Schlumberger

DUAL INDUCTION SFL 5"

CSU

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[illegible]

COMPANY:	REICHHOLD ENERGY CORPORATION		
WELL:	WERNER 14-21		
FIELD:	ST. LOUIS		
COUNTY:	MARION		
STATE:	OREGON		
LOCATION:	604.5' N & 627.5' E OF SW CORNER		
SEC:	21	TWP: 5S	RGE: 2W

Run 2
OTHER SERVICES-
BHC
HDT

PERMANENT DATUM:	GL	ELEVATIONS-
ELEV. OF PERM. DATUM:	178.0 '	KB: 189.4 '
LOG MEASURED FROM:	KB	DF:
11.4 ' ABOVE PERM. DATUM		GL: 178.0 '
DRLG. MEASURED FROM:	KB	

PROGRAM
TAPE NO:
22.4
SERVICE
ORDER NO: Run 1
205818

SERVICE
ORDER NO: Run 2
205819

DATE:	5 OCT 1982	9 OCT 1982
RUN NO:	1	2
DEPTH-DRILLER:	2473.0 '	3354.0 '
DEPTH-LOGGER:	2474.0 '	3348.0 '
BTM. LOG INTERVAL:	2468.0 '	3342.0 '
TOP LOG INTERVAL:	1206.0 '	2468.0 '
CASING-DRILLER:	1206 '	1206 '
CASING-LOGGER:	1206 '	1206 '
CASING:	7	7"
BIT SIZE:	6.25	6.25"
DEPTH:	2473 '	3354 '

	Run 1	Run 2
TYPE FLUID IN HOLE:	LIGNOSULFONATE	LIGNOSULFONATE
DENSITY:	9.4 LB/G	9.4 LB/G
VISCOSITY:	49.0 S	52.0 S
PH:	9.0	9.5
FLUID LOSS:	4.2 C3	4.6 C3
SOURCE OF SAMPLE:	CIRC.	CIRC.
RM:	2.940 OHMM AT 70.0 DEGF	2.050 OHMM AT 80.0 DEGF
RMF:	4.430 OHMM AT 55.0 DEGF	3.060 OHMM AT 58.0 DEGF
RMC:	2.770 OHMM AT 67.0 DEGF	1.770 OHMM AT 62.0 DEGF
SOURCE RMF/RMC:	MEAS. /MEAS.	MEAS. /MEAS.
RM AT BHT:	2.219 OHMM AT 95.0 DEGF	1.698 OHMM AT 98.0 DEGF
RMF AT BHT:	2.692 OHMM AT 95.0 DEGF	1.894 OHMM AT 98.0 DEGF
RMC AT BHT:	2.009 OHMM AT 95.0 DEGF	1.163 OHMM AT 98.0 DEGF

TIME CIRC. STOPPED:	1030	0700
TIME LOGGER ON BTM.:	1230	0930
MAX. REC. TEMP:	95.0 DEGF	98.0 DEGF
LOGGING UNIT NO:	8216	8216
LOGGING UNIT LOC:	SACRAMENTO	SACRAMENTO
RECORDED BY:	ANDERSEN	ANDERSEN
WITNESSED BY:	BRUER WILLIAMSON	BRUER

REMARKS:

EQUIPMENT NUMBERS-Run 1

IS 1342 IC 1149 IEM 384

REMARKS:

EQUIPMENT NUMBERS-Run 2

IS 1342 IC 1386 IEM 384

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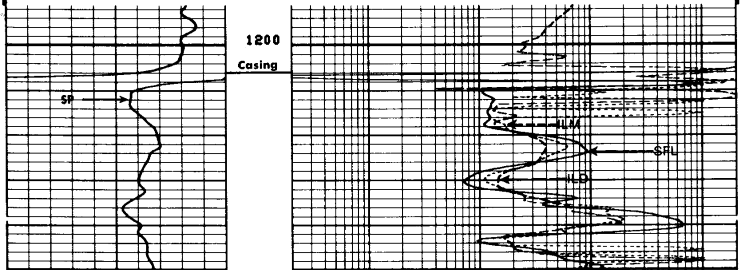
FILE

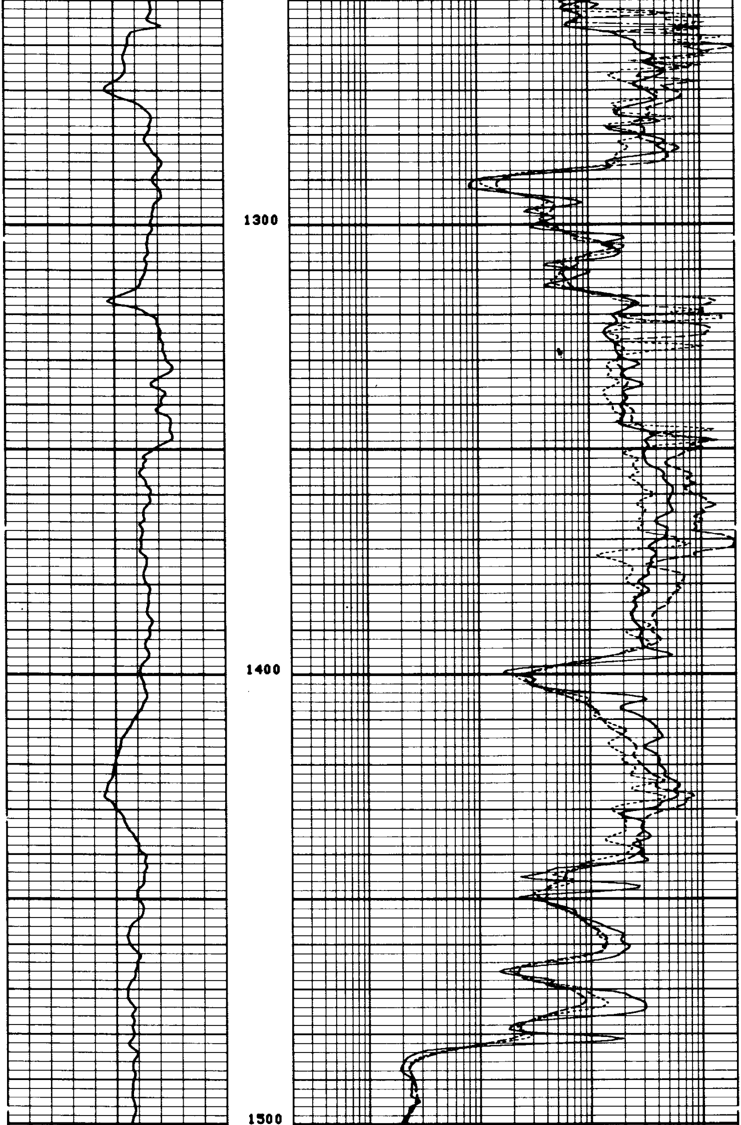
103

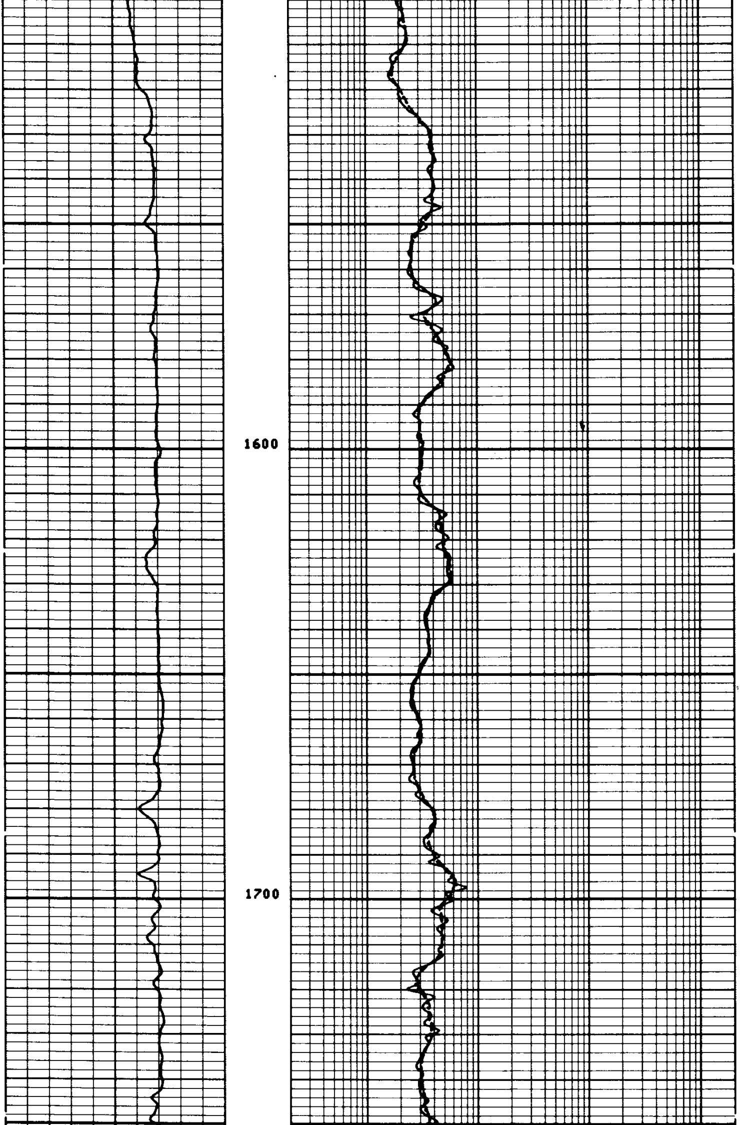
SP (MV)		ILD (OHMM) / ILM (OHMM) / SFLU(OHMM)
	Run 1	ILD (OHMM) 0.2000 – 2000.0
		ILM (OHMM) 0.2000 – 2000.0
-100.0 – 0.0		SFLU(OHMM) 0.2000 – 2000.0

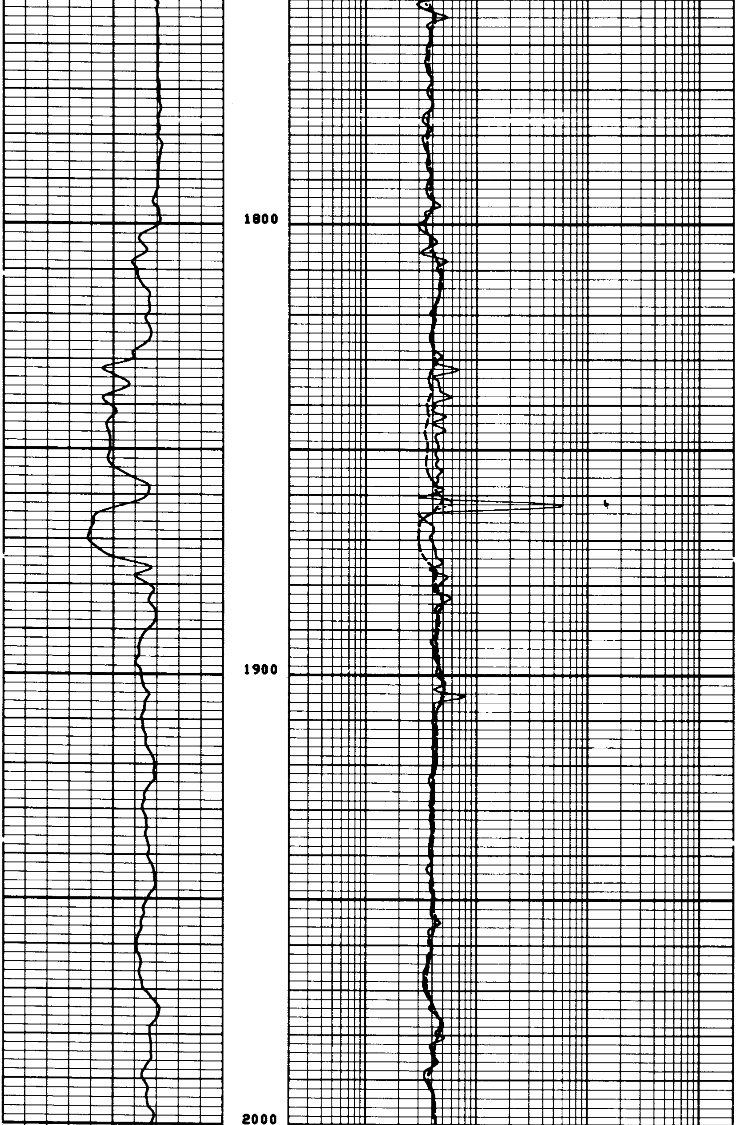
FILE

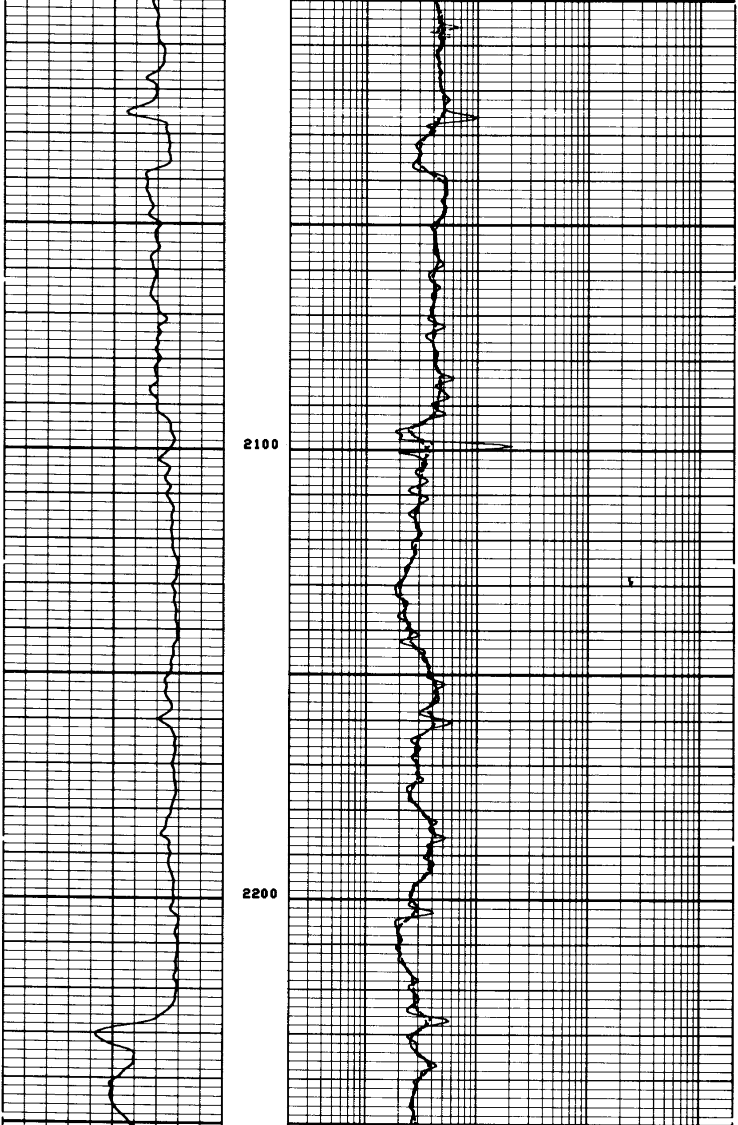
3

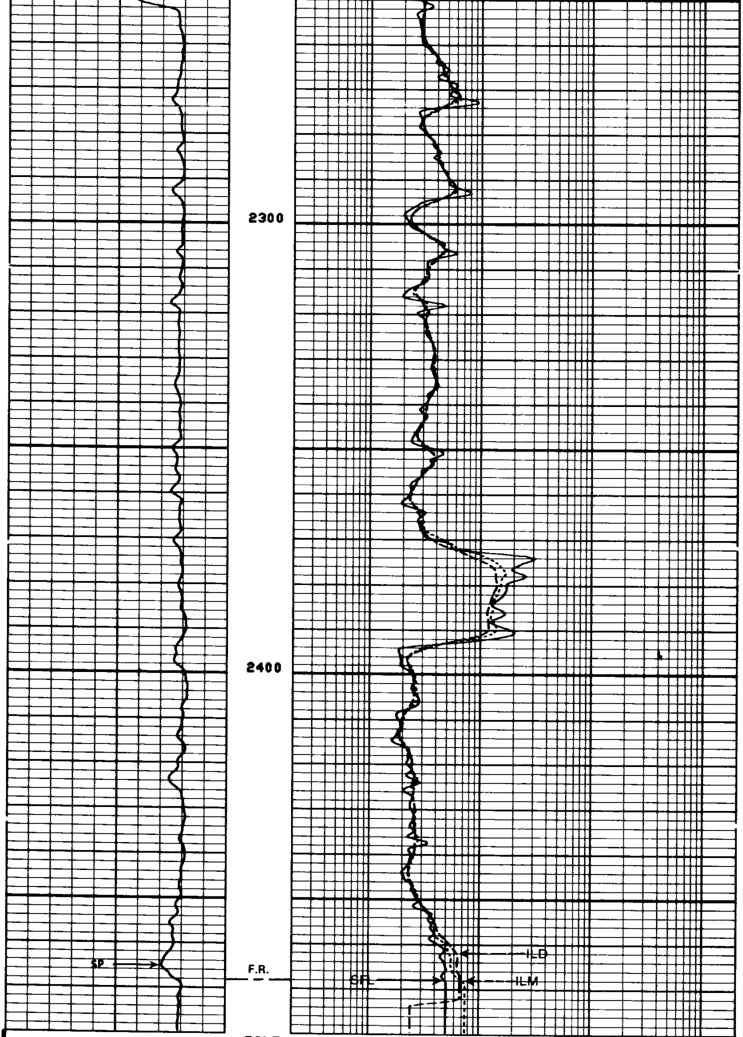












FILE

3

SP (MV)	Run 1	ILD (OHMM) / ILM (OHMM) / SFLU(OHMM)
		ILD (OHMM) 0.2000 2000.0
		ILM (OHMM) 0.2000 2000.0
-100.0 0.0		SFLU(OHMM) 0.2000 2000.0

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

SFL	3.9	FEET	ILD	6.9	FEET
SP	.0	FEET	ILM	3.3	FEET
TENS	.0	FEET	SPAR	.0	FEET

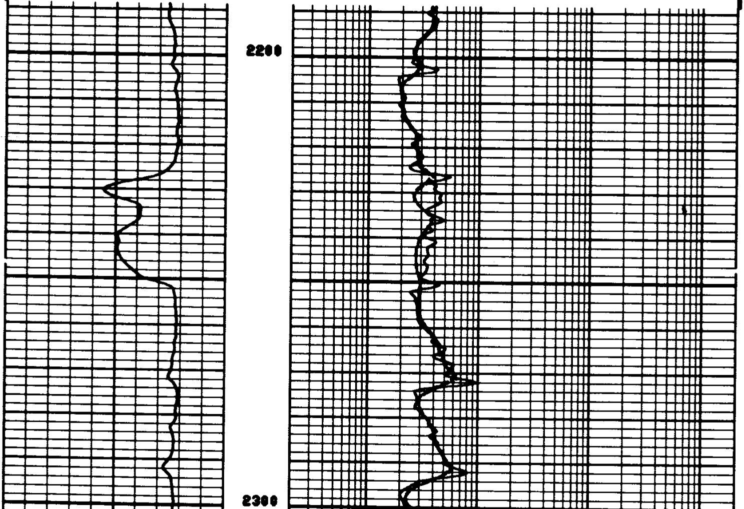
PARAMETERS

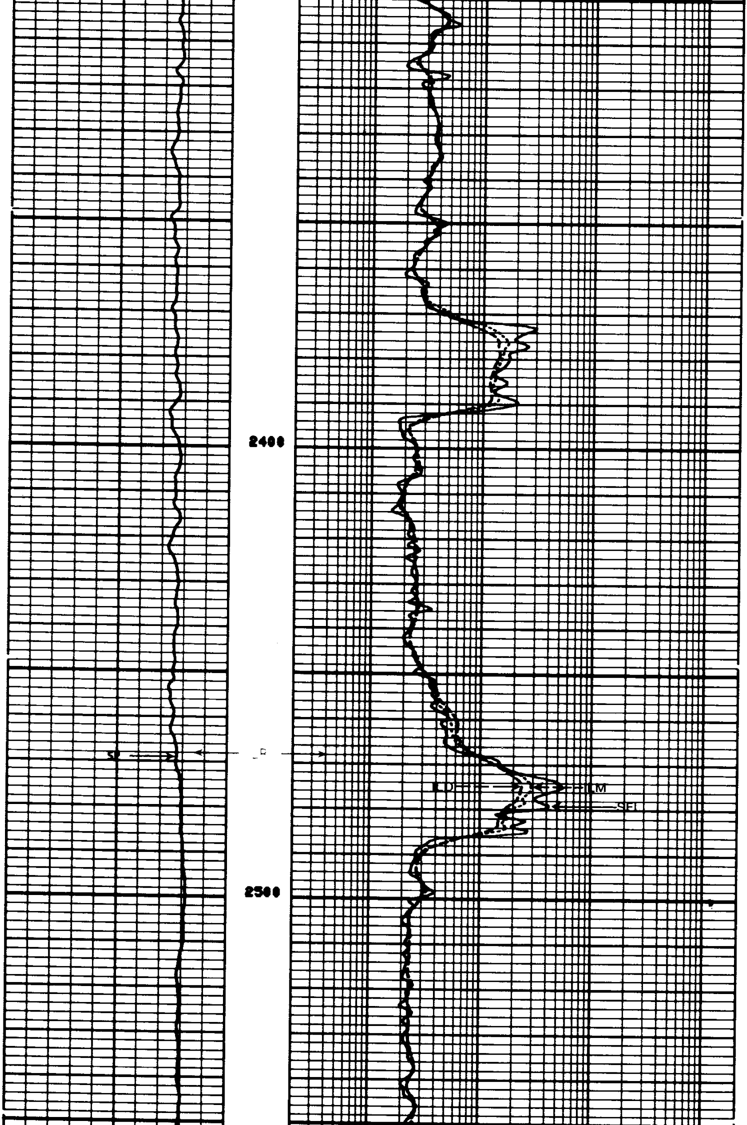
NAME	VALUE	UNIT	NAME	VALUE	UNIT
DSEC	5.70000	MMHO	BS	6.25000	IN
MSEC	7.20000	MMHO	SBR	1.00000	OHMM
DO	0.0	F	BHS	OPEN	

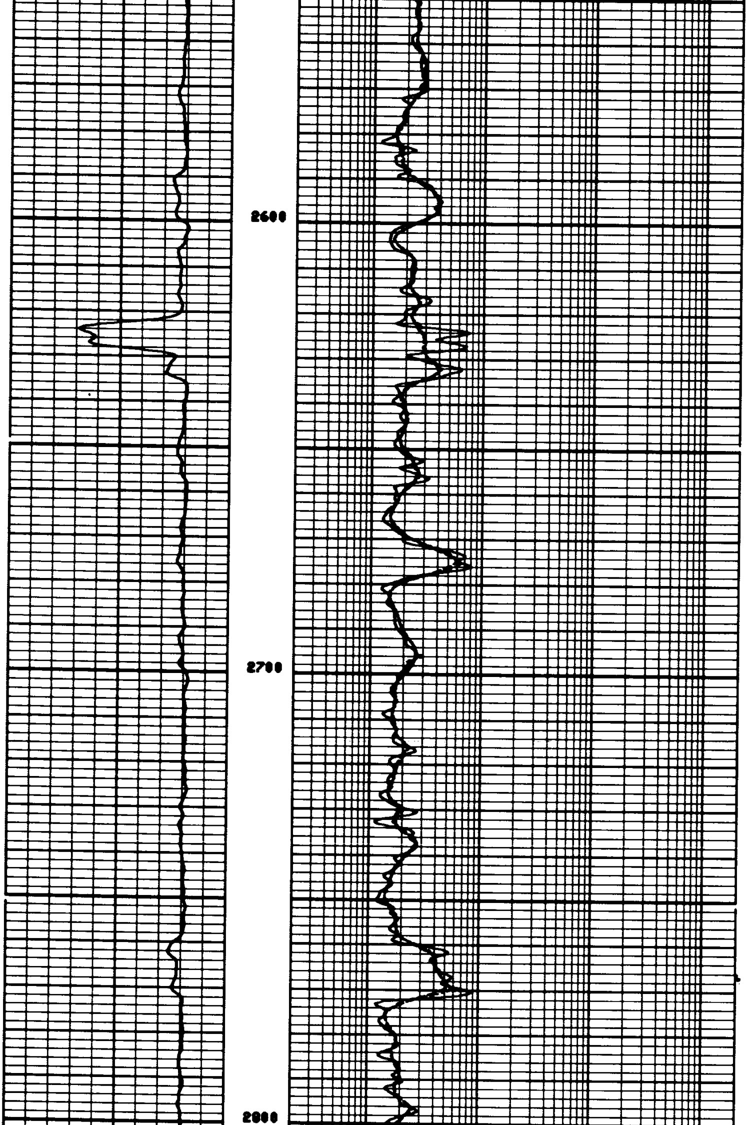
SP (MV)	1'D' Run 2	ILD (OHMM) / ILM (OHMM) / SFLU(OHMM)
		ILD (OHMM) 0.2000 2000.0
		ILM (OHMM) 0.2000 2000.0
-100.0 0.0		SFLU(OHMM) 0.2000 2000.0

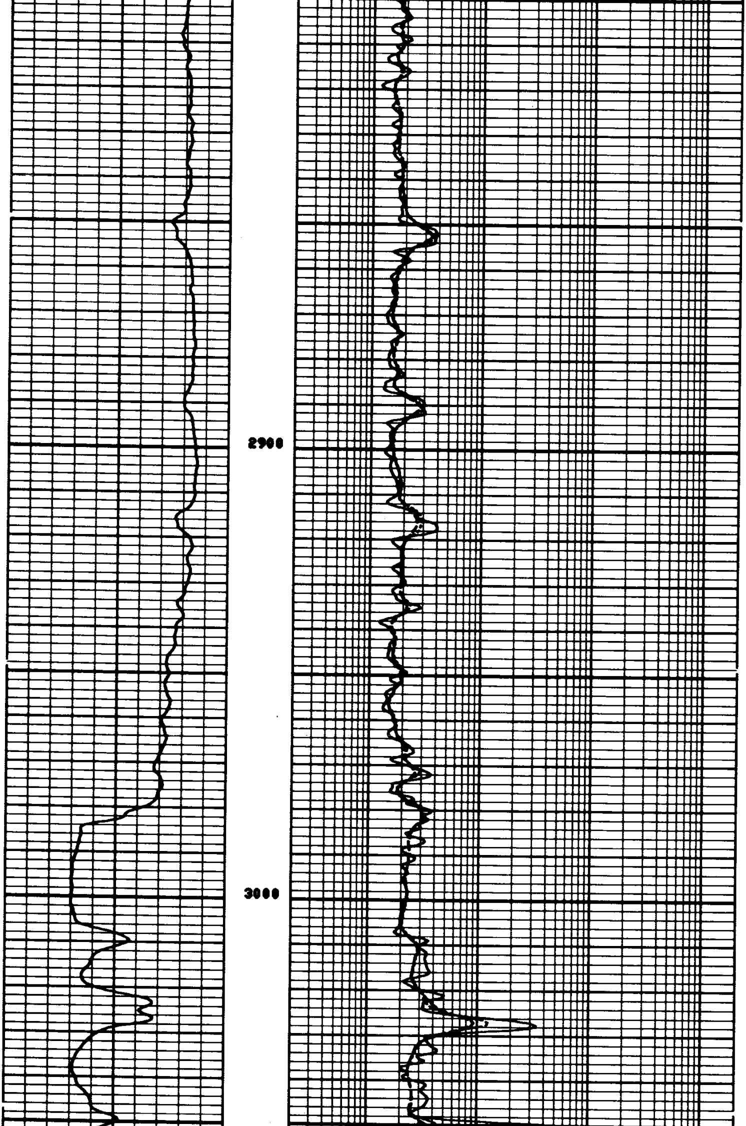
FILE

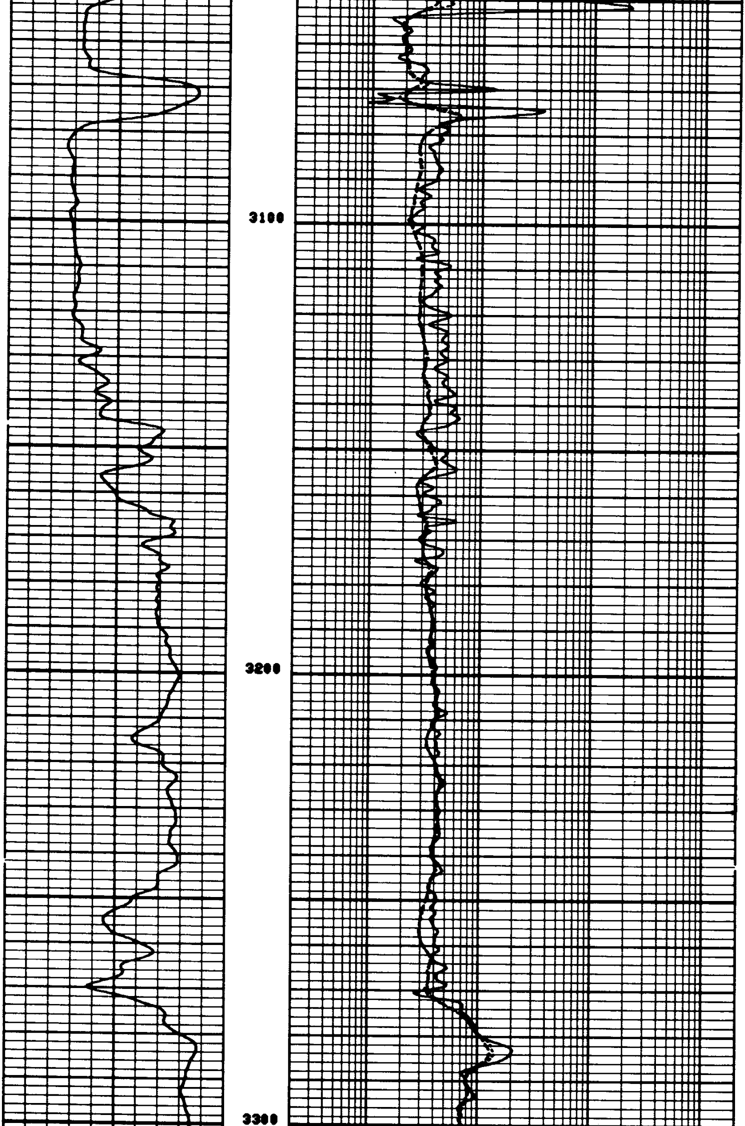
7

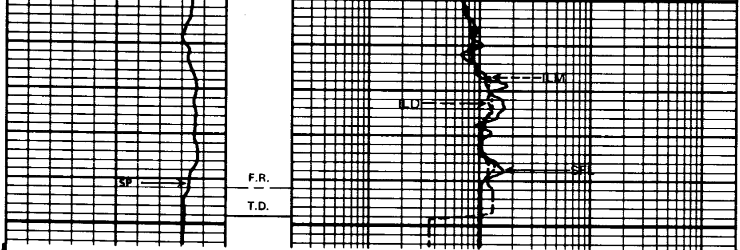












FILE

7

SP (MV)	Run 2	ILD (OHMM)
-100.0 0.0		0.2000 2000.0
		ILM (OHMM)
		0.2000 2000.0
		SFLU(OHMM)
		0.2000 2000.0

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

SFL	3.9	FEET	ILD	6.9	FEET
SP	.0	FEET	ILM	3.3	FEET
TENS	.0	FEET	SPAR	.0	FEET

PARAMETERS

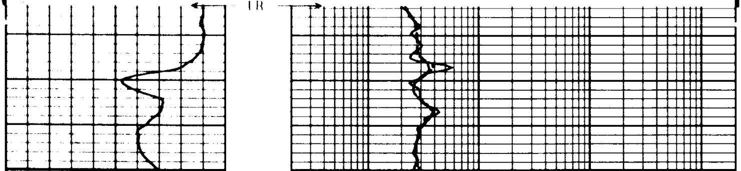
NAME	VALUE	UNIT	NAME	VALUE	UNIT
DSEC	5.00000	MMHO	BS	6.25000	IN
MSEC	7.50000	MMHO	SBR	1.00000	OHMM
DO	0.0	F	BHS	OPEN	

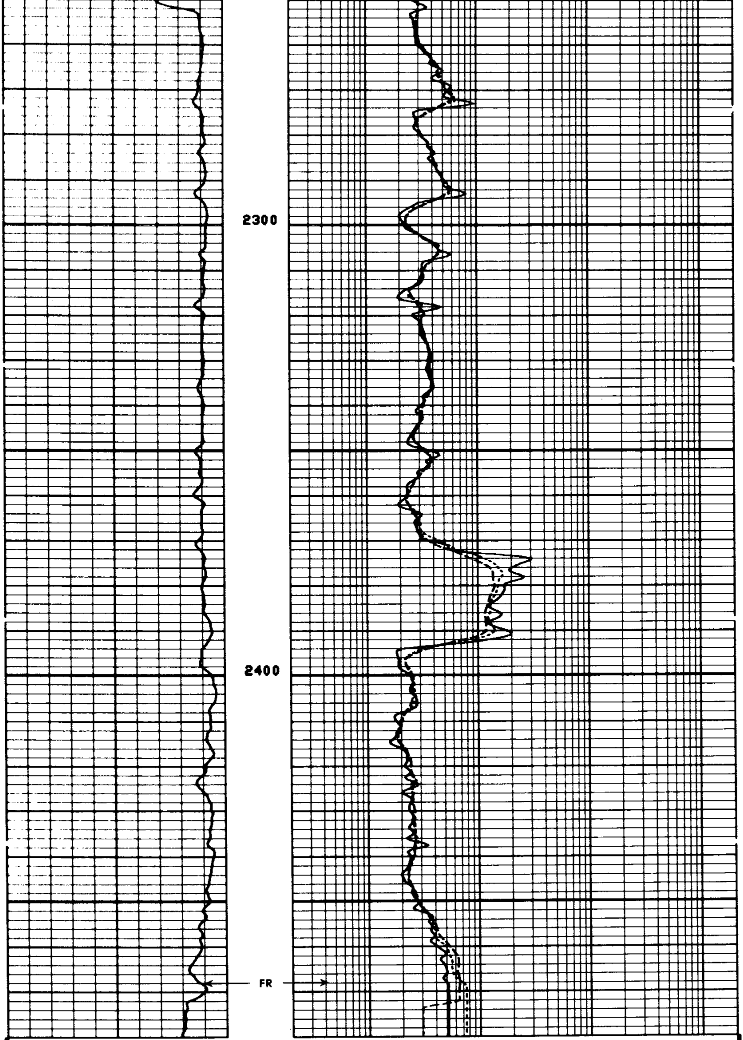
REPEAT SECTION

SP (MV)	Run 1	ILD (OHMM)
100.0 0.0		0.2000 2000.0
		ILM (OHMM)
		0.2000 2000.0
		SFLU(OHMM)
		0.2000 2000.0

FILE

2





FILE

2

SP (MV)	Run 1	ILD (OHMM)
-100.0 0.0		0.2000 2000.0
		ILM (OHMM)
		0.2000 2000.0
		SFLU(OHMM)
		0.2000 2000.0

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

SFL	3.9	FEET	ILD	6.9	FEET
SP	.0	FEET	ILM	3.3	FEET
TENS	.0	FEET	SPAR	.0	FEET

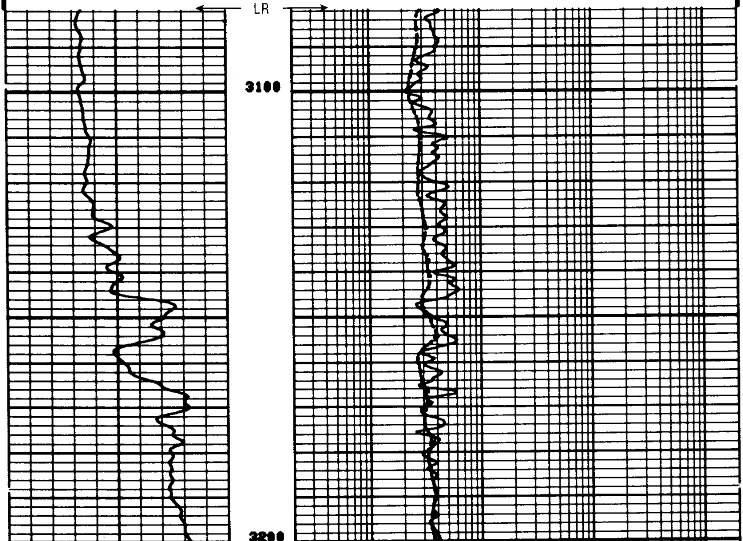
PARAMETERS

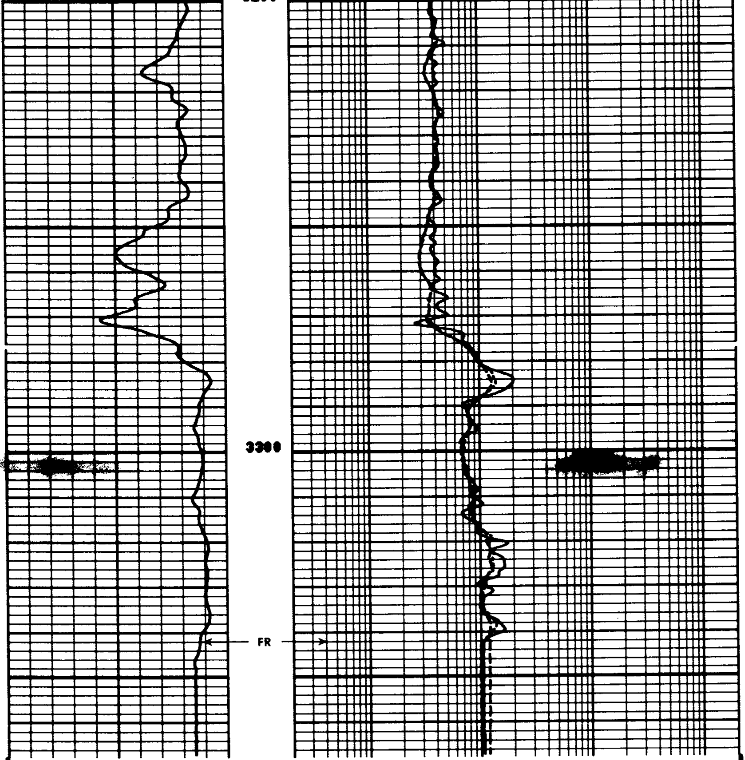
NAME	VALUE	UNIT	NAME	VALUE	UNIT
DSEC	5.70000	MMHO	BS	6.25000	IN
MSEC	7.20000	MMHO	SBR	1.00000	OHMM
DO	0.0	F	BHS	OPEN	

SP (MV)	Run 2	ILD (OHMM)
-100.0 0.0		0.2000 2000.0
		ILM (OHMM)
		0.2000 2000.0
		SFLU(OHMM)
		0.2000 2000.0

FILE

6





FILE

6

SP (MV)	Run 2	ILD (OHMM) / ILM (OHMM) / SFLU(OHMM)
-100.0 0.0		ILD (OHMM) 0.2000 2000.0 ILM (OHMM) 0.2000 2000.0 SFLU(OHMM) 0.2000 2000.0

SENSOR MEASURE POINT TO TENSION REFERENCE POINT

SFL	3.9	FEET	ILD	6.9	FEET
SP	.0	FEET	ILM	3.3	FEET
TENS	.0	FEET	SPAR	.0	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BSEC	5.00000	MMHO	BS	6.25000	IN
MSEC	7.50000	MMHO	SBR	1.00000	OHMM
BO	0.0	F	BHS	OPEN	

CALIBRATION RECORD

```
              AFTER SURVEY TOOL CHECK SUMMARY — Run 1


  PERFORMED:      82/10/05
  PROGRAM FILE: ISN     (VERSION    22.2    82/06/24)


DITD                        TOOL   CHECK

                     ZERO                          PLUS
              BEFORE        AFTER          BEFORE        AFTER      UNITS
    ILD         0.0           0.0          497.7         495.7      MMHO
    ILM         0.0           0.0          496.6         494.2      MMHO
    SFL         0.0           0.0          500.0         495.2      MMHO

ILD  SONDE ERROR CORRECTION :          5.7 MMHO
ILM  SONDE ERROR CORRECTION :          7.2 MMHO
                         FILE

                           5


•             BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:      82/10/05
  PROGRAM FILE: ISN     (VERSION    22.2    82/06/24)


DITD                 ELECTRONICS CALIBRATION SUMMARY

                 MEASURED                      CALIBRATED
               ZERO     PLUS                ZERO       PLUS           UNITS
    ILD        -0.4     542.8                0.0       497.7           MMHO
    ILM        -0.4     529.7                0.0       496.6           MMHO
    SFL        -1.7     521.0                0.0       500.0           MMHO

ILD  SONDE ERROR CORRECTION :          5.7 MMHO
ILM  SONDE ERROR CORRECTION :          7.2 MMHO
                         FILE

                           1
              SHOP SUMMARY


  PERFORMED:      82/09/01
  PROGRAM FILE: SHOP    (VERSION    22.2    82/06/08)


DITD                 ELECTRONICS CALIBRATION SUMMARY

                TEST LOOP CALIBRATION              TOOL CHECK
             MEASURED          CALIBRATED          CALIBRATED
           ZERO      PLUS      ZERO      PLUS      ZERO      PLUS     UNITS
    ILD    -3.2      537.4     0.0       500.0     0.0       498.2    MMHO
    ILM    -8.2      519.6     0.0       500.0     0.0       496.7    MMHO
ILD  SONDE ERROR CORRECTION :          5.7 MMHO
ILM  SONDE ERROR CORRECTION :          7.2 MMHO

                      (IS:1342, IC:1149)
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              AFTER SURVEY TOOL CHECK SUMMARY — Run 2


  PERFORMED:      82/10/09
  PROGRAM FILE: ISN     (VERSION    22.4    82/09/01)


DITD                        TOOL   CHECK
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```
                       ZERO                                PLUS
                BEFORE        AFTER              BEFORE        AFTER       UNITS
      ILD         0.0          -0.0               497.7         496.1       MMHO
      ILM         0.0          -0.0               496.9         495.8       MMHO
      SFL         0.0          -0.0               500.0         498.6       MMHO

   ILD  SONDE ERROR CORRECTION :             5.8 MMHO
   ILM  SONDE ERROR CORRECTION :             7.5 MMHO
                                FILE

                                  9


                   BEFORE SURVEY CALIBRATION SUMMARY


     PERFORMED:        82/10/09
     PROGRAM FILE: ISN     (VERSION     22.4     82/09/01)

   DITD                  ELECTRONICS CALIBRATION SUMMARY

                   MEASURED                             CALIBRATED
                ZERO      PLUS                       ZERO        PLUS          UNITS
      ILD       -0.3      540.2                       0.0        497.7         [illegible]
[illegible]     [illegible].6    524.9                0.0        49[illegible]  [illegible]
[illegible]     [illegible].6    534.0                0.0        [illegible]    [illegible]

   [illegible] ERROR CORRECTION :            5.8 MMHO
   [illegible]NDE ERROR CORRECTION :         7.5 MMHO
                                FILE

                                  5
                     SHOP SUMMARY


     PERFORMED:        82/10/07
     PROGRAM FILE: SHOP    (VERSION     20.2     81/ 1/30)

   DITD                  ELECTRONICS CALIBRATION SUMMARY

                     TEST LOOP CALIBRATION                  TOOL CHECK
                 MEASURED             CALIBRATED             CALIBRATED
               ZERO      PLUS      ZERO        PLUS       ZERO         PLUS     UNITS
      ILD      -5.0      541.0      0.0        500.0       0.0        498.0     MMHD
      ILM      -8.1      517.4      0.0        500.0       0.0        497.0     MMHD
   ILD   SONDE ERROR CORRECTION :           5.8     MMHD
   ILM   SONDE ERROR CORRECTION :           7.5     MMHD

                          (IS:1342 , IC:1386 )
```

CALIBRATION RECORD

COMPANY REICHHOLD ENERGY CORPORATION

WELL WERNER 14-21

FIELD ST. LOUIS

COUNTY MARION STATE OREGON

SCHL. FR 3342.0'
SCHL. TD 3348.0'
DRLR. TD 3354.0'

Elev: KB 189.4'
DF N/A
GL 178.0'