5" FINAL PRINT

**Schlumberger**

SIMULTANEOUS
# COMPENSATED NEUTRON-FORMATION DENSITY

GL04164_12

COUNTY IMPERIAL
FIELD EAST MESA
LOCATION 7-16S-17E
WELL EAST MESA 83-7
COMPANY MAGMA POWER CO.

COMPANY MAGMA POWER COMPANY
WELL EAST MESA 83-7
FIELD EAST MESA
COUNTY IMPERIAL STATE CALIFORNIA

LOCATION 1500' SOUTH AND 500' W OF NE CORNER OF SEC. 7
Other Services: DI/SFL

| API SERIAL NO | SEC. | TWP | RANGE |
|---|---|---|---|
| -- | 7 | 16S | 17E |

Permanent Datum: GL ; Elev.: 40.0
Log Measured From KB 12.0 Ft. Above Perm. Datum
Drilling Measured From KB
Elev.: K.B. 52.0
D.F. 50.5
G.L. 40.0

| | | | | |
|---|---|---|---|---|
| Date | 10-31-85 | | | |
| Run No. | ONE | | | |
| Depth—Driller | 5700 | | | |
| Depth—Logger | 5662 | | | |
| Btm. Log Interval | 5630 | | | |
| Top Log Interval | 3921 | | | |
| Casing—Driller | 7" @ 3913 | @ | @ | @ |
| Casing—Logger | 3921 | | | |
| Bit Size | 6 1/8 | | | |
| Type Fluid in Hole | GEL/LIGNITE | | | |
| Dens. \| Visc. | 8.9 \| 38 | | | |
| pH \| Fluid Loss | 10.6 \| 9.4 ml | ml | ml | ml |
| Source of Sample | MUDPIT | | | |
| Rm @ Meas. Temp. | 1.25 @ 90 °F | @ °F | @ °F | @ °F |
| Rmf @ Meas. Temp. | 1.41 @ 70 °F | @ °F | @ °F | @ °F |
| Rmc @ Meas. Temp. | 1.96 @ 70 °F | @ °F | @ °F | @ °F |
| Source: Rmf \| Rmc | FILTER \| PRESS | | | |
| Rm @ BHT | .415 @ 285 °F | @ °F | @ °F | @ °F |
| TIME Circulation Stopped | 13:00 | | | |
| TIME Logger on Bottom | 17:08 | | | |
| Max. Rec. Temp. | 285 °F | °F | °F | °F |
| Equip. \| Location | 8240 \| 4404 | | | |
| Recorded By | M. MACGLASHAN | | | |
| Witnessed By | GEORGE ZERAI | | | |

FOLD HERE The well name, location and borehole reference data were furnished by the customer.

| | | | | |
|---|---|---|---|---|
| RUN NO. | ONE | | | |
| Service Order No. | 468647 | | | |
| Fluid Level | FULL | | | |
| Salinity, PPM CL. | 420 | | | |
| Speed - F.P.M. | 30 | | | |
| **EQUIPMENT DATA** | | | | |
| Dens. Panel | NLM-1083 | | | |
| Dens. Cart. | PGC-689 | | | |
| Dens. Skid. | PDH-1189 | | | |
| Dens. Sonde | PGS-665 | | | |
| Dens. Source | GSR-J-6728 | | | |
| Dens. Calibrator | SFT-454 | | | |
| Neut. Panel | NLM-1083 | | | |
| Neut. Cart. | CNC-2459 | | | |
| Neut. Source | NSR-F-2433 | | | |
| Neut. Calibrator | CNB-1286 | | | |
| GR Cart. | SGC-3214 | | | |
| Memorizer Panel | CPU-2003 | | | |
| Tape Recorder (TTR) | MTU-3980 | | | |
| Depth Encoder (DRE) | -- | | | |
| Pressure Wheel (CPW) | -- | | | |
| Centralizers: Enter Spring, Standoffs, In-line, or None — Type | | | | |
| No. | | | | |
| S. O. — Inches | | | | |

| Type Log | Depth | | |
|---|---|---|---|
| | | | |

REMARKS:
$T_1$ = 285°
$T_2$ = 285°
$T_3$ = 285°

CALIBRATION DATA SEE FILM REMARKS

| | | | | |
|---|---|---|---|---|
| GR | BKG. CPS | | | |
| | Source CPS | | | |
| | Sens. - Cal | | | |
| | T. C. - Cal | | | |
| CNL | Short Spacing - Before Log | | | |
| | Long Spacing - Before Log | | | |
| | Short Spacing - After Log | | | |
| | Long Spacing - After Log | | | |
| FDC | P¹ — Before Log | | | |
| | P² — Before Log | | | |
| | P¹ — After Log | | | |
| | P² — After Log | | | |

SEE FILM REMARKS LOGGING DATA

| DEPTH | | CNP | | | FDC | | | | GR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Top | Bottom | Porosity Scale | Matrix | Auto Corr. or Hole Size Setting | Porosity Scale | Grain Density | Liquid Density | Hole Fluid | Sens. Logged | T. C. | Zero. Div. Left | Scale Per 100 Div. |
| | | | | | | | | | | | | |

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

```
BS (IN )                      DRHO(G/C3)          TENS(LB )
4.0000         14.000         -.2500      .25000  10000.        0.0
CALI(IN )                            DPHI
4.0000         14.000         .60000                            0.0
GR (GAPI)                            NPHI
0.0            200.00         .60000                            0.0

FILE   7     31-OCT-85 18:10
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FILE   7     31-OCT-85 17:07

BS (IN )                      DRHO(G/C3)          TENS(LB )
4.0000         14.000         -.2500      .25000  10000.        0.0
CALI(IN )                            DPHI
4.0000         14.000         .60000                            0.0
GR (GAPI)                            NPHI
0.0            200.00         .60000                            0.0

             SENSOR MEASURE POINT TO TOOL ZERO

     NCNL 46.9  FEET                 GR   55.4  FEET
     FFDC 31.5  FEET                 FCNL 46.9  FEET
     CALI 31.5  FEET                 NFDC 31.5  FEET
     SFL   6.4  FEET                 ILD   9.4  FEET
     SP    2.5  FEET                 ILM   5.7  FEET
     TENS  2.5  FEET                 SPAR  2.5  FEET
     NRAT 46.9  FEET

                        PARAMETERS

     NAME  VALUE    UNIT             NAME  VALUE    UNIT

     HC    CALI                      PSNR 2.22400
     FD    1.00000  G/C3             MATR SAND
     FDCC ALLO                       MDEN 2.65000   G/C3
     DSEC 1.80000   MMHO             BHF  WATE
     MSEC 5.40000   MMHO             SBR  1.00000   OHMM
     BS   6.12500   IN               BHS  OPEN

BS (IN )                      DRHO(G/C3)          TENS(LB )
4.0000         14.000         -.2500      .25000  10000.        0.0
CALI(IN )                            DPHI
4.0000         14.000         .60000                            0.0
GR (GAPI)                            NPHI
0.0            200.00         .60000                            0.0
```

## REPEAT SECTION

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FILE   6     31-OCT-85 17:05
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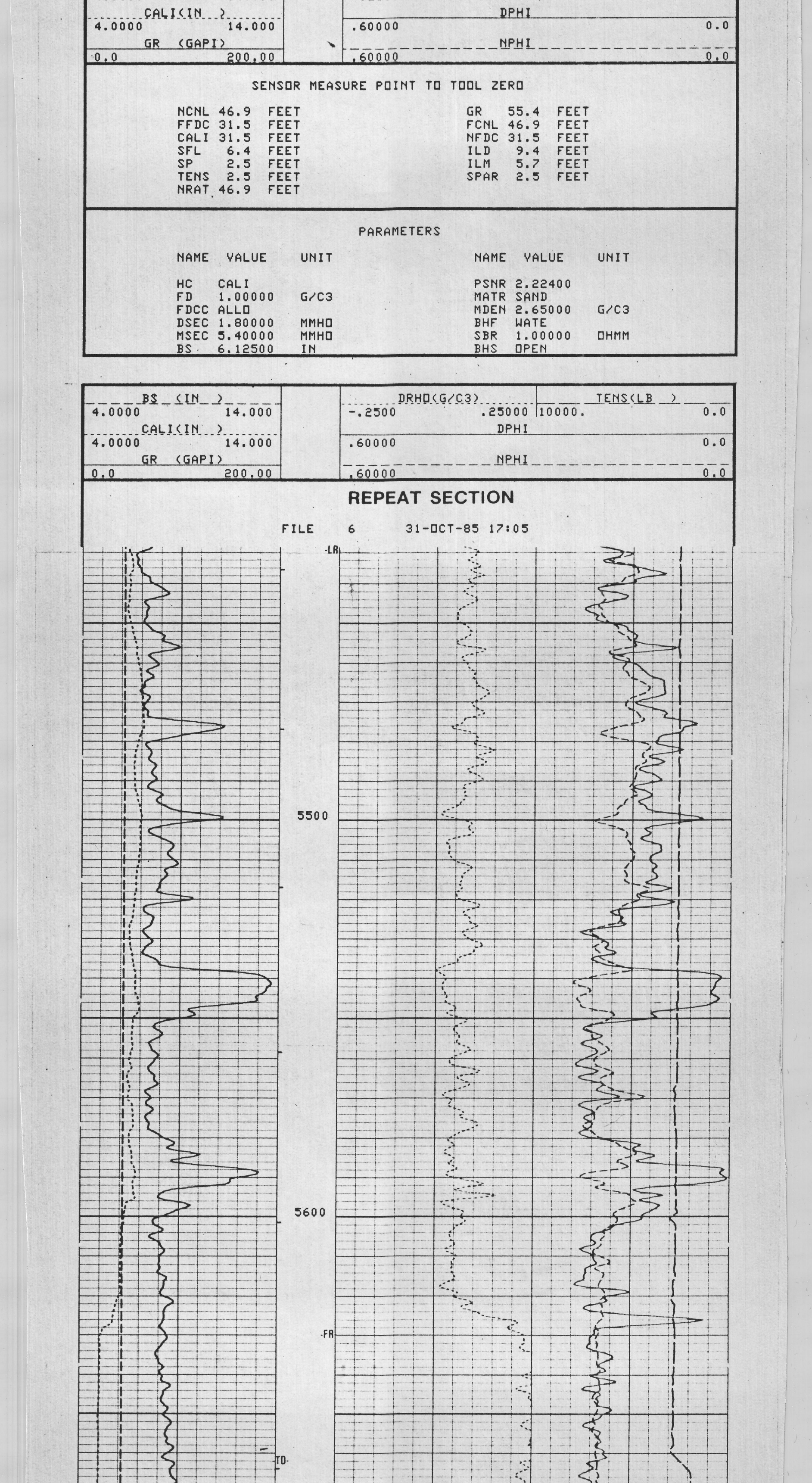

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FILE   6     31-OCT-85 16:55

BS (IN )                      DRHO(G/C3)          TENS(LB )
4.0000         14.000         -.2500      .25000  10000.        0.0
CALI(IN )                            DPHI
4.0000         14.000         .60000                            0.0
GR (GAPI)                            NPHI
0.0            200.00         .60000                            0.0

             SENSOR MEASURE POINT TO TOOL ZERO

     NCNL 46.9  FEET                 GR   55.4  FEET
     FFDC 31.5  FEET                 FCNL 46.9  FEET
     CALI 31.5  FEET                 NFDC 31.5  FEET
     SFL   6.4  FEET                 ILD   9.4  FEET
     SP    2.5  FEET                 ILM   5.7  FEET
     TENS  2.5  FEET                 SPAR  2.5  FEET
     NRAT 46.9  FEET

                        PARAMETERS

     NAME  VALUE    UNIT             NAME  VALUE    UNIT

     HC    CALI                      PSNR 2.22400
     FD    1.00000  G/C3             MATR SAND
     FDCC ALLO                       MDEN 2.65000   G/C3
     DSEC 1.80000   MMHO             BHF  WATE
     MSEC 5.40000   MMHO             SBR  1.00000   OHMM
     BS   6.12500   IN               BHS  OPEN

          AFTER SURVEY TOOL CHECK SUMMARY

   PERFORMED:     85/10/31
   PROGRAM FILE: ISN    (VERSION    26.2    83/11/17)

 CNTA                    TOOL  CHECK

                       JIG
                BEFORE      AFTER
   NRAT         2.069       2.050

   POROSITY CHANGE  (LIME):  -.002

 PGTK                    TOOL  CHECK

                       JIG
                BEFORE      AFTER     UNITS
   FFDC          341         342       CPS
   NFDC          529         526       CPS

   RHOB  CHANGE (WATER):  -.005 G/C3

                   FILE   10     31-OCT-85 19:00


          BEFORE SURVEY CALIBRATION SUMMARY

   PERFORMED:     85/10/31
   PROGRAM FILE: ISN    (VERSION    26.2    83/11/17)

 DITD            ELECTRONICS CALIBRATION SUMMARY

              MEASURED                  CALIBRATED
            ZERO    PLUS             ZERO      PLUS         UNITS
   ILD       2.0    550.0             0.0      504.8        MMHO
   ILM        .1    521.0             0.0      498.3        MMHO
   SFL        .8    524.5             0.0      500.0        MMHO

 ILD  SONDE ERROR CORRECTION :        1.8 MMHO
 ILM  SONDE ERROR CORRECTION :        5.4 MMHO

 SGTE             DETECTOR CALIBRATION SUMMARY

              MEASURED
            BKGD    JIG        CALIBRATED         UNITS
    GR      120     257           165             GAPI

 CNTA             DETECTOR CALIBRATION SUMMARY

               TANK                         JIG
           INPUT  CALIBRATED         MEASURED   CALIBRATED
   NRAT    2.22400  2.158              2.132       2.069

 PGTK             DETECTOR CALIBRATION SUMMARY

               BLOCK                        JIG
           INPUT  CALIBRATED         MEASURED   CALIBRATED    UNITS
   FFDC     454      337                459         341
   NFDC     836      528                838         529

 PGTK             CALIPER CALIBRATION SUMMARY

              MEASURED                  CALIBRATED
           SMALL   LARGE             SMALL     LARGE        UNITS
   CALI     11.4    15.8               8.0      12.0          IN

                   FILE   5      31-OCT-85 16:54

             SHOP SUMMARY

   PERFORMED:     85/10/31
   PROGRAM FILE: SHOP   (VERSION    26.2    83/11/17)

 PGTK             DETECTOR CALIBRATION SUMMARY

               BLOCK                      JIG
       MEASURED   CALIBRATED       MEASURED   CALIBRATED    UNITS

   FFDC   454        337              450         334         CPS
   NFDC   836        528              840         530         CPS

          (PGS:665 , PDH:1179, GSR:6728, SFT :454 )

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             SHOP SUMMARY

   PERFORMED:     85/09/24
   PROGRAM FILE: SHOP   (VERSION    26.2    83/11/17)

 CNTA             DETECTOR CALIBRATION SUMMARY

              TANK                        JIG
       MEASURED  CALIBRATED       MEASURED   CALIBRATED

   NRAT   2.224       2.158          2.132        2.069

                 (CNC:2459, CNB:1286)
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## CALIBRATION RECORD

COMPANY MAGMA POWER COMPANY
WELL EAST MESA 83-7
FIELD EAST MESA
COUNTY IMPERIAL STATE CALIFORNIA

SCHL. FR 5630
SCHL. TD 5662
DRLR. TD 5700
Elev: KB 52.0
DF 50.5
GL 40.0