Schlumberger

2"&5" LITHO-DENSITY/NEUTRON/GR

CSU

COMPANY: ARCO OIL AND GAS CO.

WELL: LONGVIEW FIBRE 41-35

FIELD: MIST
COUNTY: COLUMBIA
STATE: OREGON
NATION: USA
LOCATION: 636' S & 364' W
OF NE COR
SEC: 35 TWP: 6N RGE: 5W

OTHER SERVICES-
DIL
SLT
HDT
WST

PERMANENT DATUM: GL
ELEV. OF PERM. DATUM: 742.0 F
LOG MEASURED FROM: KB
12.0 F ABOVE PERM. DATUM
DRLG. MEASURED FROM: KB

ELEVATIONS-
KB: 754.0 F
DF:
GL: 742.0 F

PROGRAM
TAPE NO:
28.4
SERVICE
ORDER NO:
524219

DATE: 20 AUG 86
RUN NO: 1

DEPTH-DRILLER: 1585.0 F
DEPTH-LOGGER: 1589.0 F
BTM. LOG INTERVAL: 1587.0 F
TOP LOG INTERVAL: 445.0 F

CASING-DRILLER: 445.0 F
CASING-LOGGER: 445.0 F
CASING: 9 5/8
WEIGHT:
BIT SIZE: 8 1/2
DEPTH: 1585.0 F

TYPE FLUID IN HOLE: SPERSENE CF
DENSITY: 11.00 LB/G
VISCOSITY: 40.0 S
PH: 11.5
FLUID LOSS: 7.2 C3
SOURCE OF SAMPLE: FLOWLINE
RM: 2.230 OHMM AT 58.0 DEGF

```
RMF:                    1.410 OHMM AT 55.0 DEGF
RMC:                    2.090 OHMM AT 55.0 DEGF
SOURCE RMF/RMC:        MEAS/MEAS
RM AT BHT:              1.407 OHMM AT 96.0 DEGF
RMF AT BHT:              .849 OHMM AT 96.0 DEGF
RMC AT BHT:             1.258 OHMM AT 96.0 DEGF

TIME CIRC. STOPPED:    02:50
TIME LOGGER ON BTM.:   05:51

MAX. REC. TEMP:         96.0 DEGF

LOGGING UNIT NO:       8128
LOGGING UNIT LOC:      SACRAMENTO
RECORDED BY:           KUNKLER/HARPER
WITNESSED BY:          JACKSON/WEAVER
```

REMARKS:

LOG TIED TO CASING SHOE AT 445'

EQUIPMENT NUMBERS-

```
DRS 3756         NSC 1955         CNC HA 241       SGC 680
CCSM 322         CCC 1801
```

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.

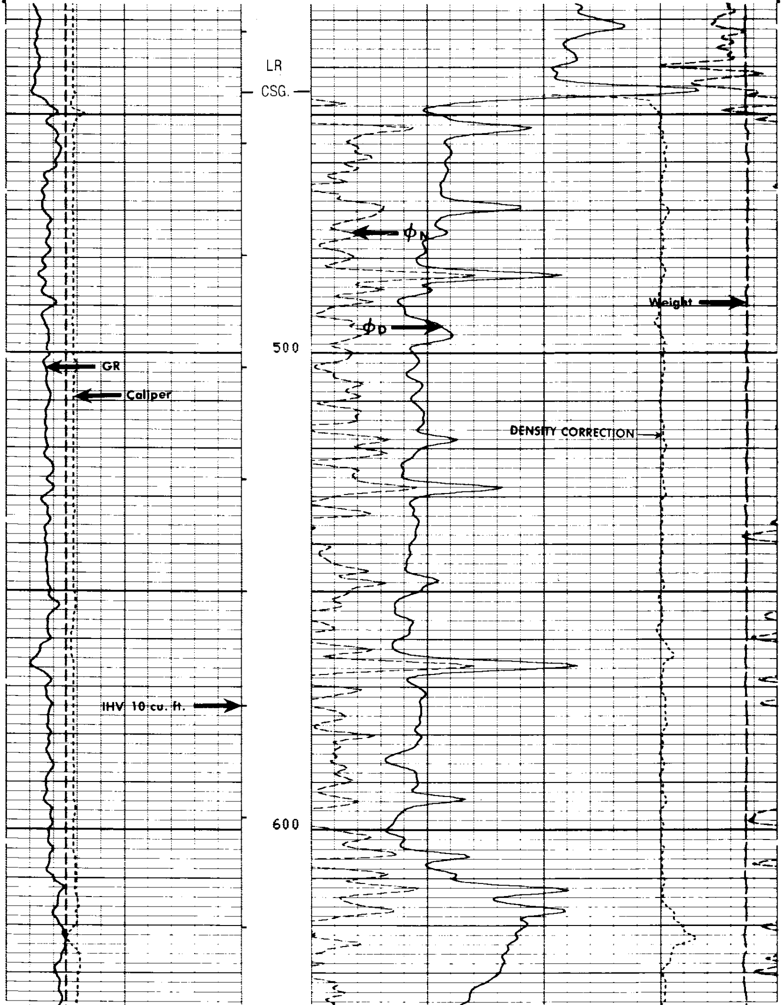
```
   CP 28.4          FILE    7       20-AUG-86 07:04
                    DATA ACQUIRED       NA
```

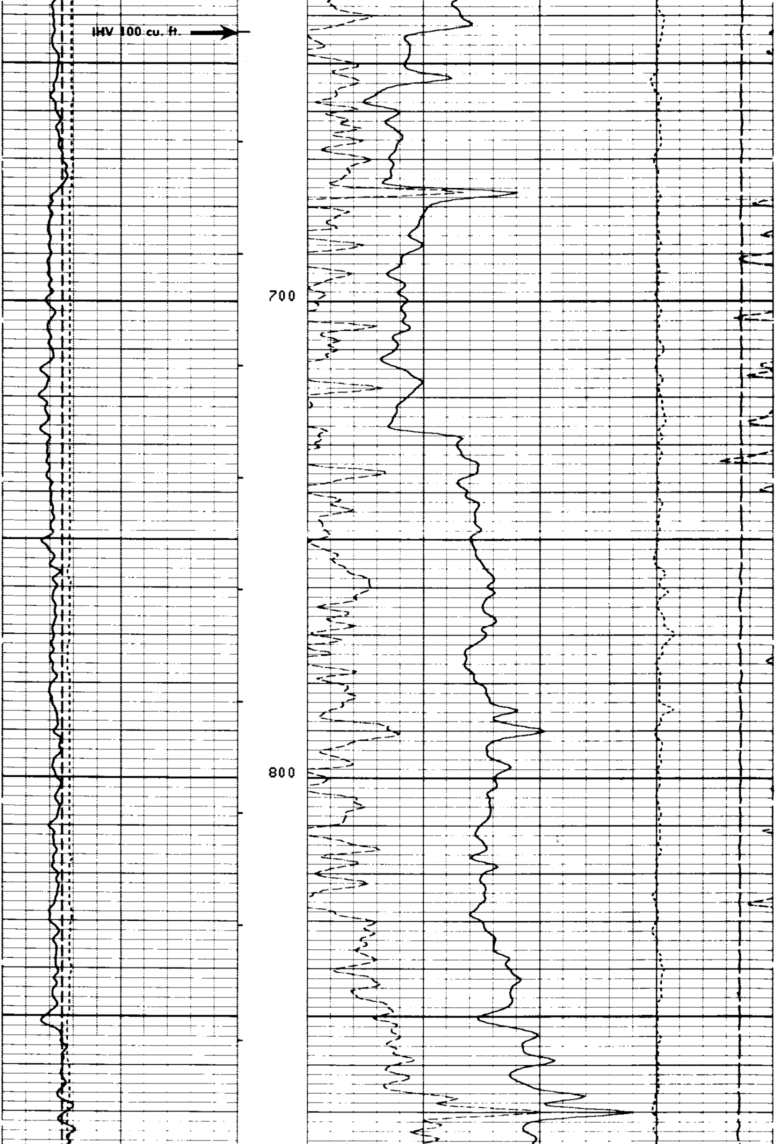
EVENT MARK SUMMARY:

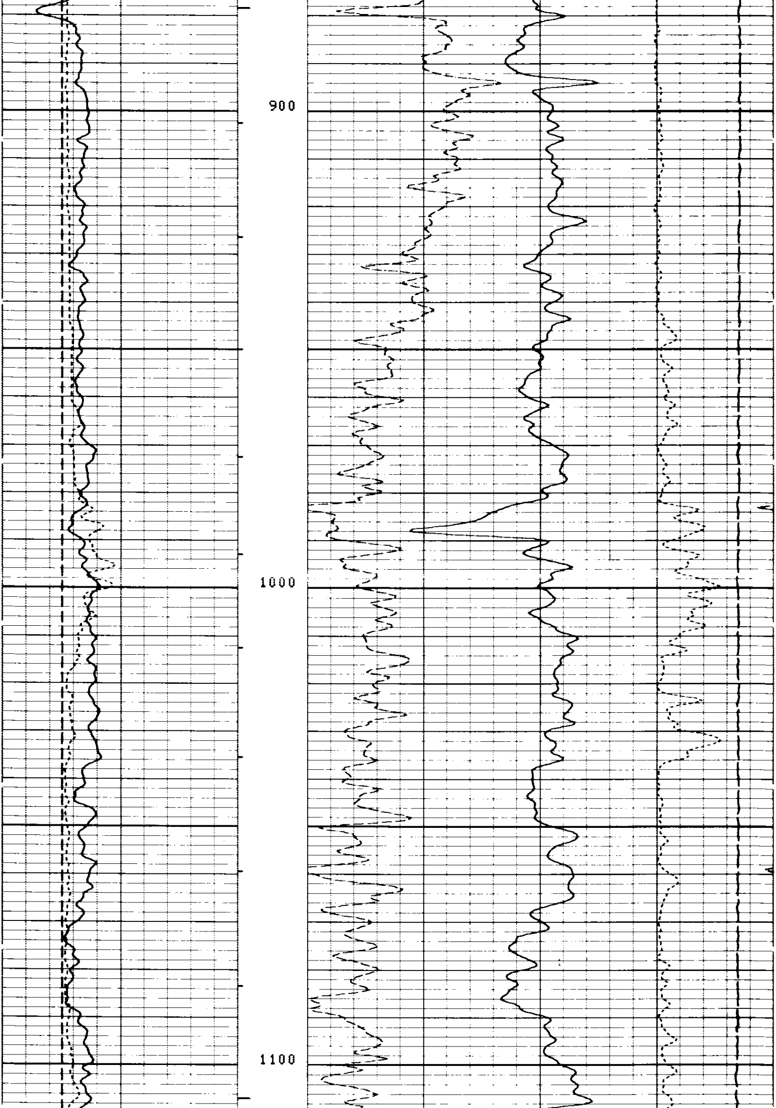
```
OUTPUT   INTERVAL         DEPTH TRACK
         BETWEEN PIPS     EDGE

IHV      10.0000 F3       LEFT EDGE
```

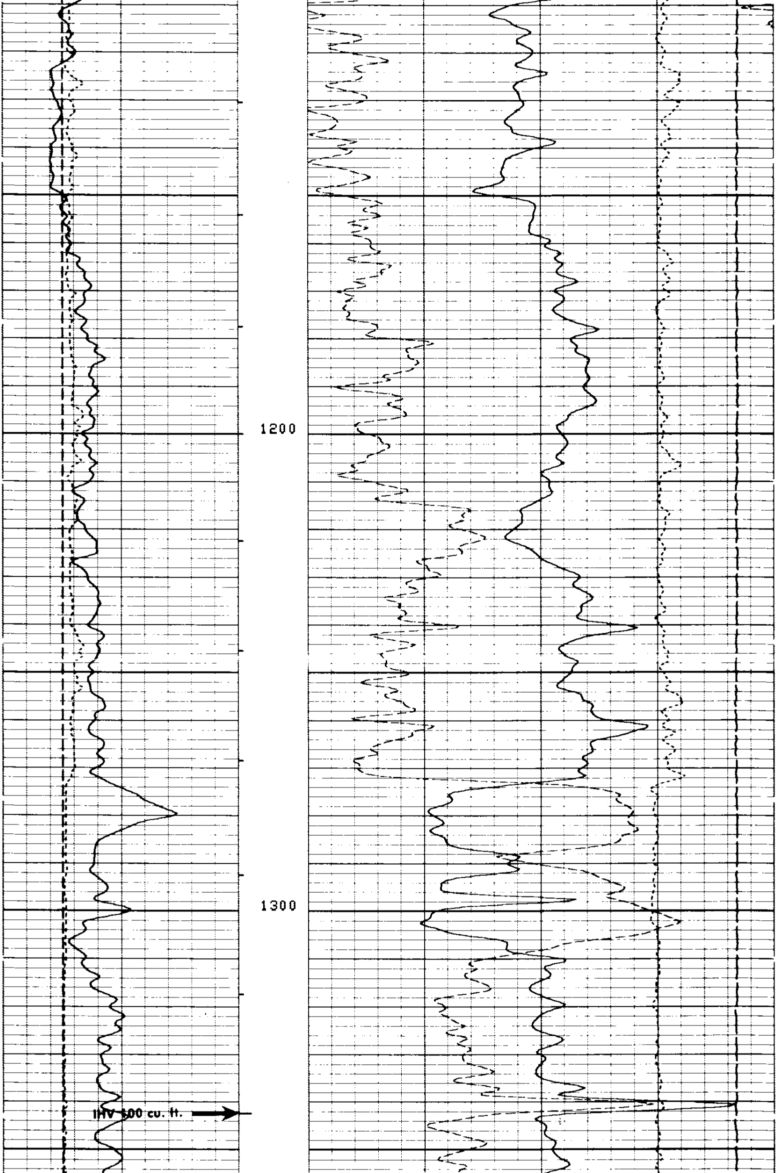
```
                                                        TENS(LB )
                                                  5000.0                 0.0
        BS  (IN  )                                         DRHO(G/C3)
6.0000             16.000                         -.2500              .25000
        CALI(IN  )                               NPHI
6.0000             16.000        .60000                                  0.0
        GR  (GAPI)                               DPHI
0.0                200.00        .60000                                  0.0
```

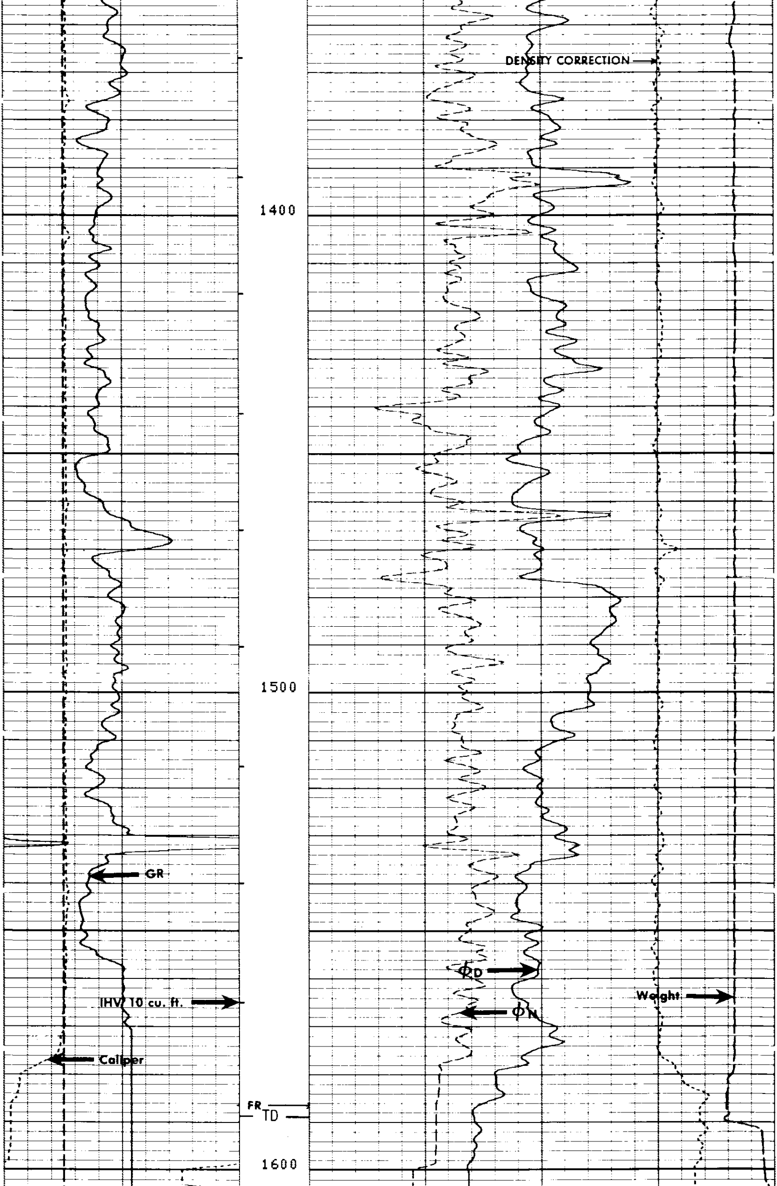
CP 28.4 FILE 5 20-AUG-86 06:37











```
CP 28.4            FILE    5      20-AUG-86 06:00
```

```
                                                          TENS(LB  )
                                                   5000.0                 0.0
      BS  (IN  )                                              DRHO(G/C3)
6.0000          16.000                             -.2500              .25000
      CALI(IN  )                               NPHI
6.0000          16.000          .60000                                    0.0
      GR  (GAPI)                               DPHI
0.0             200.00          .60000                                    0.0
```

```
                  SENSOR MEASURE POINT TO TOOL ZERO

         STSG  -.9  FEET                         GR    32.3  FEET
         NCNL 23.7  FEET                         FCNL  23.7  FEET
         LITH  2.6  FEET                         SCNL   -.9  FEET
         LS    2.6  FEET                         LL     2.6  FEET
         SS1   2.1  FEET                         LU     2.6  FEET
         CALI  2.7  FEET                         SS2    2.1  FEET
         NRAT 23.7  FEET                         TENS   -.9  FEET
```

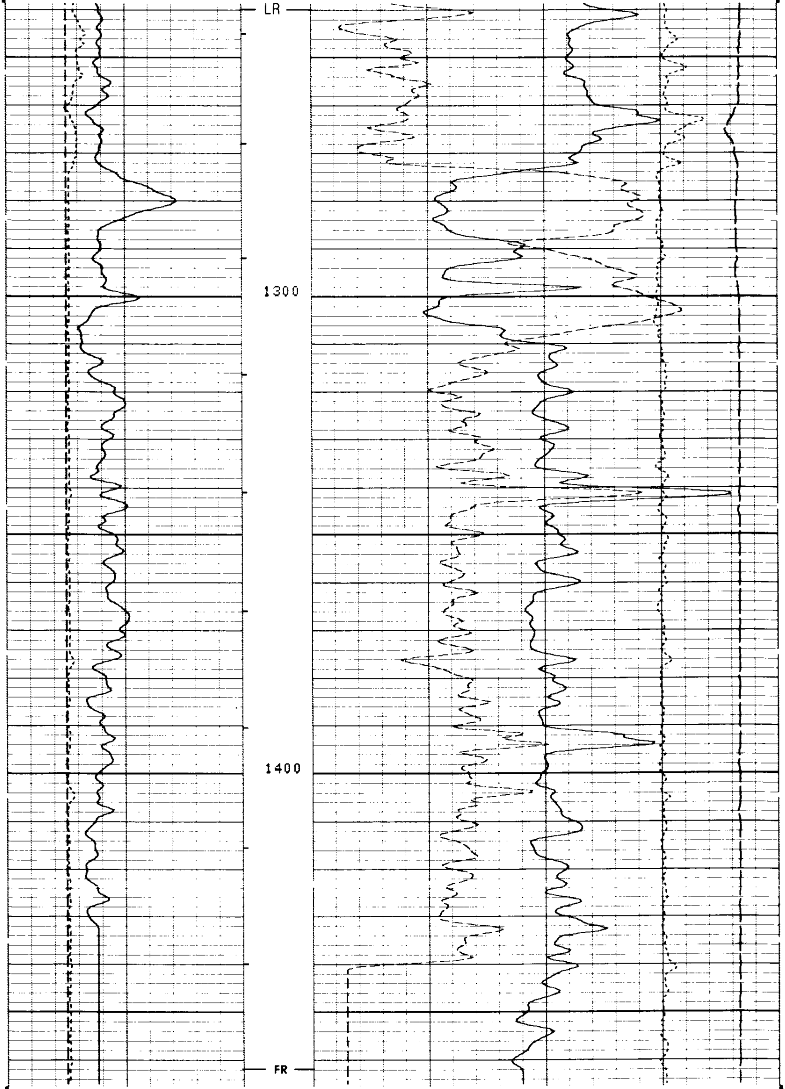
```
                              PARAMETERS

        NAME  VALUE        UNIT                NAME  VALUE       UNIT

        SHT   80.0000      DEGF                TD    10000.0     F
        HC    CALI                             PSNR  2.26900
        FD    1.00000      G/C3                MATR  SAND
        WMUD  10.0000      LB/G                MDEN  2.65000     G/C3
        DHC   BS                               BFM   LIQU
        BS    8.50000      IN                  BHS   OPEN
```

```
  EVENT MARK SUMMARY:

  OUTPUT  INTERVAL        DEPTH TRACK
          BETWEEN PIPS    EDGE

  IHV     10.0000 F3      LEFT EDGE
```

```
                                                          TENS(LB  )
                                                   5000.0                 0.0
      BS  (IN  )                                              DRHO(G/C3)
6.0000          16.000                             -.2500              .25000
      CALI(IN  )                               NPHI
6.0000          16.000          .60000                                    0.0
      GR  (GAPI)                               DPHI
0.0             200.00          .60000                                    0.0
```

REPEAT SECTION

```
CP 28.4            FILE    4      20-AUG-86 05:58
```



CP 28.4 FILE 4 20-AUG-86 05:50

REPEAT SECTION

TENS(LB)
5000.0 0.0
DRHO(G/C3)
-.2500 .25000

BS (IN)
6.0000 16.000
CALI(IN)
6.0000 16.000
GR (GAPI)
0.0 200.00

NPHI
.60000 0.0
DPHI
.60000 0.0

SENSOR MEASURE POINT TO TOOL ZERO

STSG	-.9	FEET	GR	32.3	FEET
NCNL	23.7	FEET	FCNL	23.7	FEET
LITH	2.6	FEET	SCNL	-.9	FEET
LS	2.6	FEET	LL	2.6	FEET
SS1	2.1	FEET	LU	2.6	FEET
CALI	2.7	FEET	SS2	2.1	FEET
NRAT	23.7	FEET	TENS	-.9	FEET

PARAMETERS

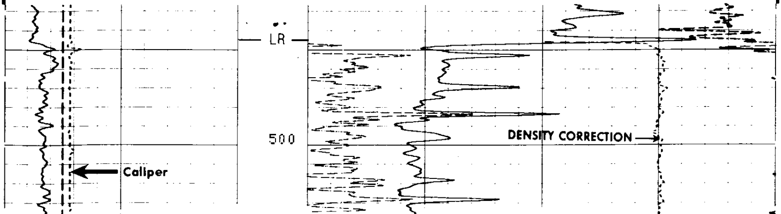
NAME	VALUE	UNIT	NAME	VALUE	UNIT
SHT	80.0000	DEGF	TD	10000.0	F
HC	CALI		PSNR	2.26900	
FD	1.00000	G/C3	MATR	SAND	
WMUD	10.0000	LB/G	MDEN	2.65000	G/C3
DHC	BS		BFM	LIQU	
BS	8.50000	IN	BHS	OPEN	

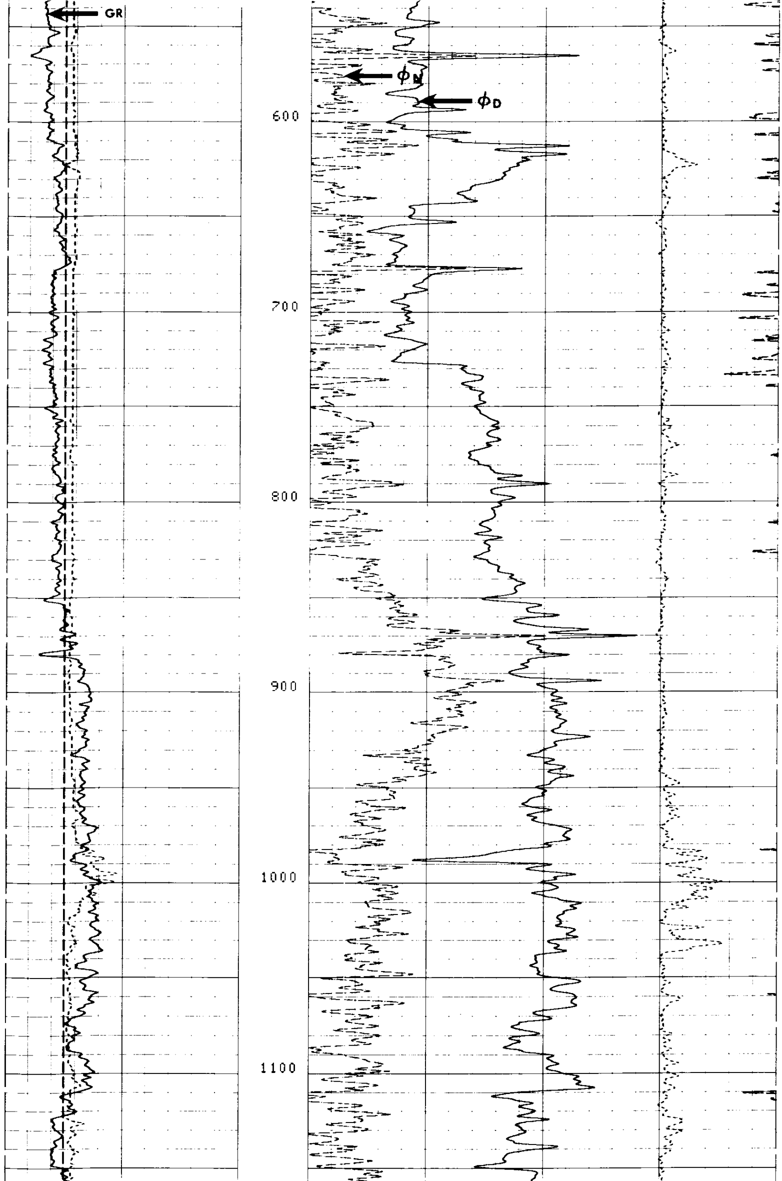
BS (IN)
6.0000 16.000
CALI(IN)
6.0000 16.000
GR (GAPI)
0.0 200.00

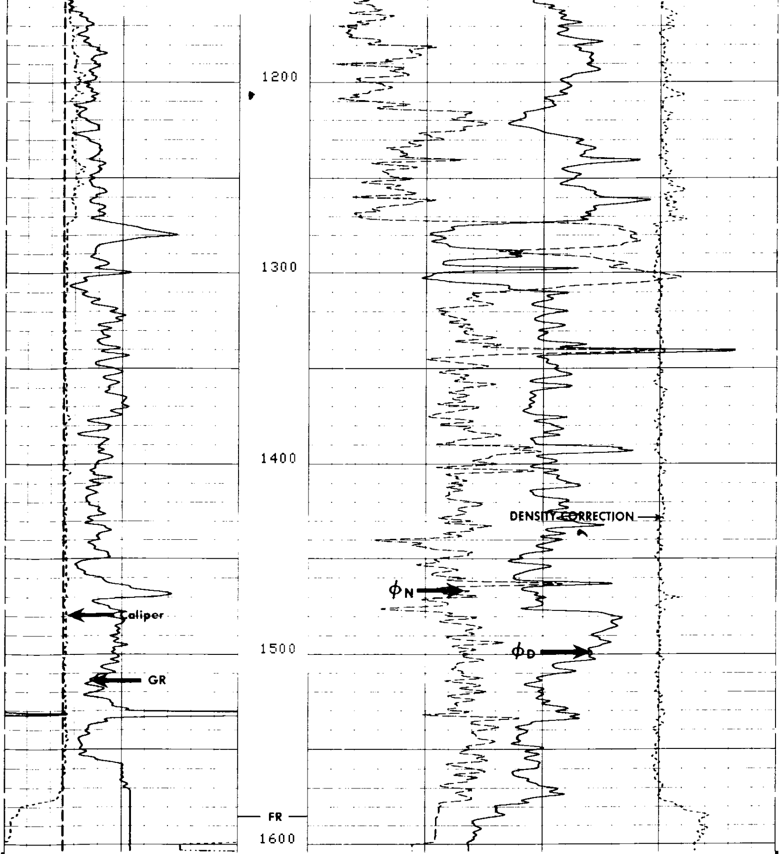
DRHO(G/C3)
-.2500 .25000

NPHI
.60000 0.0
DPHI
.60000 0.0

CP 28.4 FILE 5 20-AUG-86 06:37







CP 28.4 FILE 5 20-AUG-86 06:00

BS (IN)
6.0000 16.000

CALI(IN)
6.0000 16.000

GR (GAPI)
0.0 200.00

DRHO(G/C3)
-.2500 .25000

NPHI
.60000 0.0

DPHI
.60000 0.0

SENSOR MEASURE POINT TO TOOL ZERO

STSG	-.9	FEET	GR	32.3	FEET
NCNL	23.7	FEET	FCNL	23.7	FEET
LITH	2.6	FEET	SCNL	-.9	FEET
LS	2.6	FEET	LL	2.6	FEET

```
     SS1   2.1  FEET                              LU    2.6  FEET
     CALI  2.7  FEET                              SS2   2.1  FEET
     NRAT 23.7  FEET                              TENS  -.9  FEET
```

```
                                   PARAMETERS

   NAME  VALUE       UNIT                    NAME  VALUE       UNIT

   SHT   80.0000     DEGF                    TD    10000.0     F
   HC    CALI                                PSNR 2.26900
   FD    1.00000     G/C3                    MATR SAND
   WMUD 10.0000      LB/G                    MDEN 2.65000      G/C3
   DHC   BS                                  BFM  LIQU
   BS    8.50000     IN                      BHS  OPEN
```

```
                    BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:     19-AUG-86 13:35
  PROGRAM FILE: LEP     (VERSION    28.2A   85/07/10)


SGTL                  DETECTOR CALIBRATION SUMMARY

             MEASURED
          BKGD    JIG          CALIBRATED          UNITS
   GR      40     207             165              GAPI


LDTC                  DETECTOR CALIBRATION SUMMARY

        DRS SONDE NUMBER                           :    3756
        NUCLEAR SERVICE CARTRIDGE NUMBER           :    1955
        POWERED DETECTOR HOUSING NUMBER            :    2942
        POWERED GAMMA-GAMMA DETECTOR NUMBER        :    2710
        LDT LOGGING SOURCE NUMBER                  :    6929
        LDT CALIBRATION MODE                       :    WATE
        MUD DENSITY                                :    10.0000    LB/G

             M E A S U R E D
          BKGD   AL+FE    AL   UNITS
    LL    18.8    85.3   94.4   CPS
    LU    70.6   130.2  145.1   CPS
    LS    54.1   150.5  167.0   CPS
  LITH     5.3    32.6   48.4   CPS
   SS1    13.7   177.0  197.5   CPS
   SS2     9.3   250.0  273.0   CPS


CNTH                  DETECTOR CALIBRATION SUMMARY

             TANK                         JIG
        INPUT  CALIBRATED          MEASURED   CALIBRATED
  NRAT  2.26900  2.158              2.236        2.127


LDTC                  CALIPER CALIBRATION SUMMARY

            MEASURED                       CALIBRATED
         SMALL    LARGE               SMALL      LARGE         UNITS
  CALI   6.80     11.2                8.00       12.0           IN

   CP 28.2A           FILE    0       19-AUG-86 13:35
```

```
               AFTER SURVEY TOOL CHECK SUMMARY

   PERFORMED:    20-AUG-86 07:10
   PROGRAM FILE: LEP     (VERSION    28.4    85/11/11)


 LDTC                         TOOL  CHECK

          DRS SONDE NUMBER                               :    3756
          NUCLEAR SERVICE CARTRIDGE NUMBER               :    1955
          POWERED DETECTOR HOUSING NUMBER                :    2942
          POWERED GAMMA-GAMMA DETECTOR NUMBER            :    2710
          LDT LOGGING SOURCE NUMBER                      :    6929
          LDT CALIBRATION MODE                           :    WATE
          MUD DENSITY                                    :    10.0000   LB/G

             BACKGROUND MEASURED
             BEFORE        AFTER        UNITS
     LL      18.76         18.73         CPS
     LU      70.56         70.56         CPS
     LS      54.06         54.03         CPS
   LITH       5.320         5.38         CPS
    SS1      13.71         13.81         CPS
    SS2       9.296         9.34         CPS


 CNTH                         TOOL  CHECK

                        JIG
               BEFORE         AFTER
   NRAT        2.127          2.127

   POROSITY CHANGE  (LIME):    .001

    CP 28.4            FILE    7       20-AUG-86 07:10

                      SHOP SUMMARY


    PERFORMED:     17-AUG-86 10:04
    PROGRAM FILE: CCSHOP (VERSION    28.2A   85/07/10)


  LDTC                     DETECTOR CALIBRATION SUMMARY

          DRS SONDE NUMBER                               :    3756
          NUCLEAR SERVICE CARTRIDGE NUMBER               :    1955
          POWERED DETECTOR HOUSING NUMBER                :    2942
          POWERED GAMMA-GAMMA DETECTOR NUMBER            :    2710
          LDT LOGGING SOURCE NUMBER                      :    6929
          LDT CALIBRATION MODE                           :    WATE
          MUD DENSITY                                    :    8.00000   LB/G

            MASTER  CALIBRATED
            BKGD   AL+FE    AL    UNITS
     LL     18.7    85.3   94.4    CPS
     LU     70.6   130.3  145.2    CPS
     LS     54.0   150.6  167.1    CPS
   LITH      5.3    32.6   48.4    CPS
    SS1     13.8   177.0  197.5    CPS
    SS2      9.3   250.1  273.2    CPS

            SPECTRUM QUALITY RATIOS
    QRLS       .6497
    QRSS       .7228
    QRLI       .2898
    QLIR      1.3394
    QR         .9944
```

```
                    SHOP SUMMARY

   PERFORMED:     01-AUG-86 11:17
   PROGRAM FILE: CCSHOP (VERSION     28.2A    85/07/10)

 CNTH                 DETECTOR CALIBRATION SUMMARY

                                                  JIG
                   TANK
          MEASURED  CALIBRATED       MEASURED   CALIBRATED

    NRAT     2.269         2.158          2.255         2.146

                        (CNC:H241, CNB:3200)
```

COMPANY ARCO OIL AND GAS
WELL LONGVIEW FIBRE 41-35
FIELD MIST
COUNTY COLUMBIA STATE OREGON

SCHL. FR 1587
SCHL. TD 1589
DRLR. TD 1585

Elev: KB 754
DF
GL 742