Schlumberger

2" & 5" DENSITY-NEUTRON-GR

CSU

COMPANY: ARCO OIL AND GAS COMPANY

WELL: CAVENAM FOREST INDUSTRIES #41-4

FIELD: MIST
COUNTY: COLUMBIA
STATE: OREGON
NATION: U.S.A
LOCATION: 1,033' SOUTH AND 935' WEST
FROM NORTHEAST CORNER OF
SEC: 4 TWP: 5N RGE: 4W

OTHER SERVICES-
- DITD
- BHC
- WST
- HDT
- CORES

PERMANENT DATUM: G.L
ELEV. OF PERM. DATUM: 886.5 F
LOG MEASURED FROM: K.B
11.0 F ABOVE PERM. DATUM
DRLG. MEASURED FROM: K.B

ELEVATIONS-
KB: 897.5 F
DF:
GL: 886.5 F

PROGRAM
TAPE NO:
28.4A
SERVICE
ORDER NO:
524309

DATE: 14 SEP 86
RUN NO: 1

DEPTH-DRILLER: 2584.0 F
DEPTH-LOGGER: 2581.0 F
BTM. LOG INTERVAL: 2580.0 F
TOP LOG INTERVAL: 440.0 F

CASING-DRILLER: 441.0 F
CASING-LOGGER: 440.0 F
CASING: 9.625
WEIGHT: 47.0000 LB/F
BIT SIZE: 8.5
DEPTH: 2584.0 F

DOGAMI
Portland

TYPE FLUID IN HOLE: LIGNO
DENSITY: 10.30 LB/G
VISCOSITY: 40.0 S
PH: 9.1
FLUID LOSS: 7.6 C3
SOURCE OF SAMPLE: FLOWLINE
RM: 3.150 OHMM AT 72.0 DEGF
RMF: 3.320 OHMM AT 60.0 DEGF
RMC: 3.600 OHMM AT 59.0 DEGF
SOURCE RMF/RMC: M /M
RM AT BHT: 2.348 OHMM AT 99.0 DEGF
RMF AT BHT: 2.098 OHMM AT 99.0 DEGF
RMC AT BHT: 2.242 OHMM AT 99.0 DEGF

TIME CIRC. STOPPED: 21:30
TIME LOGGER ON BTM.: 4:11

MAX. REC. TEMP: 99.0 DEGF

LOGGING UNIT NO:	8128
LOGGING UNIT LOC:	SACRAMENTO
RECORDED BY:	K. HARPER
WITNESSED BY:	J. JACKSON

REMARKS:

THIS LOG WAS TIED IN TO DIL LOG

EQUIPMENT NUMBERS-

PGS 542	PDH 340	CNC 1132	SGC JC

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 28.4A FILE 4 14-SEP-86 05:35
DATA ACQUIRED 14-SEP-86 05:16

EVENT MARK SUMMARY:

OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
IHV	10.0000 F3	LEFT EDGE

TENS(LB)
10000. 0.0

DRHO(G/C3)
-.2500 .25000

BS (IN)
6.0000 16.000

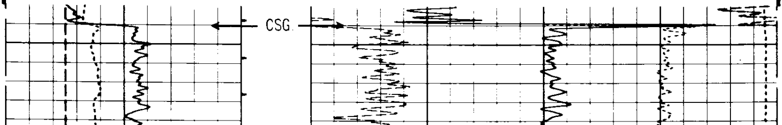
CALI(IN)
6.0000 16.000

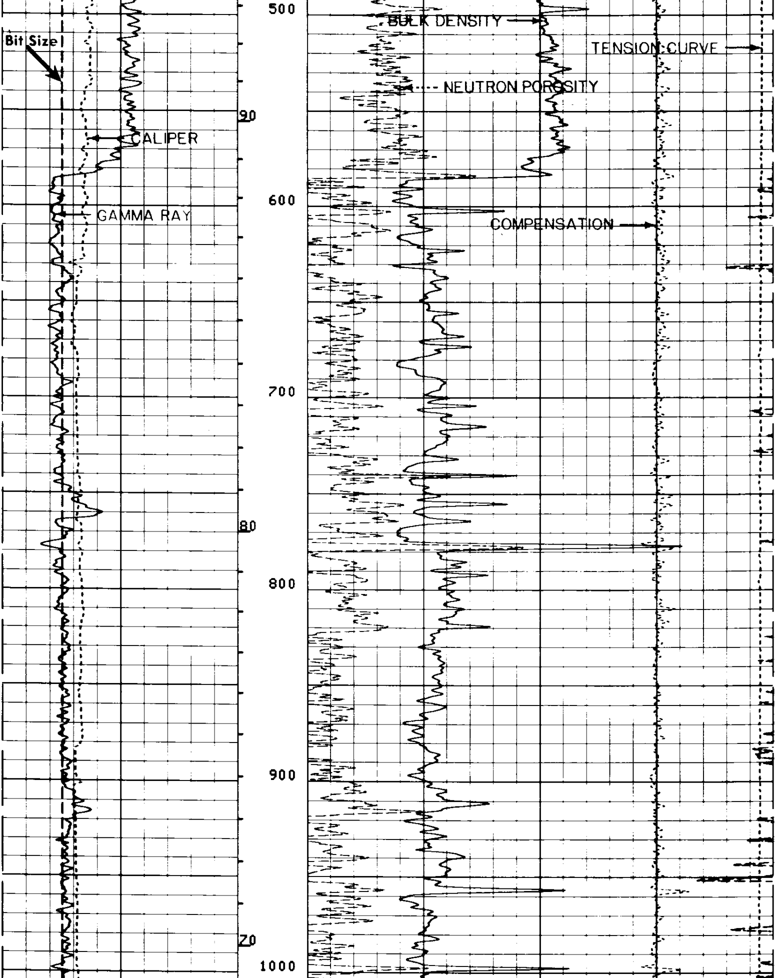
NPHI
.60000 0.0

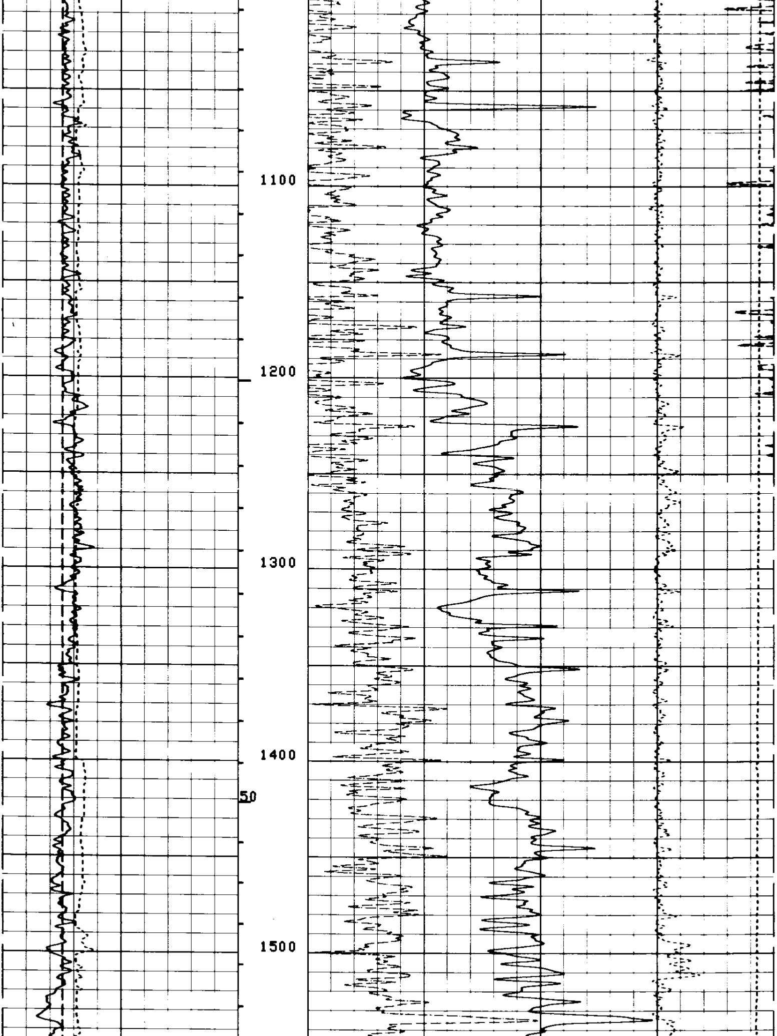
GR (GAPI)
0.0 150.00

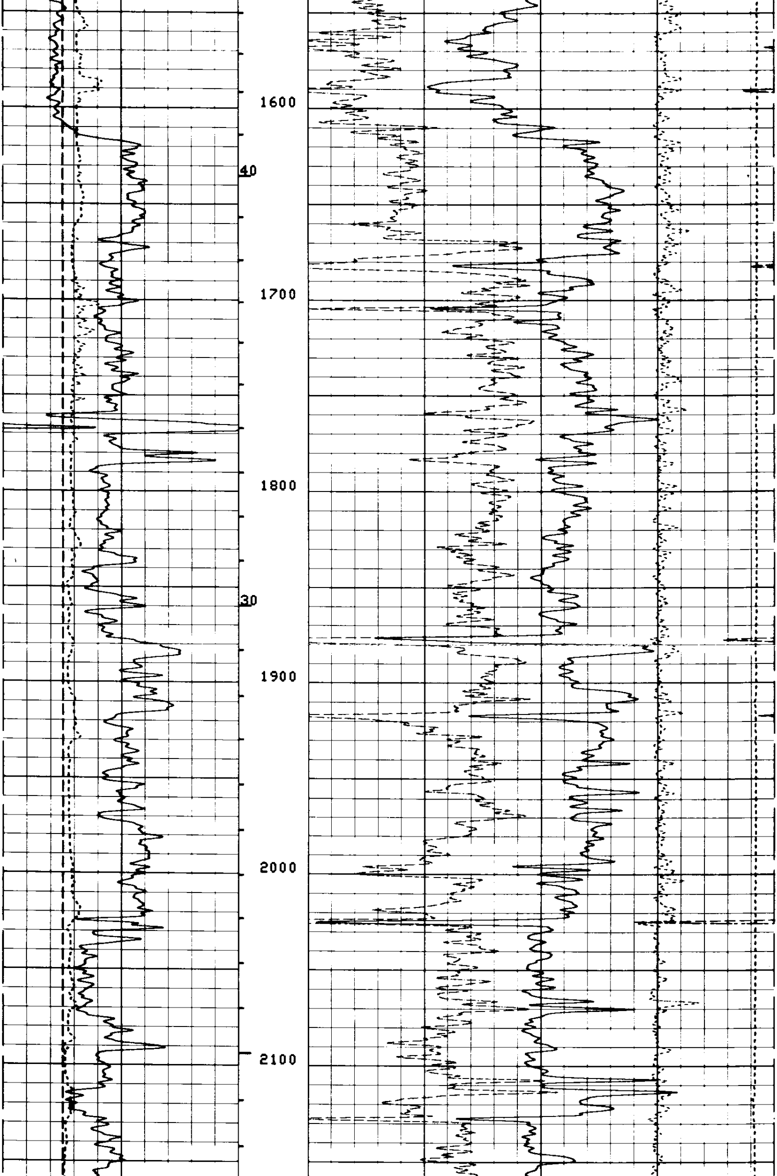
RHOB(G/C3)
1.6500 2.6500

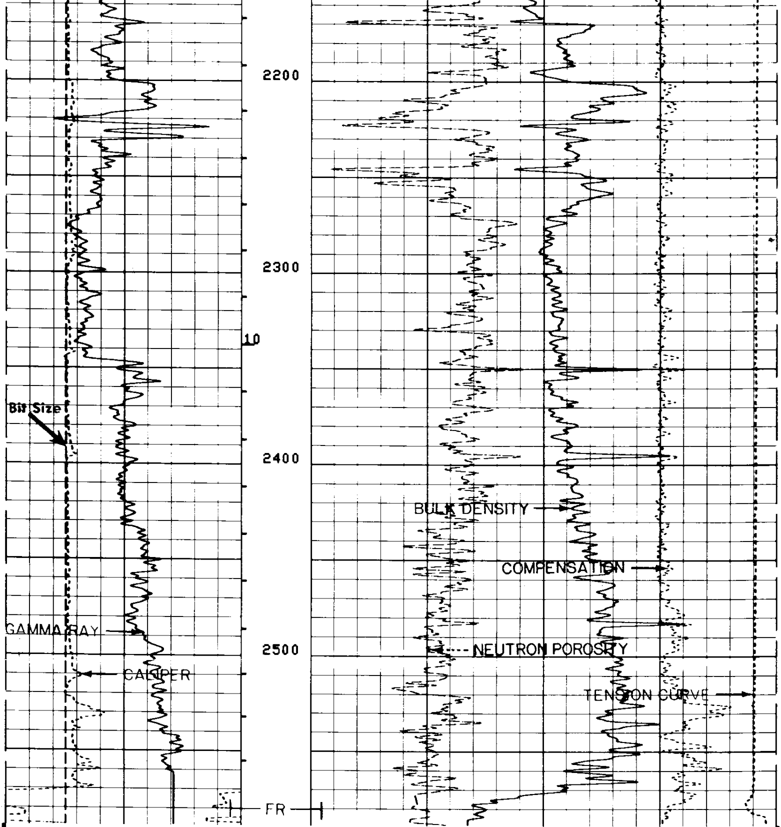
CP 28.4A FILE 4 14-SEP-86 05:23
DATA ACQUIRED 14-SEP-86 05:16











CP 28.4A

FILE 4 14-SEP-86 05:19
DATA ACQUIRED 14-SEP-86 04:09

TENS(LB)	10000.	0.0
DRHO(G/C3)	-.2500	.25000
BS (IN)	6.0000	16.000
CALI(IN)	6.0000	16.000
NPHI	.60000	0.0
GR (GAPI)	0.0	150.00
RHOB(G/C3)	1.6500	2.6500

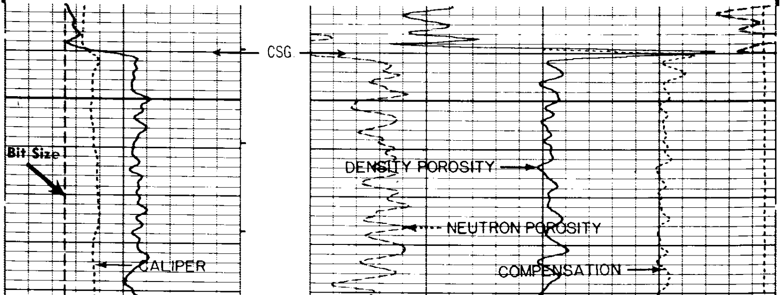
```
                    SENSOR MEASURE POINT TO TOOL ZERO

          FCNL  18.1   FEET                          GR    26.6   FEET
          FFDC   2.7   FEET                          NCNL  18.1   FEET
          CALI   2.7   FEET                          NFDC   2.7   FEET
          NRAT  18.1   FEET                          TENS   -.3   FEET
```

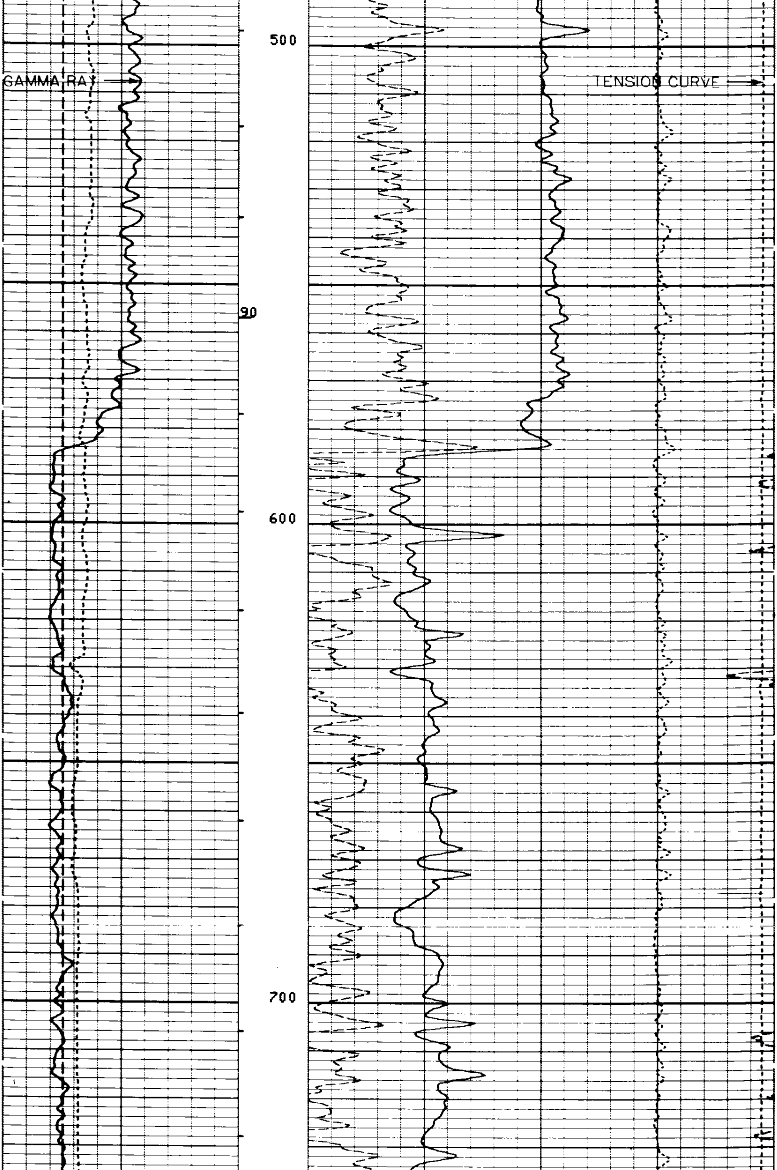
```
                                PARAMETERS

        NAME   VALUE        UNIT                   NAME   VALUE        UNIT

        HC     CALI                                PSNR 2.31800
        FD     1.00000      G/C3                   MATR SAND
        FDCC   ALLO                                MDEN 2.65000        G/C3
        WMUD   10.3000      LB/G                   BHF  WATE
        BS     8.50000      IN                     BHS  OPEN
        PP     NORM                                DO   0.0            F

                              TAPE NOT MADE
```

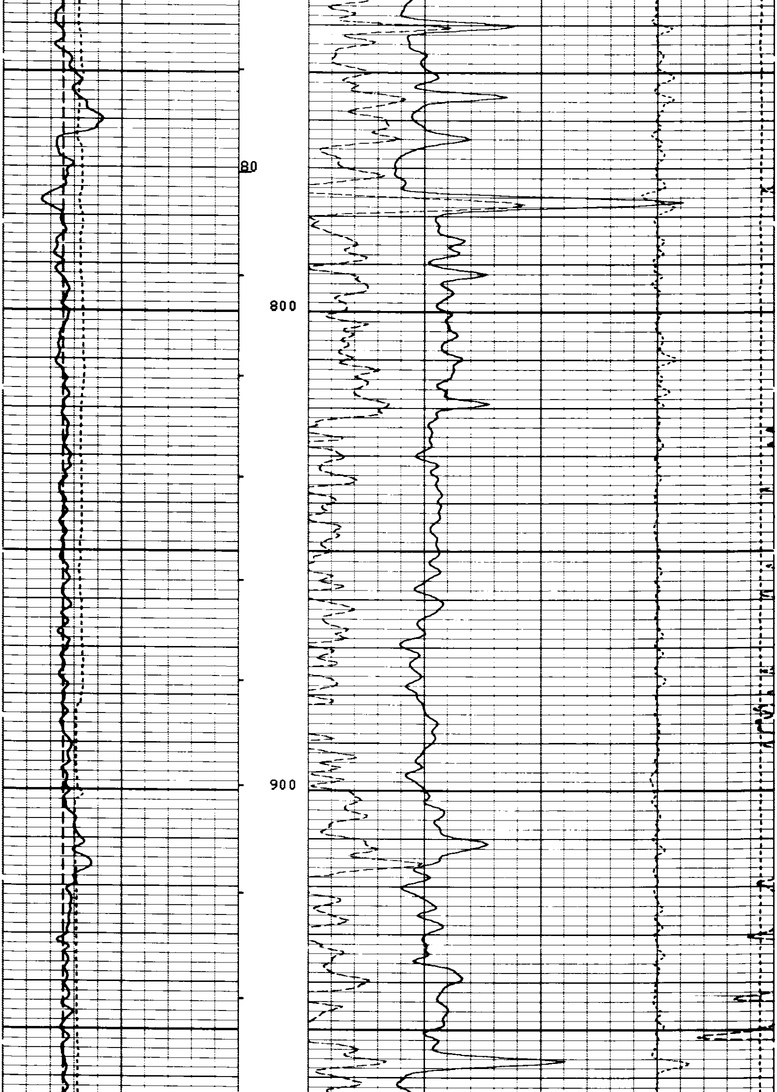
```
  EVENT MARK SUMMARY:

  OUTPUT    INTERVAL          DEPTH TRACK
            BETWEEN PIPS      EDGE

  IHV       10.0000 F3        LEFT EDGE
```

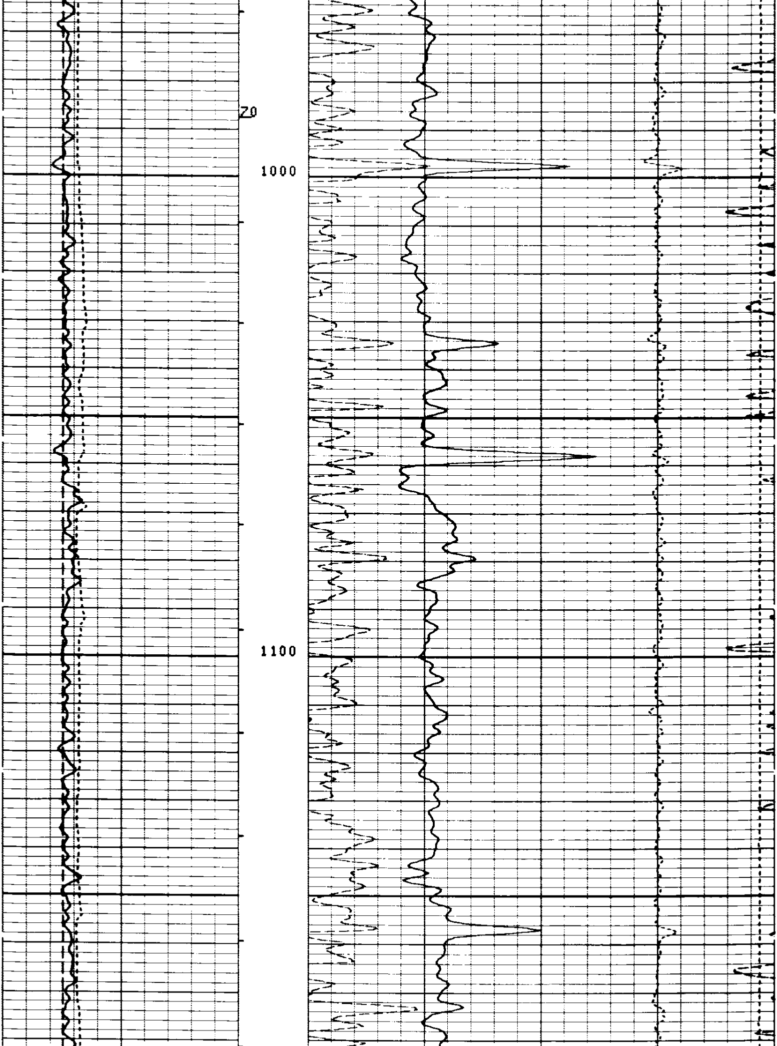
```
                                                                 TENS(LB  )
                                                        10000.                  0.0
          BS   (IN   )                                             DRHO(G/C3)
 6.0000                16.000                           -.2500               .25000
          CALI(IN   )                            NPHI
 6.0000                16.000        .60000                                     0.0
          GR   (GAPI)                            DPHI
 0.0                   150.00        .60000                                     0.0
```

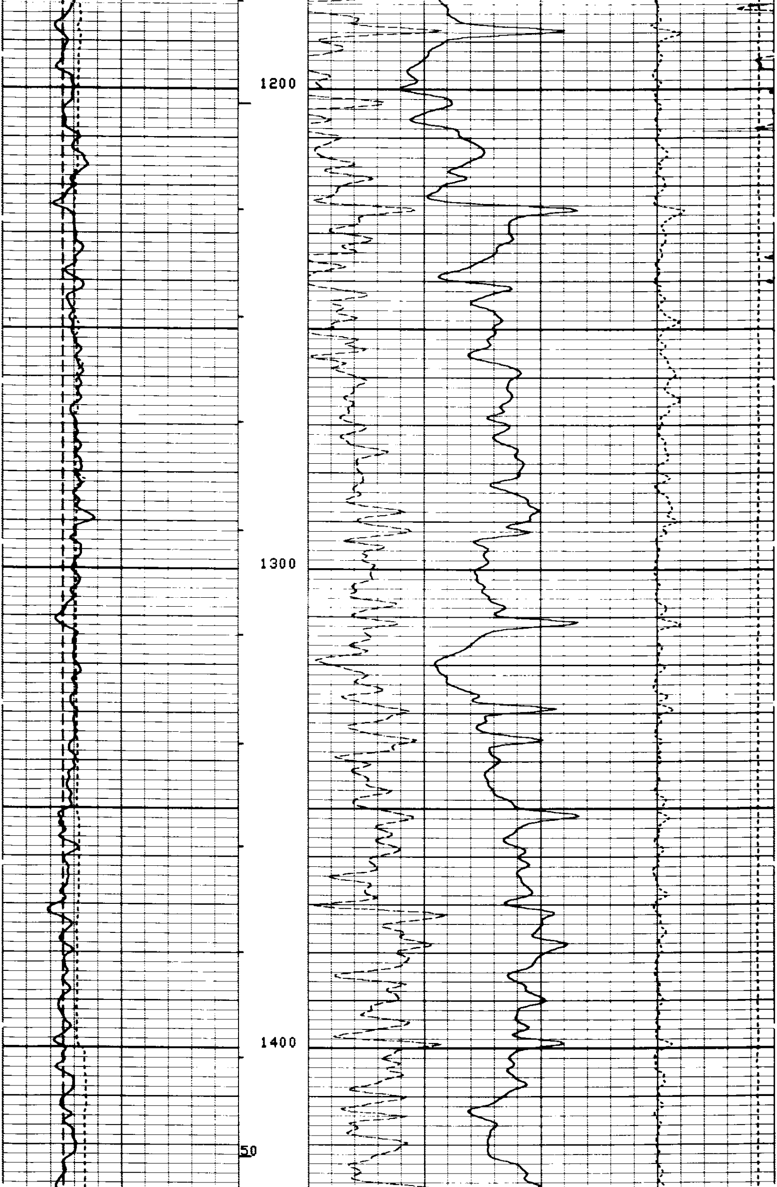
```
       CP 28.4A           FILE     4       14-SEP-86 05:16
```

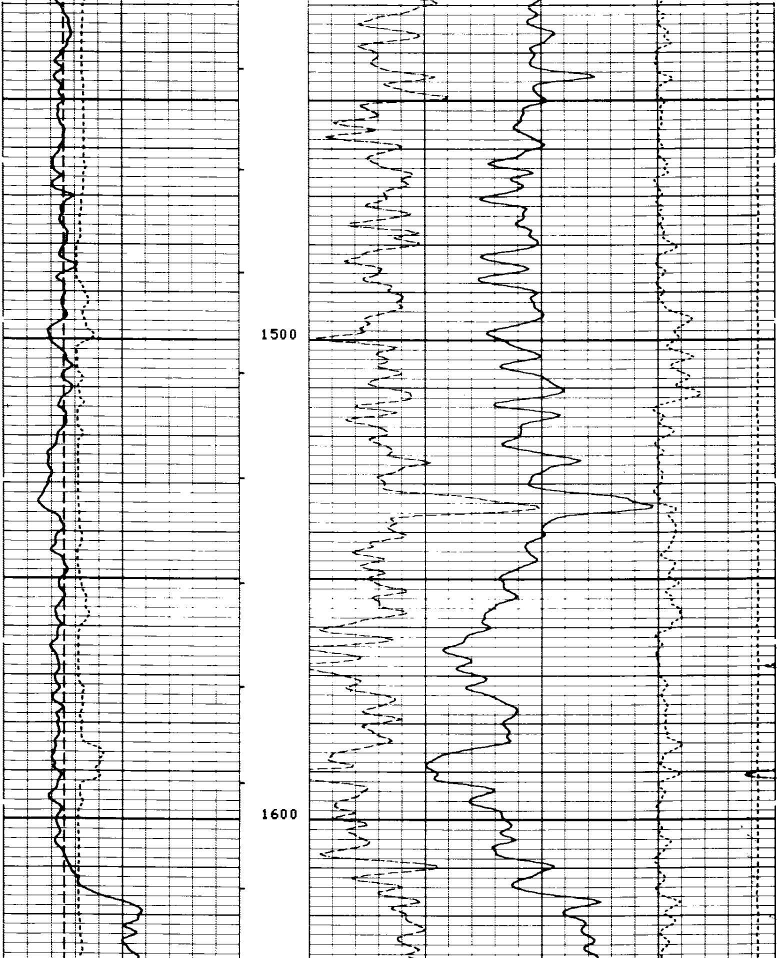


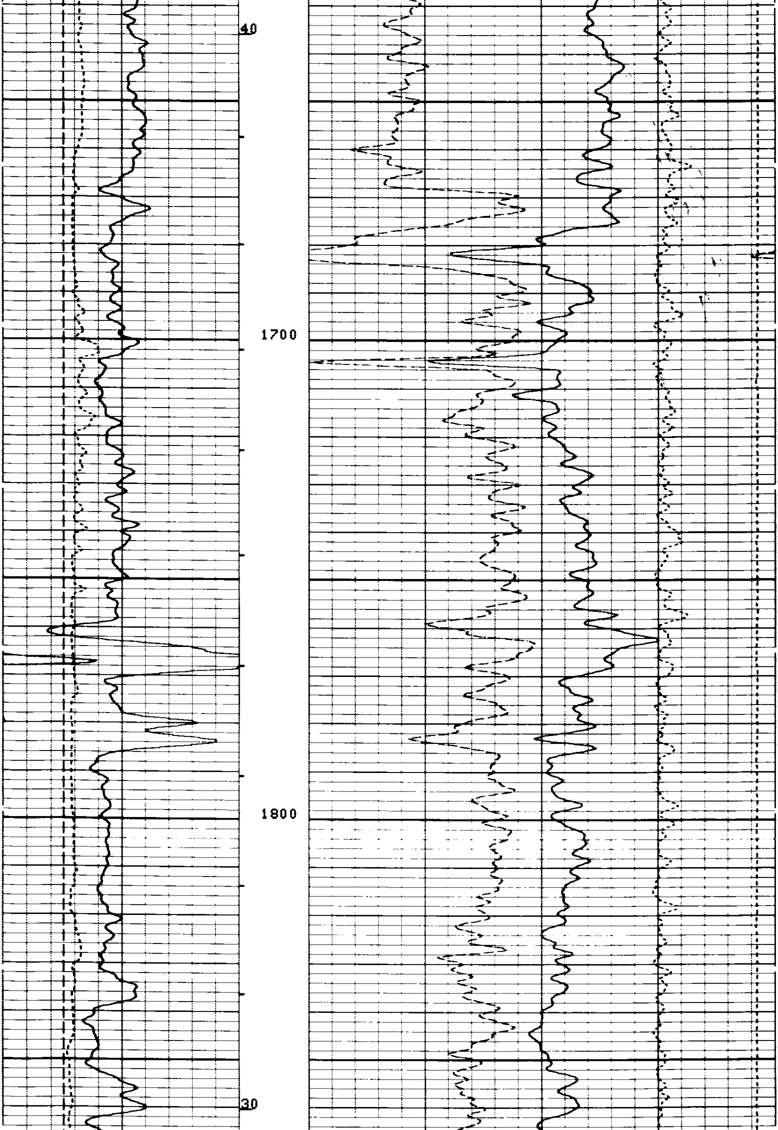


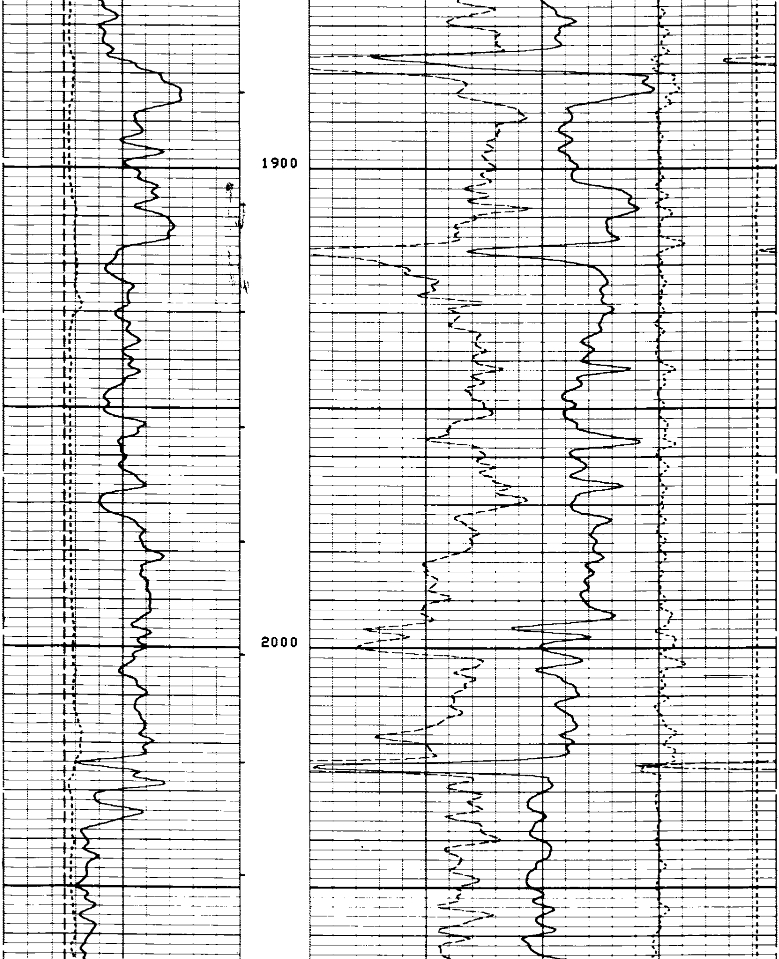


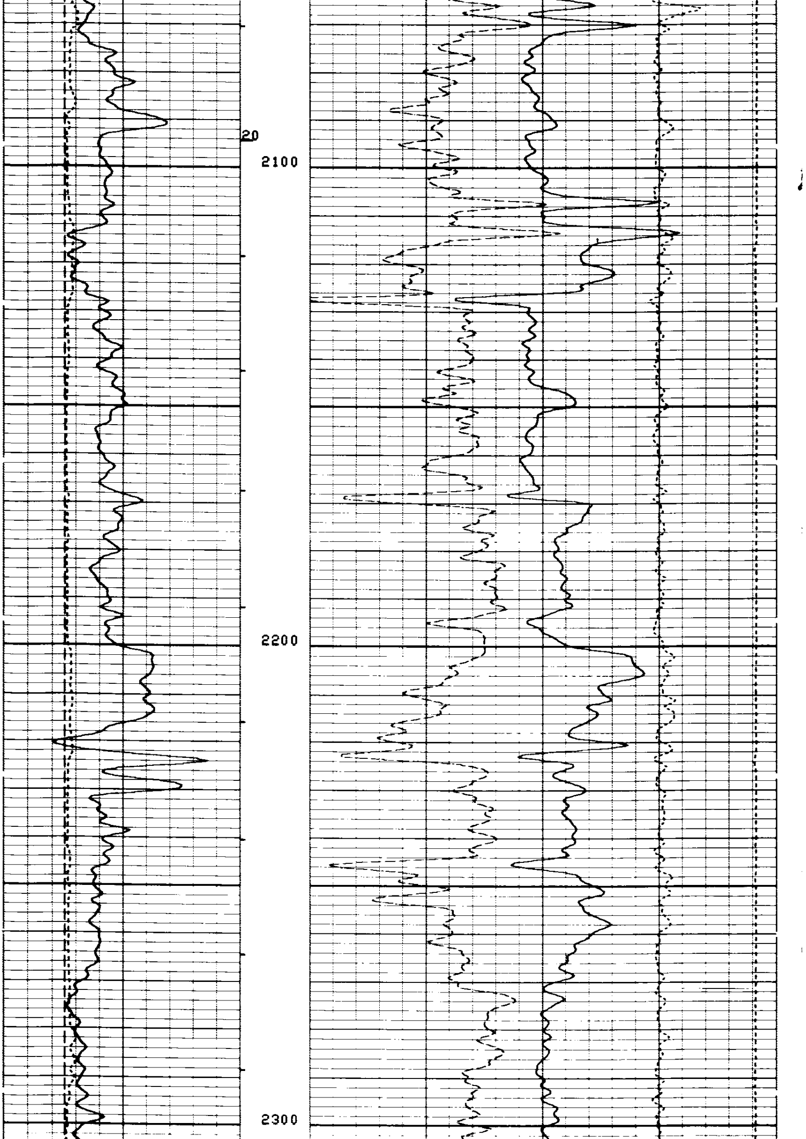


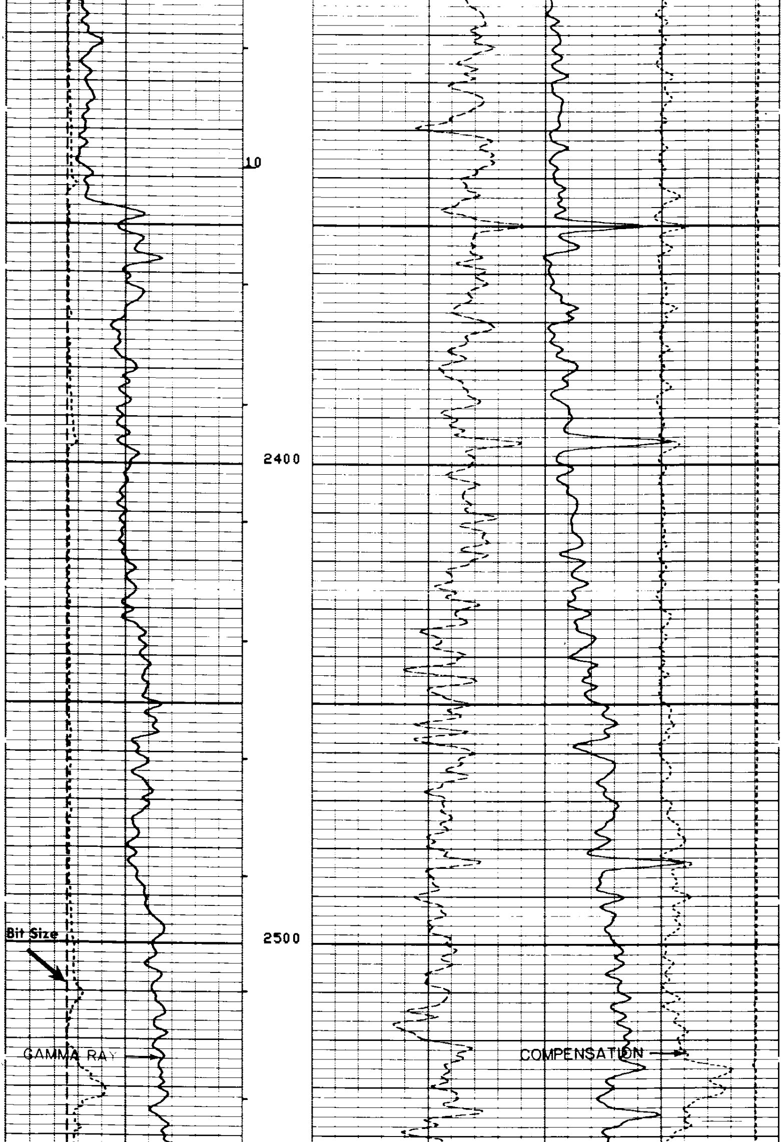


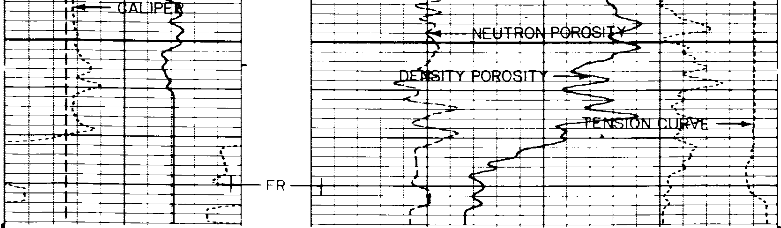












CP 28.4A FILE 4 14-SEP-86 04:10

TENS(LB)
10000. 0.0
DRHO(G/C3)
-.2500 .25000

BS (IN)
6.0000 16.000
CALI(IN)
6.0000 16.000
GR (GAPI)
0.0 150.00

NPHI
.60000 0.0
DPHI
.60000 0.0

SENSOR MEASURE POINT TO TOOL ZERO

FCNL	18.1	FEET	GR	26.6	FEET
FFDC	2.7	FEET	NCNL	18.1	FEET
CALI	2.7	FEET	NFDC	2.7	FEET
NRAT	18.1	FEET	TENS	-.3	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
HC	CALI		PSNR	2.31800	
FD	1.00000	G/C3	MATR	SAND	
FDCC	ALLD		MDEN	2.65000	G/C3
WMUD	10.3000	LB/G	BHF	WATE	
BS	8.50000	IN	BHS	OPEN	

EVENT MARK SUMMARY:

OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
IHV	10.0000 F3	LEFT EDGE

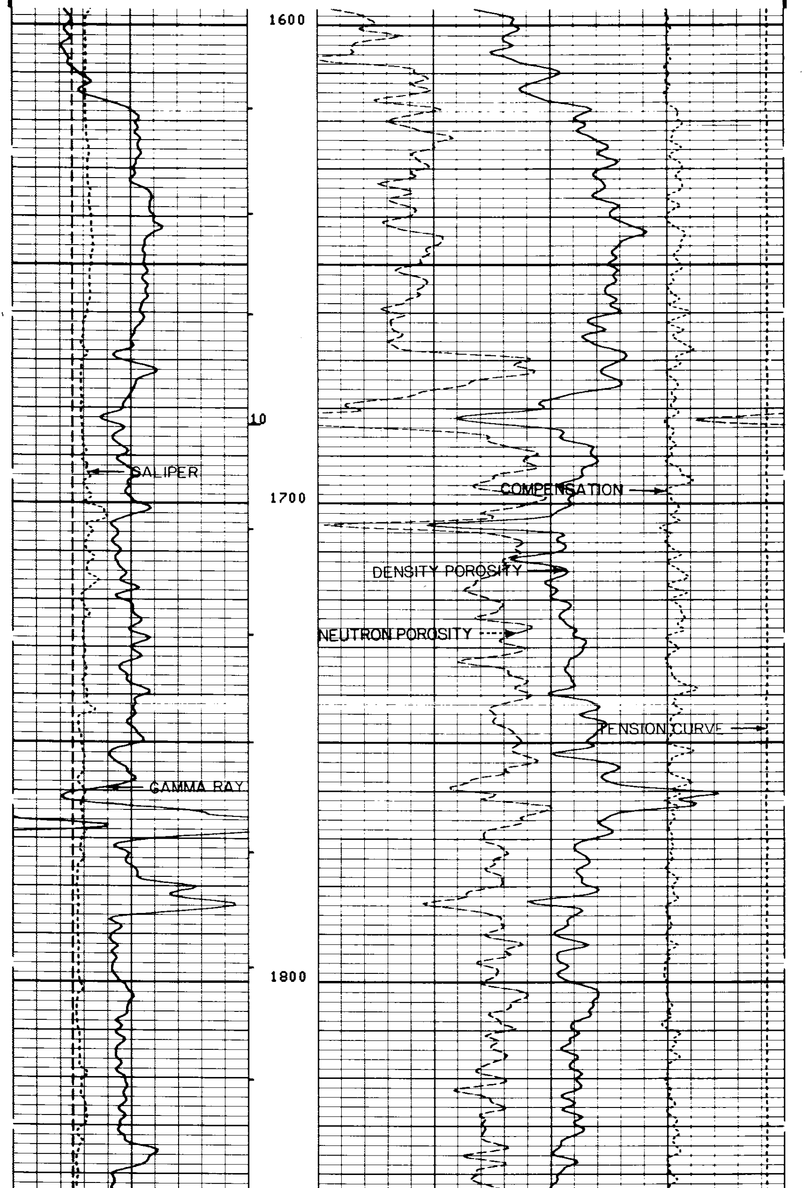
TENS(LB)
10000. 0.0
DRHO(G/C3)
-.2500 .25000

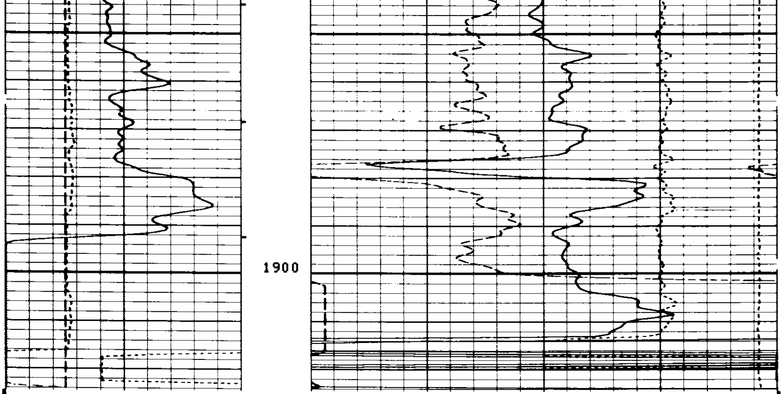
BS (IN)
6.0000 16.000
CALI(IN)
6.0000 16.000
GR (GAPI)
0.0 150.00

NPHI
.60000 0.0
DPHI
.60000 0.0

REPEAT SECTION REPEAT SECTION REPEAT SECTION

CP 28.4A FILE 3 14-SEP-86 05:38
DATA ACQUIRED 14-SEP-86 03:56





```
     CP 28.4A               FILE     3       14-SEP-86 05:37
                            DATA ACQUIRED   14-SEP-86 03:45
```

```
                                                        TENS(LB  )
                                                      10000.              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                 150.00           .60000                              0.0
```

SENSOR MEASURE POINT TO TOOL ZERO

```
FCNL 18.1  FEET                          GR   26.6  FEET
FFDC  2.7  FEET                          NCNL 18.1  FEET
CALI  2.7  FEET                          NFDC  2.7  FEET
NRAT 18.1  FEET                          TENS  -.3  FEET
```

PARAMETERS

```
NAME  VALUE       UNIT                NAME  VALUE       UNIT

HC    CALI                            PSNR 2.31800
FD    1.00000     G/C3                MATR SAND
FDCC  ALLO                            MDEN 2.65000      G/C3
WMUD  10.3000     LB/G                BHF  WATE
BS    8.50000     IN                  BHS  OPEN
PP    NORM                            DO   2.00000      F
```

TAPE NOT MADE

BEFORE SURVEY CALIBRATION SUMMARY

```
PERFORMED:     13-SEP-86 10:09
PROGRAM FILE: ISN     (VERSION    28.4A   85/11/11)
```

SGTE DETECTOR CALIBRATION SUMMARY

```
             MEASURED
           BKGD    JIG        CALIBRATED         UNITS
    GR      37     204           165             GAPI


CNTA              DETECTOR CALIBRATION SUMMARY

               TANK                        JIG
          INPUT  CALIBRATED          MEASURED   CALIBRATED
  NRAT    2.31800  2.158              2.355       2.193


PGTK              DETECTOR CALIBRATION SUMMARY

GAIN COMPUTED FROM SHOP BLOCK COUNTS

               BLOCK                       JIG
          INPUT  CALIBRATED          MEASURED   CALIBRATED    UNITS
  FFDC     538      337                531         332
  NFDC     844      528                851         532


PGTK              CALIPER CALIBRATION SUMMARY

             MEASURED                    CALIBRATED
           SMALL   LARGE                SMALL     LARGE         UNITS
  CALI    11.34    15.4                 8.00      12.0           IN

   CP 28.4A           FILE    0      13-SEP-86 10:09
```

```
               AFTER SURVEY TOOL CHECK SUMMARY


  PERFORMED:     14-SEP-86 10:04
  PROGRAM FILE:  ISN    (VERSION    28.4A   85/11/11)


CNTA                    TOOL  CHECK

                      JIG
               BEFORE      AFTER
  NRAT         2.193       2.195

  POROSITY CHANGE  (LIME):    .001

PGTK                    TOOL  CHECK

                      JIG
               BEFORE      AFTER     UNITS
  FFDC          332         333       CPS
  NFDC          532         533       CPS

  RHOB  CHANGE (WATER):    .001 G/C3
```

```
                SHOP SUMMARY


  PERFORMED:     09-SEP-86 11:18
  PROGRAM FILE:  SHOP   (VERSION    28.4    85/11/11)


CNTA              DETECTOR CALIBRATION SUMMARY

              TANK                          JIG
       MEASURED  CALIBRATED        MEASURED   CALIBRATED

  NRAT    2.318       2.158          2.363       2.201

                     (CNC:1132, CNB:2284)
```

```
                    SHOP SUMMARY


   PERFORMED:     09-SEP-86 12:01
   PROGRAM FILE:  SHOP   (VERSION    28.4    85/11/11)


 PGTK                 DETECTOR CALIBRATION SUMMARY

                BLOCK                          JIG
        MEASURED   CALIBRATED    MEASURED   CALIBRATED     UNITS

   FFDC   538         337          564         354          CPS
   NFDC   844         528          848         530          CPS

          (PGS:542 , PDH:340 , GSR:6608, SFT :1171)
```

COMPANY ARCO OIL AND GAS COMPANY

WELL CAVENAM FOREST INDUSTRIES NO. 41-4

FIELD MIST

COUNTY COLUMBIA STATE OREGON

SCHL. FR 2580
SCHL. TD 2581
DRLR. TD 2584

Elev: KB 897.5
DF 896.5
GL 886.5