Schlumberger

DUAL INDUCTION-SFL-SONIC

COUNTY COLUMBIA
FIELD MIST
LOCATION 1385'E AND 274'S
WELL "FISHHAWK/WILSON" #11A-5-65
COMPANY NAHAMA AND WEAGANT ENERGY CO

COMPANY	NAHAMA AND WEAGANT ENERGY CO.
WELL	"FISHHAWK/WILSON" #11A-5-65
FIELD	MIST
COUNTY	COLUMBIA **STATE** OREGON

LOCATION	1385'E AND 274'S FROM NW CORNER			Other Services: DIL-BHC GR SHDT
API SERIAL NO. 36-009-00296	SECT. 5	TWP. 6N	RANGE 5W	

Permanent Datum	GL	Elev.	604.0 F		Elev.: K.B.615.0 F
Log Measured From	KB	11.0 F	above Perm. Datum		D.F.
Drilling Measured From	KB				G.L.604.0 F

Date	19-OCT-1992		
Run No.	ONE		
Depth Driller	2765.0 F		
Depth Logger (Schl.)	2760.0 F		
Btm. Log Interval	2754.0 F		
Top Log Interval	508.0 F		
Casing-Driller	8 5/8" @ 509.0 F	@	@
Casing-Logger	508.0 F		
Bit Size	7 7/8" @ 2765.0 F	@	@
Type Fluid in Hole	GEL DRISPAC		
Dens. / Visc.	9.60 LB/G / 40.0 S		
pH / Fld. Loss	8.0 / 6.0 C3		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp.	2.280 OHMM @ 79.0 DEGF	@	
Rmf @ Meas. Temp.	3.530 OHMM @ 64.0 DEGF	@	
Rmc @ Meas. Temp.	2.130 OHMM @ 64.0 DEGF	@	
Source: Rmf / Rmc	MEASURED / MEASURED		
Rm @ BHT	1.904 OHMM @ 96.0 DEGF	@	
TIME Circulation Ended	16:00 10-19		
TIME Logger on Bottom	19:42 10-19		
Max. Rec. Temp.	96.0 DEGF		
Equip. / Location	8504 / SACRAMENTO		
Recorded By	SCOTT PILCH		
Witnessed By	LUCAS / PINOTTI		

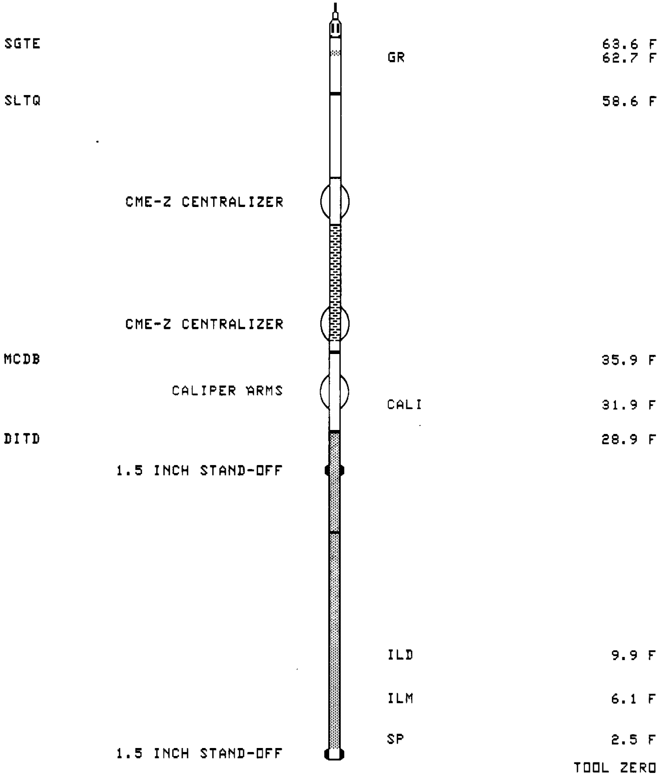
The well name, location and borehole reference data were furnished by the customer.

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 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.	595070	
Drilling Fluid Level	5.0 F	
Salinity	800.0 PPM	
Rmf @ BHT	2.433 OHMM @ 96.0 DEGF	@
Rmo @ BHT	1.468 OHMM @ 96.0 DEGF	@
Logging Speed	3600.0 F/HR	
EQUIPMENT DATA		
Tool Number 1	DIS-EC 298	
Tool Number 2	DIC-DA 1078	
Tool Number 3	MCD-DA 1237	
Tool Number 4	SLS-WA 1464	
Tool Number 5	SLC-MA 114	
Tool Number 6	SGC-JC 4148	
Tool Number 7	IEM-BD 304	
Tool Number 8	SLM-DA 428	
Tool Number 9	NLM-BC 418	
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

LOGGING TOOL STRING SKETCH



TOTAL TOOL STRING LENGTH IS 66.6 F.
TOTAL TOOL STRING WEIGHT IS 957. LB IN AIR.

MAIN LOG

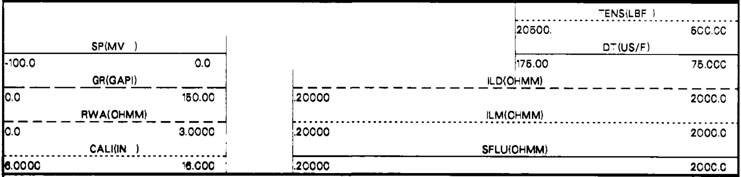
```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    756.700 F3     FROM 2760.00 F     TO 509.000 F
Integrated Cement Volume:  508.082 F3     FROM 2760.00 F     TO 509.000 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:   .282961 S      FROM 2760.00 F     TO 509.000 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 32.6          FILE    18       19-OCT-1992 20:40

                     INPUT FILE(S)    CREATION DATE
                          11          19-OCT-1992 19:40
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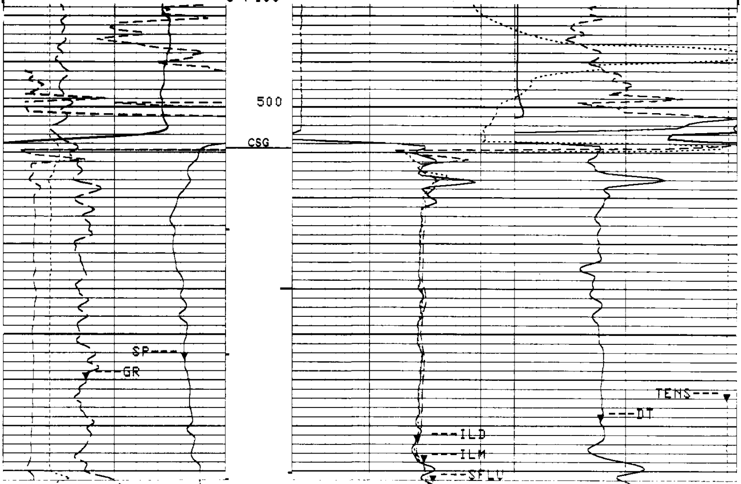
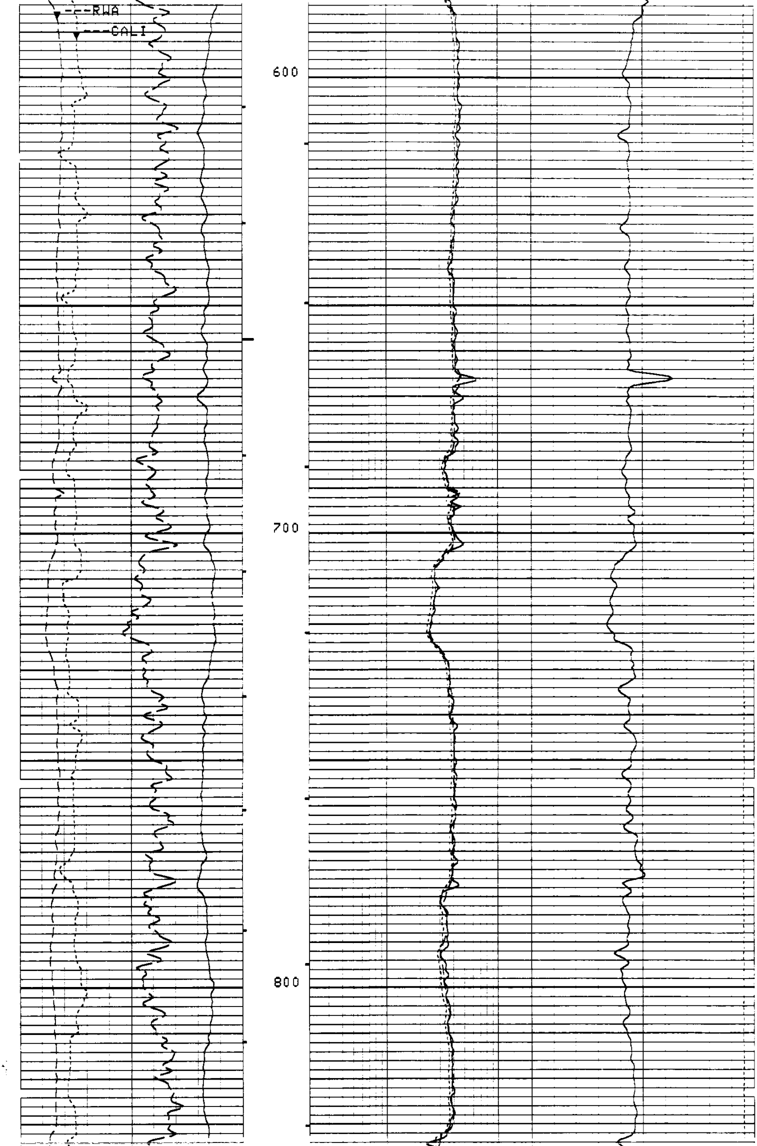
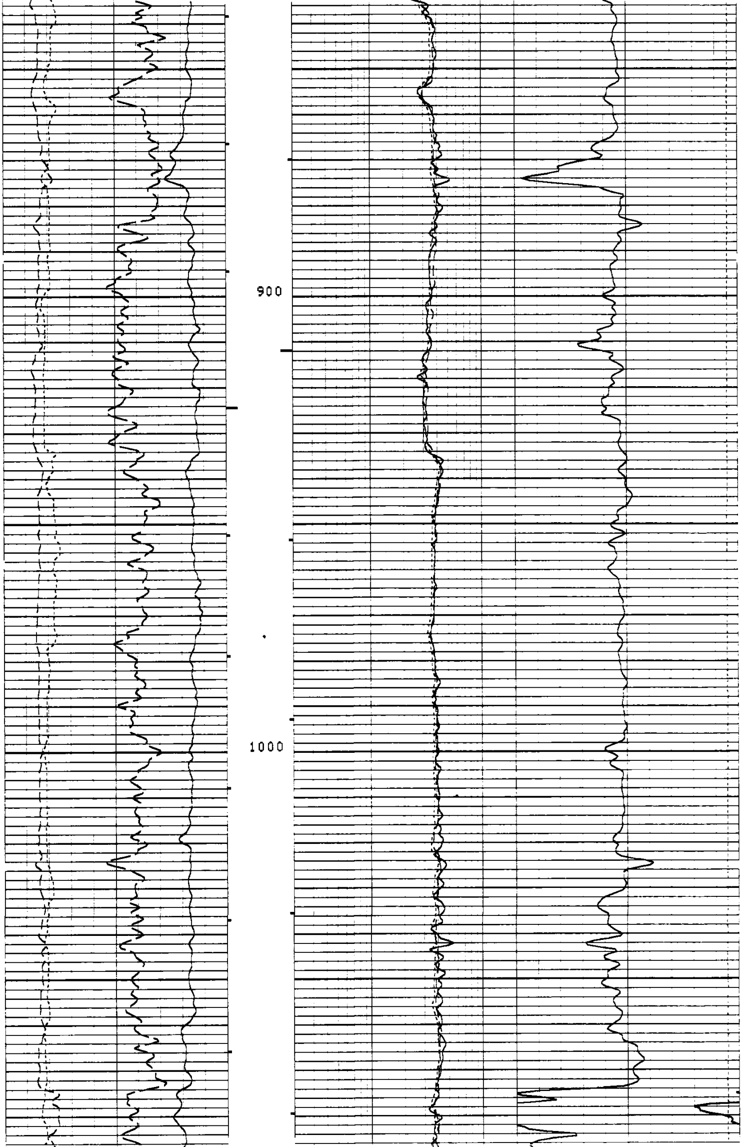
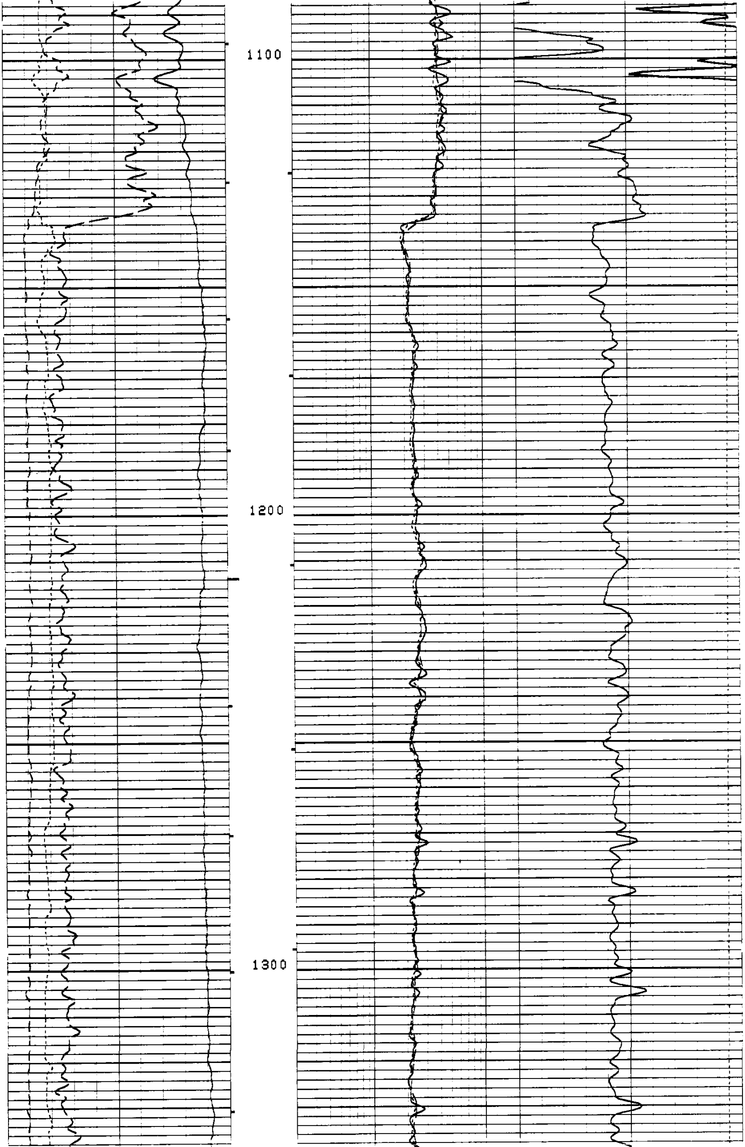
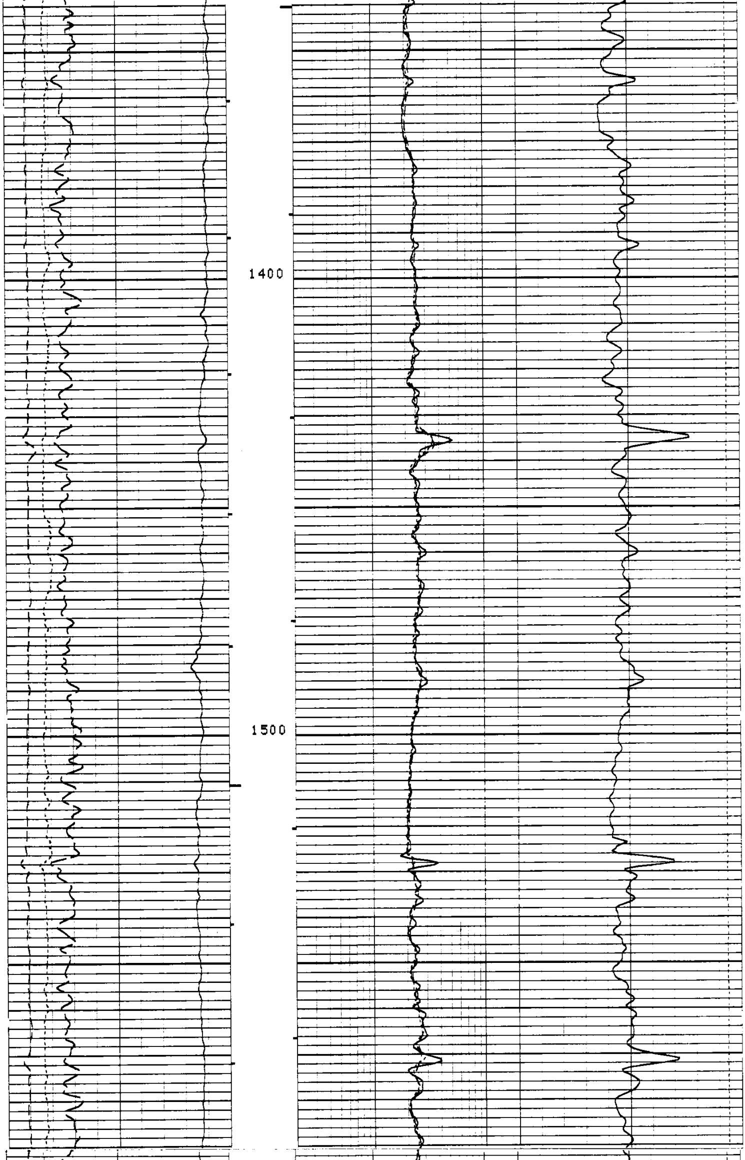
5"/100'

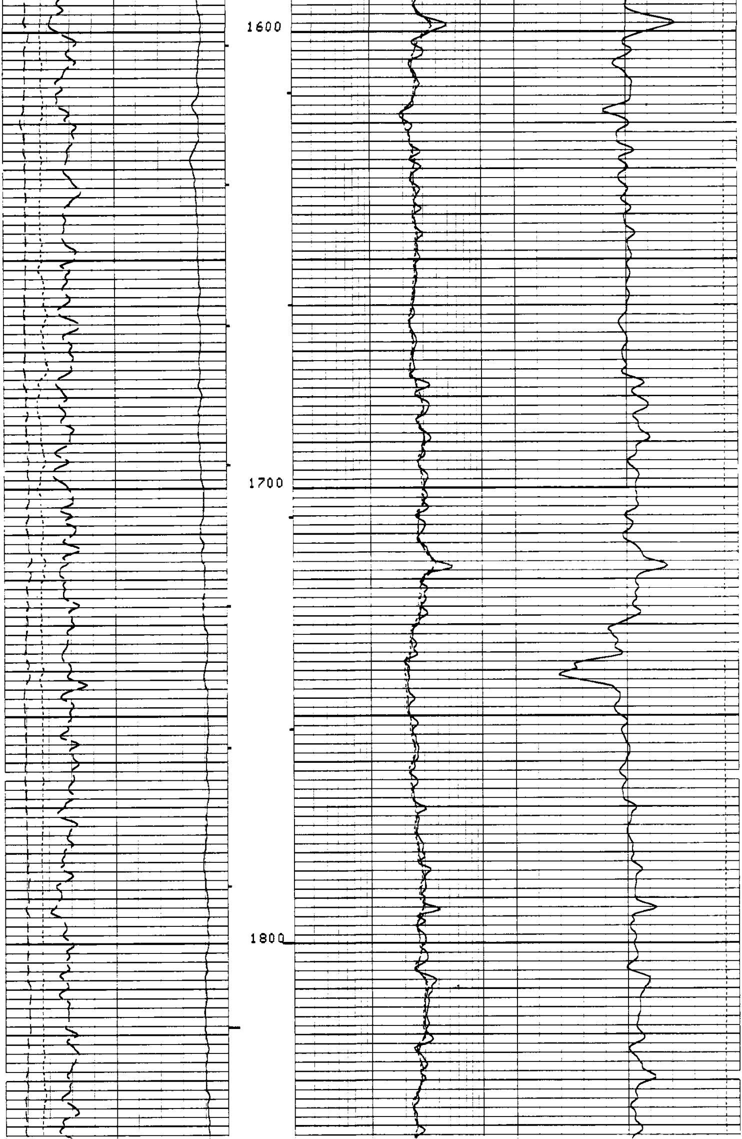


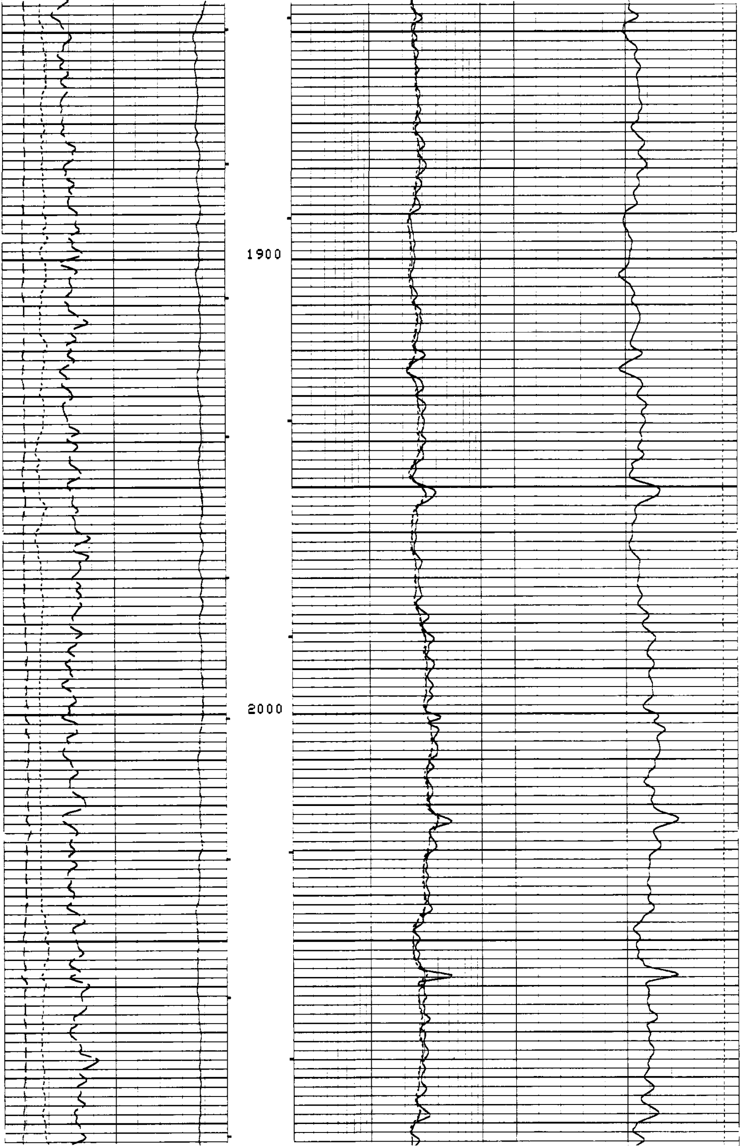


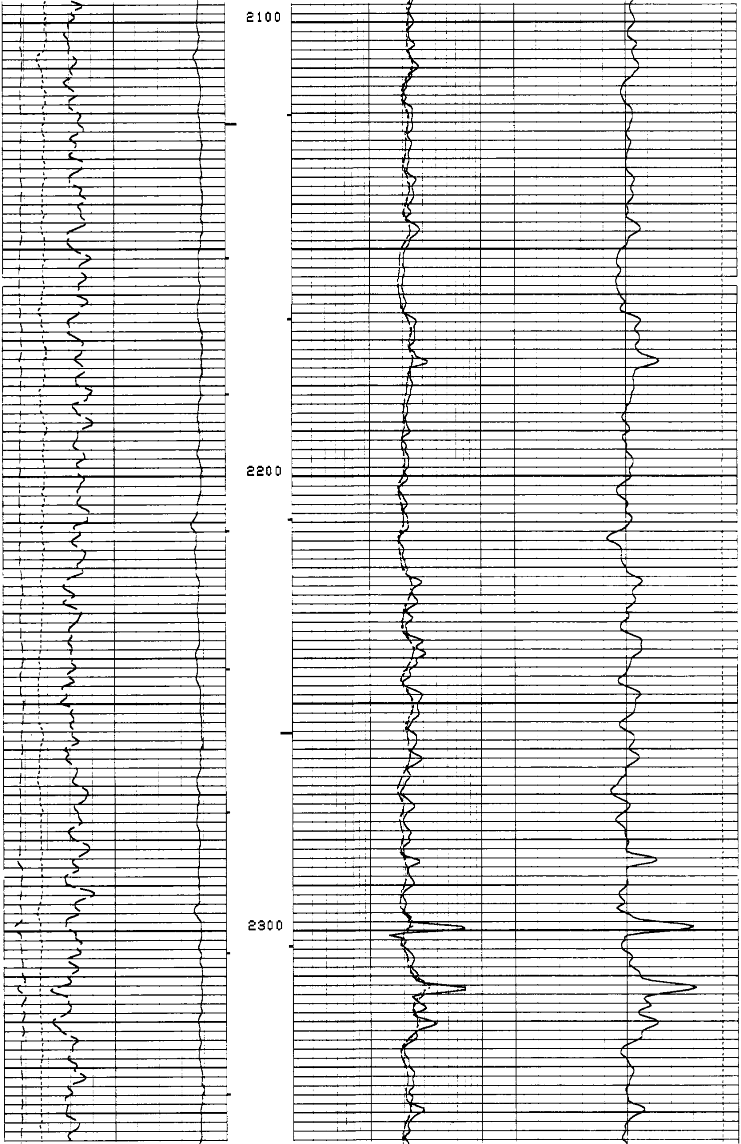


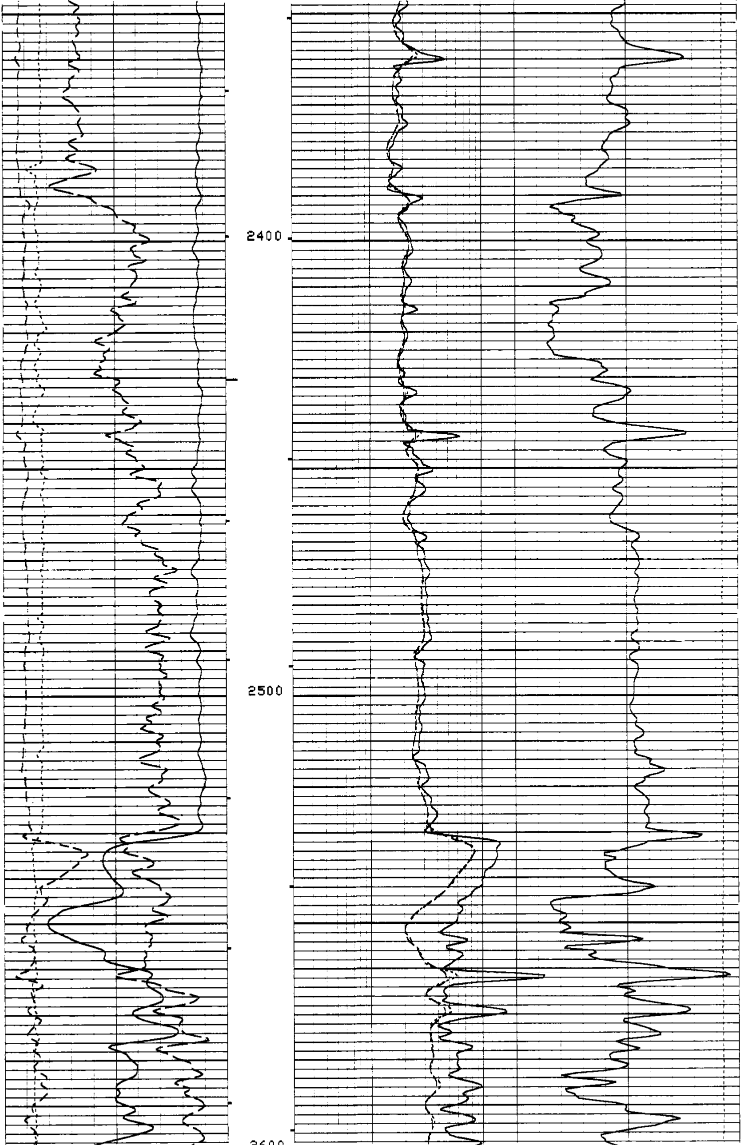


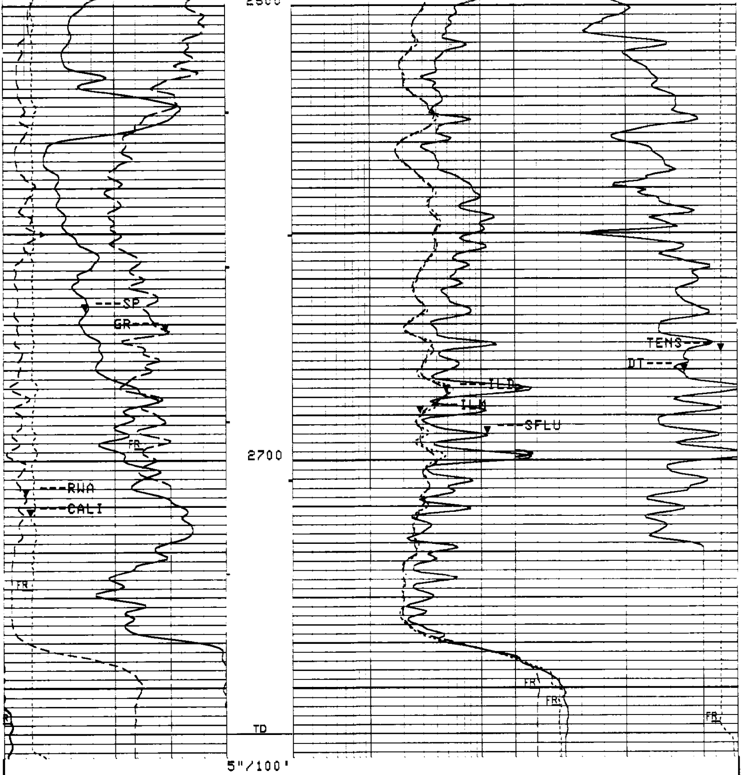












CP 32.6

FILE 18

19-OCT-1992 20:29

INPUT FILE(S)
11

CREATION DATE
19-OCT-1992 19:40

TENS(LBF)	20500.	500.00
DT(US/F)	175.00	75.000
SP(MV)	-100.0	0.0
GR(GAPI)	0.0	150.00
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
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
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	
TOCA - TO Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	/5	
DETE - Detection	E2	
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
WMUD - Weight of Mud	9.60000	LB/G
MSEC - Medium Sonde Error Correction	5.90000	MM/M
SBR - Shoulder Bed Resistivity	1.00000	OHMM
DSEC - Deep Sonde Error Correction	6.60000	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:    80.7732 F3    FROM 2760.00 F    TO 2491.00 F
Integrated Cement Volume:  51.0631 F3    FROM 2760.00 F    TO 2491.00 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .0298581 S     FROM 2760.00 F    TO 2491.00 F
```

EVENT MARK SUMMARY:

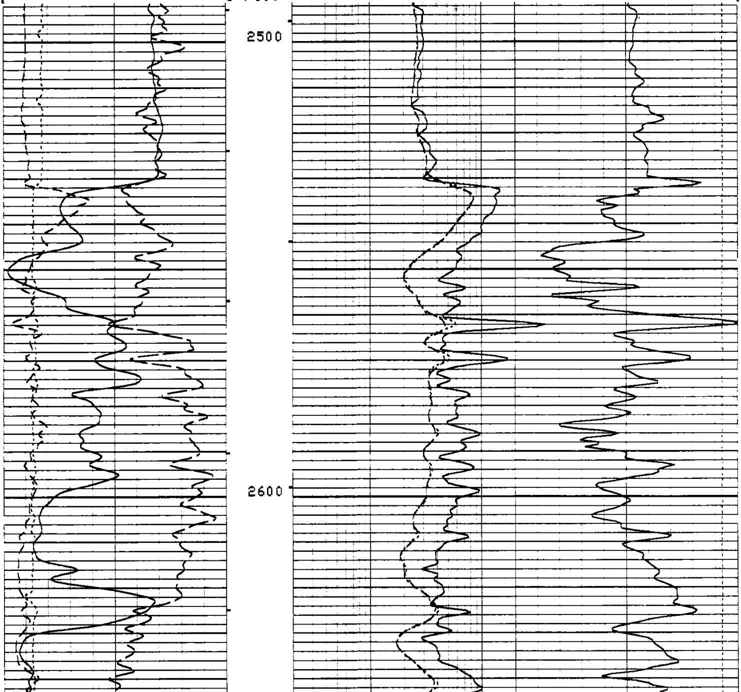
OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

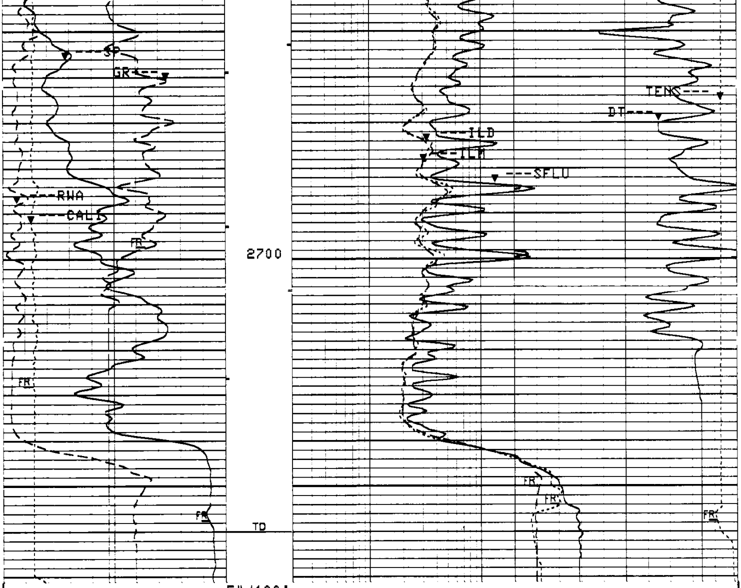
TENS(LBF)	20500.	500.00
DT(US/F)	175.00	75.000
SP(MV)	-120.0	-20.00
GR(GAPI)	0.0	150.00
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

CP 32.6 FILE 14 19-OCT-1992 20:25

INPUT FILE(S) CREATION DATE
7 19-OCT-1992 19:22

5"/100'





CP 32.6 FILE 14 19-OCT-1992 20:24

INPUT FILE(S) CREATION DATE
7 19-OCT-1992 19:22

Curve	Left	Right
SP(MV)	-120.0	-20.00
GR(GAPI)	0.0	150.00
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
TENS(LBF)	20500.	500.00
DT(US/F)	175.00	75.000
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

PARAMETER	VALUE	UNIT

```
SMB  - Sonic Memory Board                         DISA
TOCA - TO Correction Status                       DISA
RATE - Firing Rate                                15            HZ
DG   - Downhole Gain                              /5
DETE - Detection                                  E2
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
WMUD - Weight of Mud                              9.60000       LB/G
MSEC - Medium Sonde Error Correction              5.90000       MM/M
SBR  - Shoulder Bed Resistivity                   1.00000       OHMM
DSEC - Deep Sonde Error Correction                6.60000       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:    19-OCT-1992 19:20
  PROGRAM FILE: ISN    (VERSION     32.6    92/10/14  91/08/23)


DITD            ELECTRONICS CALIBRATION SUMMARY

             MEASURED                      CALIBRATED
           ZERO    PLUS                 ZERO      PLUS         UNITS
   ILD      .59   550.1                 0.0      497.0          MM/M
   ILM      .58   531.1                 0.0      503.2          MM/M
   SFL     1.23   536.2                 0.0      500.0          MM/M

ILD SONDE ERROR CORRECTION :       6.6 MM/M
ILM SONDE ERROR CORRECTION :       5.9 MM/M

ZERO: 19-OCT-1992 19:19  PLUS: 19-OCT-1992 19:19  COMP: 19-OCT-1992 19:19


SGTE            DETECTOR CALIBRATION SUMMARY

             MEASURED
           BKGD    JIG        CALIBRATED        UNITS
    GR      43     190           165            GAPI

BACK: 19-OCT-1992 18:47   JIG: 19-OCT-1992 18:51  COMP: 19-OCT-1992 18:51


MCDB            CALIPER CALIBRATION SUMMARY
```

```
              MEASURED                             CALIBRATED
           SMALL   LARGE                        SMALL     LARGE        UNITS
    CALI     6.61   10.09                        8.00      12.00         IN

  SMALL: 19-OCT-1992 18:42 LARGE: 19-OCT-1992 18:43 COMP: 19-OCT-1992 18:43

     CP 32.6            FILE    6       19-OCT-1992 19:20



                  AFTER SURVEY TOOL CHECK SUMMARY


    PERFORMED:     19-OCT-1992 20:20
    PROGRAM FILE: ISN    (VERSION    32.6    92/10/14  91/08/23)


  DITD                        TOOL  CHECK

                    ZERO                          PLUS
            BEFORE        AFTER          BEFORE       AFTER     UNITS
     ILD      0.0           -.4          497.0        489.3     MM/M
     ILM      0.0           -.3          503.2        496.6     MM/M
     SFL      0.0           -.6          500.0        490.0     MM/M

  ILD SONDE ERROR CORRECTION :          6.6 MM/M
  ILM SONDE ERROR CORRECTION :          5.9 MM/M

  BEFORE SURVEY:            ZERO: 19-OCT-1992 19:19  PLUS: 19-OCT-1992 19:19
  AFTER SURVEY CHECK:       ZERO: 19-OCT-1992 20:19  PLUS: 19-OCT-1992 20:20

     CP 32.6            FILE   13       19-OCT-1992 20:20



                   SHOP SUMMARY


    PERFORMED:     09-OCT-1992 10:04
    PROGRAM FILE: SHOP   (VERSION    32.6    91/08/23  91/08/23)


  DITD             ELECTRONICS CALIBRATION SUMMARY

                  TEST LOOP CALIBRATION              TOOL CHECK
            MEASURED          CALIBRATED           CALIBRATED
          ZERO     PLUS     ZERO       PLUS     ZERO       PLUS   UNITS
     ILD  -5.8     544.8     0.0       500.0     0.0       497.0  MM/M
     ILM  -4.7     521.9     0.0       500.0     0.0       503.2  MM/M
  ILD  SONDE ERROR CORRECTION :          6.6 MM/M
  ILM  SONDE ERROR CORRECTION :          5.9 MM/M

                        (IS:298 , IC:1078)

     CP 32.6            FILE    1      09-OCT-1992 10:04
```

COMPANY	NAHAMA AND WEAGANT ENERGY CO.			**SCHL.**	**FR**	**2754.0 F**
				SCHL.	**TD**	**2760.0 F**
WELL	"FISHHAWK/WILSON" #11A-5-65			**DRLR.**	**TD**	**2765.0 F**
FIELD	MIST			**Elev:**	**KB**	**615.0 F**
					DF	
COUNTY	COLUMBIA	**STATE**	OREGON		**GL**	**604.0 F**

Schlumberger

DUAL INDUCTION-SFL-SONIC