COUNTY	COLUMBIA
FIELD	MIST
LOCATION	982.7 S & 890.6E
WELL	"GRUB CREEK JOHNSTON #11-30-65 R.D.
COMPANY	NAHAMA AND WEAGANT ENERGY CO.

Schlumberger

DUAL INDUCTION - SFL
BHC SONIC

COMPANY	NAHAMA AND WEAGANT ENERGY CO.
WELL	"GRUB CREEK JOHNSTON" #11-30-65 R.D.1
FIELD	MIST
COUNTY	COLUMBIA **STATE** OREGON

LOCATION 982.7'S & 890.6'E
FROM NW CORNER OF:

Permit 495

Other Services:
DIL/BHC/GR

API SERIAL NO.	**SECT.**	**TWP.**	**RANGE**
36-009-00317	30	6N	5W

Permanent Datum	GL	Elev.	633.7 F	**Elev.: K.B.643.7 F**
Log Measured From	KB	10.0 F	**above Perm. Datum**	**D.F.642.7 F**
Drilling Measured From	KB			**G.L.633.7 F**

Date	5-NOV-93			
Run No.	TWO			
Depth Driller	2811.0 F			
Depth Logger (Schl.)	2812.0 F			
Btm. Log Interval	2806.0 F			
Top Log Interval	517.0 F			
Casing-Driller	8 5/8 @ 517.0 F	@	@	
Casing-Logger	517.0 F			
Bit Size	7 7/8 @ 2811.0 F	@	@	
Type Fluid in Hole	GEL/BENEX/PAC			
Dens. / **Visc.**	10.10 LB/G	40.0 S		
pH / **Fld. Loss**	8.0	6.0 C3		
Source of Sample	FLOWLINE			
Rm @ Meas. Temp.	1.540 OHMM @ 70.0 DEGF		@	
Rmf @ Meas. Temp.	2.360 OHMM @ 50.0 DEGF		@	
Rmc @ Meas. Temp.	2.220 OHMM @ 50.0 DEGF		@	
Source: Rmf / **Rmc**	MEASURED	MEASURED		
Rm @ BHT	1.222 OHMM @ 90.0 DEGF		@	
TIME **Circulation Ended**	11:30 5-NOV-93			
TIME **Logger on Bottom**	14:45 5-NOV-93			
Max. Rec. Temp.	90.0 DEGF			
Equip. / **Location**	8504	SACRAMENTO		
Recorded By	M.DEMSKIE			
Witnessed By	R.LUCAS/B.PINOTTI			

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

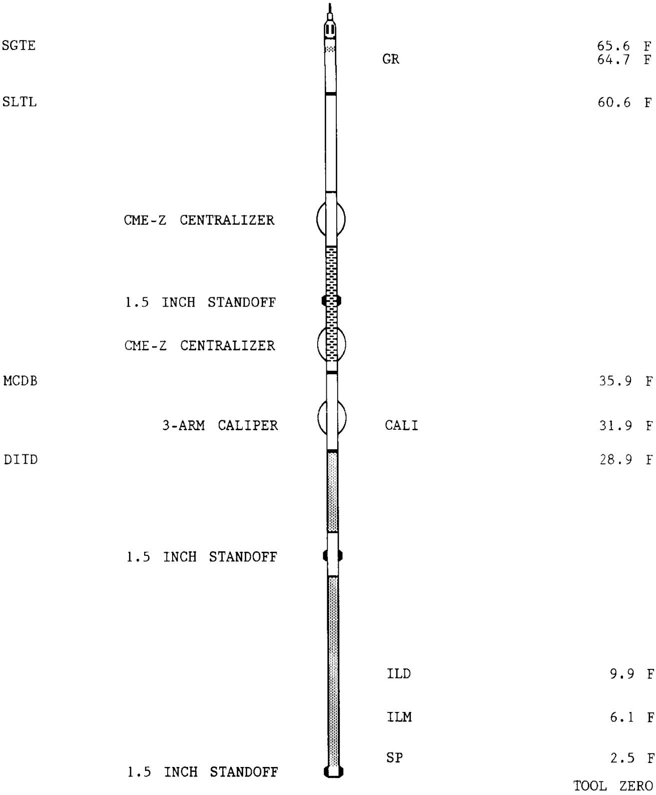
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.	TWO	
Service Order No.	624385	
Drilling Fluid Level	5.0 F	
Salinity	600.0 PPM	
Rmf @ BHT	1.387 OHMM @ 90.0 DEGF	@
Rmc @ BHT	1.305 OHMM @ 90.0 DEGF	@
Logging Speed	3600.0 F/HR	
EQUIPMENT DATA		
Tool Number 1	DIS-EC 1342	
Tool Number 2	DIC-DA 1386	
Tool Number 3	MCD-D 1237	
Tool Number 4	SLC-MA 114	
Tool Number 5	SLS-WA 1464	
Tool Number 6	SGC-JC 4148	
Tool Number 7	IEM-BD 1349	
Tool Number 8	SLM-DA 428	
Tool Number 9	NLM-BC 207	
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

1.5" STANDOFFS RUN ON INDUCTION TOOL
CMEZ CENTRALIZERS RUN ON SONIC TOOL
THANK YOU FOR CHOOSING SCHLUMBERGER
ORIGINAL HOLE SIDETRACKED AT 570'

LOGGING TOOL STRING SKETCH



TOTAL TOOL STRING LENGTH IS 68.6 F.
TOTAL TOOL STRING WEIGHT IS 993. LB IN AIR.

Main Log - 5"/100'

ACCUMULATED INTEGRATION VALUES SUMMARY:

```
Integrated Hole Volume:   911.972 F3     FROM 2811.00 F     TO 517.000 F
Integrated Cement Volume: 658.616 F3     FROM 2811.00 F     TO 517.000 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .271561 S      FROM 2811.00 F     TO 517.000 F
```

EVENT MARK SUMMARY:

OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

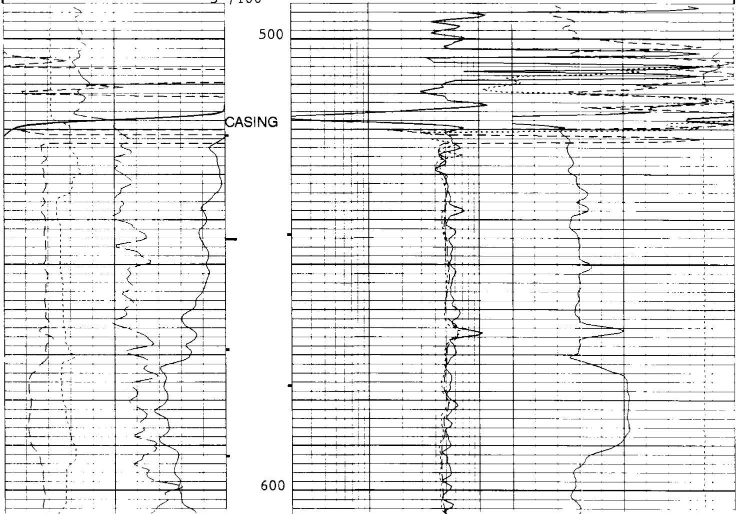
TENS(LBF)
10000. 0.0
DT(US/F)
150.00 50.000

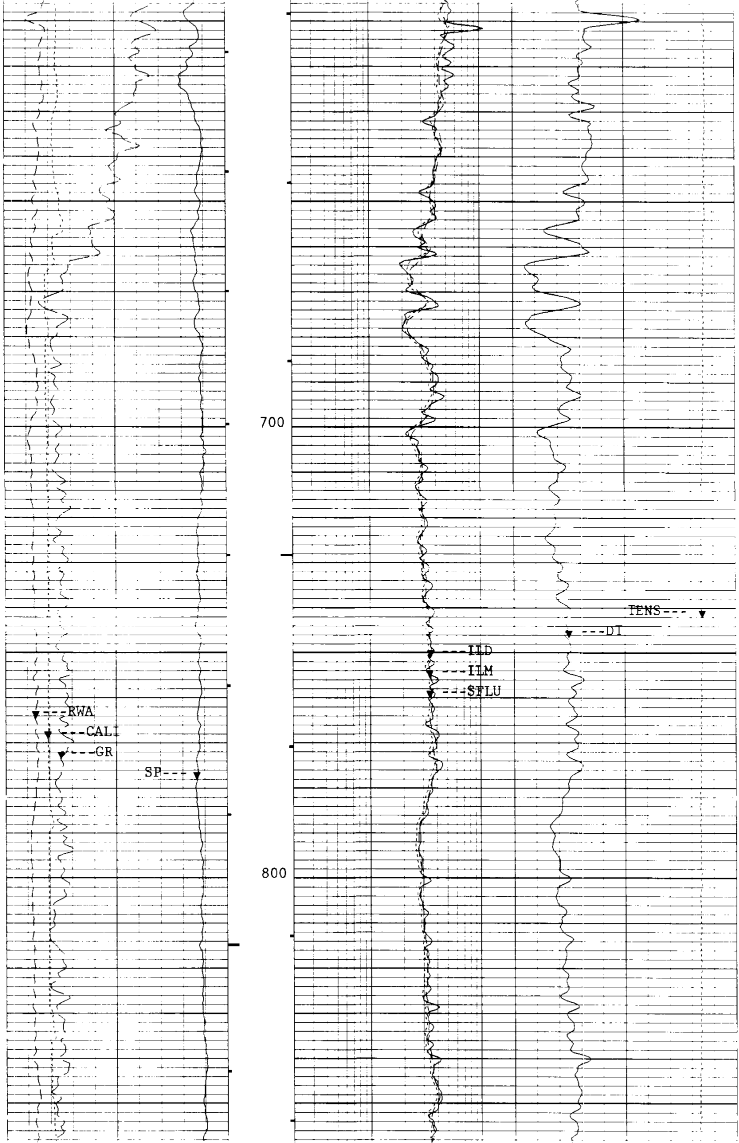
RWA(OHMM)
0.0 3.0000
CALI(IN)
6.0000 16.000
GR(GAPI)
0.0 150.00
SP(MV)
-100.0 0.0

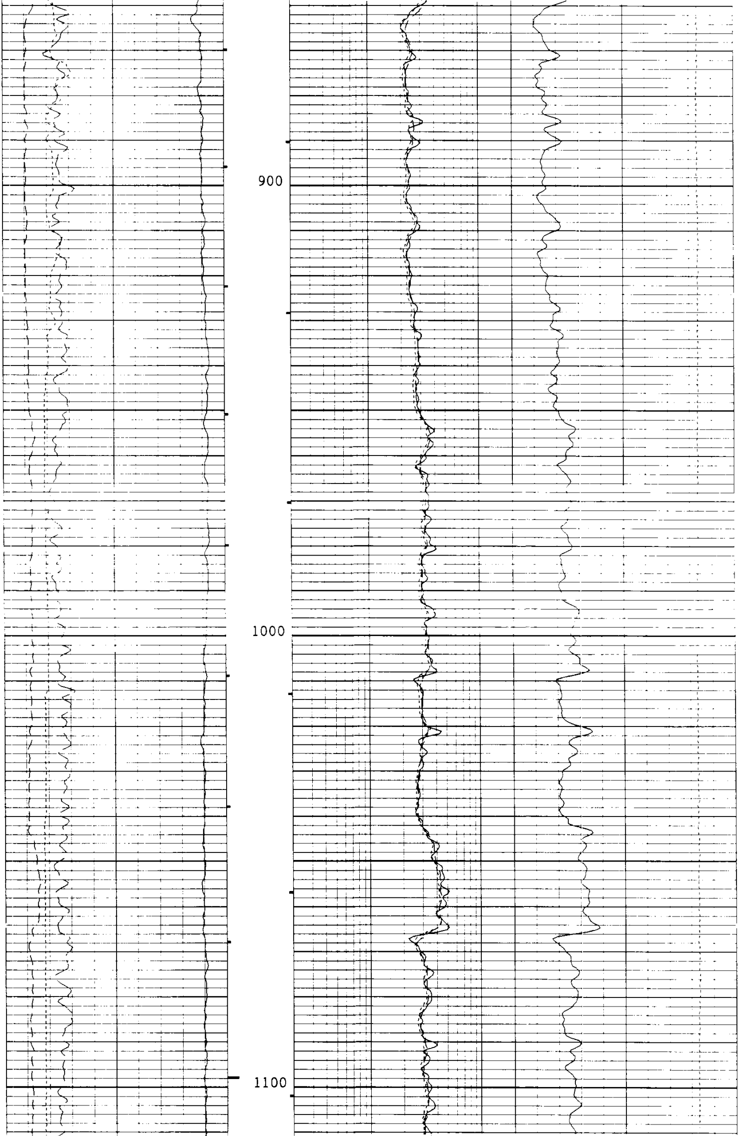
ILD(OHMM)
.20000 2000.0
ILM(OHMM)
.20000 2000.0
SFLU(OHMM)
.20000 2000.0

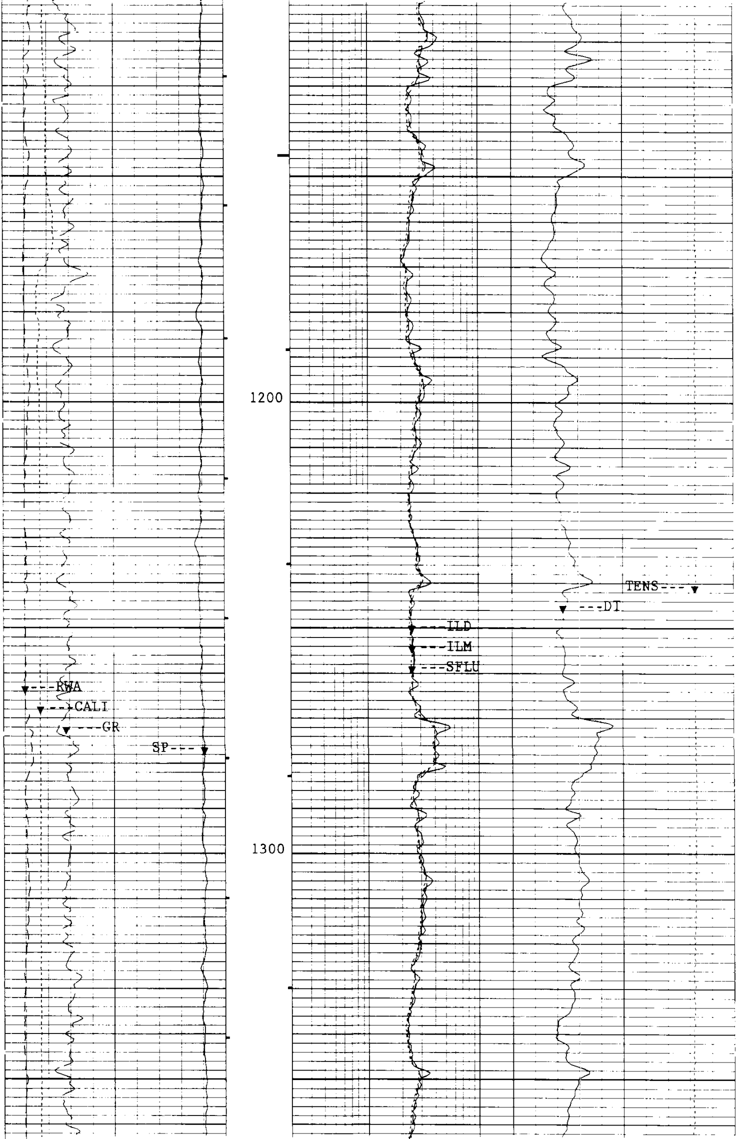
CP 38.2 FILE 6 05-NOV-1993 16:19 (UP)

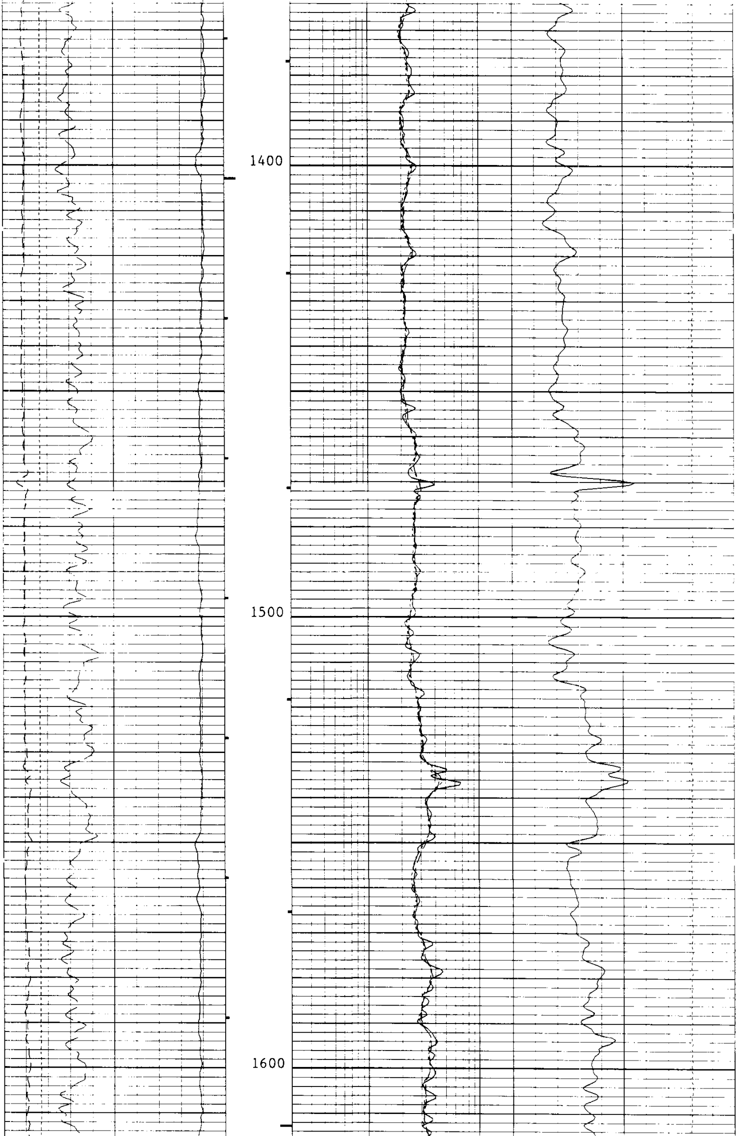
5"/100'

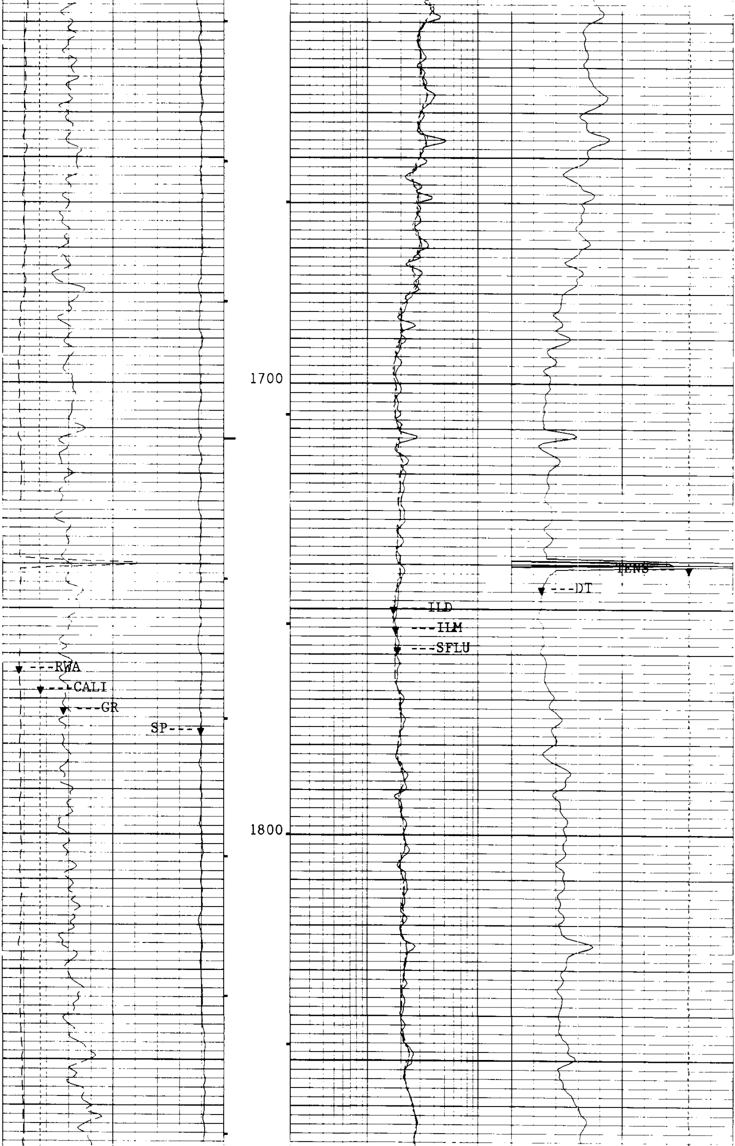


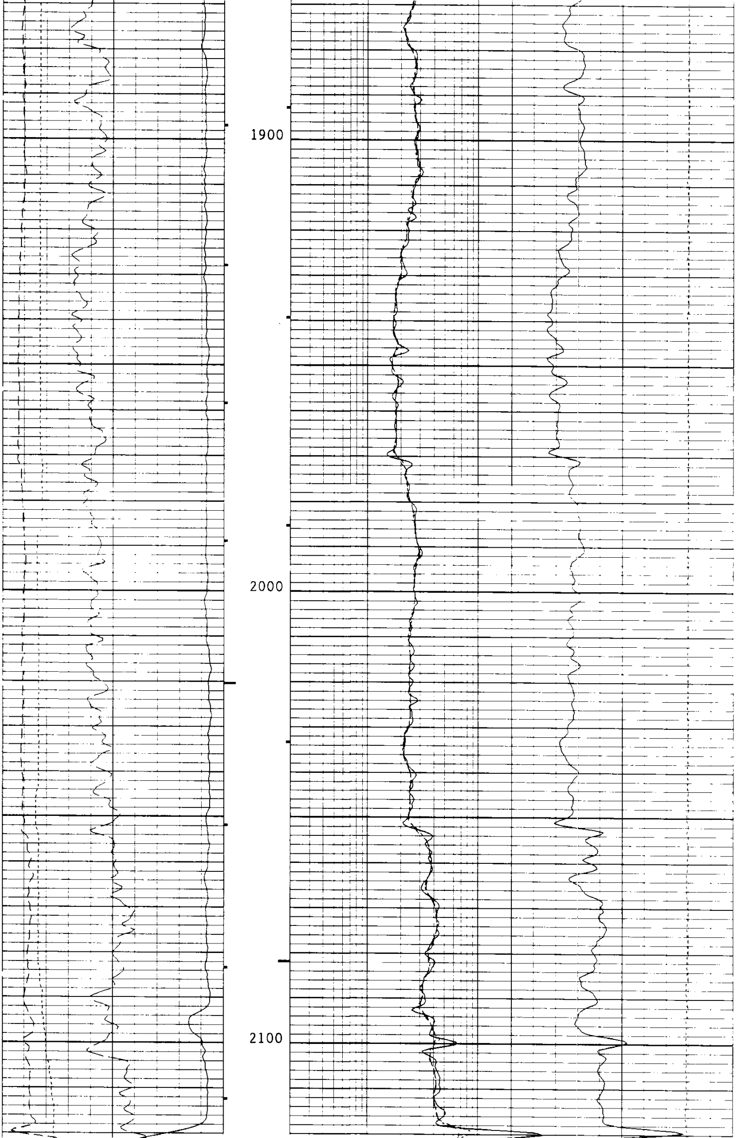


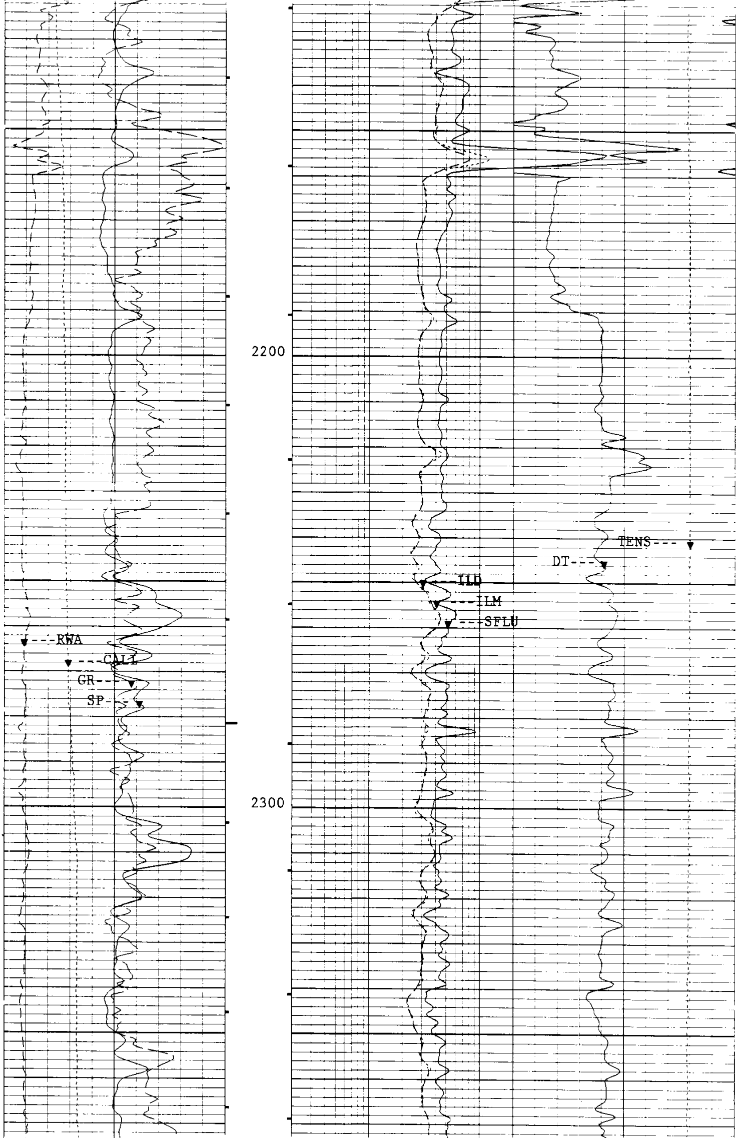


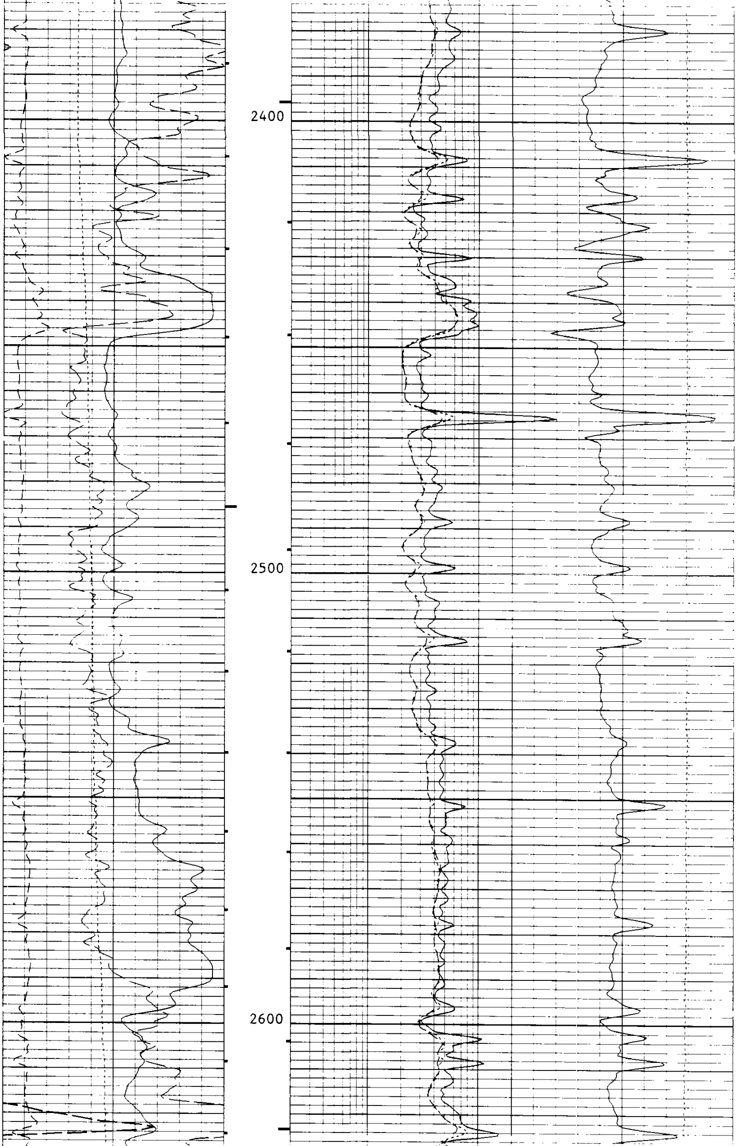


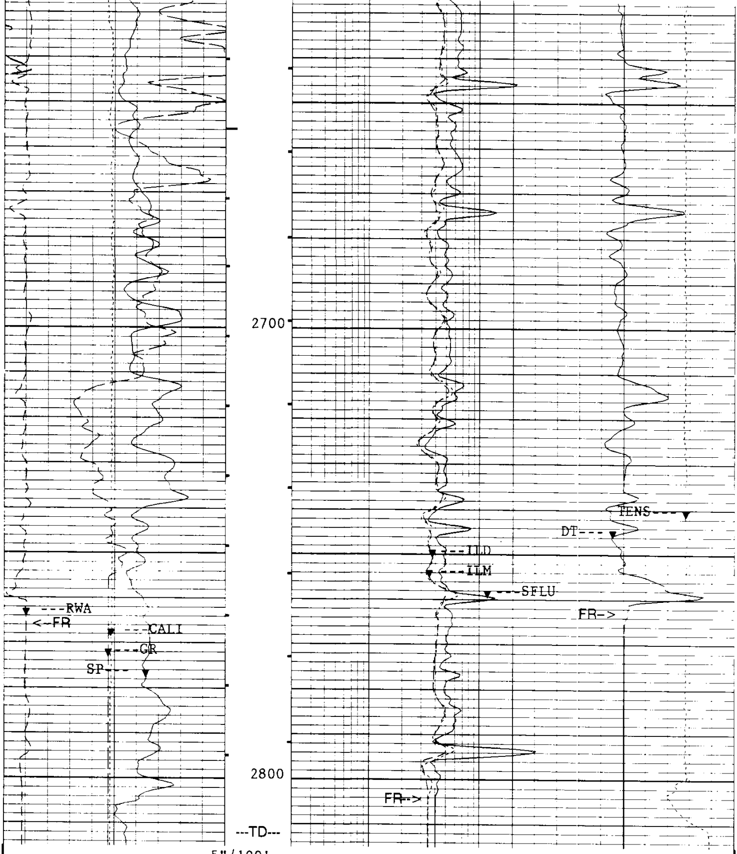












5"/100'

CP 38.2 FILE 6 05-NOV-1993 15:43 (UP)

Curve	Left	Right
TENS(LBF)	10000.	0.0
DT(US/F)	150.00	50.000
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
GR(GAPI)	0.0	150.00
SP(MV)	-100.0	0.0
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

SENSOR MEASURE POINT TO TOOL ZERO

SRAT	41.7	FEET
CBFS	43.1	FEET
TT2	44.1	FEET
TT4	39.3	FEET
TT	44.1	FEET
CBSL	44.1	FEET
CALI	31.9	FEET
ILM	6.1	FEET
SP	2.5	FEET
TENS	2.5	FEET
NOIS	2.5	FEET
AMPL	44.1	FEET
CBL	44.1	FEET
TT1	43.1	FEET
TT3	40.3	FEET
TO	44.1	FEET
TTSL	44.1	FEET
GR	62.7	FEET
ILD	9.9	FEET
SFL	6.8	FEET
SPAR	2.5	FEET

PARAMETERS

PARAMETER	VALUE	UNIT
SMB - Sonic Memory Board	DISA	
VDLR - Defn not found	2IN	
TOCA - TO Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	/5	
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	
WMUD - Weight of Mud	10.1000	LB/G
MSEC - Medium Sonde Error Correction	8.00000	MM/M
SBR - Shoulder Bed Resistivity	1.00000	OHMM
DSEC - Deep Sonde Error Correction	6.70000	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	

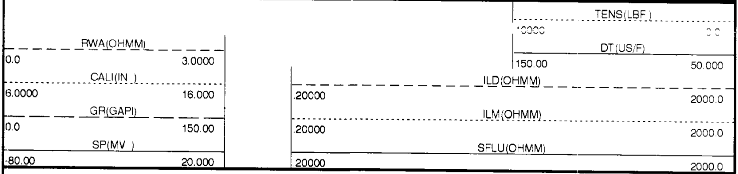
Repeat Section - 5"/100'

ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:	98.5283 F3	FROM 2275.50 F	TO 1931.50 F
Integrated Cement Volume: (ASSUMING 4.50000 IN O.D. CASING)	66.0570 F3	FROM 2275.50 F	TO 1931.50 F
Integrated Transit Time:	.0342826 S	FROM 2275.50 F	TO 1931.50 F

EVENT MARK SUMMARY:

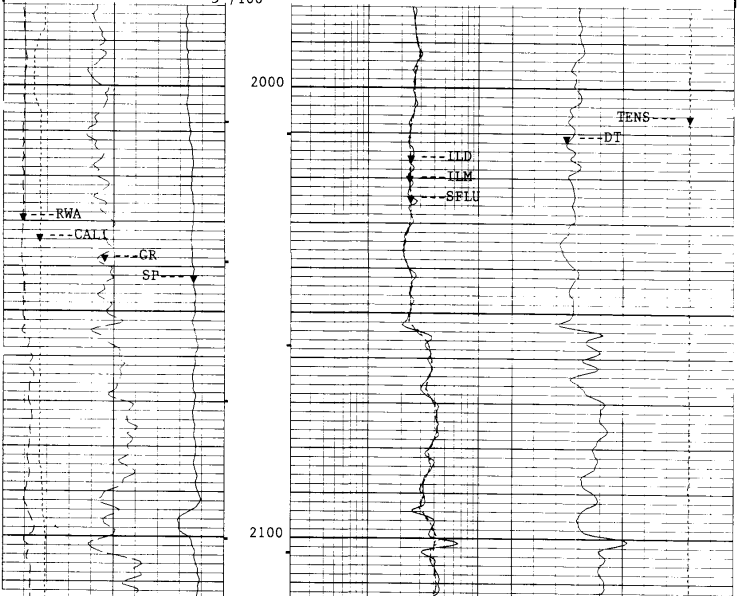
OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

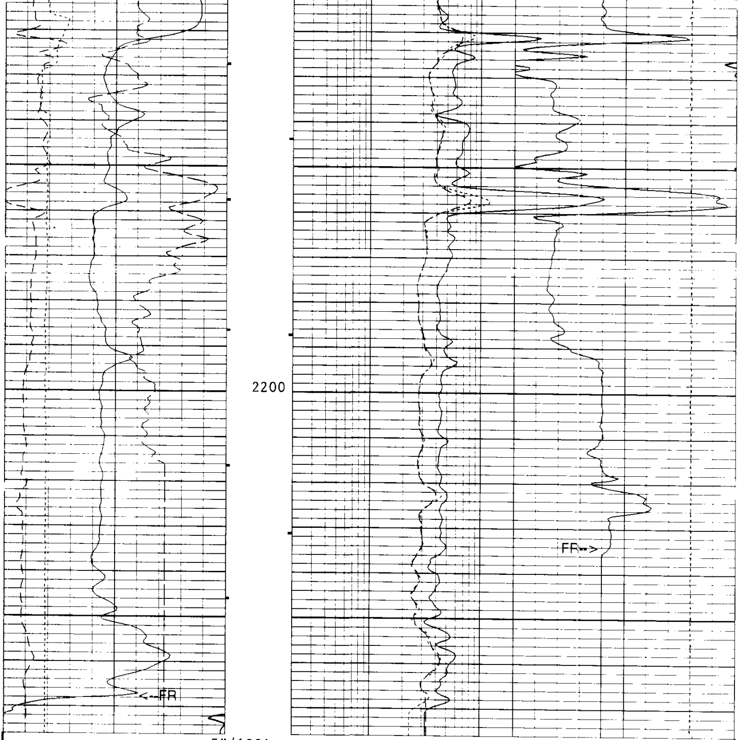


CP 38.2 FILE 3 05-NOV-1993 15:55

INPUT FILE(S) CREATION DATE
5 05-NOV-1993 15:40

5"/100'





5"/100'

CP 38.2

FILE 3 05-NOV-1993 15:55

INPUT FILE($) CREATION DATE
5 05-NOV-1993 15:40

TENS(LBF)
10000 0.0
DT(US/F)
150.00 50.000

RWA(OHMM)
0.0 3.0000
CALI(IN)
6.0000 16.000
GR(GAPI)
0.0 150.00
SP(MV)
-80.00 20.000

ILD(OHMM)
.20000 2000.0
ILM(OHMM)
.20000 2000.0
SFLU(OHMM)
.20000 2000.0

SENSOR MEASURE POINT TO TOOL ZERO

```
      SRAT 41.7  FEET                      AMPL 44.1  FEET
      CBFS 43.1  FEET                      CBL  44.1  FEET
      TT2  44.1  FEET                      TT1  43.1  FEET
      TT4  39.3  FEET                      TT3  40.3  FEET
      TT   44.1  FEET                      T0   44.1  FEET
      CBSL 44.1  FEET                      TTSL 44.1  FEET
      CALI 31.9  FEET                      GR   62.7  FEET
      ILM   6.1  FEET                      ILD   9.9  FEET
      SP    2.5  FEET                      SFL   6.8  FEET
      TENS  2.5  FEET                      SPAR  2.5  FEET
      NOIS  2.5  FEET
```

```
                            PARAMETERS

    NAME  VALUE       UNIT                NAME  VALUE       UNIT

    SMB  DISA                             VDLR 2IN
    TOCA DISA                             RATE 15           HZ
    DG   /5                               DETE E2
    NMSG 180          US                  CBLG 35           US
    AMPL 2                                CBL  UT
    WFM  1                                SS   FAST
    TOD  DISA                             DTF  189.000      US/F
    DTM  56.0000      US/F                CDTS 100.000
    SPFS R-H                              PP   NORM
    DO   0.0          F                   WMUD 10.1000      LB/G
    MSEC 8.00000      MM/M                SBR  1.00000      OHMM
    DSEC 6.70000      MM/M                FCD  4.50000      IN
    NCJT GSRY                             FPHI SPHI
    DWCO 512                              DSIN 5            US
    DDEL 200          US                  BS   7.87500      IN
    BHS  OPEN
```

Calibration Summary

```
              AFTER SURVEY TOOL CHECK SUMMARY


  PERFORMED:     05-NOV-1993 16:22
  PROGRAM FILE: ISN     (VERSION    38.2    92/10/12  92/10/12)


DITD                      TOOL   CHECK

                  ZERO                         PLUS
           BEFORE          AFTER         BEFORE       AFTER      UNITS
   ILD       0.0             .0          496.4        493.3      MM/M
   ILM       0.0             .1          495.7        493.7      MM/M
   SFL       0.0             .1          500.0        484.1      MM/M

ILD SONDE ERROR CORRECTION :         6.7 MM/M
ILM SONDE ERROR CORRECTION :         8.0 MM/M

BEFORE SURVEY:             ZERO: 05-NOV-1993 15:29  PLUS: 05-NOV-1993 15:30
AFTER SURVEY CHECK:        ZERO: 05-NOV-1993 16:21  PLUS: 05-NOV-1993 16:21

   CP 38.2           FILE    8        05-NOV-1993 16:22


              BEFORE SURVEY CALIBRATION SUMMARY
```

```
PERFORMED:     05-NOV-1993 15:31
PROGRAM FILE: ISN     (VERSION    38.2    92/10/12  92/10/12)


DITD                ELECTRONICS CALIBRATION SUMMARY

              MEASURED                      CALIBRATED
           ZERO    PLUS                 ZERO        PLUS        UNITS
    ILD     .06    536.9                0.0         496.4        MM/M
    ILM    -.05    524.3                0.0         495.7        MM/M
    SFL     .15    524.0                0.0         500.0        MM/M

ILD SONDE ERROR CORRECTION :          6.7 MM/M
ILM SONDE ERROR CORRECTION :          8.0 MM/M

ZERO: 05-NOV-1993 15:29  PLUS: 05-NOV-1993 15:30  COMP: 05-NOV-1993 15:30


SGTE                DETECTOR CALIBRATION SUMMARY

              MEASURED
           BKGD    JIG          CALIBRATED          UNITS
    GR      43     209             165              GAPI

BACK: 05-NOV-1993 14:04   JIG: 05-NOV-1993 14:06  COMP: 05-NOV-1993 14:06


MCDB                CALIPER CALIBRATION SUMMARY

              MEASURED                     CALIBRATED
           SMALL   LARGE               SMALL       LARGE        UNITS
  CALI     7.48    11.00               8.00        12.00         IN

SMALL: 05-NOV-1993 13:40 LARGE: 05-NOV-1993 13:42 COMP: 05-NOV-1993 13:42

   CP 38.2             FILE     4        05-NOV-1993 15:30



                    SHOP SUMMARY


  PERFORMED:     14-OCT-1993 08:46
  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    -6.3    501.2      0.0         500.0     0.0        496.4    MM/M
    ILM    -8.8    518.8      0.0         500.0     0.0        495.7    MM/M
ILD  SONDE ERROR CORRECTION :           6.7 MM/M
ILM  SONDE ERROR CORRECTION :           8.0 MM/M

                        (IS:1342, IC:1422)

   CP 38.2             FILE     2        14-OCT-1993 08:46
```

COMPANY	NAHAMA AND WEAGANT ENERGY CO.			SCHL.	FR	2806.0 F
				SCHL.	TD	2812.0 F
WELL	"GRUB CREEK JOHNSTON" #11-30-65 R.D.1			DRLR.	TD	2811.0 F
FIELD	MIST			Elev:	KB	643.7 F
					DF	642.7 F
COUNTY	COLUMBIA	**STATE**	OREGON		GL	633.7 F

Schlumberger

DUAL INDUCTION - SFL
BHC SONIC