Schlumberger

HIGH RESOLUTION DIPMETER

CSU

```
COMPANY:     REICHHOLD ENERGY CORPORATION

WELL:        PAUL #34-32  RD-1

FIELD:       MIST
COUNTY:      COLUMBIA
STATE:       OREGON

LOCATION:    741'N & 255'E OF THE SOUTH
             1/4  CORNER OF...
     SEC:    32          TWP: 7N          RGE: 25W

PERMANENT DATUM:              GL           ELEVATIONS-
ELEV. OF PERM. DATUM:         614.0 F       KB:  627.0 F
LOG MEASURED FROM:            KB            DF:
     13.0 F       ABOVE PERM. DATUM         GL:  614.0 F
DRLG. MEASURED FROM:          KB

DATE:                 17 SEP 84
RUN NO:               1

DEPTH-DRILLER:                2915.0 F
DEPTH-LOGGER:                 2898.0 F
BTM. LOG INTERVAL:            2898.0 F
TOP LOG INTERVAL:             497.0 F

CASING-DRILLER:               497 F
CASING-LOGGER:                497 F
CASING:                       8 5/8"

BIT SIZE:                     7 7/8"
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OTHER SERVICES-
    DIL-SFL
    BHC SONIC

PROGRAM
TAPE NO:
   26.2
SERVICE
ORDER NO:
 432256
```

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TYPE FLUID IN HOLE:   GEL-LIGNO
DENSITY:              10.0 LB/G
VISCOSITY:            25.0 S
PH:                    8.5
FLUID LOSS:            6.2 C3
SOURCE OF SAMPLE:     FLOWLINE
RM:                    2.100 OHMM AT 83.0 DEGF
RMF:                   2.090 OHMM AT 74.0 DEGF
RMC:                   2.550 OHMM AT 71.0 DEGF
SOURCE RMF/RMC:       MEASURED/MEASURED
RM AT BHT:             1.817 OHMM AT 97.0 DEGF
RMF AT BHT:            1.627 OHMM AT 97.0 DEGF
RMC AT BHT:            1.912 OHMM AT 97.0 DEGF

TIME CIRC. STOPPED:   1600 9-17
TIME LOGGER ON BTM.:  2130

MAX. REC. TEMP:        97.0 DEGF
```

LOGGING UNIT NO: 8178
LOGGING UNIT LOC: SACRAMENTO
RECORDED BY: R. BENTLEY
WITNESSED BY: M.ALGER/T.THOMAS

REMARKS:

EQUIPMENT NUMBERS-

HDS D 1896 HDE 2700 DAM 1891

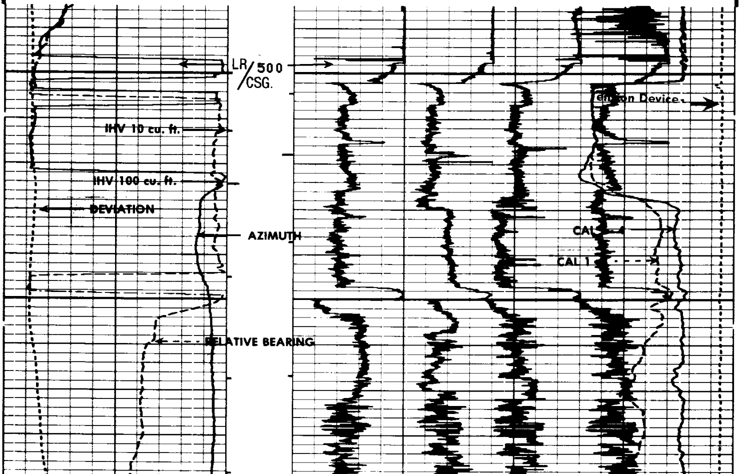
ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, 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.

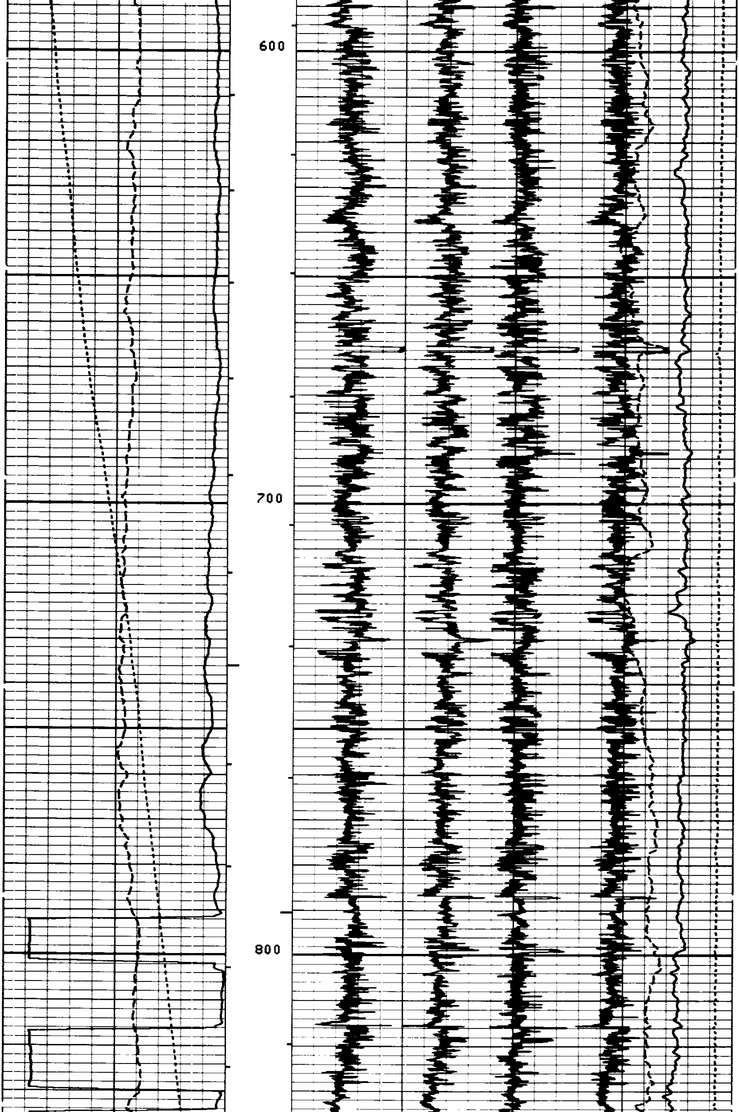
FILE 8 17-SEP-84 23:17
DATA ACQUIRED 00- -00 00:00

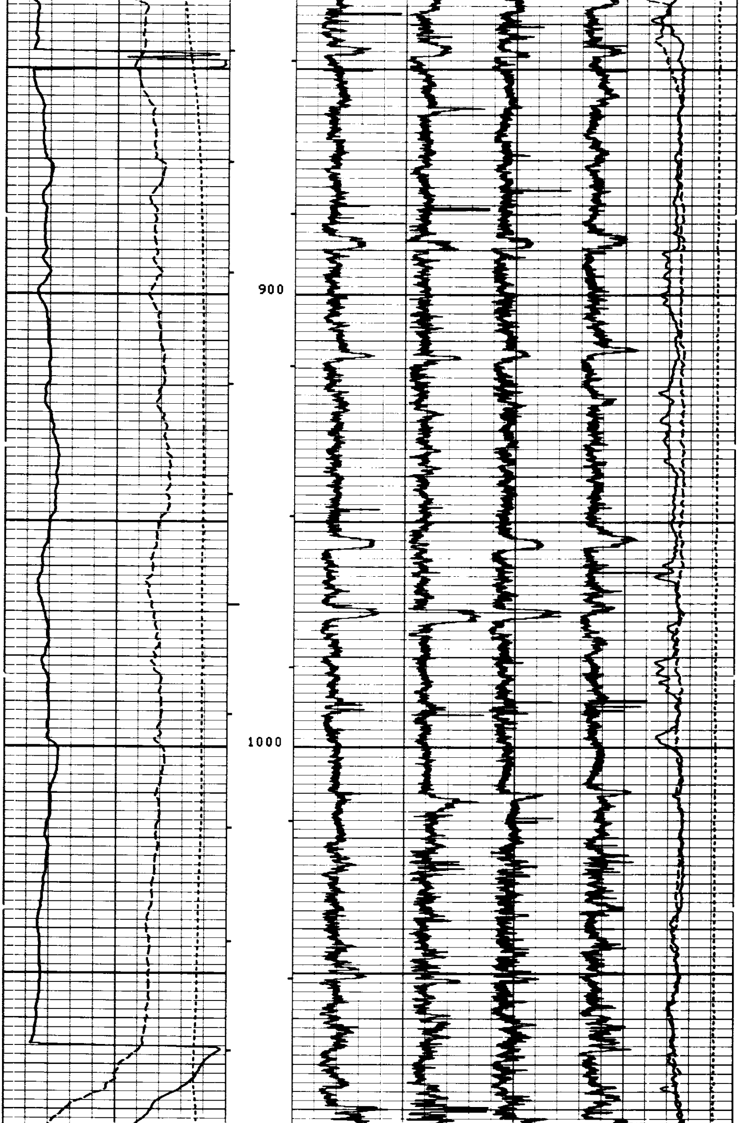
CEMENT VOLUME = 315.140 F3
HOLE VOLUME = 423.812 F3
FROM 1473.8 TO 489.8 FEET

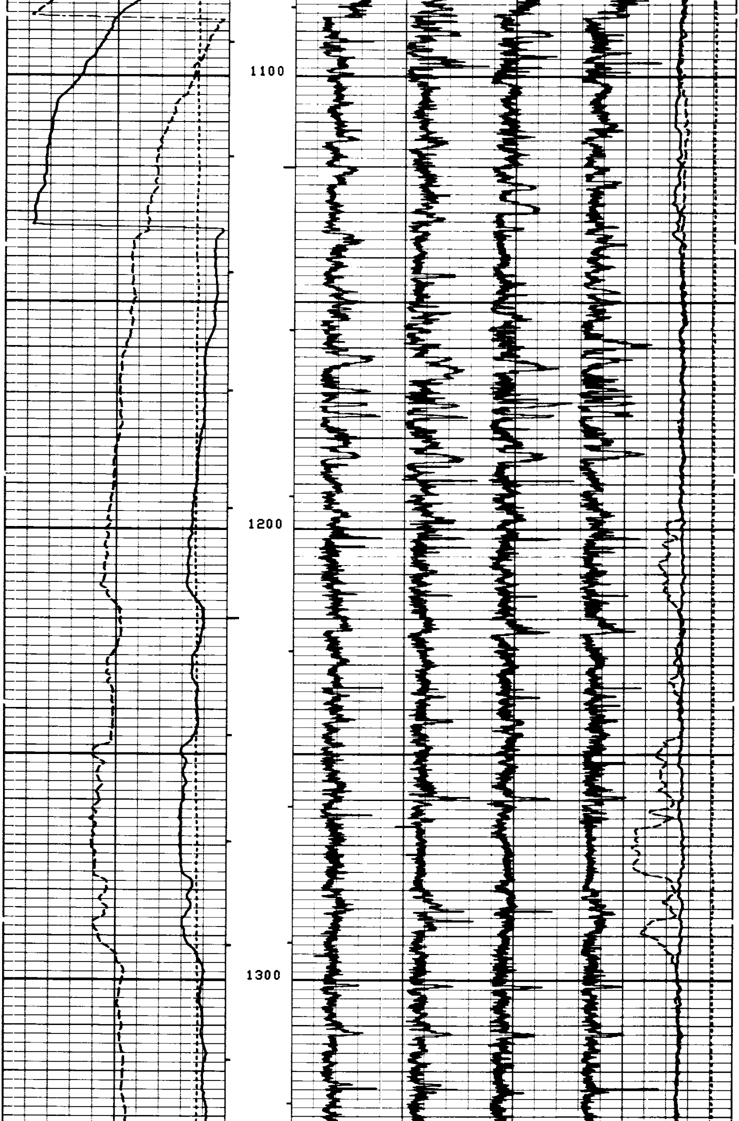
DEVI(DEG)		TENS(LB)	
-2.000	18.000	10000.	0.0
RB (DEG)		C2 (IN)	
-40.00	360.00	26.000	6.0000
AZIM(DEG)		C1 (IN)	
-40.00	360.00	26.000	6.0000

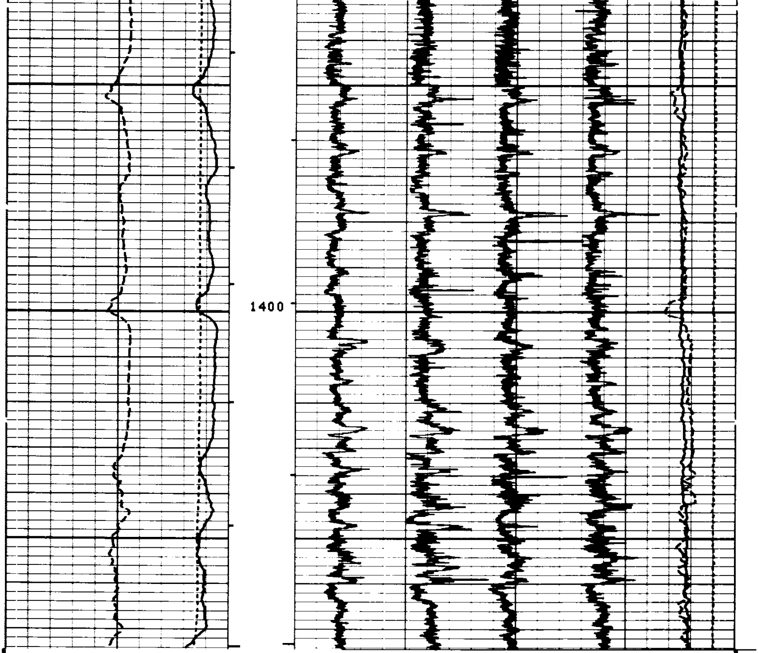
FILE 6 17-SEP-84 22:52











FILE 6 17-SEP-84 22:31

DEVI(DEG)		TENS(LB)	
-2.000	18.000	10000.	0.0
RB (DEG)		C2 (IN)	
-40.00	360.00	26.000	6.0000
AZIM(DEG)		C1 (IN)	
-40.00	360.00	26.000	6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

PARAMETERS

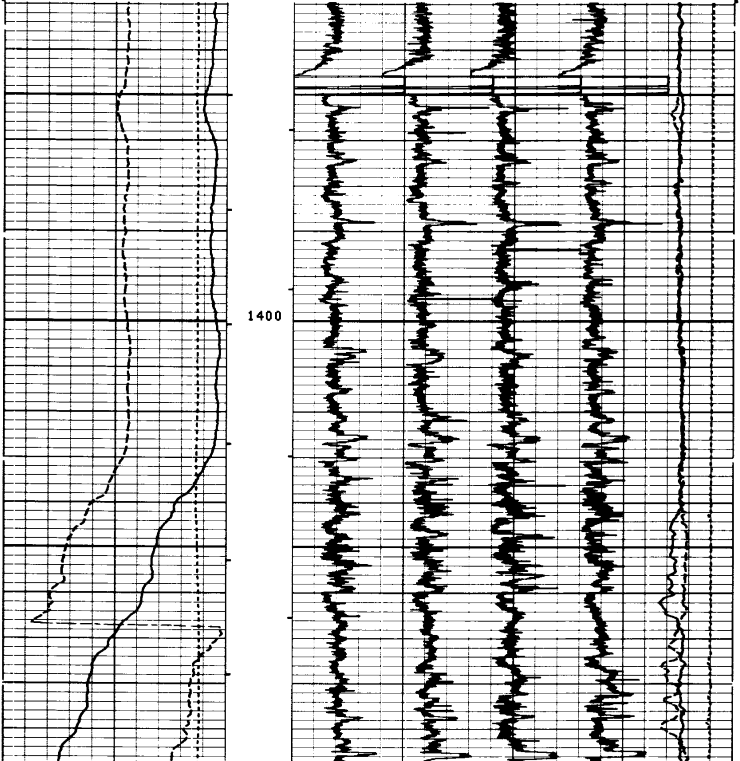
NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	36	DEG
BS	7.87500	IN	BHS	OPEN	

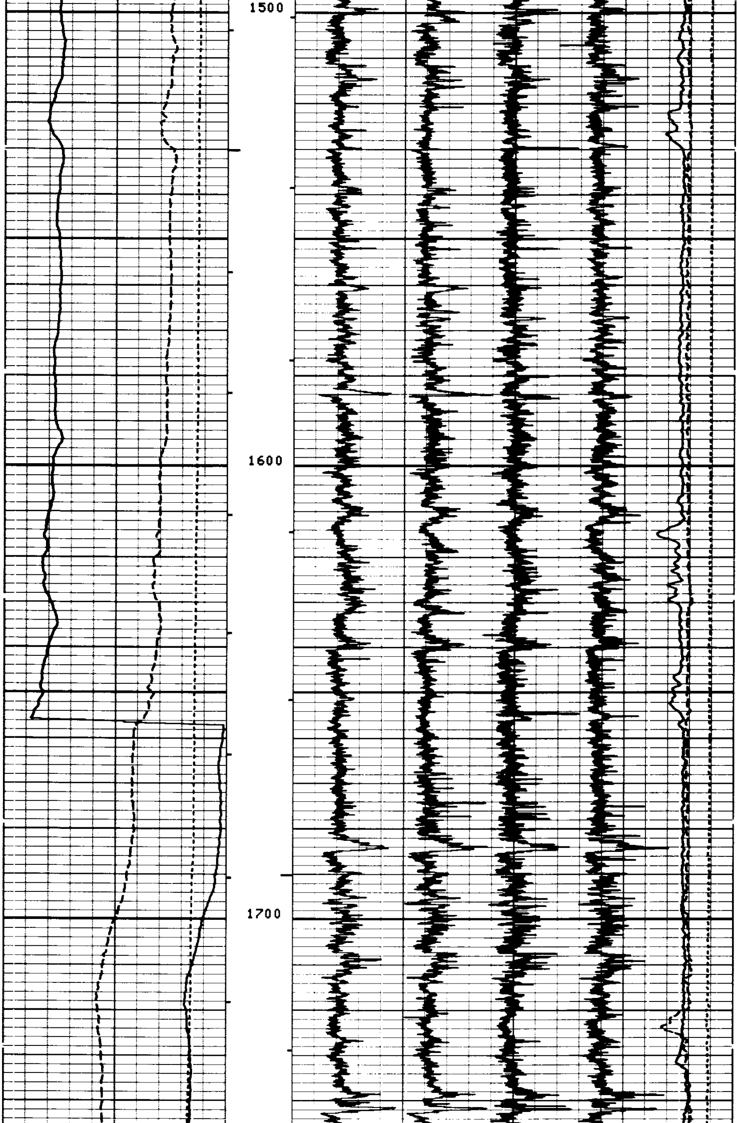
CEMENT VOLUME = 398.162 F3
HOLE VOLUME = 578.256 F3
FROM 2907.7 TO 1329.3 FEET

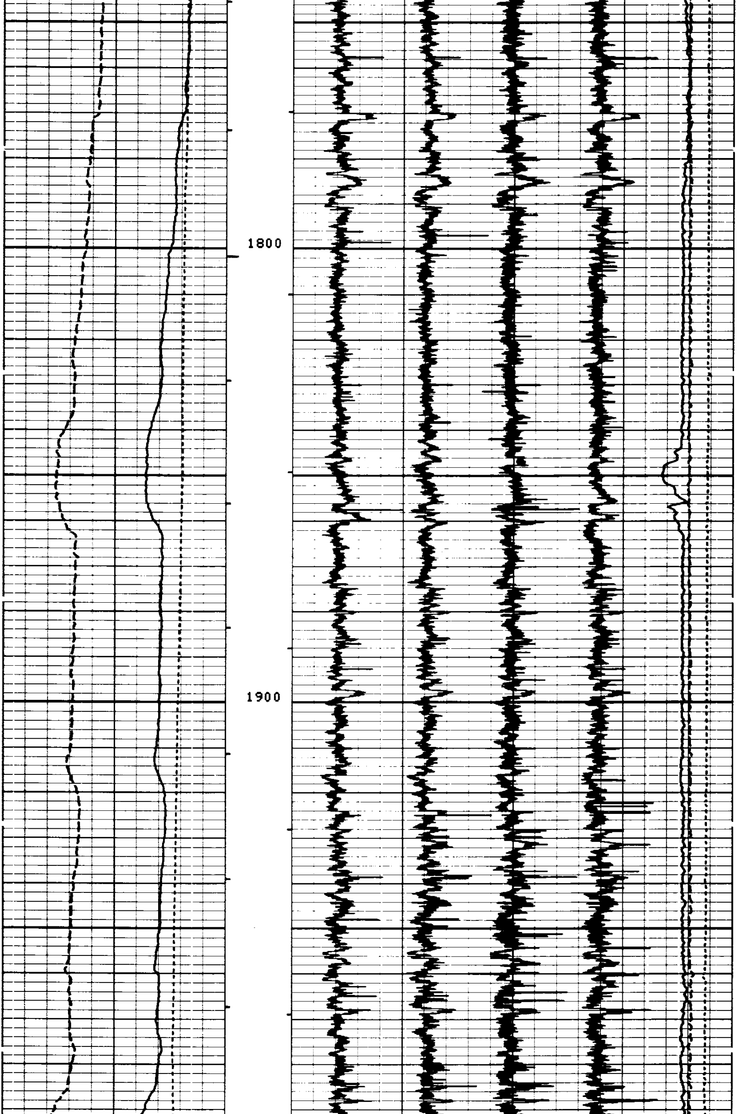
DEVI(DEG)
-2.000 18.000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

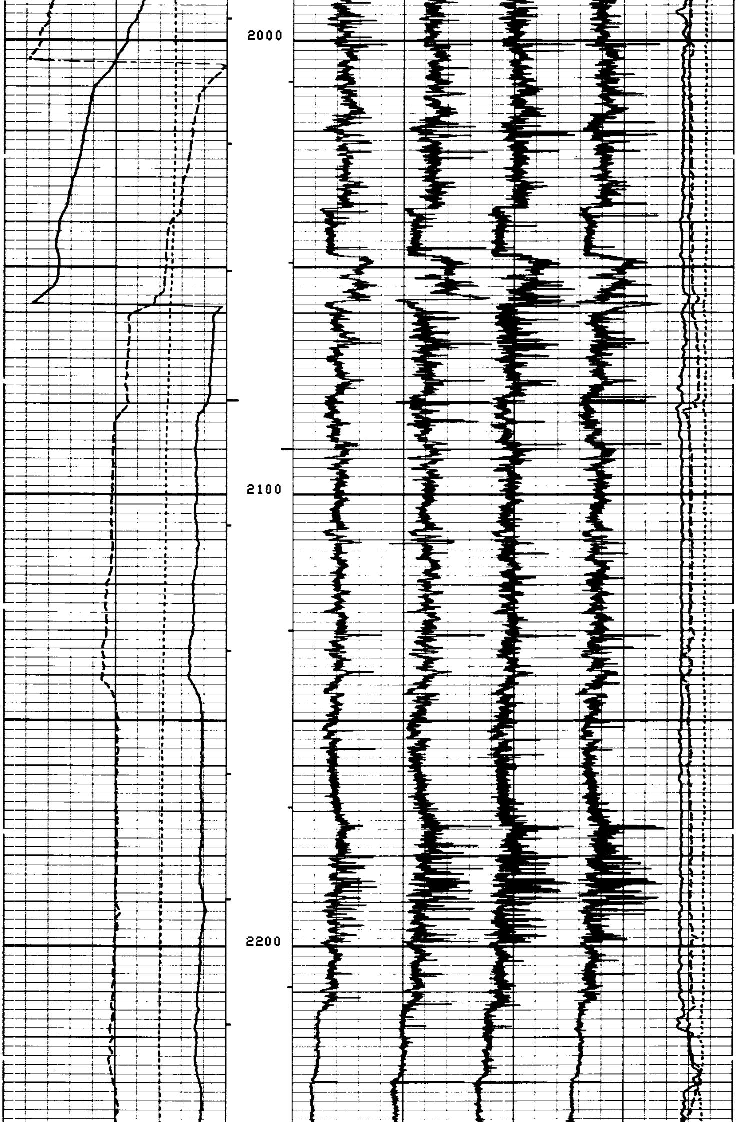
TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

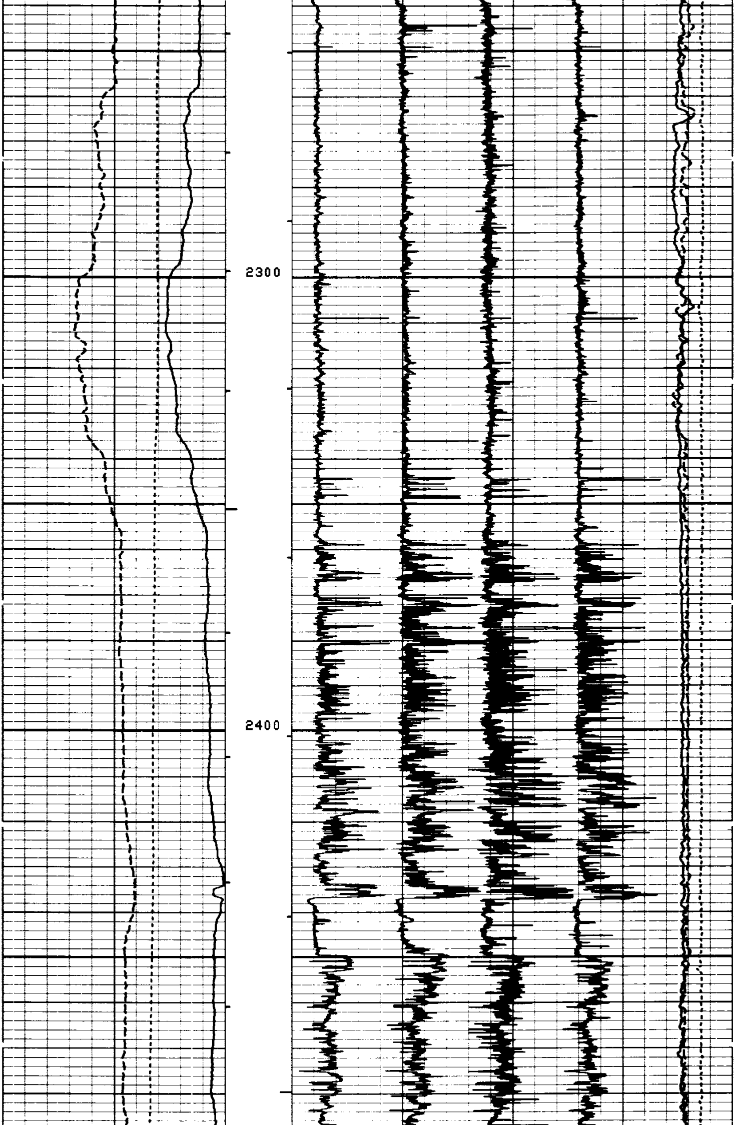
FILE 6 17-SEP-84 22:25

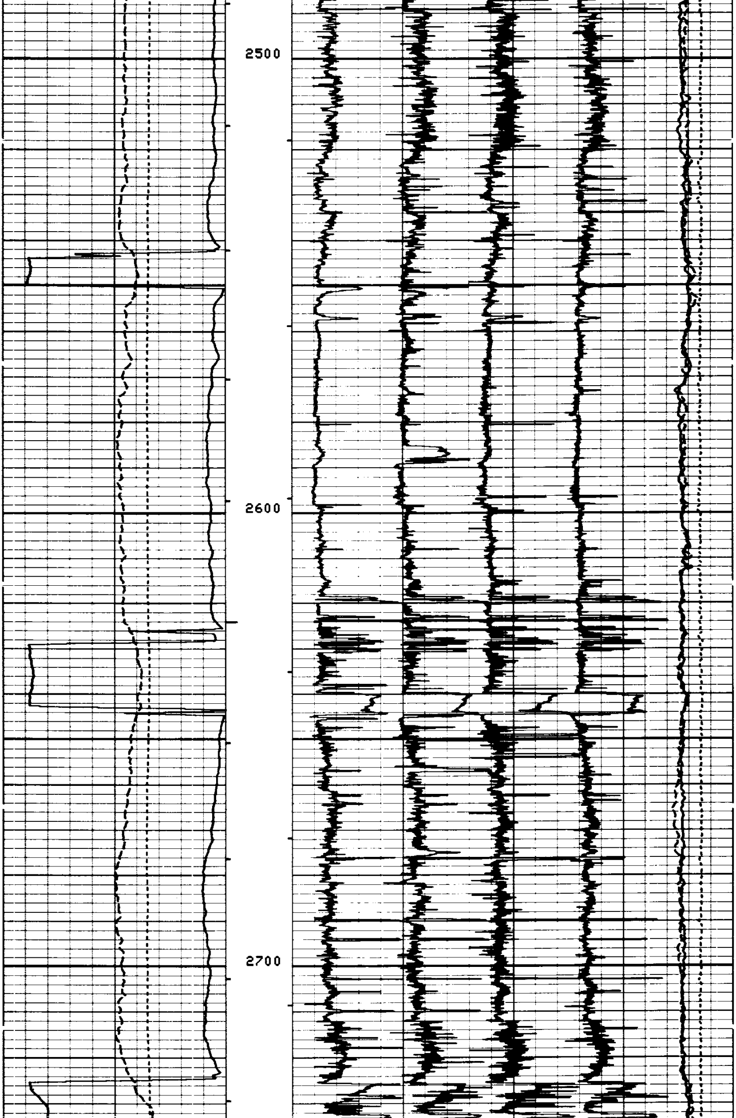


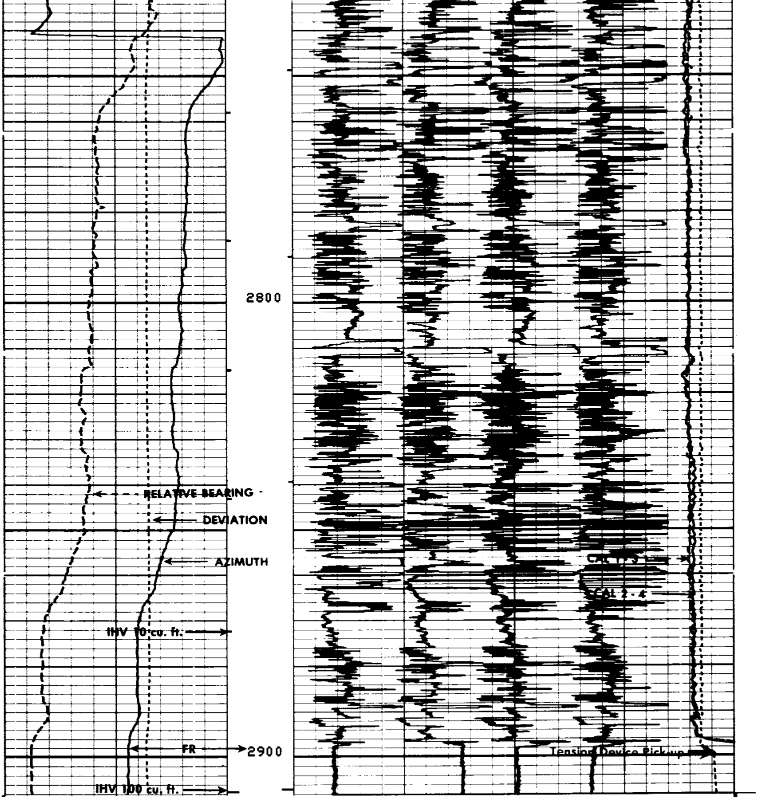












FILE 6 17-SEP-84 21:51

DEVI(DEG)	-2.000	18.000		
RB (DEG)	-40.00	360.00		
AZIM(DEG)	-40.00	360.00		
TENS(LB)			10000.	0.0
C2 (IN)			26.000	6.0000
C1 (IN)			26.000	6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	36	DEG
BS	7.87500	IN	BHS	OPEN	

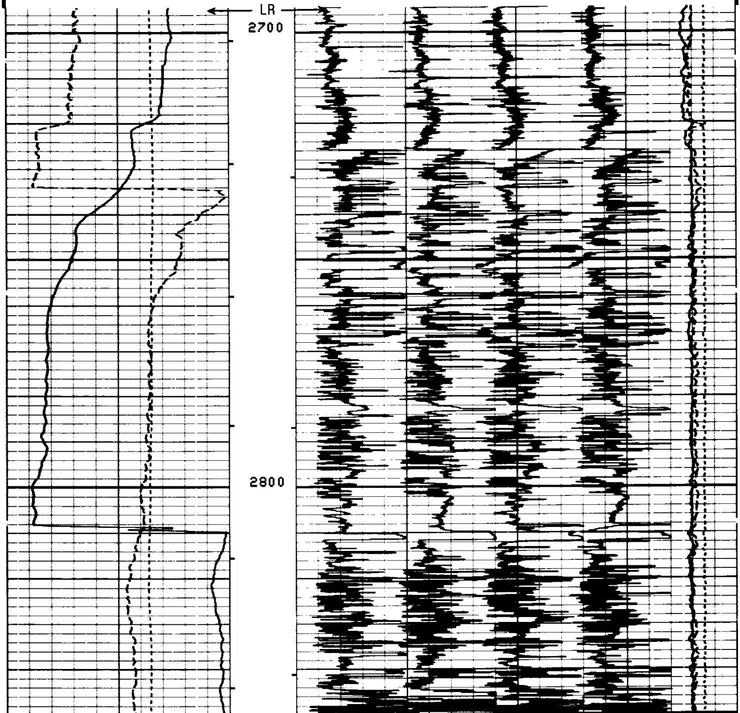
CEMENT VOLUME = 37.6114 F3
HOLE VOLUME = 72.8790 F3
FROM 2907.7 TO 2694.1 FEET

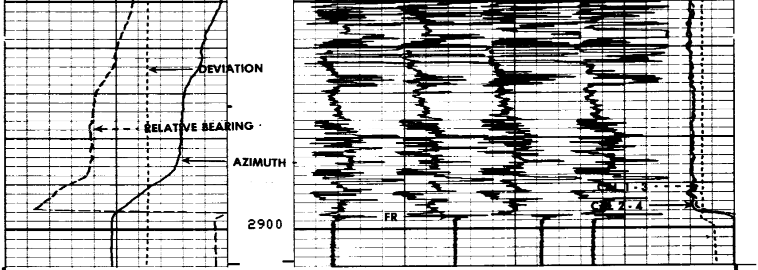
DEVI(DEG)
-2.000 18.000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

REPEAT SECTION

FILE 5 17-SEP-84 21:50





FILE 5 17-SEP-84 21:44

DEVI(DEG)		TENS(LB)	
-2.000	18.000	10000.	0.0
RB (DEG)		C2 (IN)	
-40.00	360.00	26.000	6.0000
AZIM(DEG)		C1 (IN)	
-40.00	360.00	26.000	6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

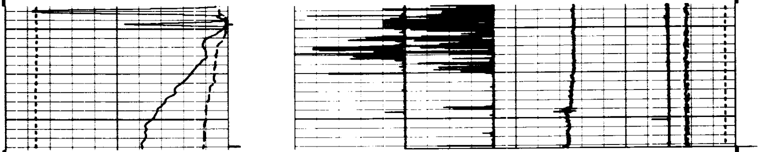
PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	36	DEG
BS	7.87500	IN	BHS	OPEN	

HOLE VOLUME = 11.7176 F3
FROM 386.1 TO 354.6 FEET

DEVI(DEG)		TENS(LB)	
-1.000	9.0000	10000.	0.0
RB (DEG)		C2 (IN)	
-40.00	360.00	26.000	6.0000
AZIM(DEG)		C1 (IN)	
-40.00	360.00	26.000	6.0000

FILE 3 17-SEP-84 21:23



FILE 3 17-SEP-84 21:21

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

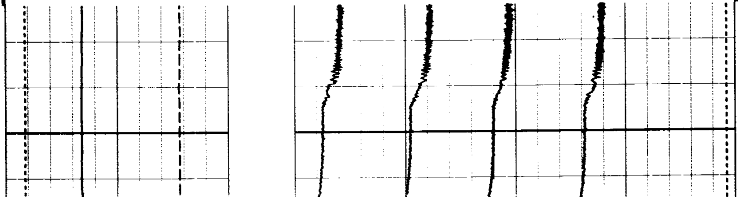
PARAMETERS

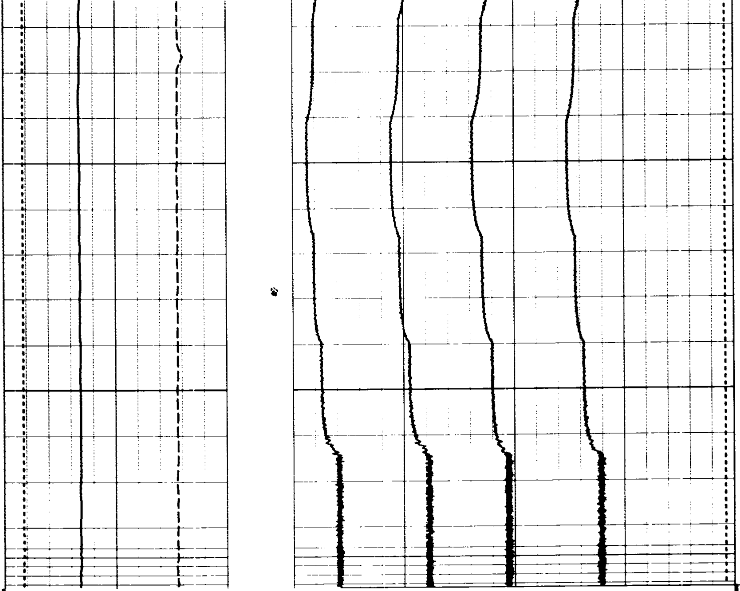
NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	36	DEG
BS	7.87500	IN	BHS	OPEN	

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

FILE 2 17-SEP-84 21:19





FILE 2 17-SEP-84 21:17

DEVI(DEG)			TENS(LB)	
-1.000	9.0000		10000.	0.0
RB (DEG)			C2 (IN)	
-40.00	360.00		26.000	6.0000
AZIM(DEG)			C1 (IN)	
-40.00	360.00		26.000	6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	36	DEG
BS	7.87500	IN	BHS	OPEN	

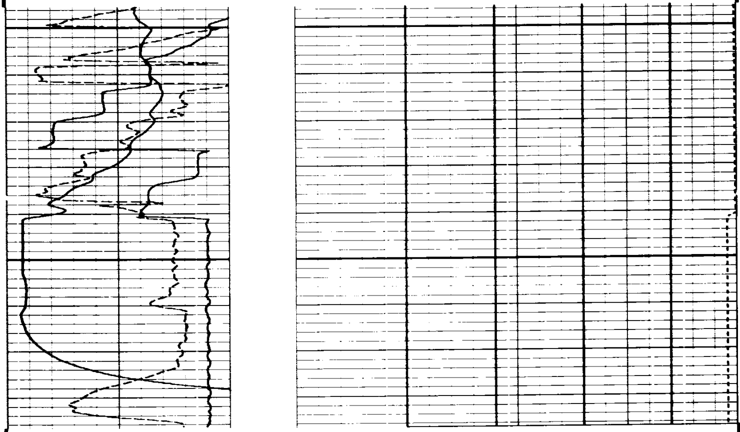
CHANGED PARAMETERS

NAME	VALUE	UNIT	DEPTH (F)	NAME	VALUE	UNIT	DEPTH (F)

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

FILE 1 17-SEP-84 21:12



FILE 1 17-SEP-84 21:09

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

PARAMETERS

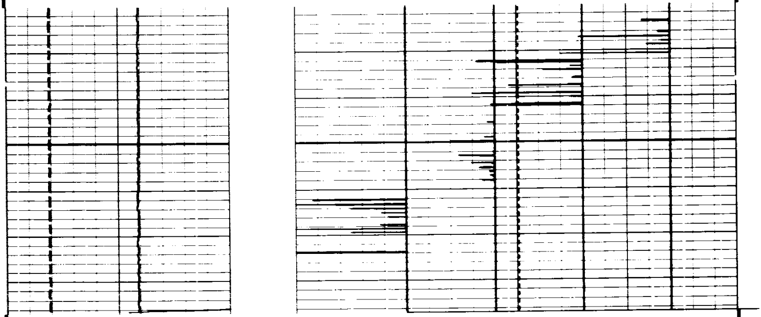
NAME	VALUE	UNIT	NAME	VALUE	UNIT

MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	72	DEG
BS	7.87500	IN	BHS	OPEN	

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

FILE 0 17-SEP-84 21:07



FILE 0 17-SEP-84 21:06

DEVI(DEG)
-1.000 9.0000
RB (DEG)
-40.00 360.00
AZIM(DEG)
-40.00 360.00

TENS(LB)
10000. 0.0
C2 (IN)
26.000 6.0000
C1 (IN)
26.000 6.0000

SENSOR MEASURE POINT TO TOOL ZERO

RB	0.0	FEET	AZIM	0.0	FEET
FEP1	0.0	FEET	DEVI	0.0	FEET
REFE	0.0	FEET	FEP2	0.0	FEET
EMEX	0.0	FEET	RC	0.0	FEET
C2	0.0	FEET	C1	0.0	FEET
RC2	0.0	FEET	RC1	0.0	FEET
TEMP	0.0	FEET	PP	0.0	FEET
FC0	0.0	FEET	TENS	0.0	FEET
FC2	0.0	FEET	FC1	0.0	FEET
FC4	0.0	FEET	FC3	0.0	FEET
SHDT	0.0	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MDEC	0	DEG	PVUM	1.00000	
STYP	HDSD		MCT	72	DEG
BS	7.87500	IN	BHS	OPEN	

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                    BEFORE SURVEY CALIBRATION SUMMARY

  PERFORMED:      84/09/17
  PROGRAM FILE: HDT     (VERSION    26.2    83/11/17)

HDTD                      CALIPER CALIBRATION SUMMARY

                 MEASURED                          CALIBRATED
              SMALL    LARGE                     SMALL      LARGE         UNITS
      C1       8.0     12.6                       8.0       12.0           IN
      C2       8.2     12.8                       8.0       12.0           IN

                            FILE      0       17-SEP-84 21:04
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