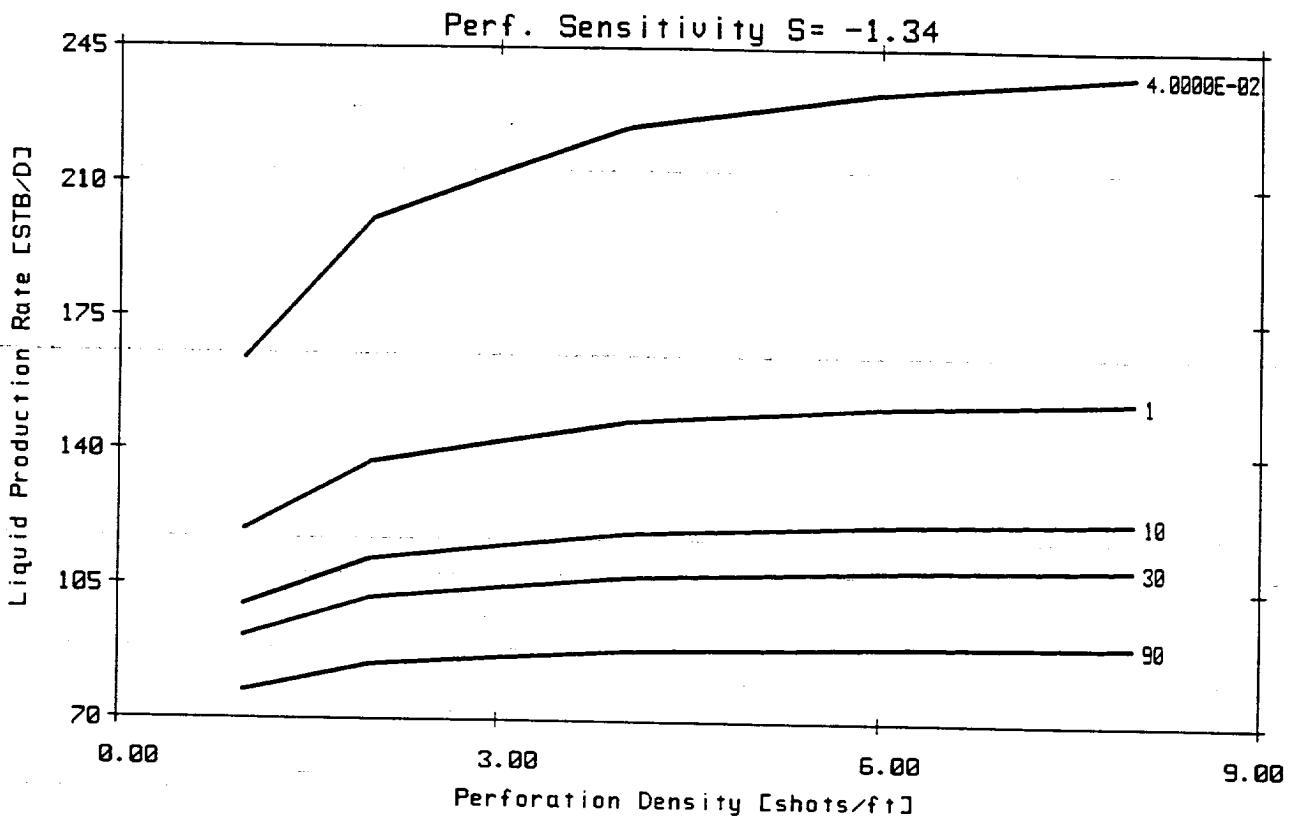
Form.Vol.Factor (bbl/STB). 1.16

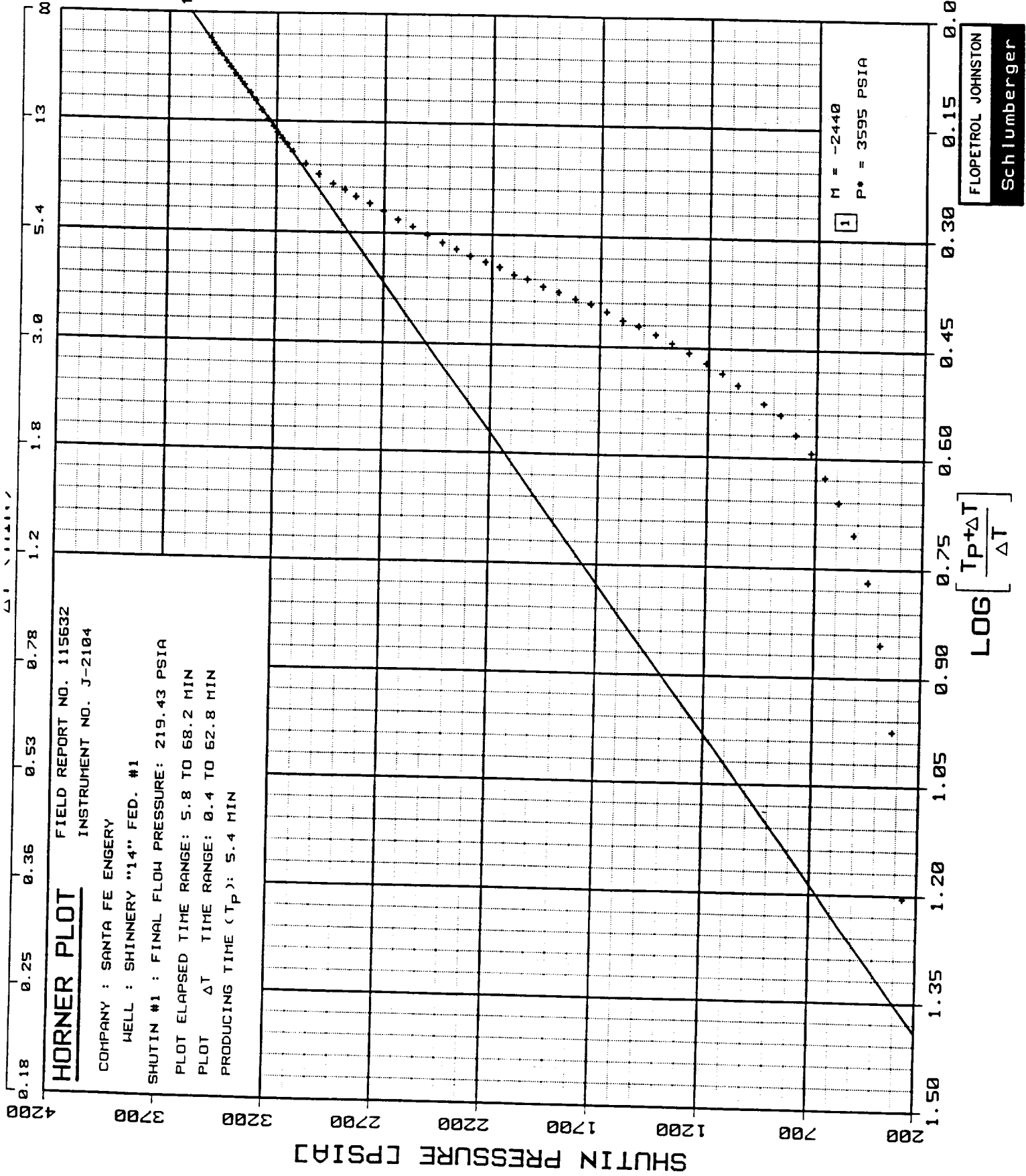
PRODUCTION RATE DURING TEST: 246 Bbls/day

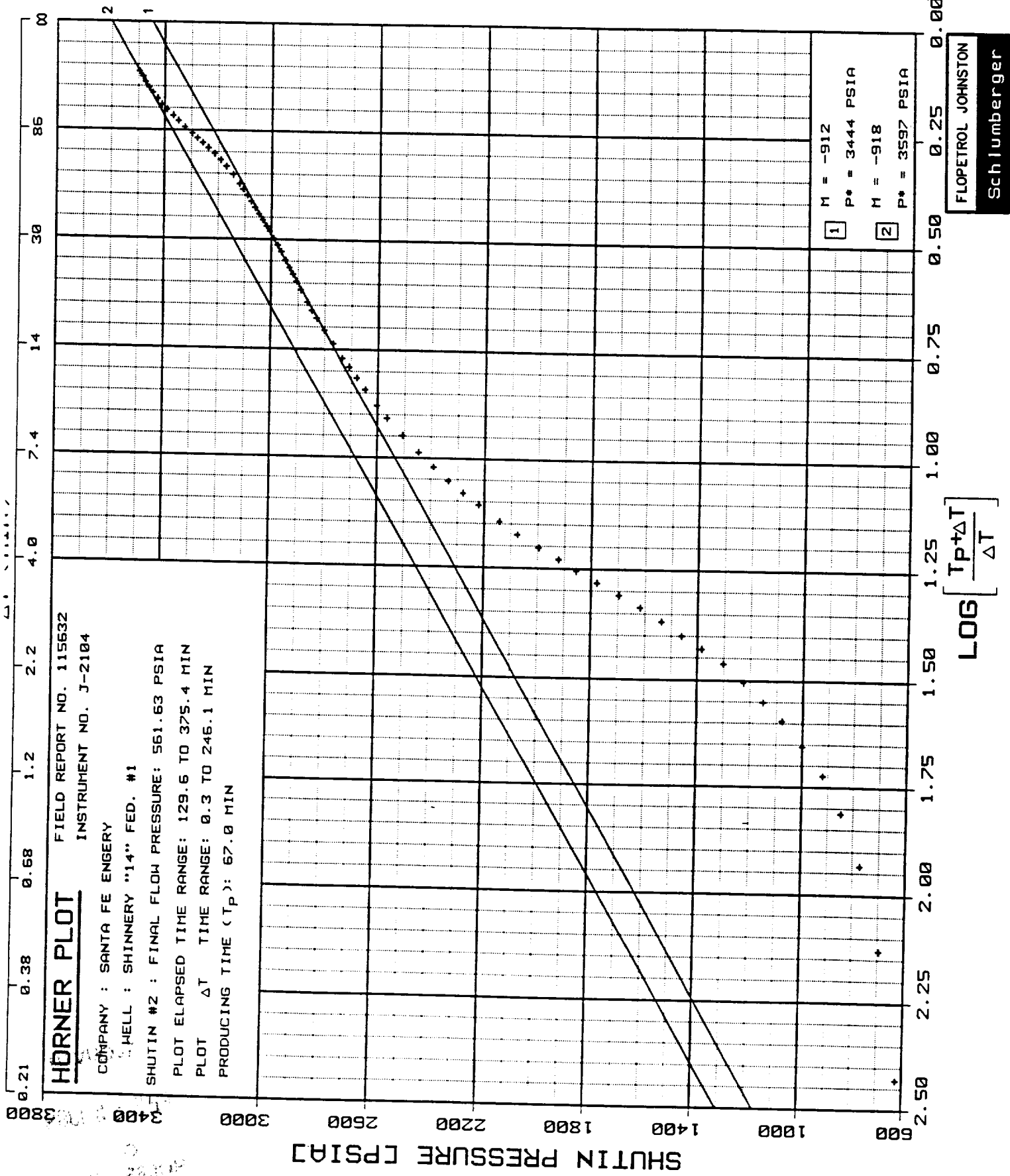
COMMENTS:

The results of the interpretation indicate that the well is in an apparent dual porosity system with good effective permeability and with no wellbore damage at the time and conditions of the test.

The flowrate was determined from the last 20 minutes of the second flow period. Calculations were made from the second straight line of the second shut-in. The large volume of mud found in the sample chamber is due to fluid segregation during the second flow.







LOG LOG PLOT

COMPANY : SANTA FE ENERGY  
WELL : SHINNERY "14" FED. #1  
FIELD REPORT NO. 115632  
INSTRUMENT NO. J-2104

SHUTIN #2 :  
FINAL FLOW PRESSURE (PWF): 561.63 PSIA  
PLOT ELAPSED TIME RANGE: 129.6 TO 375.4 MIN  
PLOT  $\Delta T$  TIME RANGE: 0.3 TO 246.1 MIN

10000

1000

$\Delta P$  (PSI)

100

10

0.10

1.0

10.0

100.0

1000.0

$\Delta T$  (MIN)

FLOPETROL JOHNSTON

Schlumberger

BOTTOMHOLE PRESSURE [PSIA]

5000

4000

3000

2000

1000

0

-50

2

1

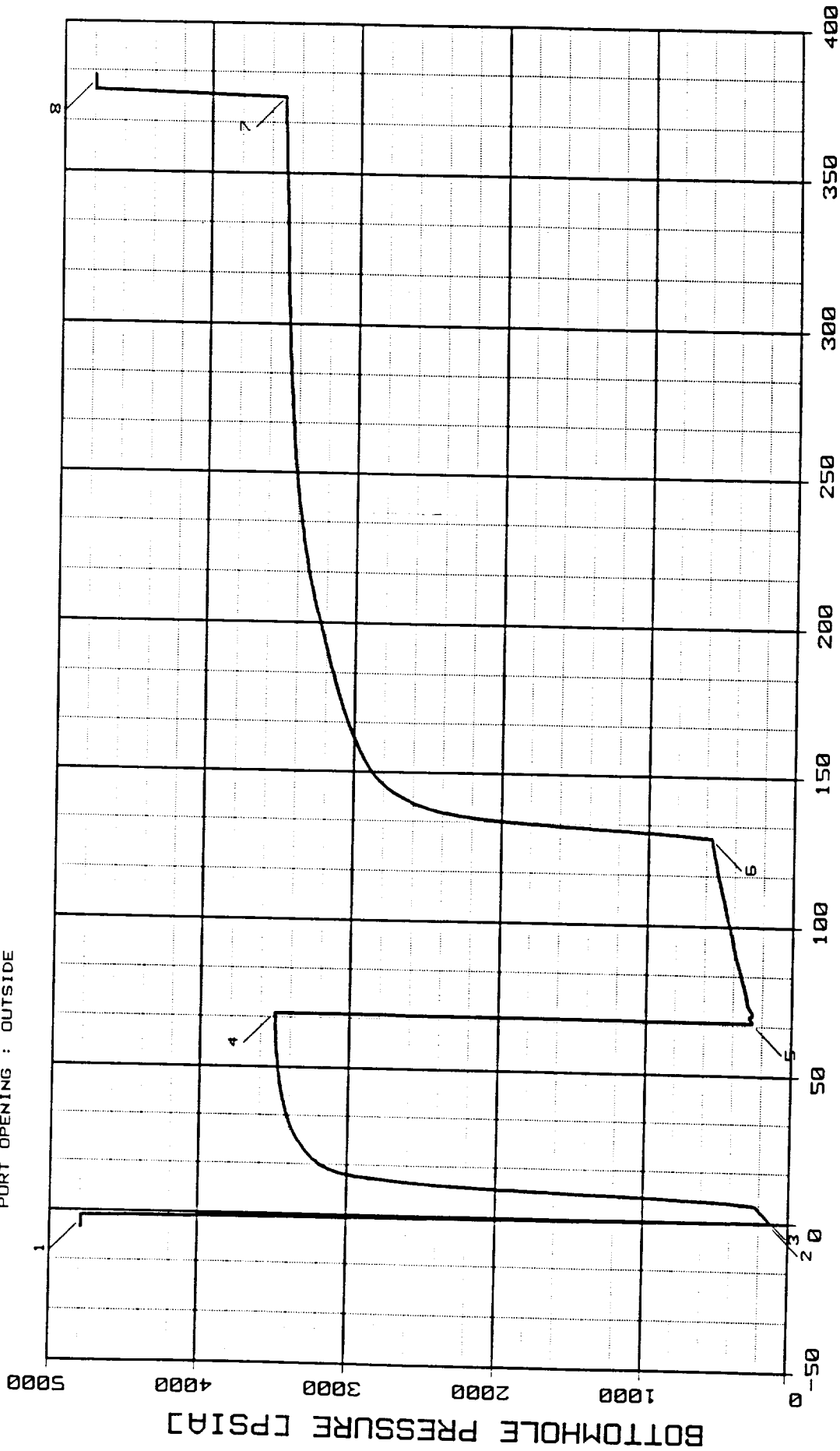
FIELD

INSTR

BOTT

# BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 115632      COMPANY : SANTA FE ENERGY  
INSTRUMENT NO. J-2104      WELL : SHINNERY "14" FED. #1  
DEPTH : 9781 FT  
CAPACITY : 6400 PSI  
PORT OPENING : OUTSIDE



ELAPSED TIME [MIN]