Schlumberger

DUAL INDUCTION-SFL-SONIC

COUNTY	COLUMBIA
FIELD	MIST
LOCATION	1757.6'S & 733'E
WELL	"RAVEN" #12A-33-75
COMPANY	NAHAMA AND WEAGANT ENERGY CO

COMPANY NAHAMA AND WEAGANT ENERGY CO.
WELL "RAVEN" #12A-33-75
FIELD MIST
COUNTY COLUMBIA **STATE** OREGON

LOCATION
1757.6'S & 733'E
FROM NW CORNER OF:

Other Services:
DIL/BHC/GR

API SERIAL NO.	SECT.	TWP.	RANGE
36-009-00299	33	7N	5W

Permanent Datum GL Elev. 888.5 F
Log Measured From KB 10.5 F above Perm. Datum
Drilling Measured From KB

Elev.: K.B. 899.0 F
D.F. 898.0 F
G.L. 888.5 F

Date	26-MAY-93		
Run No.	ONE		
Depth Driller	2475.0 F		
Depth Logger (Schl.)	2441.0 F		
Btm. Log Interval	2735.0 F		
Top Log Interval	488.0 F		
Casing-Driller	8 5/8	@ 496.0 F	@
Casing-Logger	488.0 F		
Bit Size	7 7/8	@ 2475.0 F	@
Type Fluid in Hole	GEL/POLY		
Dens. | Visc.	9.80 LB/G	45.0 S	
pH | Fld. Loss	8.5	6.2 C3	
Source of Sample	FLOWLINE		
Rm @ Meas. Temp.	2.350 OHMM	@ 78.0 DEGF	@
Rmf @ Meas. Temp.	3.650 OHMM	@ 65.0 DEGF	@
Rmc @ Meas. Temp.	2.190 OHMM	@ 65.0 DEGF	@
Source: Rmf | Rmc	MEASURED	MEASURED	
Rm @ BHT	1.939 OHMM	@ 96.0 DEGF	@
TIME Circulation Ended	18:30 26-MAY-93		
TIME Logger on Bottom	10:30 26-MAY-93		
Max. Rec. Temp.	96.0 DEGF		
Equip. | Location	8271	SACRAMENTO	
Recorded By	MIKE DEMSKIE		
Witnessed By	ROB LUCAS		

The well name, location and borehole reference data were furnished by the customer

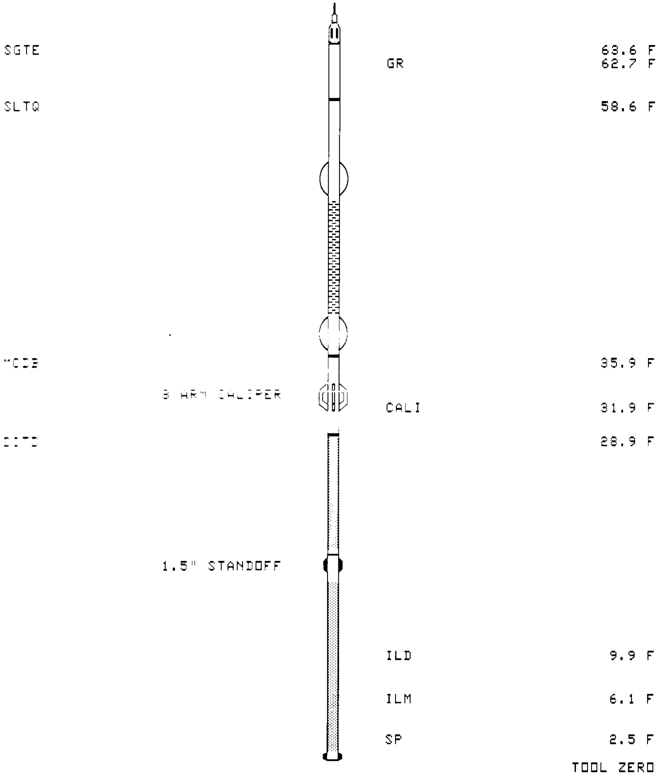
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule

Run No.	ONE		
Service Order No.	624358		
Drilling Fluid Level	5.0 F		
Salinity	400.0 PPM		
Rmf @ BHT	2.551 OHMM @ 96.0 DEGF		@
Rmc @ BHT	1.531 OHMM @ 96.0 DEGF		@
Logging Speed	3600.0 F/HR		
EQUIPMENT DATA			
Tool Number 1	DIS 1422		
Tool Number 2	DIC 1149		
Tool Number 3	SLS-WC		
Tool Number 4	SLC-MA		
Tool Number 5	MCD-B		
Tool Number 6	SGC-JC		
Tool Number 7	IEM-BD 685		
Tool Number 8	SLM-DA 1329		
Tool Number 9	NLM-BC 456		
Tool Number 10			
Tool Number 11			
Tool Number 12			

REMARKS:

TWC 1.5" STANDOFFS RUN ON INDUCTION
TWC CMEZ CENTRALIZERS RUN ON SONIC
UNABLE TO REACH DRILLER TD DUE TO HOLE CONDITIONS
DEPTH DISCREPENCY BETWEEN DRILLER'S CASING DEPTH AND
LOGGER'S CASING DEPTH VERIFIED

LOGGING TOOL STRING SKETCH



TOTAL TOOL STRING LENGTH IS 67.2 F.
TOTAL TOOL STRING WEIGHT IS 957. LB IN AIR.

MAIN LOG

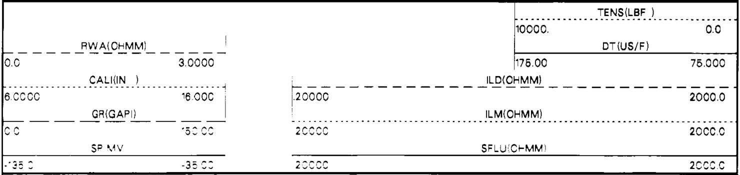
```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    665.667 F3     FROM 2438.50 F     TO 596.000 F
Integrated Cement Volume:  462.172 F3     FROM 2438.50 F     TO 596.000 F
  (ASSUMING 4.50000 IN    O.D. CASING)
Integrated Transit Time:   .231192 S      FROM 2438.50 F     TO 596.000 F
```

```
EVENT MARK SUMMARY:

OUTPUT                        INTERVAL        DEPTH TRACK
                              BETWEEN PIPS    EDGE

Integrated Hole Volume        10.0000 F3      LEFT EDGE
Integrated Cement Volume      10.0000 F3      RIGHT EDGE
```



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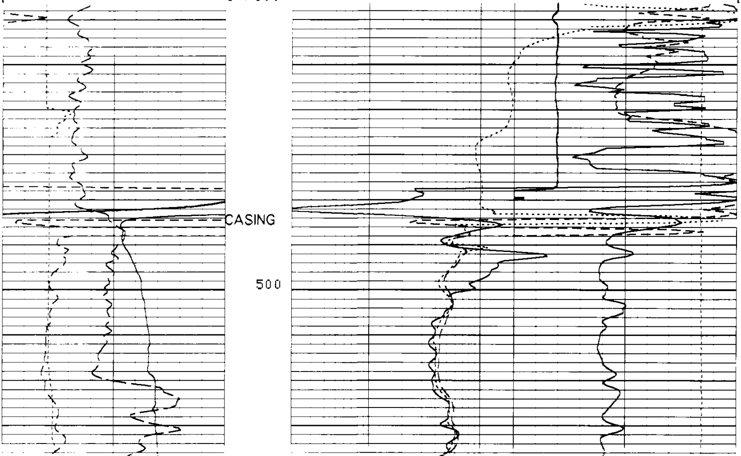
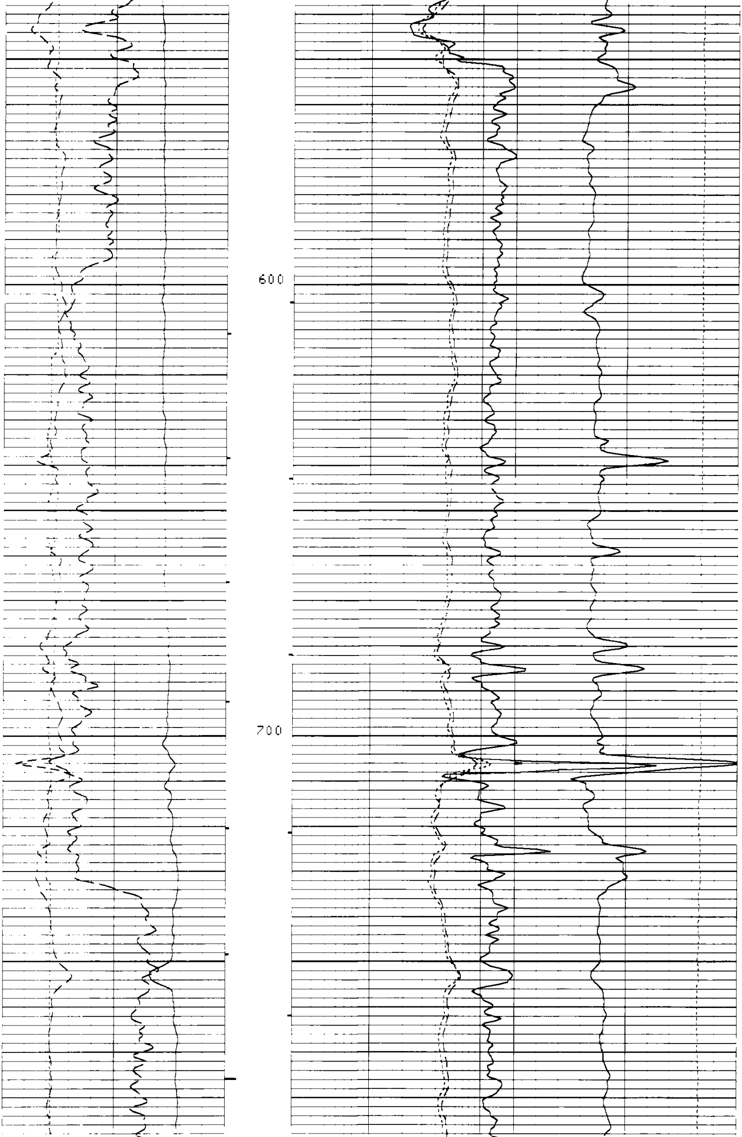
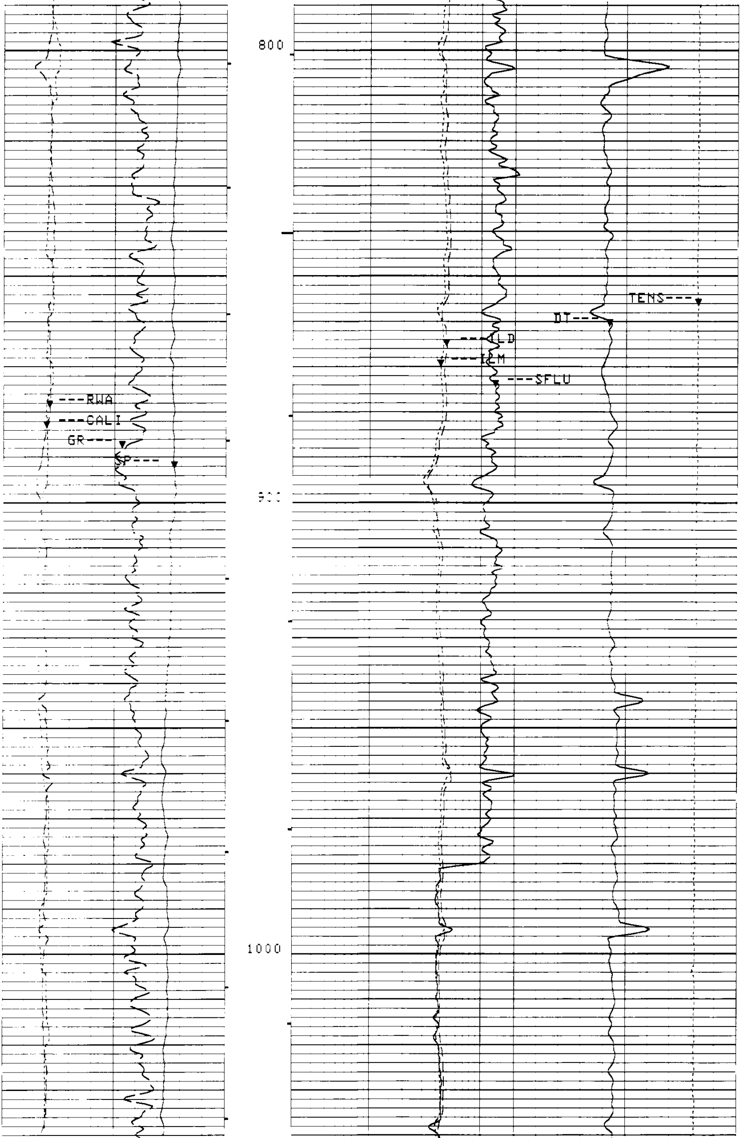
CP 38.2              FILE   18          27-MAY-1993 01:58

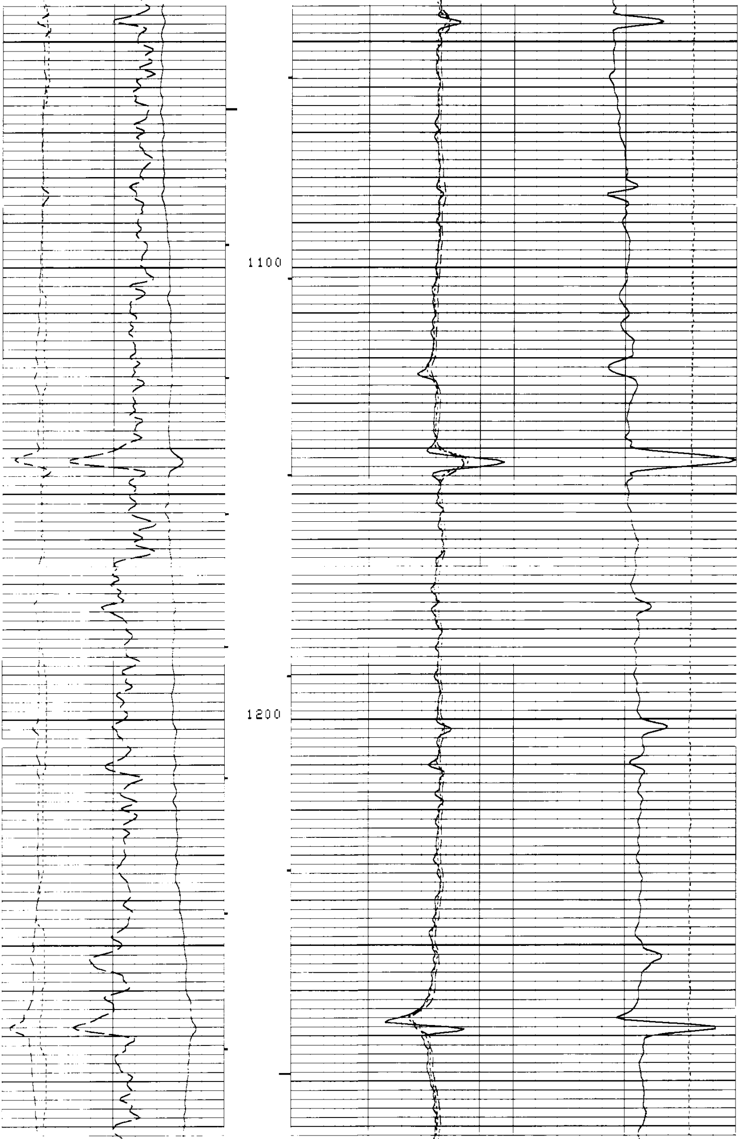
                     INPUT FILE(S)      CREATION DATE
                          4             26-MAY-1993 22:06
                          10            27-MAY-1993 01:35

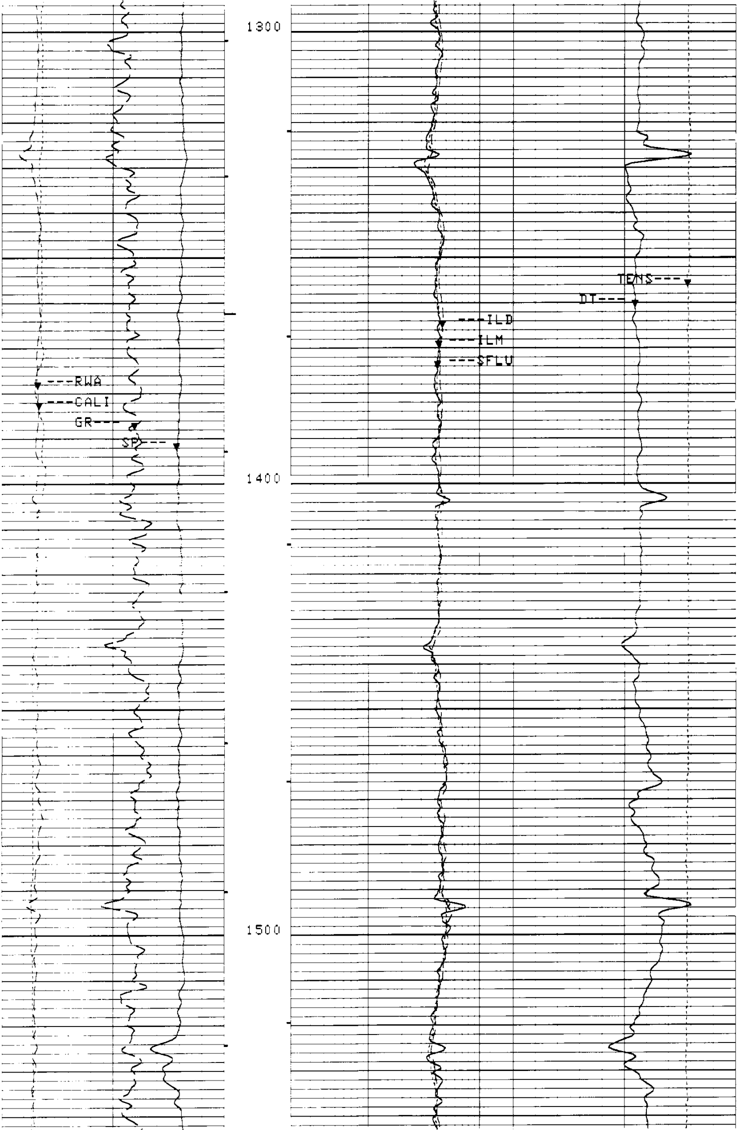
                     5"/100'
```

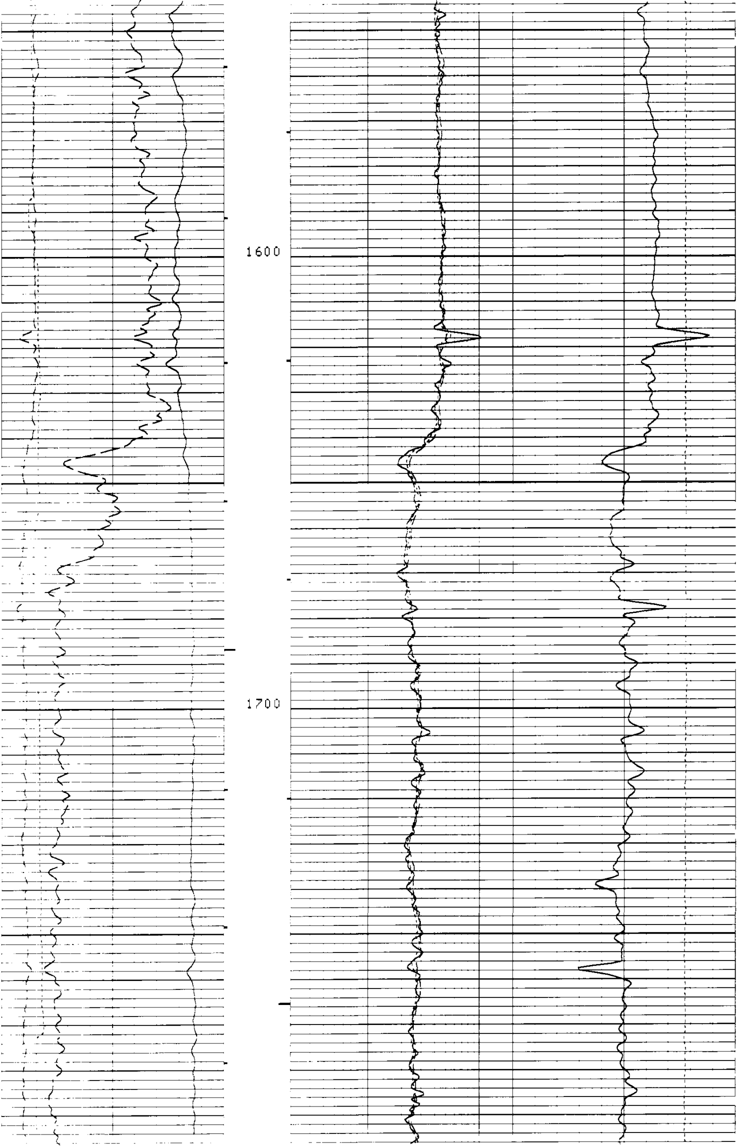


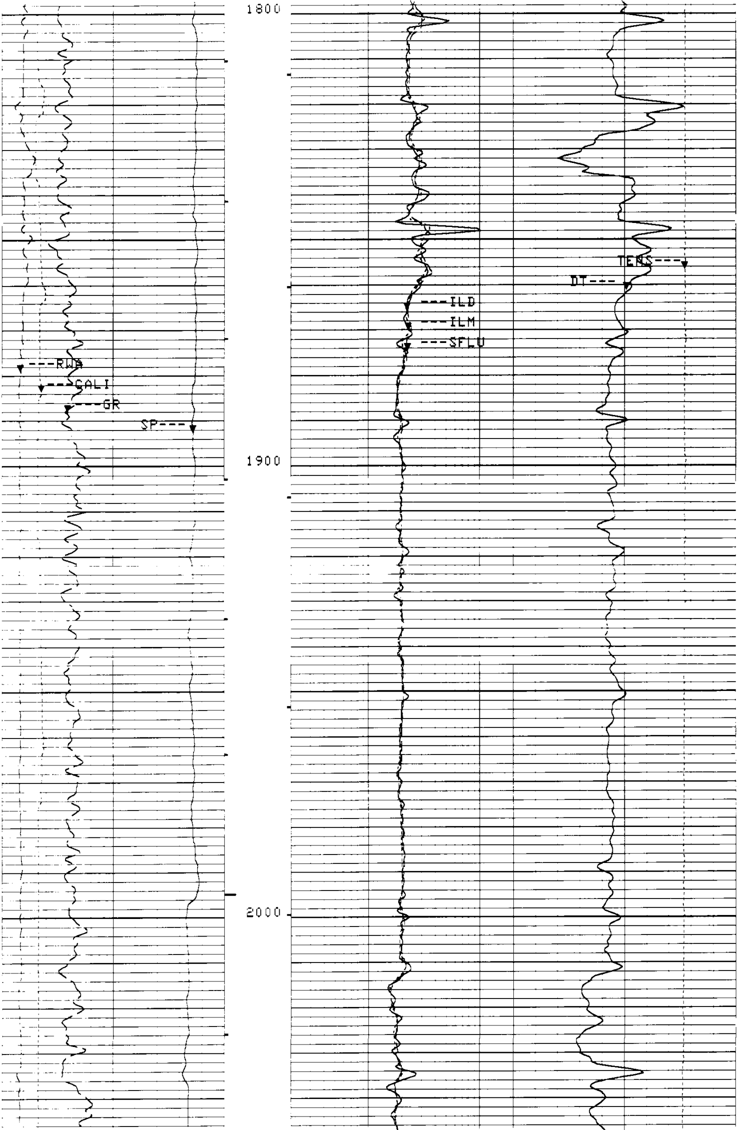


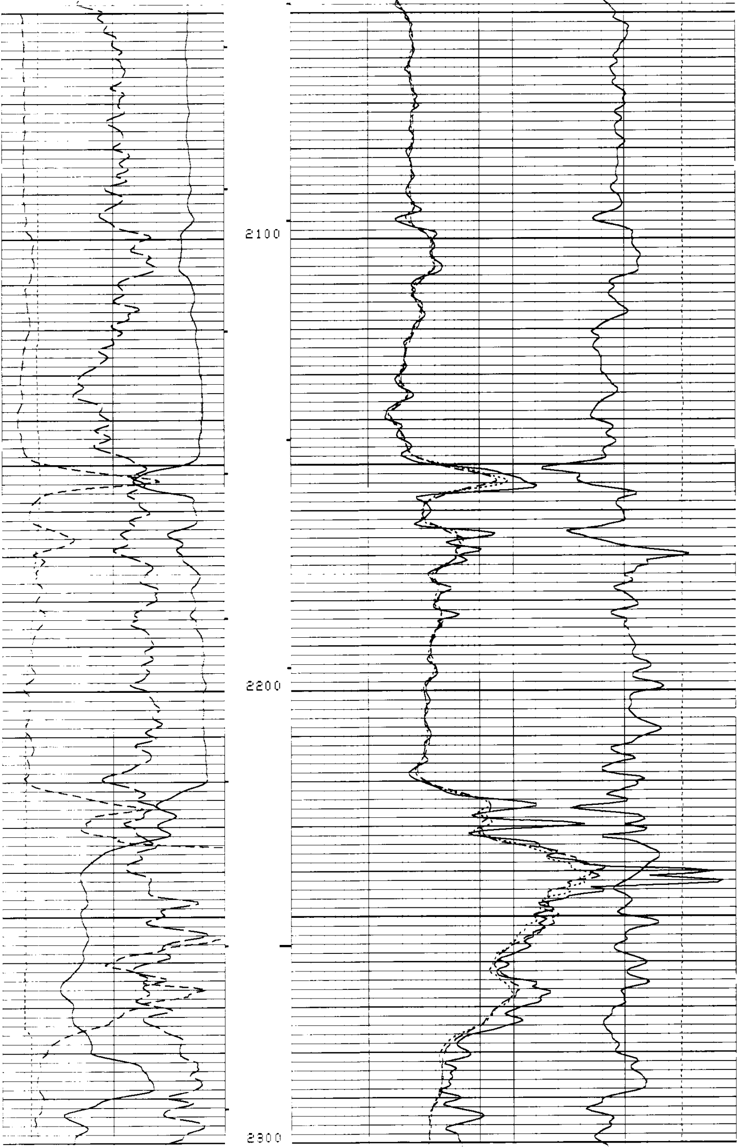


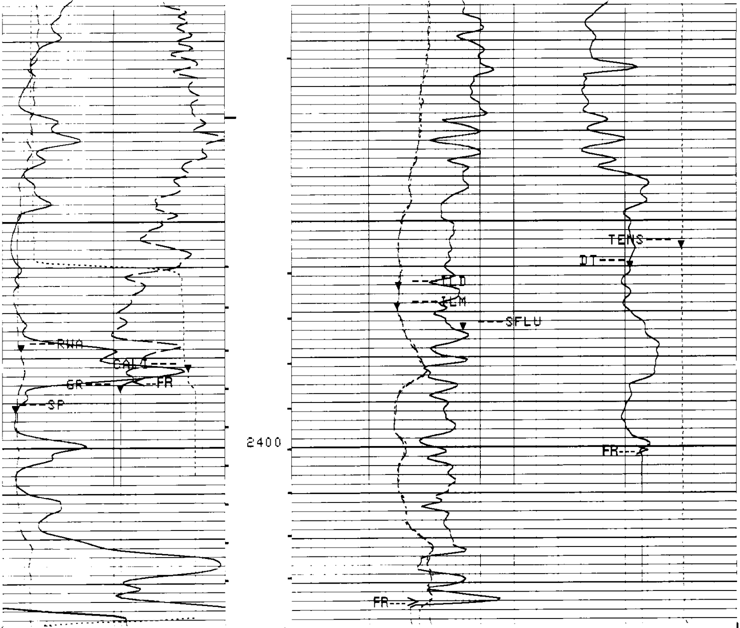












5"/100'

CP 38.2

FILE 18 27-MAY-1993 01:48

INPUT FILE(S) CREATION DATE
4 26-MAY-1993 22:06
10 27-MAY-1993 01:35

TENS(LBF)	10000.	0.0
DT(US/F)	175.00	75.000
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
GR(GAPI)	0.0	150.00
SP(MV)	-135.0	-35.00
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

PARAMETERS

PARAMETER	VALUE	UNIT

```
SPDR - Spontaneous Potential Drift                    .0100000
SMB  - Sonic Memory Board                             DISA
VDLR - Defn not found                                 2IN
TOCA - TO Correction Status                           DISA
RATE - Firing Rate                                    15          HZ
DG   - Downhole Gain                                  AUTO
DETE - Detection                                      E2
NMSG - Near Minimum Sliding Gate                      180         US
CBLG - CBL Gate Width                                 35          US
AMPL - Sonic Amplitude                                2
CBL  - Cement Bond Log Amplitude                      UT
WFM  - Waveform Mode                                  1
SS   - Sweep Speed                                    FAST
TOD  - TO Delay                                       DISA
DTF  - Delta-T Fluid                                  189.000     US/F
DTM  - Delta-T Matrix                                 56.0000     US/F
CDTS - Correction for Delta-T Shale, Empirical        100.000
SPFS - Sonic Porosity Formula Select                  R-H
PP   - Playback Processing                            NORM
DO   - Depth Offset for Logical Unit LI1              0.0         F
DO2  - Depth Offset for Logical Unit LI2              0.0         F
WMUD - Weight of Mud                                  9.80000     LB/G
MSEC - Medium Sonde Error Correction                  6.90000     MM/M
SBR  - Shoulder Bed Resistivity                       1.00000     OHMM
DSEC - Deep Sonde Error Correction                    3.70000     MM/M
FCD  - Future Casing Diameter                         4.50000     IN
NCJT - NGT Calibration Jig Type                       GSRY
FPHI - Formation Factor Formula Porosity              SPHI
DWCO - Digitizer Word Count                           512
DSIN - Digitizer Sample Interval                      5           US
DDEL - Digitizing Delay                               200         US
BS   - Bit Size                                       7.87500     IN
BHS  - BoreHole Status (Open or Cased)                OPEN
```

REPEAT SECTION

```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:   154.913 F3    FROM 2445.00 F     TO 2114.50 F
Integrated Cement Volume: 118.410 F3    FROM 2445.00 F     TO 2114.50 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .0429952 S    FROM 2445.00 F     TO 2114.50 F
```

```
EVENT MARK SUMMARY:

OUTPUT                        INTERVAL        DEPTH TRACK
                              BETWEEN PIPS    EDGE

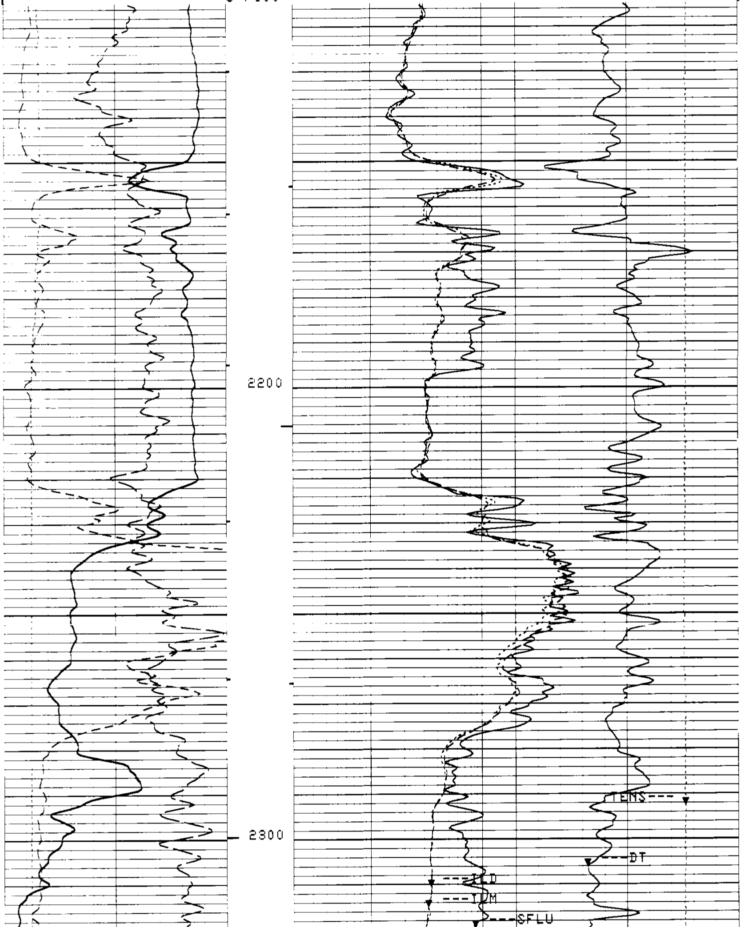
Integrated Hole Volume        10.0000 F3      LEFT EDGE
Integrated Cement Volume      10.0000 F3      RIGHT EDGE
```

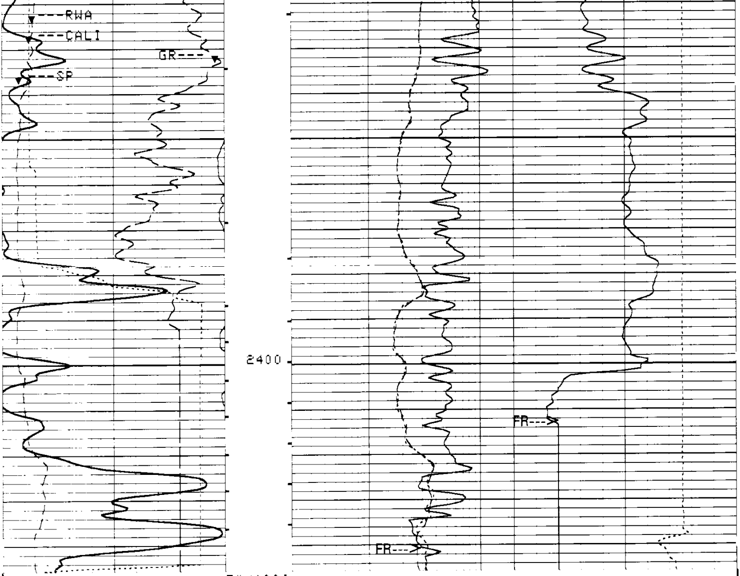
```
                                                                      TENS(LBF )
                                                            10000.                    0.0
                                                                      DT(US/F)
          RWA(OHMM)                                         175.00                 75.000
0.0                  3.0000
                                                   ILD(OHMM)
          CALI(IN )                     .20000                                     2000.0
6.0000               16.000
                                                   ILM(OHMM)
          GR(GAPI)                      .20000                                     2000.0
0.0                  150.00
                                                   SFLU(OHMM)
          SP(MV )                       .20000                                     2000.0
-150.0               -50.00

     CP 38.2          FILE    21        27-MAY-1993 02:07
```

INPUT FILE(S)	CREATION DATE
3	26-MAY-1993 21:56
20	27-MAY-1993 02:01

5"/100'





5"/100'

CP 38.2 FILE 21 27-MAY-1993 02:05

INPUT FILE(S)	CREATION DATE
3	26-MAY-1993 21:56
20	27-MAY-1993 02:01

TENS(LBF)
10000. 0.0
DT(US/F)
-75.CC 75.000
RWA(OHMM)
C.C 3.CCCC
CALI(IN)
6.CCCC 16.CCC
GR(GAPI)
C.C 15C.CC
SP(MV)
-15C.C -5C.CC
ILD(OHMM)
.2CCCC 2CCC.C
ILM(OHMM)
.2CCCC 2CCC.C
SFLU(OHMM)
.2CCCC 2CCC.C

PARAMETERS

PARAMETER	VALUE	UNIT
SPDR - Spontaneous Potential Drift	.0100000	
SMB - Sonic Memory Board	DISA	
VDLR - Defn not found	2IN	
TOCA - TO Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	AUTO	
DETE - Detection	E2	
NMSG - Near Minimum Sliding Gate	180	US
CBLG - CBL Gate Width	35	US
AMPL - Sonic Amplitude	2	
CBL - Cement Bond Log Amplitude	UT	

```
WFM  - Waveform Mode                                1
SS   - Sweep Speed                                  FAST
TOD  - TO Delay                                     DISA
DTF  - Delta-T Fluid                                189.000      US/F
DTM  - Delta-T Matrix                               56.0000      US/F
CDTS - Correction for Delta-T Shale, Empirical      100.000
SPFS - Sonic Porosity Formula Select                R-H
PP   - Playback Processing                          NORM
DO   - Depth Offset for Logical Unit LI1            0.0          F
DO2  - Depth Offset for Logical Unit LI2            0.0          F
WMUD - Weight of Mud                                9.80000      LB/G
MSEC - Medium Sonde Error Correction                6.90000      MM/M
SBR  - Shoulder Bed Resistivity                     1.00000      OHMM
DSEC - Deep Sonde Error Correction                  3.70000      MM/M
FCD  - Future Casing Diameter                       4.50000      IN
NCJT - NGT Calibration Jig Type                     GSRY
FPHI - Formation Factor Formula Porosity            SPHI
DWCO - Digitizer Word Count                         512
DSIN - Digitizer Sample Interval                    5            US
DDEL - Digitizing Delay                             200          US
BS   - Bit Size                                     7.87500      IN
BHS  - BoreHole Status (Open or Cased)              OPEN
```

CALIBRATION SUMMARY

```
               BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:     26-MAY-1993 21:55
  PROGRAM FILE: ISN    (VERSION    38.2    92/10/12  92/10/12)


DITD            ELECTRONICS CALIBRATION SUMMARY

             MEASURED                         CALIBRATED
           ZERO    PLUS                     ZERO      PLUS          UNITS
   ILD      .48    496.8                    0.0       497.1          MM/M
   ILM      .23    515.2                    0.0       498.5          MM/M
   SFL      .34    505.0                    0.0       500.0          MM/M

ILD SONDE ERROR CORRECTION :       3.7 MM/M
ILM SONDE ERROR CORRECTION :       6.9 MM/M

ZERO: 26-MAY-1993 21:53  PLUS: 26-MAY-1993 21:54  COMP: 26-MAY-1993 21:54


SGTE            DETECTOR CALIBRATION SUMMARY

             MEASURED
           BKGD    JIG          CALIBRATED          UNITS
    GR      53     212            165               GAPI

BACK: 26-MAY-1993 21:09   JIG: 26-MAY-1993 21:11  COMP: 26-MAY-1993 21:11


MCDB            CALIPER CALIBRATION SUMMARY

             MEASURED                         CALIBRATED
           SMALL   LARGE                    SMALL     LARGE         UNITS
  CALI     7.43    12.08                    8.00      12.00          IN

SMALL: 26-MAY-1993 21:03 LARGE: 26-MAY-1993 21:07 COMP: 26-MAY-1993 21:07

   CP 38.2          FILE    2        26-MAY-1993 21:55



                SHOP SUMMARY
```

```
    PERFORMED:     19-MAY-1993 16:01
    PROGRAM FILE:  SHOP   (VERSION    38.2    92/10/12  92/10/12)


  DITD            ELECTRONICS CALIBRATION SUMMARY

                      TEST LOOP CALIBRATION            TOOL CHECK
                   MEASURED          CALIBRATED         CALIBRATED
                 ZERO    PLUS      ZERO      PLUS      ZERO      PLUS    UNITS
     ILD     -3.3     493.1      0.0       500.0      0.0       497.1   MM/M
     ILM     -7.3     507.7      0.0       500.0      0.0       498.5   MM/M
  ILD  SONDE ERROR CORRECTION :        3.7 MM/M
  ILM  SONDE ERROR CORRECTION :        6.9 MM/M

                          (IS:1422, IC:1149)

     CP 38.2            FILE     6       19-MAY-1993 16:01
```

COMPANY	NAHAMA AND WEAGANT ENERGY CO.			**SCHL.**	**FR**	2735.0 F
				SCHL.	**TD**	2741.0 F
WELL	"RAVEN" #12A-33-75			**DRLR.**	**TD**	2475.0 F
				Elev:	**KB**	899.0 F
FIELD	MIST				**DF**	898.0 F
COUNTY	COLUMBIA	**STATE**	OREGON		**GL**	888.5 F

DUAL INDUCTION-SFL-SONIC

Schlumberger