Schlumberger

5" LITHO-DENSITY/NEUTRON/GR

CSU

COMPANY: REICHHOLD ENERGY CORPORATION

WELL: CZ 31-16

FIELD: PITTSBURG
COUNTY: COLUMBIA
STATE: OREGON
NATION: USA
LOCATION: 948.63 'S & 2479.46 'W
OF NE COR
SEC: 16 TWP: 5N RGE: 4W

PERMANENT DATUM: GL
ELEV. OF PERM. DATUM: 838.2 F
LOG MEASURED FROM: KB
11.4 F ABOVE PERM. DATUM
DRLG. MEASURED FROM: KB

ELEVATIONS-
KB: 849.6 F
DF:
GL: 838.2 F

DATE: 26 JUL 85
RUN NO: 1

OTHER SERVICES-
DIL SLT
HDT

PROGRAM
TAPE NO: 26.2A
SERVICE
ORDER NO: 432338

DEPTH-DRILLER: 2867.0 F
DEPTH-LOGGER: 2860.0 F
BTM. LOG INTERVAL: 2858.0 F
TOP LOG INTERVAL: 1860.0 F

CASING-DRILLER: 403 F
CASING-LOGGER: 408 F
CASING: 8 5/8

BIT SIZE: 7 7/8
DEPTH: 2867 F

TYPE FLUID IN HOLE: GELL LIGNO
DENSITY: 10.0 LB/G
VISCOSITY: 56.0 S
PH: 9.0
FLUID LOSS: 6.2 C3
SOURCE OF SAMPLE: FLOWLINE
RM: 1.720 OHMM AT 80.0 DEGF
RMF: 1.370 OHMM AT 81.0 DEGF
RMC: 1.580 OHMM AT 85.0 DEGF
SOURCE RMF/RMC: MEAS/MEAS
RM AT BHT: 1.360 OHMM AT 103. DEGF
RMF AT BHT: 1.096 OHMM AT 103. DEGF
RMC AT BHT: 1.321 OHMM AT 103. DEGF

TIME CIRC. STOPPED: 0530 7/26
TIME LOGGER ON BTM.: 11:50 7/26

MAX. REC. TEMP: 103.0 DEGF

LOGGING UNIT NO: 8126
LOGGING UNIT LOC: SACRAMENTO
RECORDED BY: KUNKLER
WITNESSED BY: THOMAS

REMARKS:

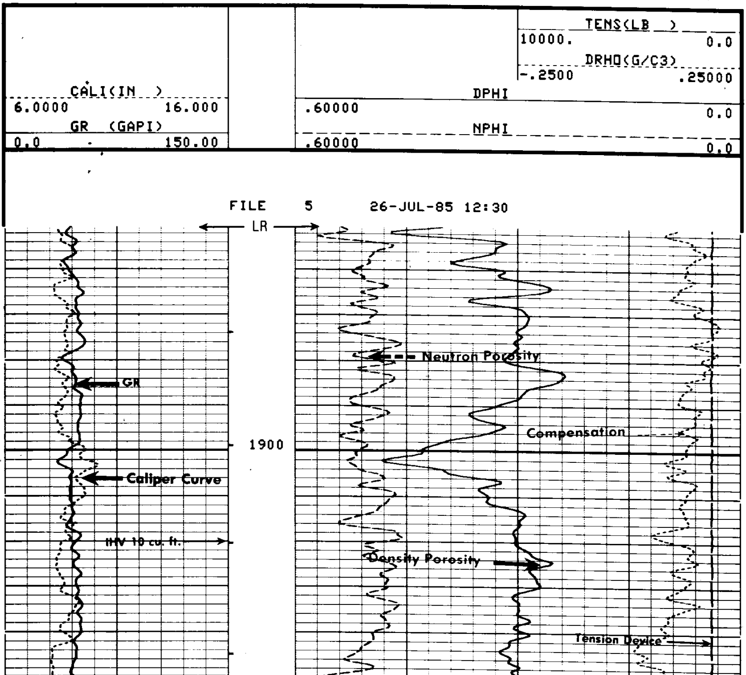
ZONE OF INTEREST AT APPROX. 2160 TO 2210 FT.

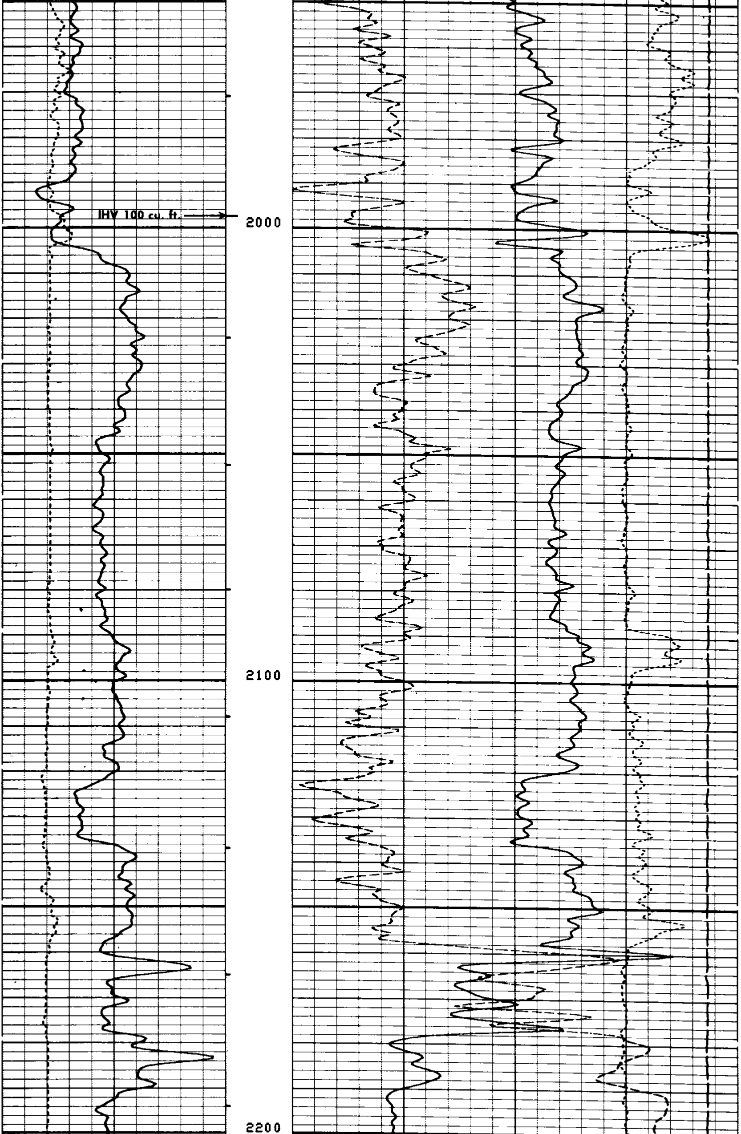
EQUIPMENT NUMBERS-

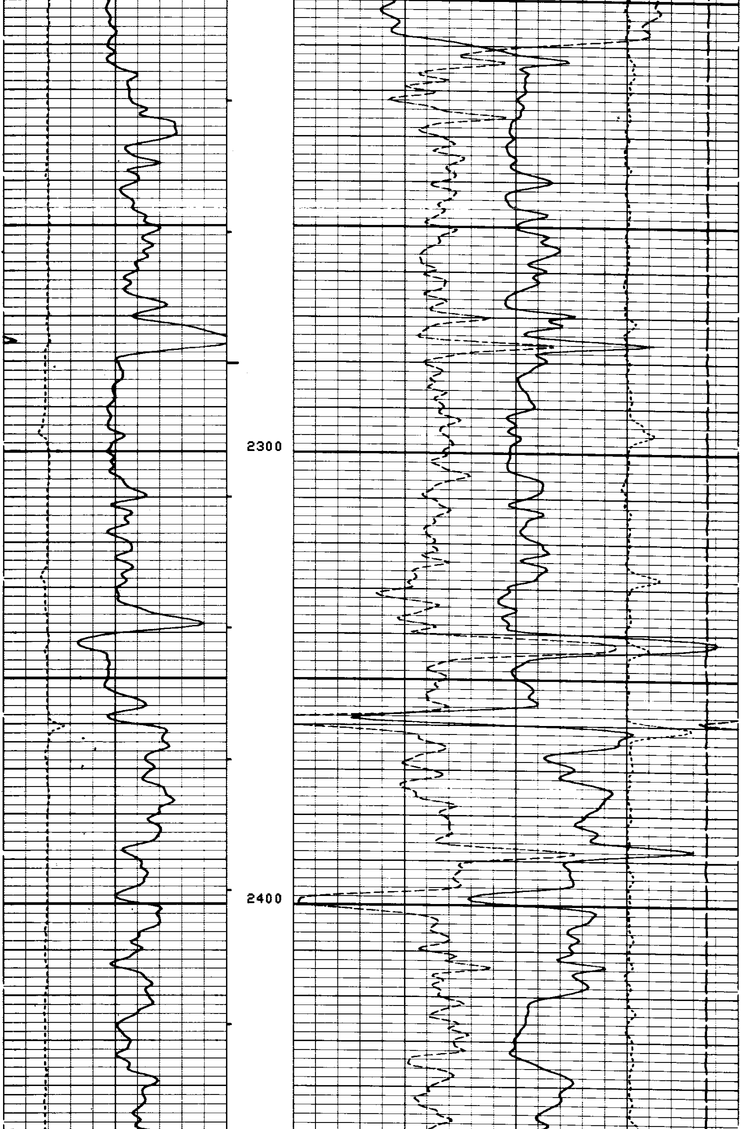
DRS 3756 PGD 2933 NSC 1760 PDH 2706
CNC HA 241 SGC SA 680

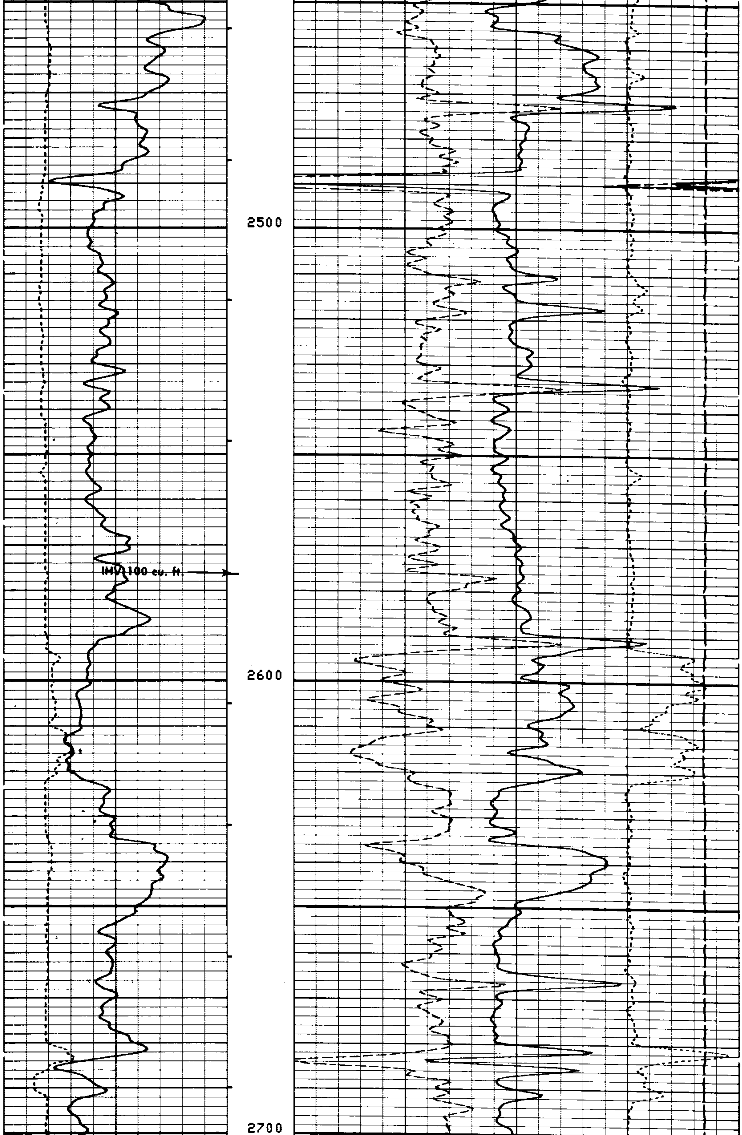
ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS,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

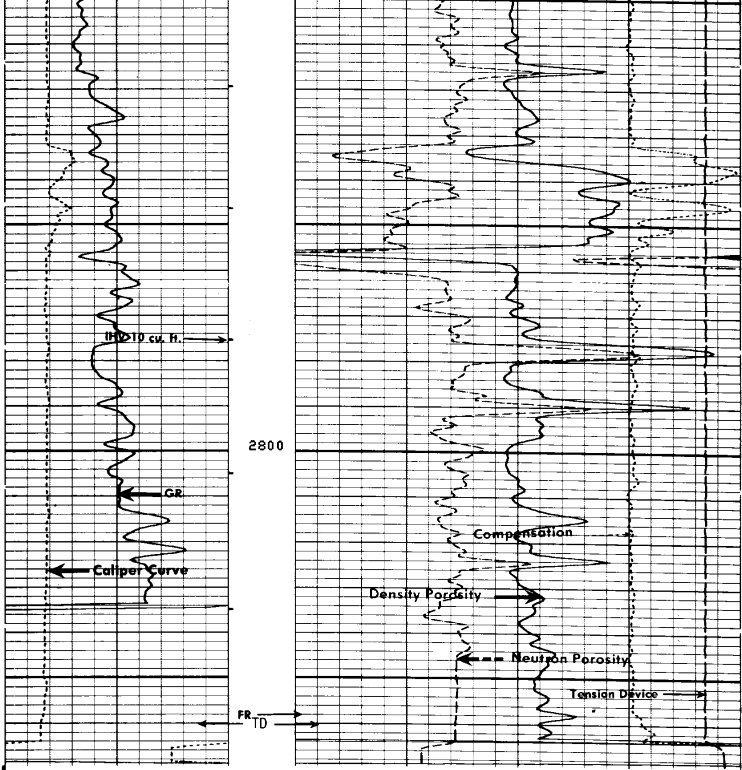
FILE 8 26-JUL-85 13:10
DATA ACQUIRED 00- -00 00:00











FILE 5 26-JUL-85 11:55

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

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCNL	23.2	FEET	SCNL	23.2	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
SHT	80.0000	DEGF	TD	2867.00	F
HC	CALI		PSNR	2.27500	
FD	1.00000	G/C3	MATR	SAND	
WMUD	8.00000	LB/G	MDEN	2.65000	G/C3
DHC	NONE		LPCS	TWIN	
BS	7.87500	IN	BHS	OPEN	

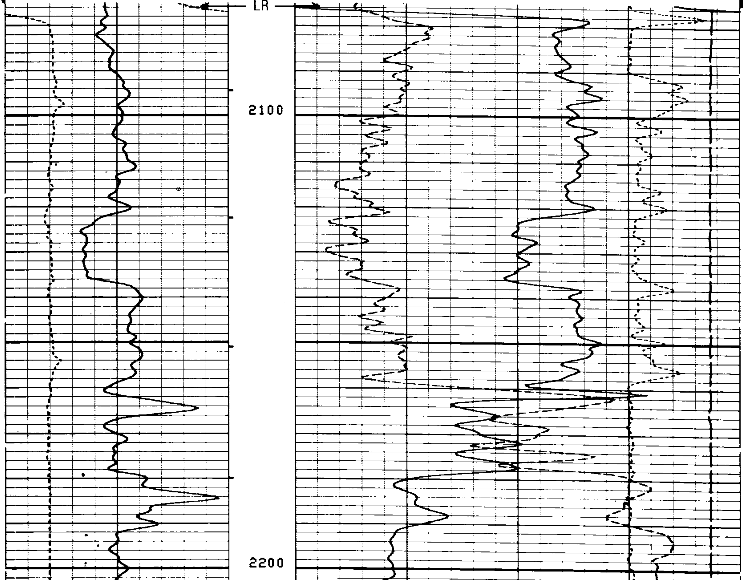
TENS(LB)
10000. 0.0
DRHO(G/C3)
-.2500 .25000

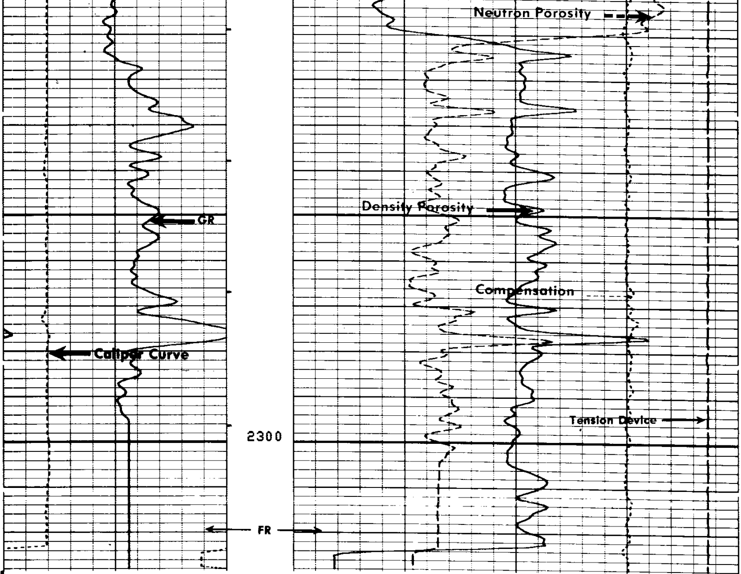
CALI(IN)
6.0000 16.000
GR (GAPI)
0.0 150.00

DPHI
.60000 0.0
NPHI
.60000 0.0

REPEAT SECTION

FILE 4 26-JUL-85 11:49





FILE 4 26-JUL-85 11:40

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

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

DPHI
.60000 0.0
NPHI
.60000 0.0

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCNL	23.2	FEET	SCNL	23.2	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
SHT	80.0000	DEGF	TD	2867.00	F
HC	CALI		PSNR	2.27500	
FD	1.00000	G/C3	MATR	SAND	
WMUD	8.00000	LB/G	MDEN	2.65000	G/C3
DHC	NONE		LPCS	TWIN	
BS	7.87500	IN	BHS	OPEN	

WMUD	8.00000	LB/G	MDEN	2.65000	G/C3
DHC	NONE		LPCS	TWIN	
BS	7.87500	IN	BHS	OPEN	

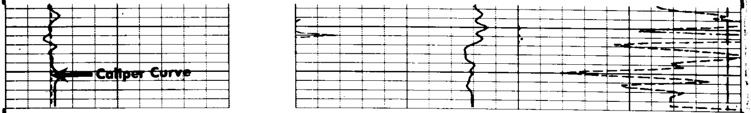
TENS(LB)
10000. 0.0
DRHO(G/C3)
-.2500 .25000

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

DPHI
.60000 0.0
NPHI
.60000 0.0

Check in Casing

FILE 2 26-JUL-85 11:17



FILE 2 26-JUL-85 11:16

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

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

DPHI
.60000 0.0
NPHI
.60000 0.0

SENSOR MEASURE POINT TO TOOL ZERO

STSG	27.6	FEET	GR	32.2	FEET
NCNL	23.2	FEET	SCNL	23.2	FEET
SS2	2.0	FEET	FCNL	23.2	FEET
LITH	2.5	FEET	SS1	2.0	FEET
LU	2.5	FEET	LS	2.5	FEET
CALI	2.6	FEET	LL	2.5	FEET
NRAT	23.2	FEET	TENS	-.9	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
SHT	80.0000	DEGF	TD	2867.00	F
HC	CALI		PSNR	2.27500	
FD	1.00000	G/C3	MATR	SAND	
WMUD	8.00000	LB/G	MDEN	2.65000	G/C3
DHC	NONE		LPCS	TWIN	
BS	7.87500	IN	BHS	OPEN	

```
                 BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:      85/07/26
  PROGRAM FILE: LEP     (VERSION     26.2A    83/11/17)


SGTL                  DETECTOR CALIBRATION SUMMARY

              MEASURED
            BKGD     JIG          CALIBRATED          UNITS
    GR       38      201             165              GAPI


CNTH                  DETECTOR CALIBRATION SUMMARY

                TANK                                JIG
           INPUT   CALIBRATED          MEASURED   CALIBRATED
   NRAT    2.27500  2.158               2.152        2.041


LDTC                  DETECTOR CALIBRATION SUMMARY

        DRS SONDE NUMBER                              :    3756
        NUCLEAR SERVICE CARTRIDGE NUMBER              :    1760
        POWERED DETECTOR HOUSING NUMBER               :    2706
        POWERED GAMMA-GAMMA DETECTOR NUMBER           :    2933
        LDT LOGGING SOURCE NUMBER                     :    6929
        LDT CALIBRATION MODE                          :    WATE
        MUD DENSITY                                   :    8.00000

              MEASURED
           BKGD   AL+FE    AL   UNITS
    LL     19.1    85.2   95.0   CPS
    LU     74.3   128.1  143.5   CPS
    LS     56.3   149.5  167.0   CPS
  LITH      5.7    36.7   54.7   CPS
   SS1     15.2   171.0  192.5   CPS
   SS2     10.5   247.0  272.5   CPS


LDTC                   CALIPER CALIBRATION SUMMARY

              MEASURED                       CALIBRATED
            SMALL    LARGE                SMALL       LARGE           UNITS
   CALI      4.8      11.3                 6.0        12.0             IN

                         FILE    2       26-JUL-85 07:10


                    AFTER SURVEY TOOL CHECK SUMMARY


  PERFORMED:      85/07/26
  PROGRAM FILE: LEP     (VERSION     26.2A    83/11/17)


CNTH                           TOOL   CHECK

                         JIG
                BEFORE          AFTER
  NRAT          2.041           2.060

  POROSITY CHANGE  (LIME):    .003


LDTC                           TOOL   CHECK
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          DRS SONDE NUMBER                                 :    3756
          NUCLEAR SERVICE CARTRIDGE NUMBER                 :    1760
          POWERED DETECTOR HOUSING NUMBER                  :    2706
          POWERED GAMMA-GAMMA DETECTOR NUMBER              :    2933
          LDT LOGGING SOURCE NUMBER                        :    6929
          LDT CALIBRATION MODE                             :    WATE
          MUD DENSITY                                      :    8.00000

               BACKGROUND MEASURED
               BEFORE          AFTER          UNITS
     LL        19.14           18.96           CPS
     LU        74.37           74.12           CPS
     LS        56.34           56.06           CPS
   LITH         5.781           5.69           CPS
    SS1        15.28           15.25           CPS
    SS2        10.51           10.50           CPS

                       FILE    7       26-JUL-85 12:33


                    SHOP SUMMARY


   PERFORMED:      85/06/27
   PROGRAM FILE: CCSHOP (VERSION    26.2    83/11/17)


 LDTC                  DETECTOR CALIBRATION SUMMARY

          DRS SONDE NUMBER                                 :    3756
          NUCLEAR SERVICE CARTRIDGE NUMBER                 :    1760
          POWERED DETECTOR HOUSING NUMBER                  :    2706
          POWERED GAMMA-GAMMA DETECTOR NUMBER              :    2933
          LDT LOGGING SOURCE NUMBER                        :    6929
          LDT CALIBRATION MODE                             :    WATE
          MUD DENSITY                                      :    8.00000

            MASTER  CALIBRATED
            BKGD   AL+FE     AL   UNITS
     LL     19.2    85.3    95.1   CPS
     LU     74.9   128.2   143.5   CPS
     LS     56.7   149.5   167.0   CPS
   LITH      5.7    36.8    54.8   CPS
    SS1     15.1   171.1   192.6   CPS
    SS2     10.5   247.1   272.7   CPS

                    SHOP SUMMARY


   PERFORMED:      85/07/23
   PROGRAM FILE: CCSHOP (VERSION    26.2    83/11/17)


 CNTH                  DETECTOR CALIBRATION SUMMARY

              TANK                           JIG
       MEASURED   CALIBRATED      MEASURED   CALIBRATED

   NRAT    2.275       2.158         2.187        2.074

                      (CNC:241 , CNB:3200)

                      FILE    0       23-JUL-85 14:24
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