

REPORT NO.  
00243F DST #1

PAGE NO. 1

TEST DATE:

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# WELL PERFORMANCE

## TESTING™ REPORT

A Production System Analysis (NODAL™)

Based On Model Verified™ Interpretation

FLOPETROL JOHNSTON

RECEIVED BY  
DEC 12 1986

O. C. D.

AREA 2, OFFICE

Company: BHP PETROLEUM COMPANY, INC.

Well: LOWE STATE #2

### TEST IDENTIFICATION

Test Type ..... MFE OH DST  
Test No. .... Two  
Formation ..... Cisco Canyon  
Test Interval (ft) ..... 7358 to 7400  
Reference Depth ..... Kelly Bushing

### WELL LOCATION

Field ..... n/a  
County ..... Eddy  
State ..... New Mexico  
Sec/Twn/Rng ..... 36/ 21s/ 23e  
Elevation (ft) ..... 3875

### HOLE CONDITIONS

Total Depth (MD/TUD) (ft) .... 7400  
Hole Size (in) ..... 8 3/4  
Casing/Liner I.D. (in) ..... --  
Perf'd Interval/Net Pay (ft).. -- / 20  
Shot Density/Diameter (in) ... --

### MUD PROPERTIES

Mud Type ..... Low Solids  
Mud Weight (lb/gal) ..... 9.7  
Mud Resistivity (ohm.m) ..... 1.6 at 50 F  
Filtrate Resistivity (ohm.m).. --  
Filtrate Chlorides (ppm) ..... 5,000

### INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) .... 3399  
Gas Cushion Type ..... None  
Surface Pressure (psi) ..... --  
Liquid Cushion Type ..... None  
Cushion Length (ft) ..... --

### TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 6787 / 3.24  
Collar Length (ft)/I.D. (in).. 538 / 2.25  
Packer Depths (ft) ..... 7352, 7358  
Bottomhole Choke Size (in) ... 15/16  
Gauge Depth (ft)/Type ..... 7387 / J-200

### NET PIPE RECOVERY

| Volume                  | Fluid Type | Properties                  |
|-------------------------|------------|-----------------------------|
| 200 Feet<br>(1.24 bbls) | Water      | Rw 2.6 at 50 F<br>3,100 PPM |
| 10 feet                 | Condensate |                             |
|                         |            |                             |
|                         |            |                             |

### NET SAMPLE CHAMBER RECOVERY

| Volume   | Fluid Type | Properties                  |
|----------|------------|-----------------------------|
| 8.82 scf | Gas        |                             |
| 10 cc    | Water      | Rw 2.6 at 50 F<br>3,100 PPM |
|          |            |                             |
|          |            |                             |

Pressure: 1200 GOR: -- GLR: 140,000

### INTERPRETATION RESULTS

Model of Behavior ..... Homogeneous  
Fluid Type Used for Analysis . Gas  
Reservoir Pressure (psi) ..... 1633  
Transmissibility (md.ft/cp) .. 29.712  
Effective Permeability (md) .. 22.28  
Skin Factor/Damage Ratio ..... 0.0 (assumed)  
Storativity Ratio .....  
Interporosity Flow Coeff. ....  
Distance to an Anomaly (ft) ..  
Radius of Investigation (ft).. 130  
Potentiometric Surface (ft) .. 259

### ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API) ..... Not measured  
Basic Solids (%) .....  
Gas Gravity ..... 0.65 (est)  
Water Cut (%) ..... 100  
Viscosity (cp) ..... 0.015  
Total Compressibility (1/psi). 4.1 E-04  
Porosity (%) ..... 15 (est)  
Reservoir Temperature (F) .... 134  
Form.Vol.Factor (bbl/STB) ....

PRODUCTION RATE DURING TEST: 5.0 mmcf/day

### COMMENTS:

The results of the interpretation indicate that the well is in an apparent homogeneous system with good effective permeability and no wellbore damage at the time and conditions of the test. The above parameters were calculated from Darcy's flow equation, assuming no wellbore damage. The buildup plots stabilized to quickly for reliable transient analysis (if the final shutin was assumed to be reliable the results would be:  $k=132$  md.,  $S=35.29$ ). The NODAL(tm) plots indicate that the optimum shot density is about 8 SPF.