CC 42-09-65

Welex

OPEN HOLE

DUAL INDUCTION GUARD LOG

COMP. ARCO OIL AND GAS CO.
WELL COLUMBIA COUNTY 42-9-65
FIELD MIST
COUNTY COLUMBIA ST. OREGON

COMPANY	ARCO OIL AND GAS CO.
WELL	COLUMBIA COUNTY 42-9-65
FIELD	MIST
COUNTY	COLUMBIA STATE OREGON

API NO.
LOCATION NORTH 89 DEG. 48 MIN. 18 SEC.
EAST 103.11 FT.
SOUTH 0 DEG. 11 MIN. 42 SEC.
EAST 2298.03 FT.
FROM NE CORNER OF
SEC. 9 TWP. 6N RGE. 5W

OTHER SERVICES

PERMANENT DATUM GROUND LEVEL ELEV. 766.54
LOG MEASURED FROM KELLY BUSHING 10 FT. ABOVE PERM. DATUM
DRILLING MEASURED FROM KELLY BUSHING

ELEV.: K.B. 776.54
D.F. 775.54
G.L. 766.54

CONFIDENTIAL

DATE	10/30/87			
RUN NO.	ONE			
DEPTH-DRILLER	2850			
DEPTH-WELEX	2843			
BTM. LOG INTER.	2838			
TOP LOG INTER.	400			
CASING-DRILLER	9 5/8@ 470	@	@	@
CASING-WELEX	466			
BIT SIZE	8.5			
TYPE FLUID IN HOLE	POLYMER			
DENS. : VISC.	10.2 : 40	:		:
PH : FLUID LOSS	9.6 : 5 ML	: ML	ML	: ML
SOURCE OF SAMPLE	FLOW LINE			
RM @ MEAS. TEMP.	3.4 @ 70 F	@ F	@ F	@ F
RMF @ MEAS. TEMP.	2.89 @ 70 F	@ F	@ F	@ F
RMC @ MEAS. TEMP.	4.25 @ 70 F	@ F	@ F	@ F
SOURCE RMF RMC	MES : MES	:	:	:
RM @ BHT	@ F	@ F	@ F	@ F
TIME CIRC. STOPPED	14:00			
TIME ON BOTTOM	19:15			
MAX. REC. TEMP.	96 F@ 2843	F@	F@	F@
EQUIP. : LOCATION	1888 : WODLAND	:	:	:
RECORDED BY	STARNES			
WITNESSED BY	MR. J. SWAIN			

FOLD HERE

SERVICE TICKET NO.: API SERIAL NO.: PGM VERSION: V1.87 09/06/85

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLES

DATE : SAMPLE NO.	:	:
DEPTH-DRILLER		
TYPE FLUID IN HOLE		
DENS. : VISC.	:	:
PH : FLUID LOSS	: ML	: ML
SOURCE OF SAMPLE		
RM e MEAS. TEMP.	e F	e F
RMF e MEAS. TEMP.	e F	e F
RMC e MEAS. TEMP.	e F	e F
SOURCE: RMF : RMC	:	:
RM e BH[illegible]	[illegible] F	e F
RMF e B[illegible]	[illegible]	F
RMC e B[illegible]	[illegible]	F

RESISTIVITY SCALE CHANGES

TYPE LOG	DEPTH	SCALE UP HOLE	SCALE DOWN HOLE

RESISTIVITY EQUIPMENT DATA

RUN NO.	TOOL TYPE AND NO.	PAD TYPE	TOOL POSITION	OTHER
ONE	DIGL 98862			
	GUARD 67279			
	AWL 123123			

BOREHOLE CORREC[illegible] MEDIUM DEEP.

REMARKS

WELEX DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS, OR RECOMMENDATIONS WHICH MAY BE GIVEN BY WELEX PERSONNEL OR WHICH MAY APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT WELEX IS NOT RESPONSIBLE, EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILFULL MISCONDUCT FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

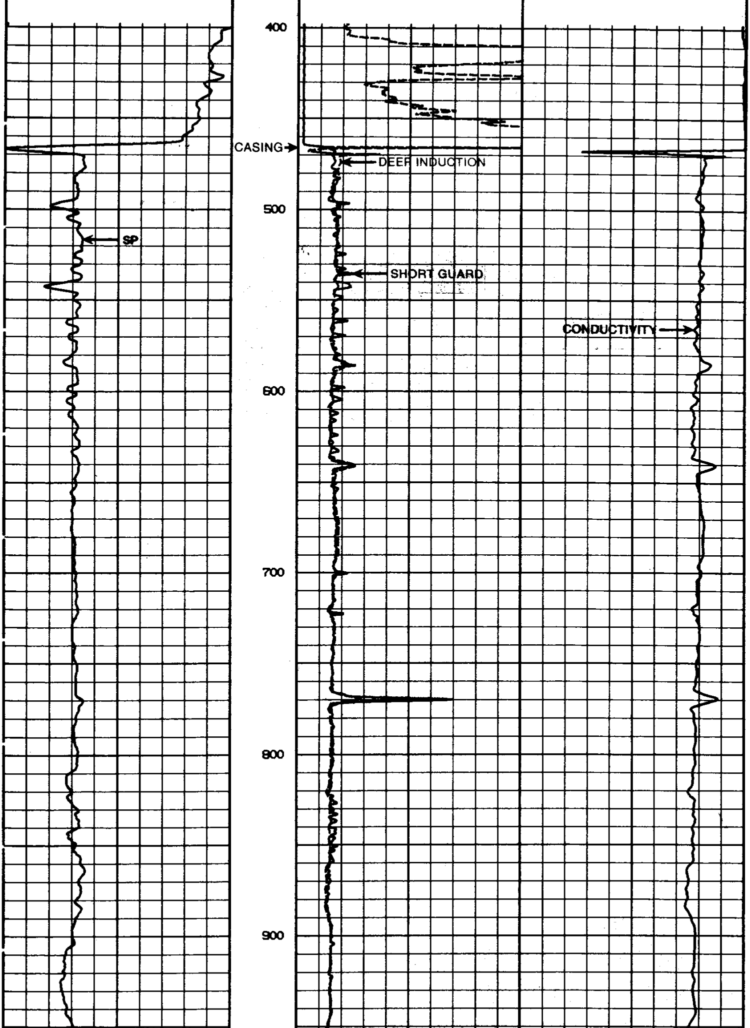
2 - 100

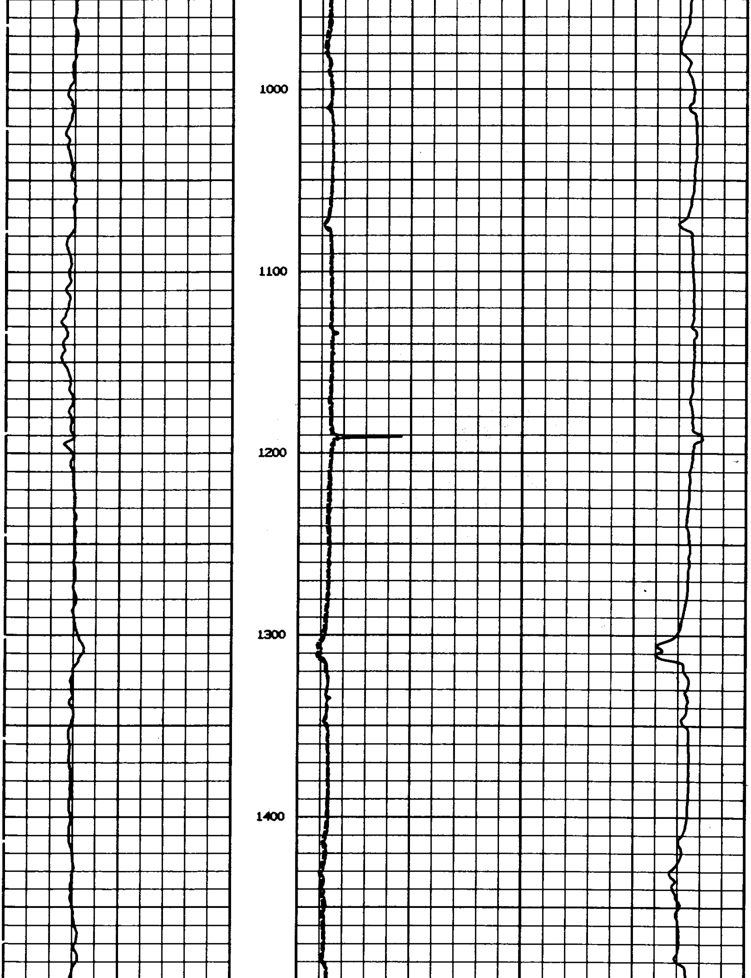
- |10| +
SP

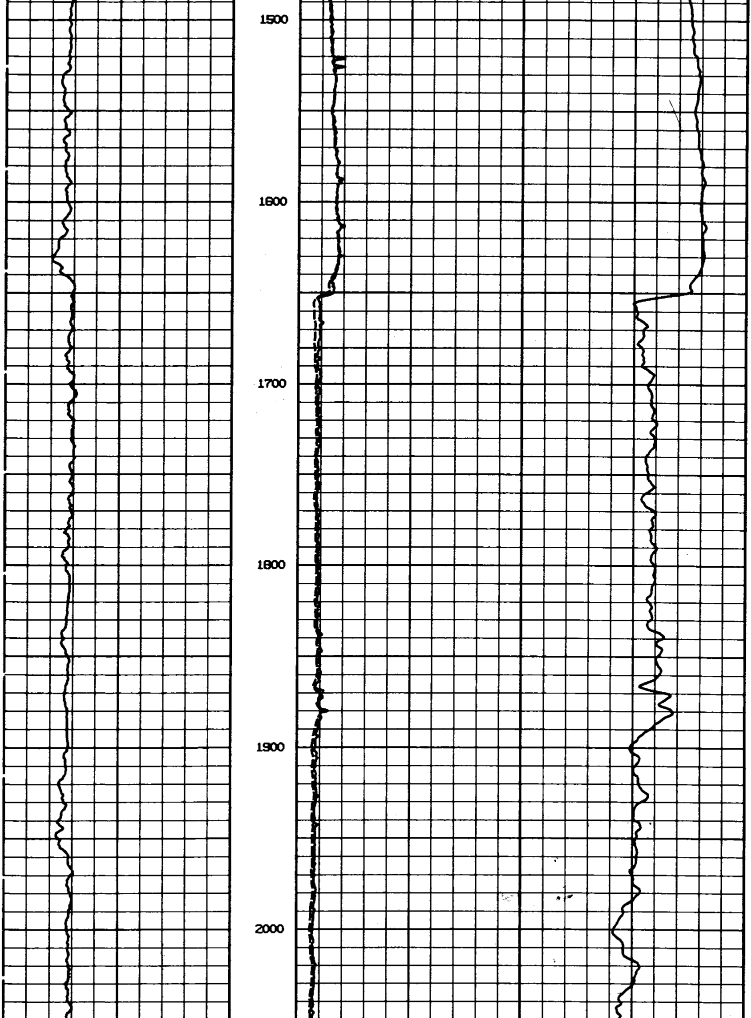
0. DEEP INDUCTION 30.
OHM-M

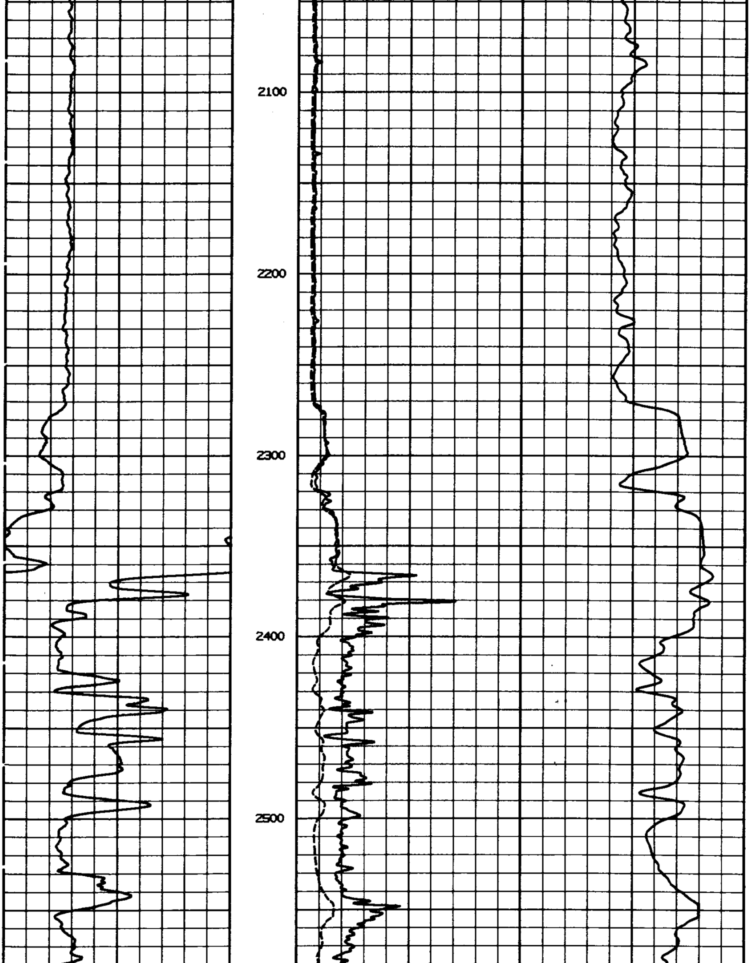
0. SHORT GUARD 30.
OHM-M

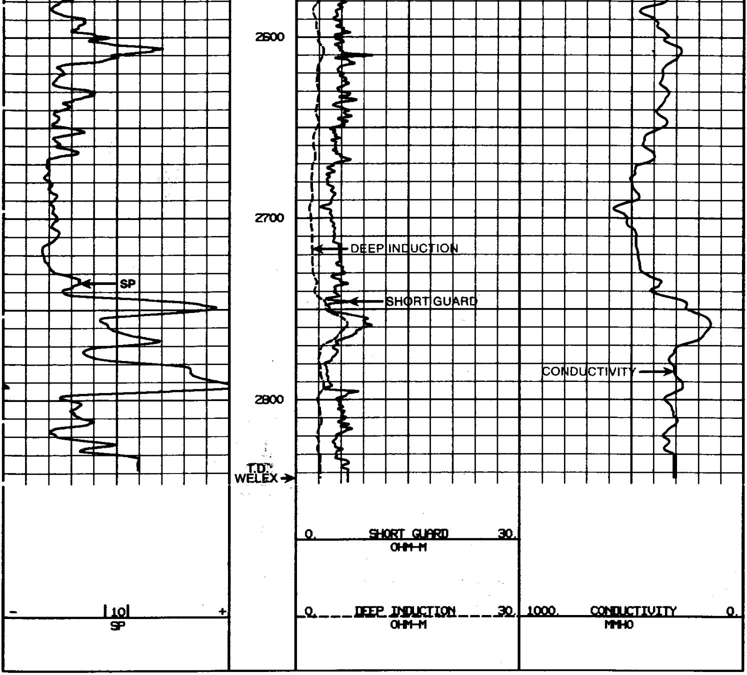
1000. CONDUCTIVITY 0.
MMHO











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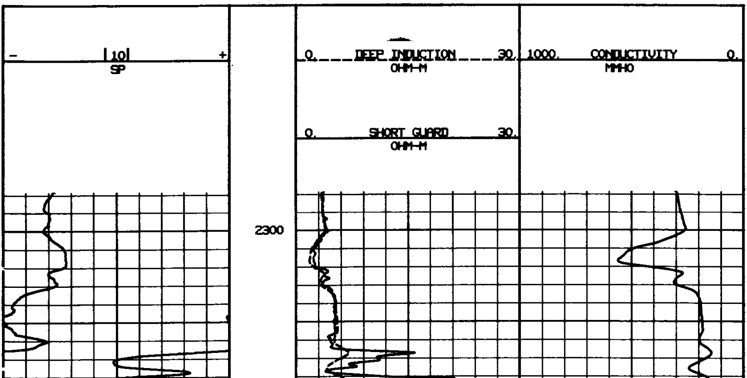
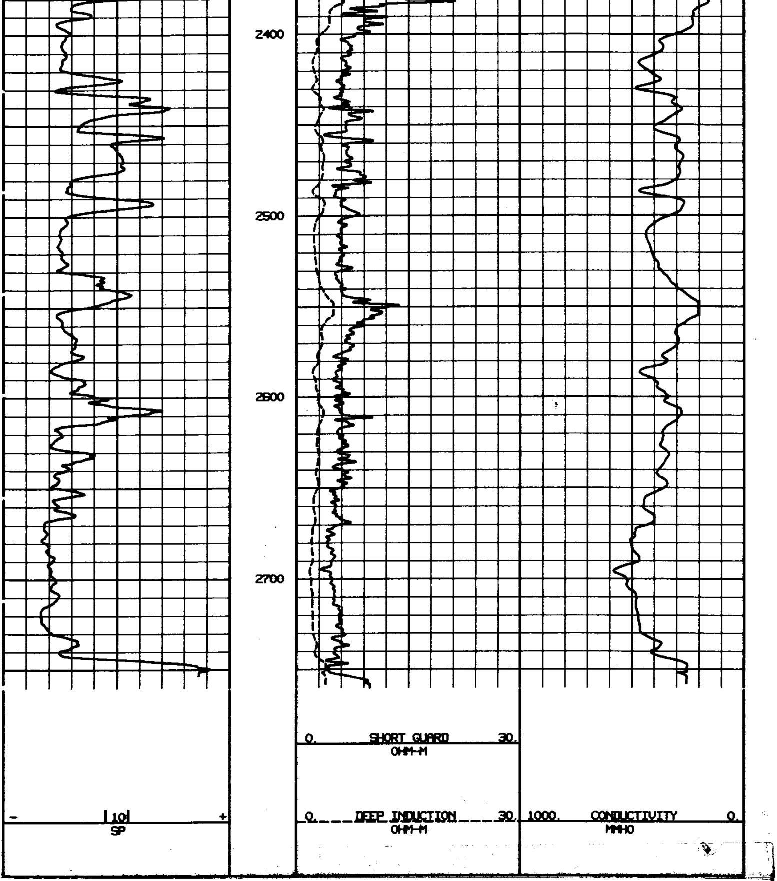
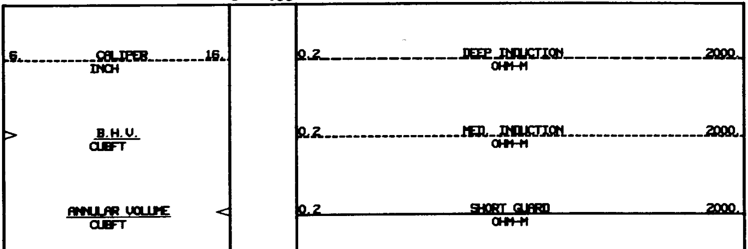
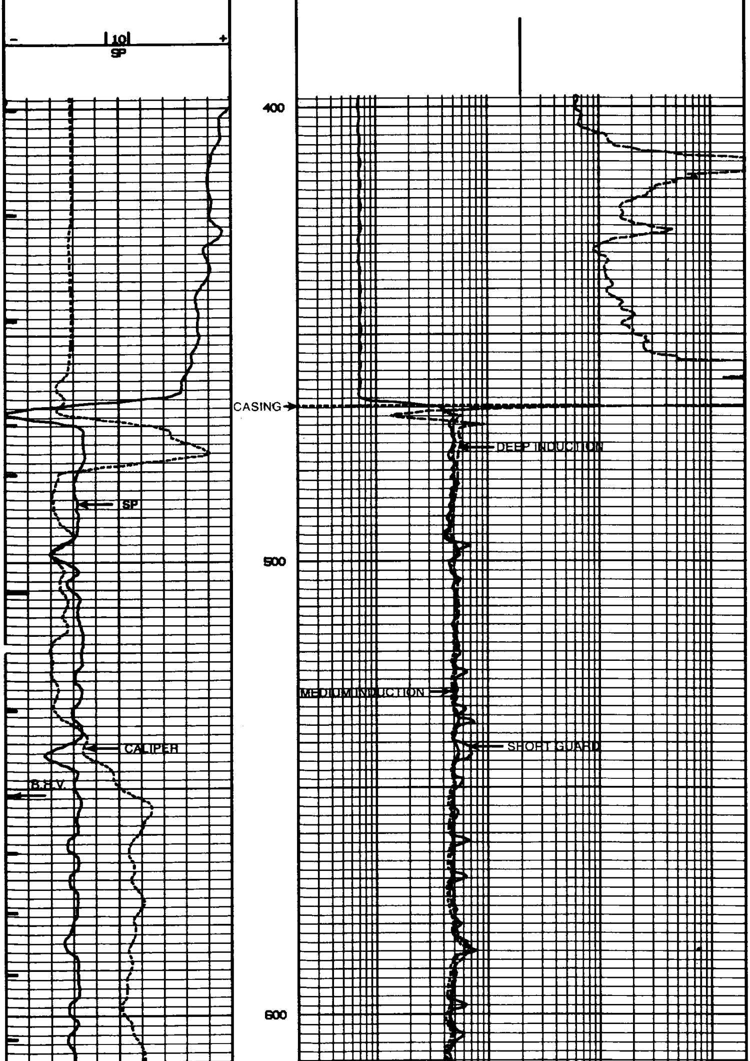
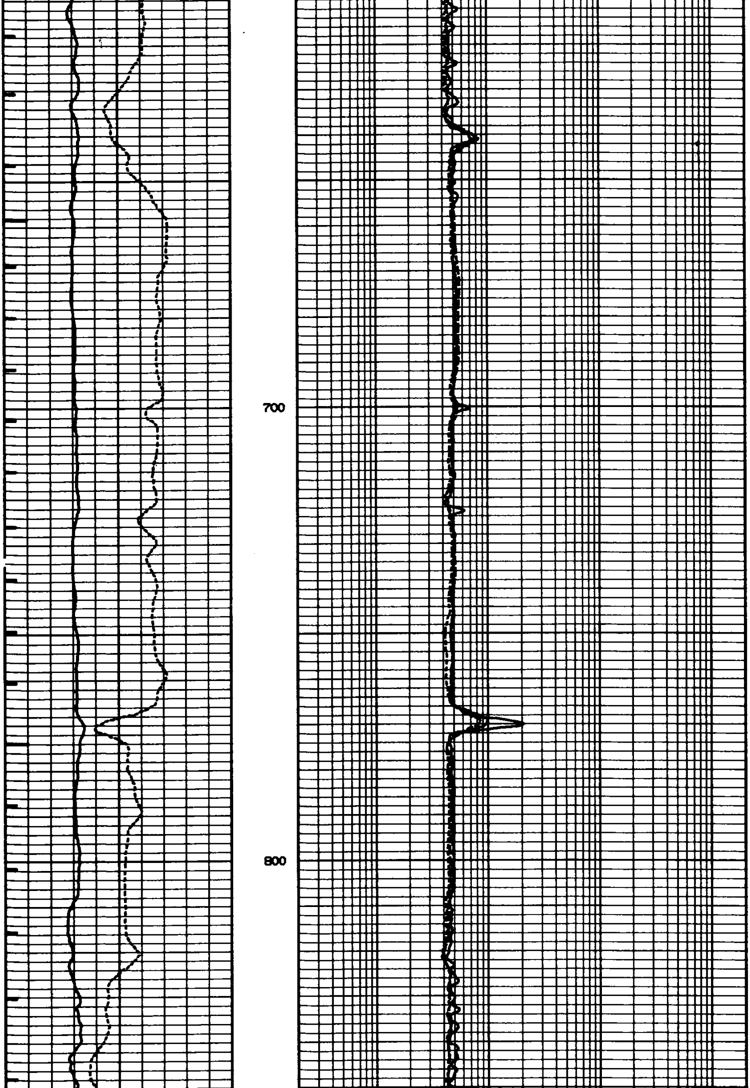


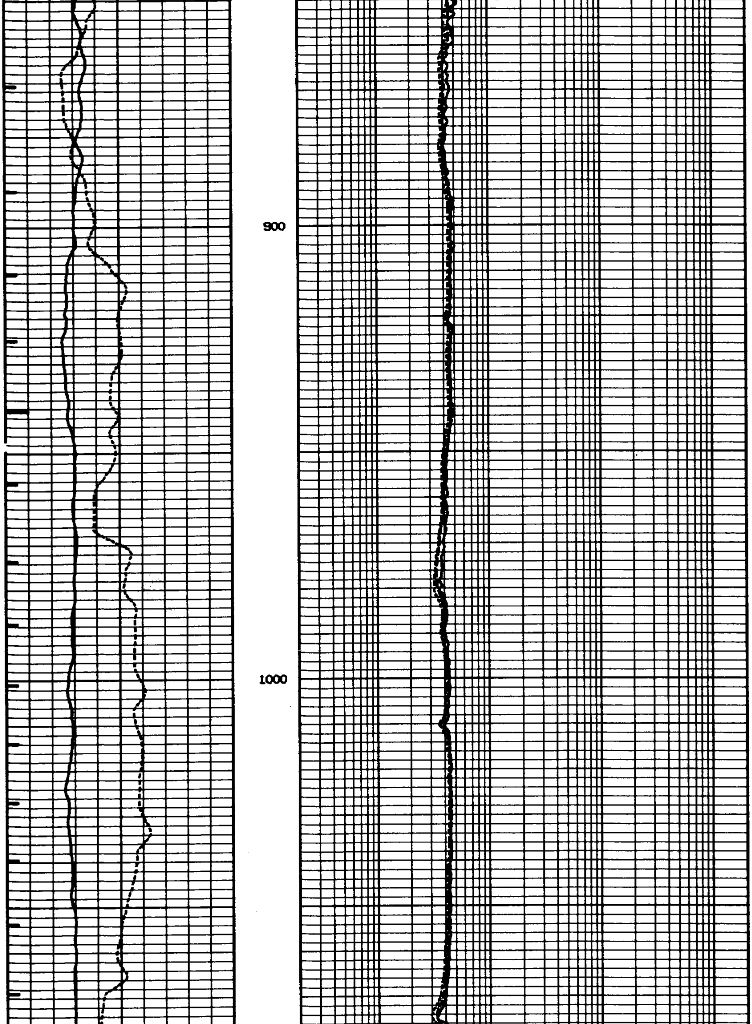


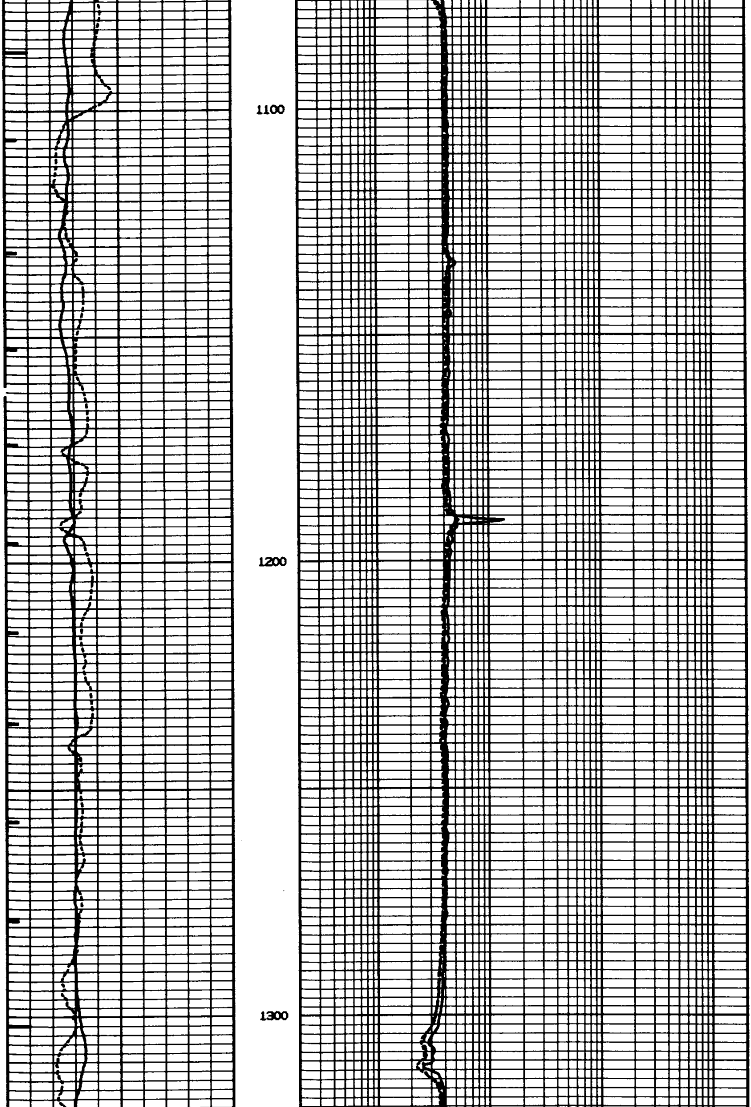
5″ = 100′

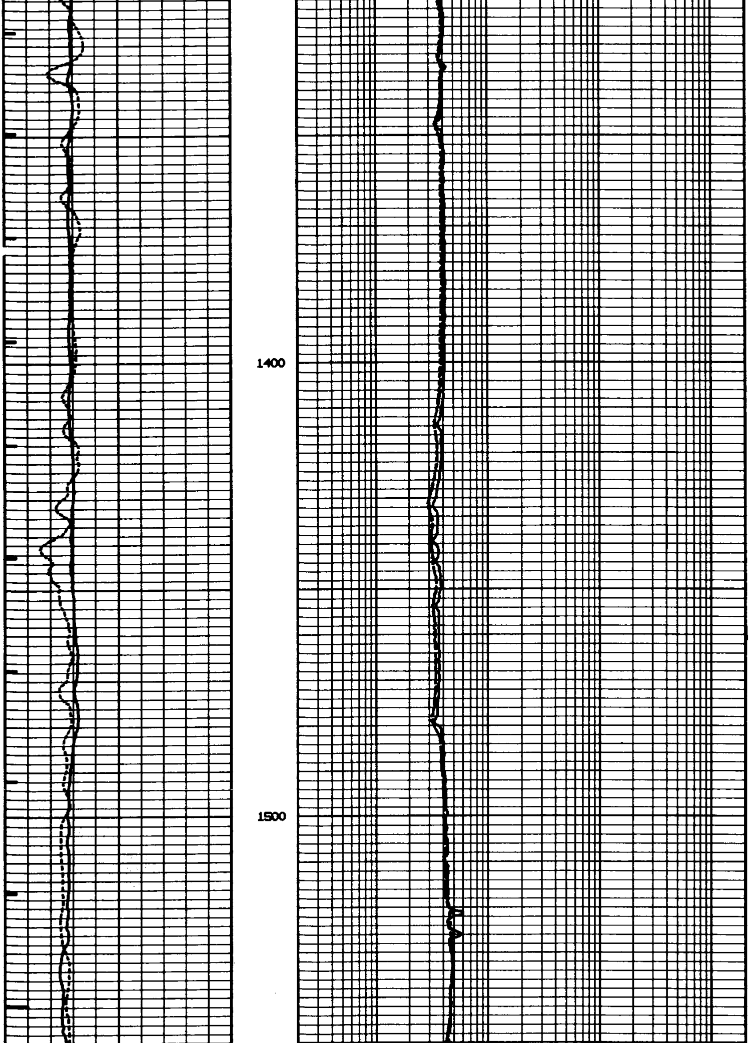


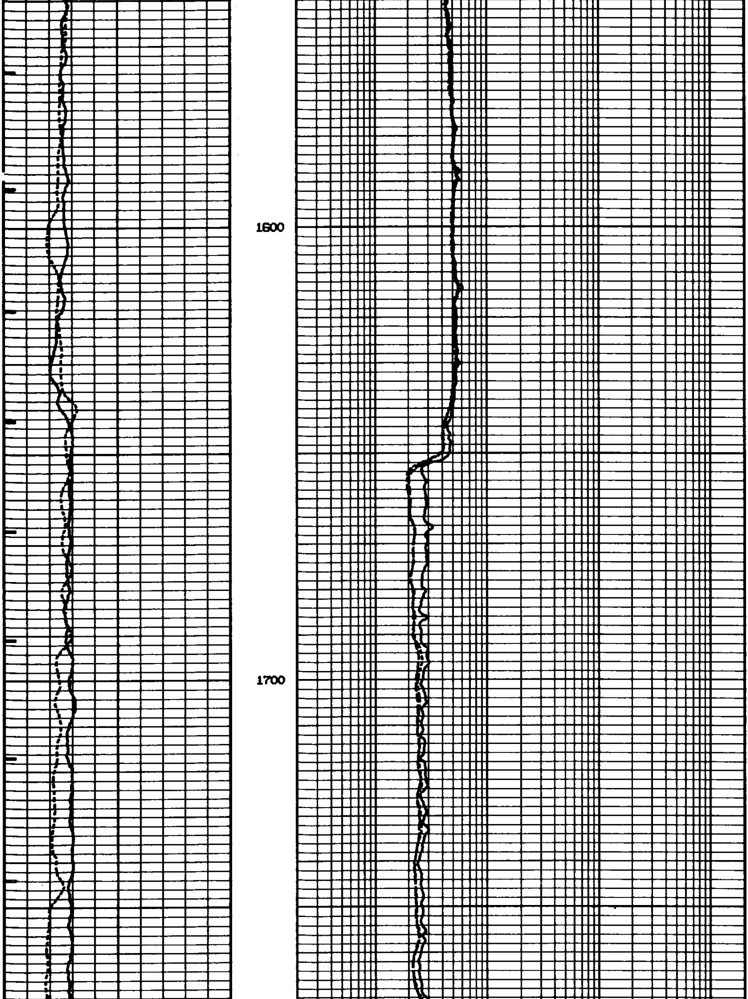


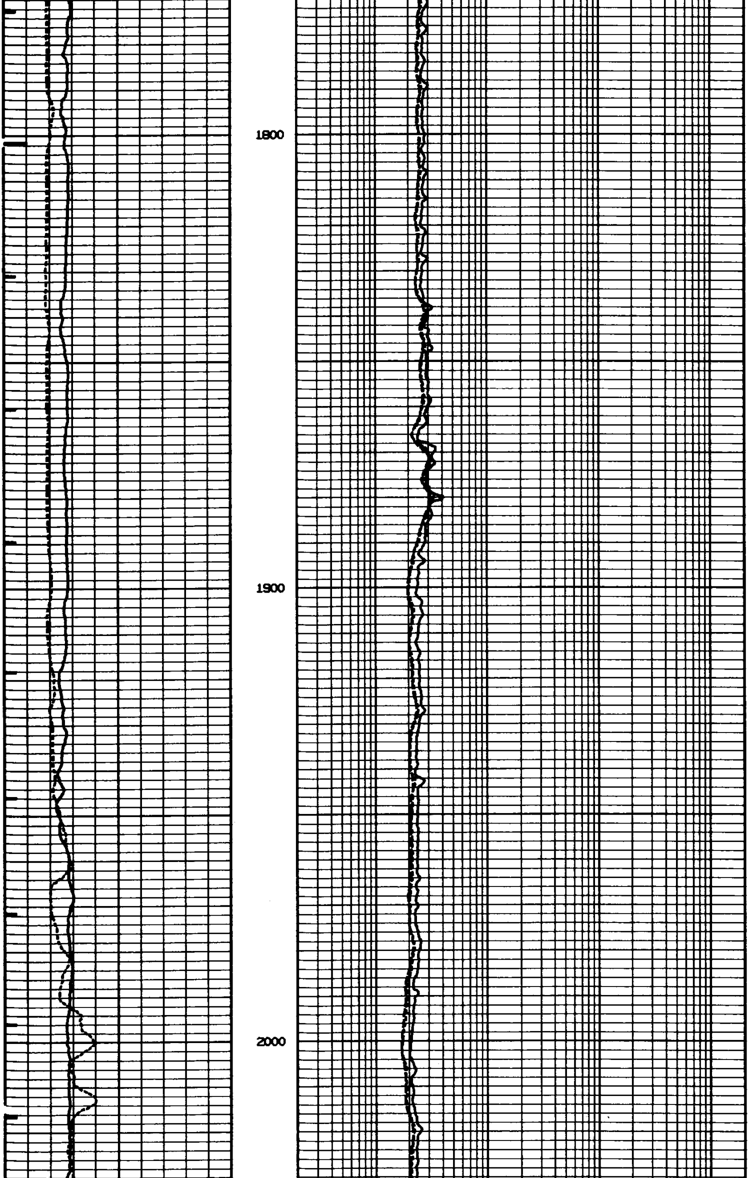


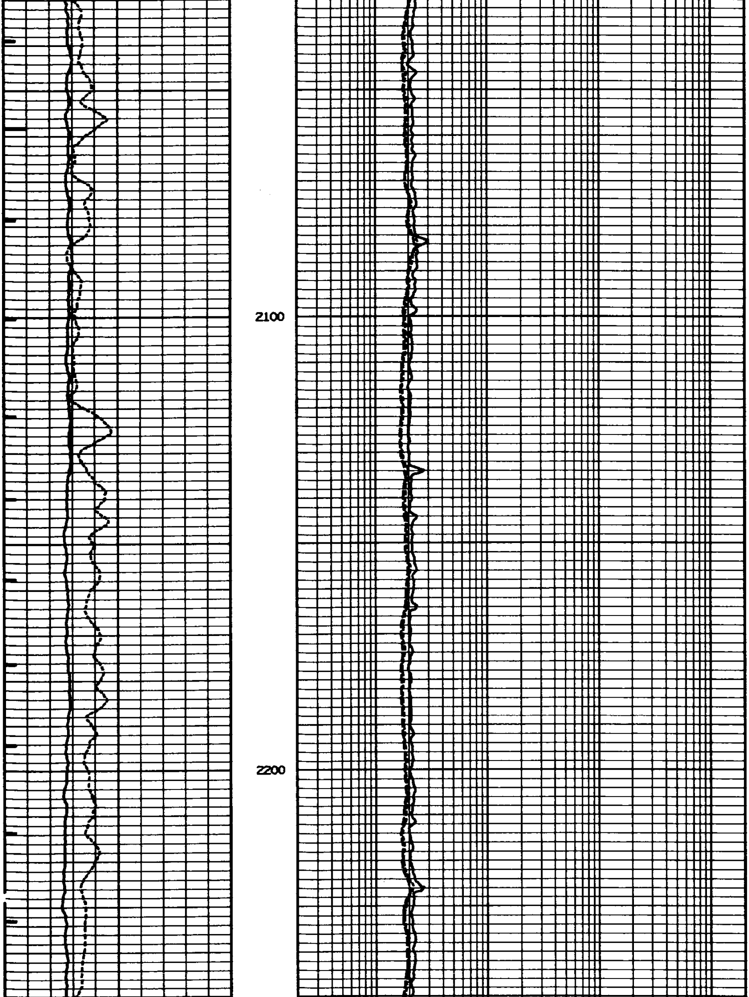


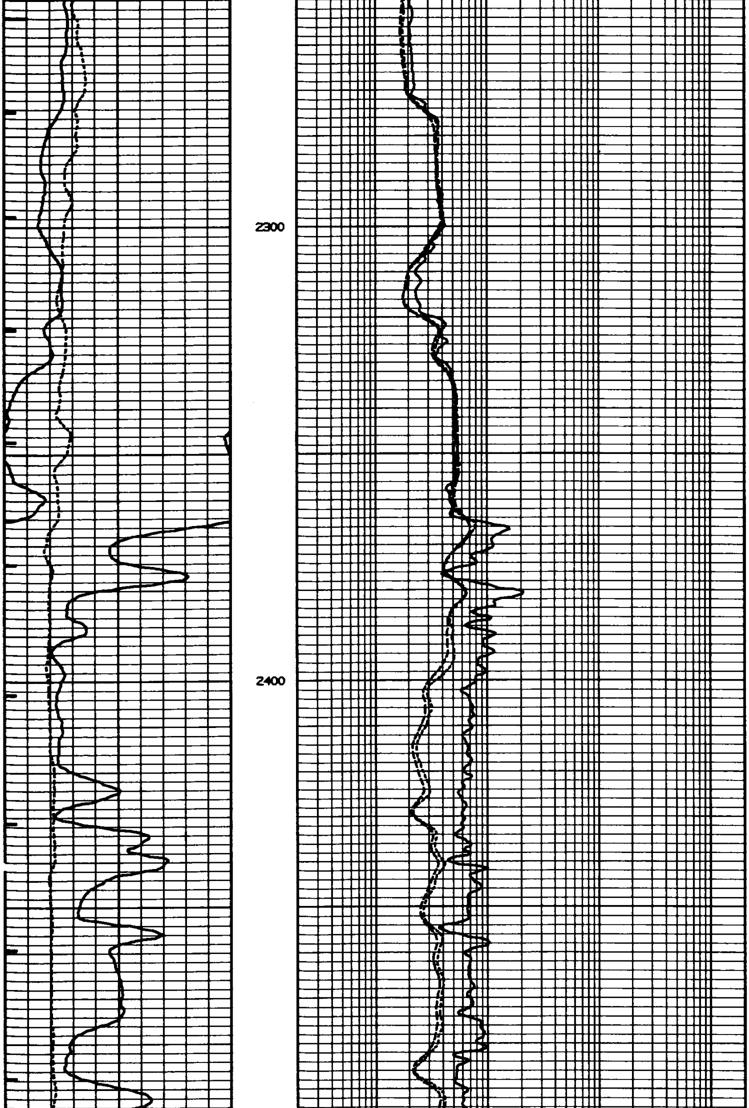


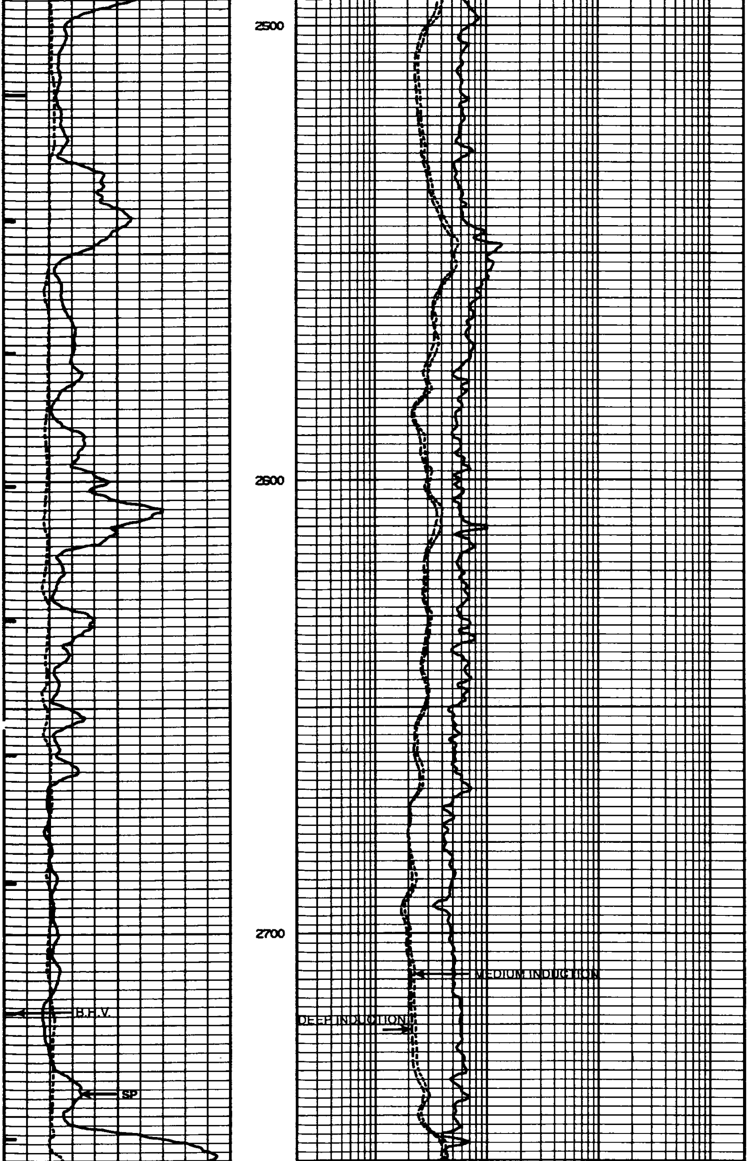


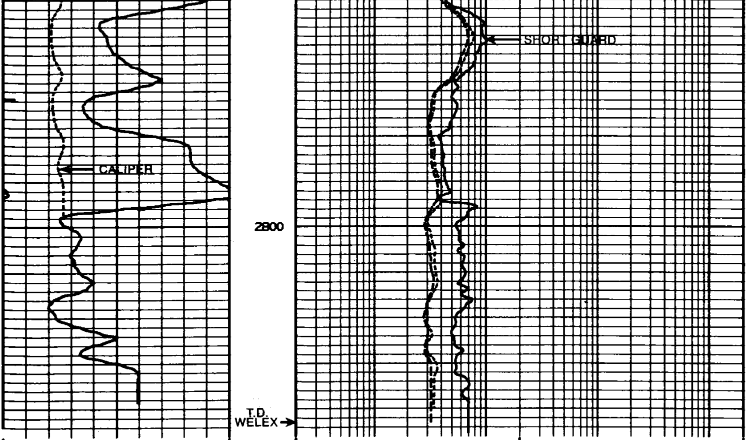












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SP

ANNULAR VOLUME
CUBFT

B.H.V.
CUBFT

6. CALIPER 16.
INCH

0.2 SHORT GUARD 2000.
OHM-M

0.2 MED. INDUCTION 2000.
OHM-M

0.2 DEEP INDUCTION 2000.
OHM-M

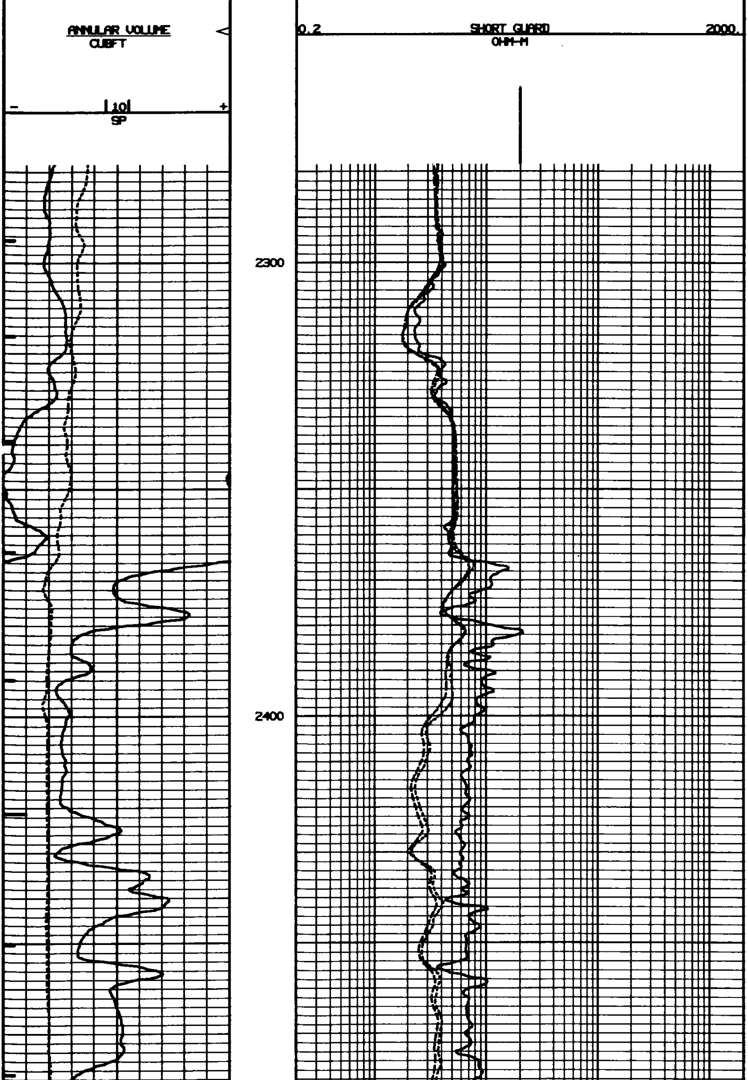
REPEAT SECTION

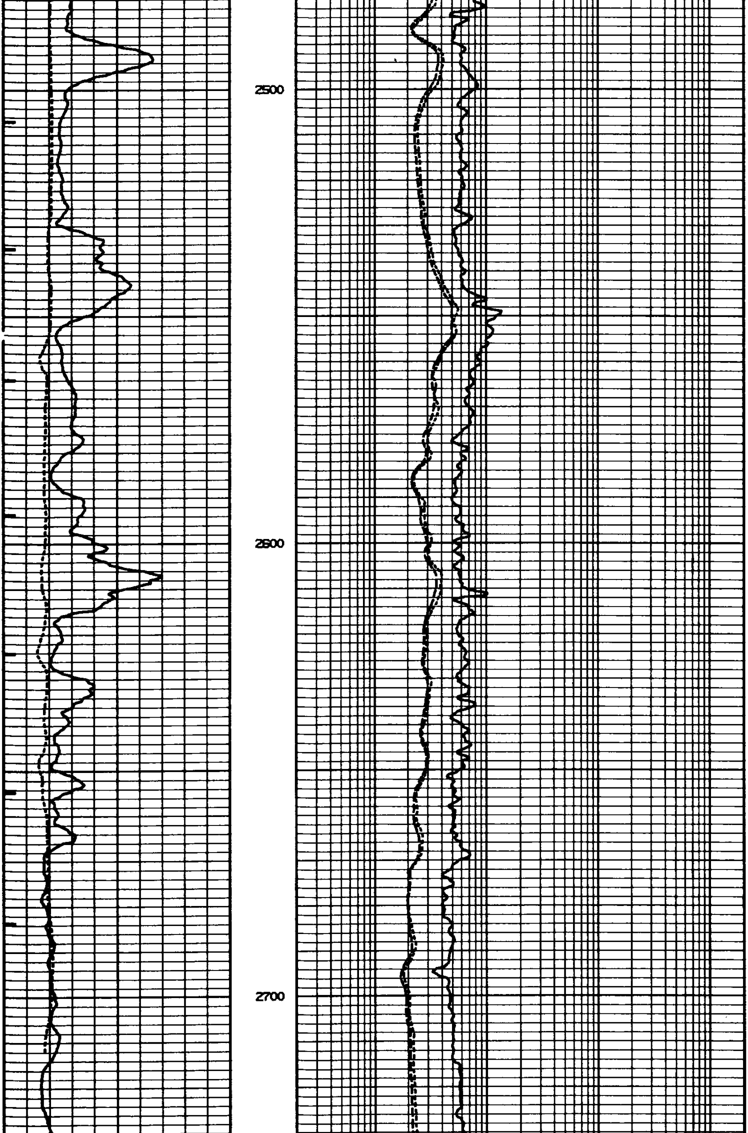
6. CALIPER 16.
INCH

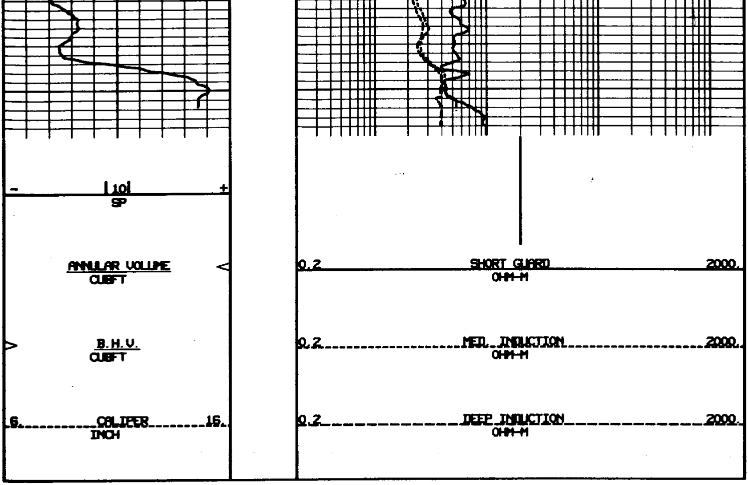
0.2 DEEP INDUCTION 2000.
OHM-M

B.H.V.
CUBFT

0.2 MED. INDUCTION 2000.
OHM-M







```
CALI FIELD CALIBRATION
PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 01/ 87
PROGRAM VERSION V1.87

            TOOL VALUE   MEASURED   CALIBRATED   UNITS
VALUE 1       8221.       7.445        8.        INCH
VALUE 2      11842.      16.405       16.        INCH
```

```
                SHORT GUARD(NORMAL) BEFORE SURVEY CALIBRATION SUMMARY

PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                        TOOL VALUE MEASURED CALIBRATED
INT LOW CAL VE              1279
INT LOW CAL IALPHA          9626    1.9463    1.9857
INT HIGH CAL VE             5679
INT HIGH CAL IALPHA          411    200.29    198.85

SHOP NORM  INTC       14.226          0
FIELD NORM  INTC       14.12          0

SER # 67279      MOD. # 478    SRC. # 0         FLD CAL. # 0
```

```
                BEFORE LOG  FIELD CALIBRATION SUMMARY

PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                          DEEP INDUCTION            MEDIUM INDUCTION
      ITEM              FIELD        SHOP          FIELD          SHOP
 TOOL ZERO             1.0407         0.          2.3744           0.
 INT. CALIB.           523.89       515.38        503.64        502.03
 MANDREL ERROR         0.8326                     6.9793


SER # 98862      MOD. # 280    SRC. # 0         FLD CAL. # 0
```

SHOP CALIBRATION SUMMARY

```
PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                         DEEP INDUCTION            MEDIUM INDUCTION
     ITEM            MEASURED    CALIBRATED     MEASURED    CALIBRATED
  TOOL ZERO          0.9097          0.         2.0014          0.
  INT. CALIB.        511.33        515.38       498.65        502.03
  WHEEL               496.2        500.15       496.97        500.33
  MANDREL ERROR                    0.8326                     6.9793


  SER # 98862      MOD. # 280     SRC. # 0           FLD CAL. # 0
```

SHORT GUARD(NORMAL) SHOP CALIBRATION

```
PERFORMED   10/ 13/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                        MEASURED    CALIBRATED    UNITS
SHOP CAL LOW             1.6374          2.       OHMM
SHOP CAL HIGH            163.74        200.       OHMM
INTERNAL CAL LOW         1.6258       1.9857      OHMM
INTERNAL CAL HIGH         162.8       198.85      OHMM

SER # 67279      MOD. # 478     SRC. # 0           FLD CAL. # 0
```

SHORT GUARD(NORMAL) AFTER SURVEY CALIBRATION

```
PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87
                                        MEASURED
                        TOOL VALUE   AFTER      BEFORE
INT LOW CAL VE              1273
INT LOW CAL IALPHA          9618     1.8742     1.9463
INT HIGH CAL VE             5729
INT HIGH CAL IALPHA          418     198.54     200.29



SER # 67279      MOD. # 478     SRC. # 0           FLD CAL. # 0
```

AFTER LOG FIELD CALIBRATION SUMMARY

```
PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                         DEEP INDUCTION            MEDIUM INDUCTION
     ITEM              AFTER       BEFORE         AFTER       BEFORE
  TOOL ZERO          1.0407          0.         2.3024          0.
  INT. CALIB.        524.87        523.89       504.92        503.64
  MANDREL ERROR      0.8326                     6.9793


SER # 98862      MOD. # 280     SRC. # 0           FLD CAL. # 0
```

AFTER LOG CALI CALIBRATION SUMMARY

```
PERFORMED   10/ 30/ 87    LAST SHOP CALIB   10/ 01/ 87
PROGRAM VERSION V1.87


               BEFORE       AFTER    UNITS
VALUE 1            8.      7.7748     INCH
VALUE 2           16.      15.987     INCH


SER # 123        MOD. # 123     SRC. # 0           FLD CAL. # 0
```

```
SERVICE ID TRK  UNIT       SCL            RBASE TYPE STYP OPFL IPFL    OFF   DCH CVC
                         L          R      L R                                  1 2
BHV      25  1  CUBFT     0.        10.    0 0   9   LIN   0.   0.       0.  15 NYY
DCAL      0  4  INCH     -5.         5.    0 0   0   LIN  0.25  0.       0.   0 NNN
AHV      26  1  CUBFT    10.         0.    0 0   9   LIN   0.   0.       0.   0 NYY
SP       12  1   MV       0.       100.    Y Y   4   LIN  0.25 3.75      0.   6 YYY
SPU       2  1   MV       0.       100.    Y Y   4   LIN   0.   0.       0.   0 NNN
F        11  4            2.     20000.    0 0   0   LOG  1.25  0.       0.   4 QQQ
RWA      13  1  OHM-M     0.         3.    0 1   2   LIN  0.5   0.       0.  11 QQQ
BSIZ      0  1  INCH      6.        16.    0 0   0   LIN   0.   0.       0.   0 NNN
TENS     10  3         5000.         0.    1 1   0   LIN   0.  0.75      0.  13 NQQ
RXRT      0  1            1.6       -0.4   0 0   0   LIN   0.   0.       0.   0 NNN


                        ENG V1.87 09/06/85 DUAL INDUCTION ACOUSTIC

SERVICE ID TRK  UNIT       SCL            RBASE TYPE STYP OPFL IPFL    OFF   DCH CVC
                         L          R      L R                                  1 2
CILD     22  3  MMHO   1000.         0.    1 0   0   LIN   0.  1.75      0.   7 YQQ
ILDE     18  2  OHM-M     0.        30.    0 1   2   LIN   0.   0.       0.   8 MMN
ILD       4  4  OHM-M     0.2     2000.    0 1   0   LOG   0.   0.       0.   1 NQM
ILME      0  2  OHM-M     0.        30.    0 1   2   LIN   0.  1.75      0.   0 QFQ
ILM       5  4  OHM-M     0.2     2000.    0 1   0   LOG   0.   0.       0.   2 NQF
GLSE     19  2  OHM-M     0.        30.    0 1   2   LIN   0.  1.25      0.   9 YYN
GLS       6  4  OHM-M     0.2     2000.    0 1   0   LOG   0.   0.       0.   3 NQY
GLSA     20  2  OHM-M     0.         3.    0 0   0   LIN   0.   0.       0.  10 QQQ
DT        9  3  US/FT   150.        50.    1 1   0   LIN   0.   0.       0.  16 QYQ
VPHI     29  3   %       45.       -15.    1 0   0   LIN   0.   0.       0.   0 QQQ
TDI      30  3           10.         0.    0 0   9   LIN   0.   0.       0.  12 NYQ
PAMP      0  2            0.      1000.    0 0   0   LIN   0.  1.25      0.   0 NNN
APAM      0  2            0.       100.    0 0   0   LIN   0.   0.       0.   0 NNN
FAMP      0  2            0.      1000.    0 0   0   LIN   0.  1.25      0.   0 NNN
TT        0  1  USEC    400.       200.    0 0   0   LIN   0.   0.       0.   0 NNN
CALI      1  1  INCH      6.        16.    1 1   0   LIN  0.25 3.75      0.   5 QFF
```

- End -