Western Atlas International

ATLAS WIRELINE SERVICES

BHC ACOUSTILOG®
GAMMA RAY

FILE NO. 3947

API NO. 36-009-00267

5" = 100'

COMPANY NORTHWEST NATURAL GAS COMPANY
WELL I. W. 13b - 11
FIELD MIST
COUNTY COLUMBIA STATE OREGON

LOCATION:
272.25' NORTH & 344.20' EAST
FROM THE WEST 1/4 CORNER OF:
SEC 11 TWP 6N RGE 5W

OTHER SERVICES
DIFL-SP-CAL
CDLC-CN-GR
DIPLOG

PERMANENT DATUM GROUND LEVEL ELEV. 886.45
LOGGING MEASURED FROM K. B. 11.4 FT. ABOVE P.D.
DRILLING MEASURED FROM K. B.

ELEVATIONS
KB 897.85'
DF ---
GL 886.45'

FINAL PRINT

DATE	24-SEP-91		28-SEP-91	
RUN	1		2	
SERVICE ORDER	66910		65912	
DEPTH-DRILLER	2214'		2905'	
DEPTH-LOGGER	2209'		2905	
BOTTOM LOGGED INTERVAL	2176'		2871	
TOP LOGGED INTERVAL	530'		2210'	
CASING - DRILLER	13 3/8"	@ 532'	8 5/8"	@ 2210'
CASING - LOGGER	530'		2210'	
BIT SIZE	12 1/4"		7-7/8"	
TYPE FLUID IN HOLE	GEL/POLYMER		KCL/HEC 10/CACL	
DENSITY / VISCOSITY	9.3	55	9.2	42
PH / FLUID LOSS	9.0	4.6	9.0	12.4
SOURCE OF SAMPLE	FLOWLINE		FLOWLINE	
RM AT MEAS. TEMP.	2.14	@ 72 F	.130	@ 69 F
RMF AT MEAS. TEMP.	2.31	@ 72 F	.126	@ 69 F
RMC AT MEAS. TEMP.	2.01	@ 72 F	.154	@ 69 F
SOURCE OF RMF / RMC	MEASURED	MEASURED	MEASURED	MEASURED
RM AT BHT	1.55	@ 101 F	.090	@ 100 F
TIME SINCE CIRCULATION	2 1/2 HRS.		3 HRS.	
MAX. REC. TEMP. DEG. F	101 F		100 F	
EQUIP. NO. / LOC.	HL 6399	BAKRSFLD	HL 6399	BAKRFLD
RECORDED BY	TORGERSON		TORGERSON	
WITNESSED BY	CLAYTON ROTH		CLAYTON ROTH	

FOLD HERE

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT, BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS RUN (1)

TAYLOR RIG 4
BHT 101 F & 101 F
VOLUME COMPUTED FOR 8 5/8" CASING
BHC ACOUSTILOG MANDREL IS A T3R1R3T TYPE

REMARKS RUN (2)

TAYLOR RIG 4
BHT 100 F & 100 F
VOLUME COMPUTED USING 5 1/2" LINER
BHC ACOUSTILOG MANDREL IS A T3R1R3T TYPE.

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
1	1	DIFL	72372	1503XA	1.5" S. O.
1	1	AC	79731-79726	1609-1603	CENTRALIZED
1	1	GR	60519	1309XA	CENTRALIZED
1	1	CAL	55718	4209XA	CENTRALIZED

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
2	1	DIFL	72372	1503XA	1.5" S. O.
2	1	AC	79731-79726	1609-1603	CENTRALIZED
2	1	GR	60519	1309XA	CENTRALIZED
2	1	CAL	55718	4209XA	CENTRALIZED

5" = 100'

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                                   FILE:   4


          CURVE  DELAY  REPORT
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                                          PHYS.
                               CURVE      DELAY     UNITS
                               -----      -----     -----

                               CFOC           0     FT,IN
                               CILM         6,0     FT,IN
                               CILD         9,3     FT,IN
                               SP           9,3     FT,IN
                               GR          48,3     FT,IN
                               CAL         58,0     FT,IN
                               ACQ         31,9     FT,IN
                               AC          31,9     FT,IN


          PARAMETERS
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                    NAME        DEPTH INTERVAL      VALUE       UNITS
                  --------     ---------------   ----------     -----
                  A             2240  TO   453        1.000
                  DEL-T F       2240  TO   453      189.000     MICS/FT
                  DEL-T M       2240  TO   453       55.500     MICS/FT
                  DEL-T S       2240  TO   453      100.000     MICS/FT
                  M             2240  TO   453        2.000
                  O.D.          2240  TO   453        8.625     INCH
                  PORA          2240  TO   453       WYLLIE
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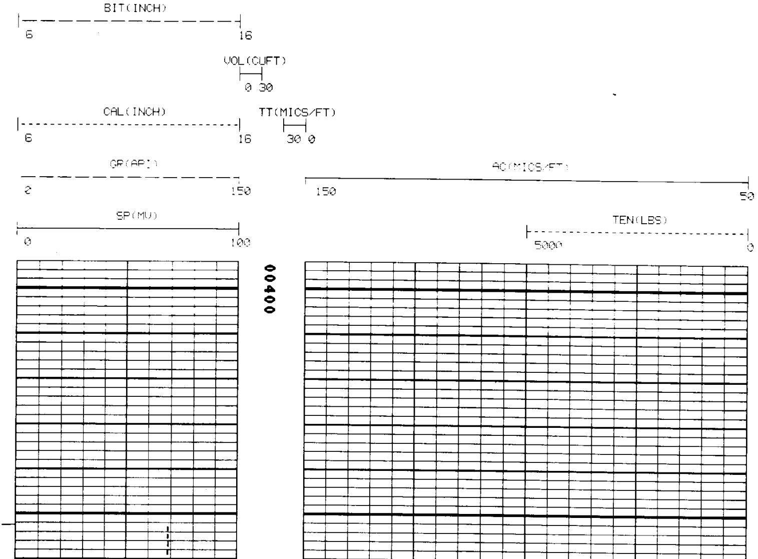
PARAMETERS

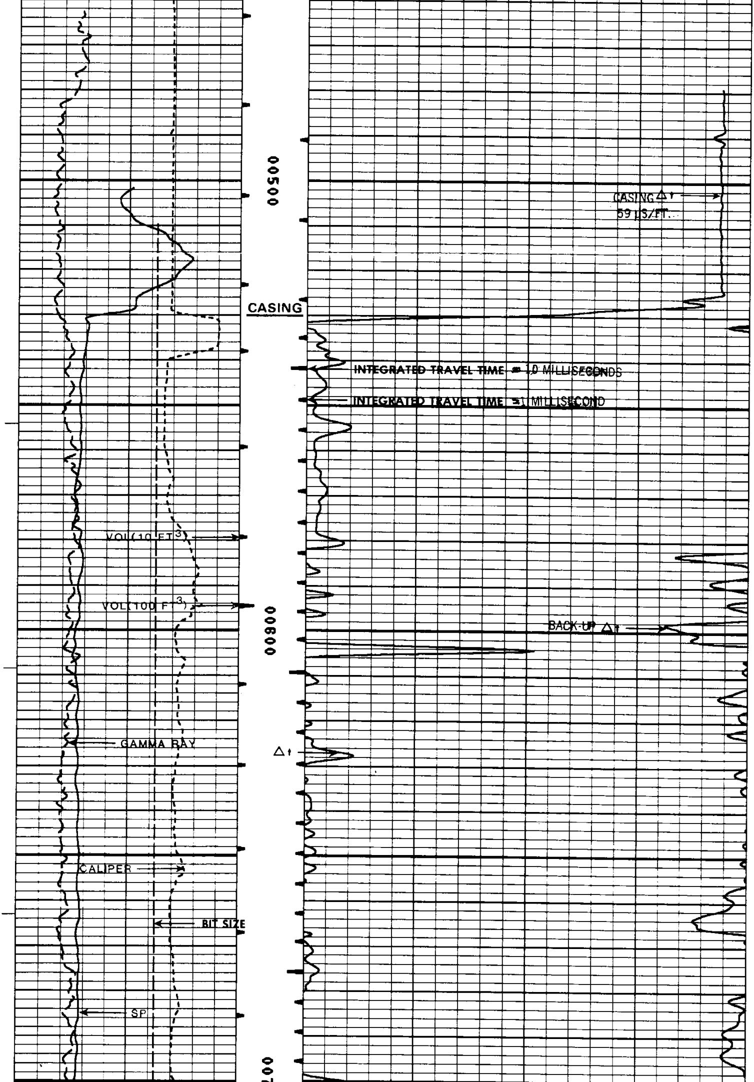
NAME	DEPTH INTERVAL	VALUE	UNITS
A	2917 TO 2025	1.000	
DEL-T F	2917 TO 2025	189.000	MICS/FT
DEL-T M	2917 TO 2025	55.500	MICS/FT
DEL-T S	2917 TO 2025	100.000	MICS/FT
M	2917 TO 2025	2.000	
O.D.	2917 TO 2025	5.500	INCH
PORA	2917 TO 2025	WYLLIE	

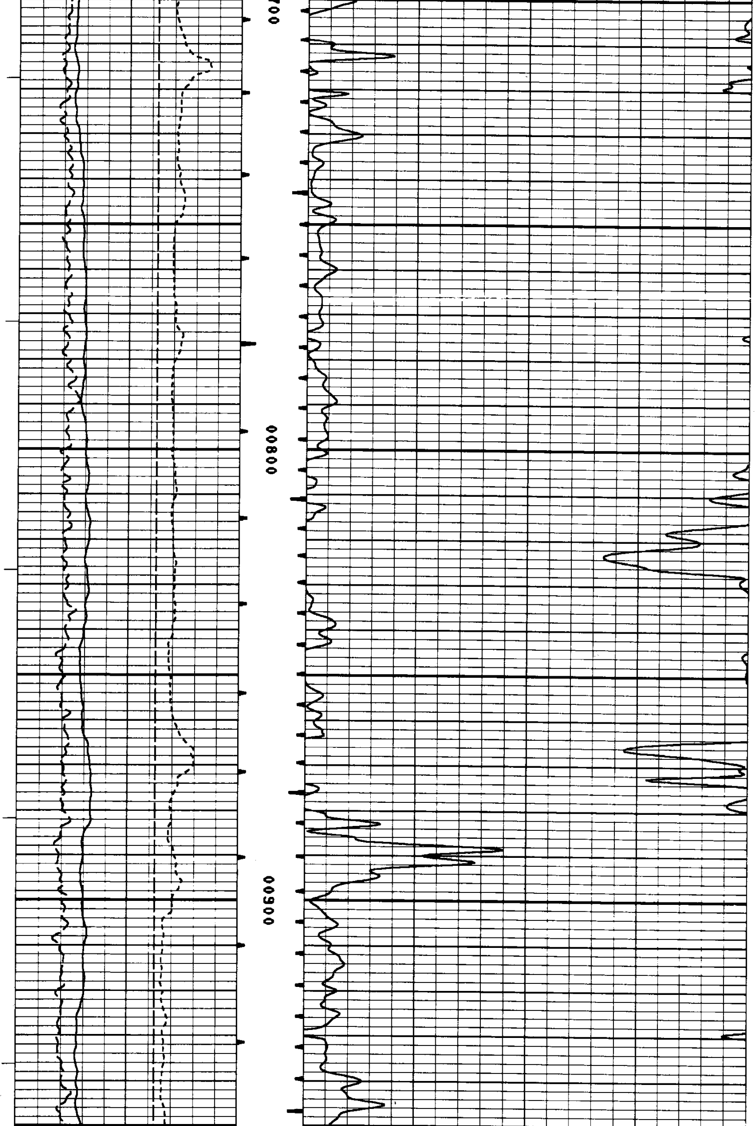
DISPLAY SCALE CHANGES

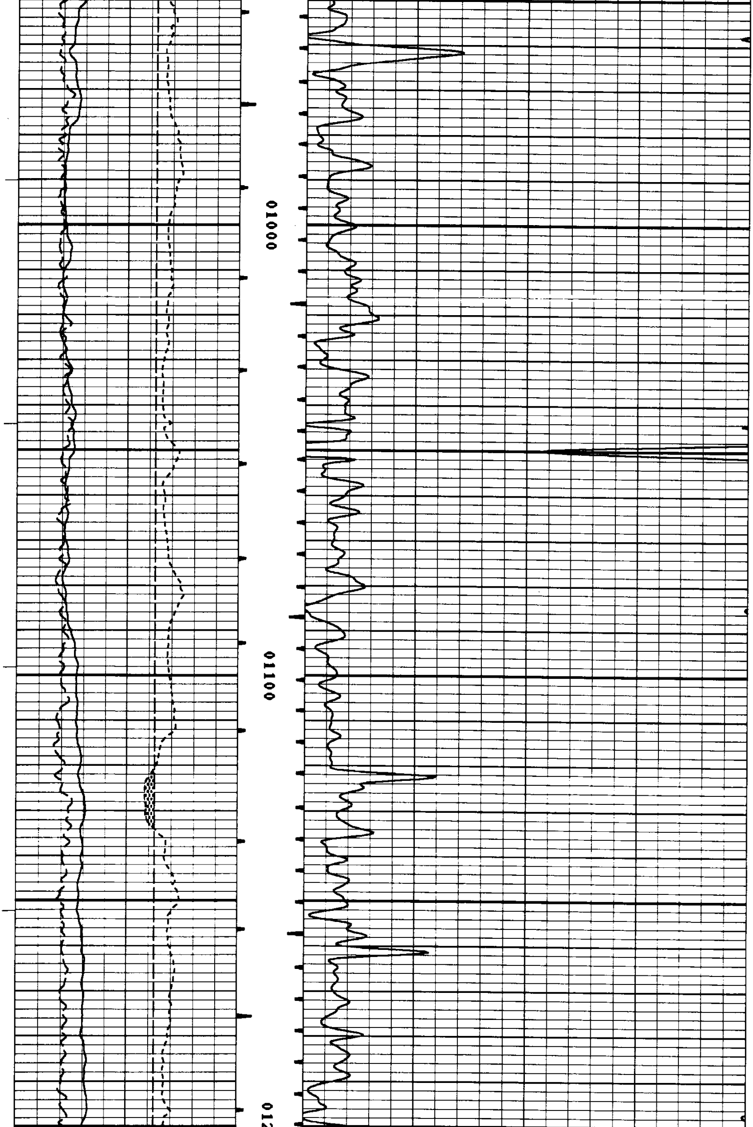
*** NONE ***

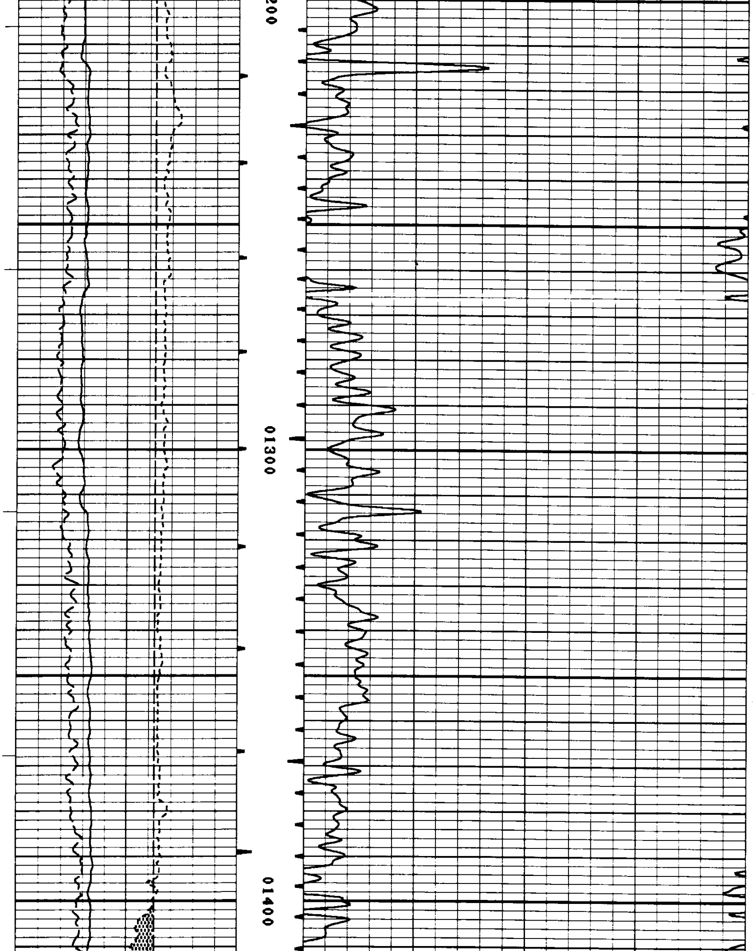
COMPANY:	OREGON NATURAL GAS DEVELOPMENT CORP.		RUN: 1
WELL NAME:	I. W. 13b - 11		TRIP: 1
SERVICE:	BK214M FILE: 4	DATE: 09/24/91	TIME: 20:35:24
REVISION:	FSYS256 REV:G002 VER:2.0		MODE: RECORD

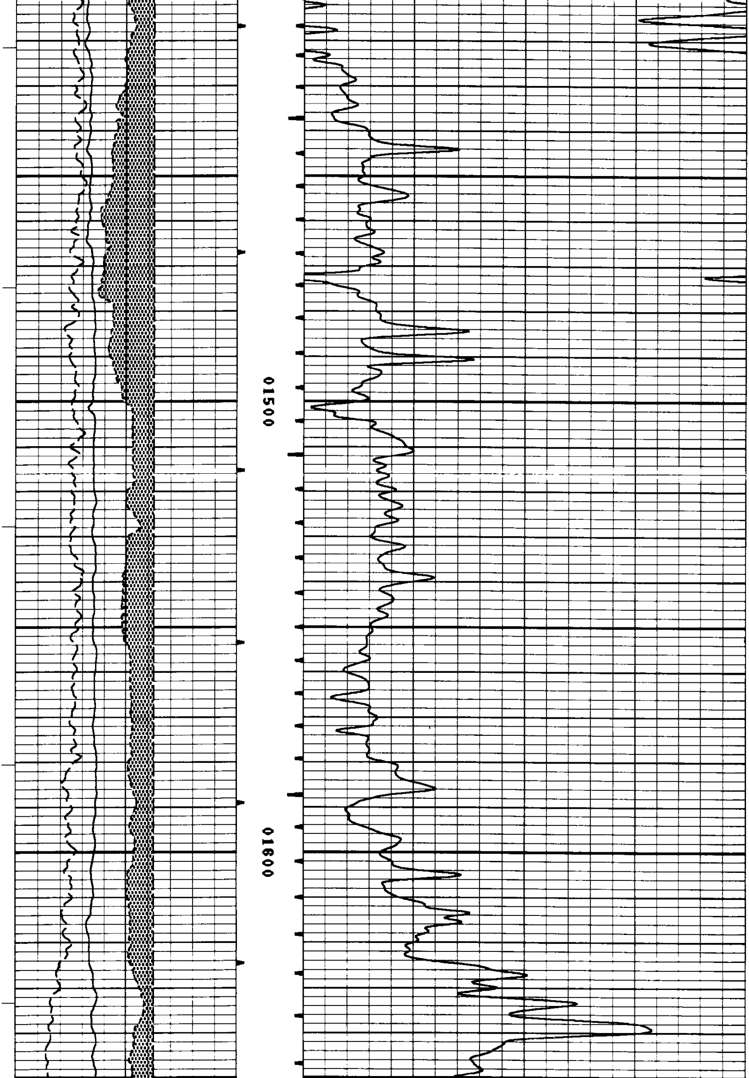


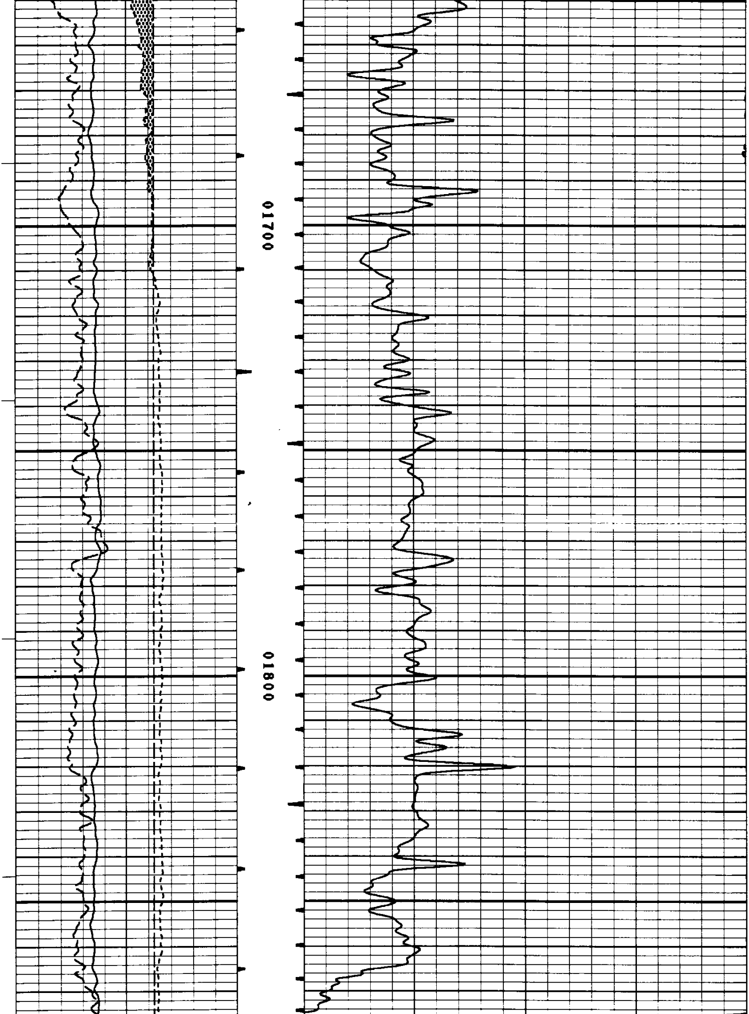


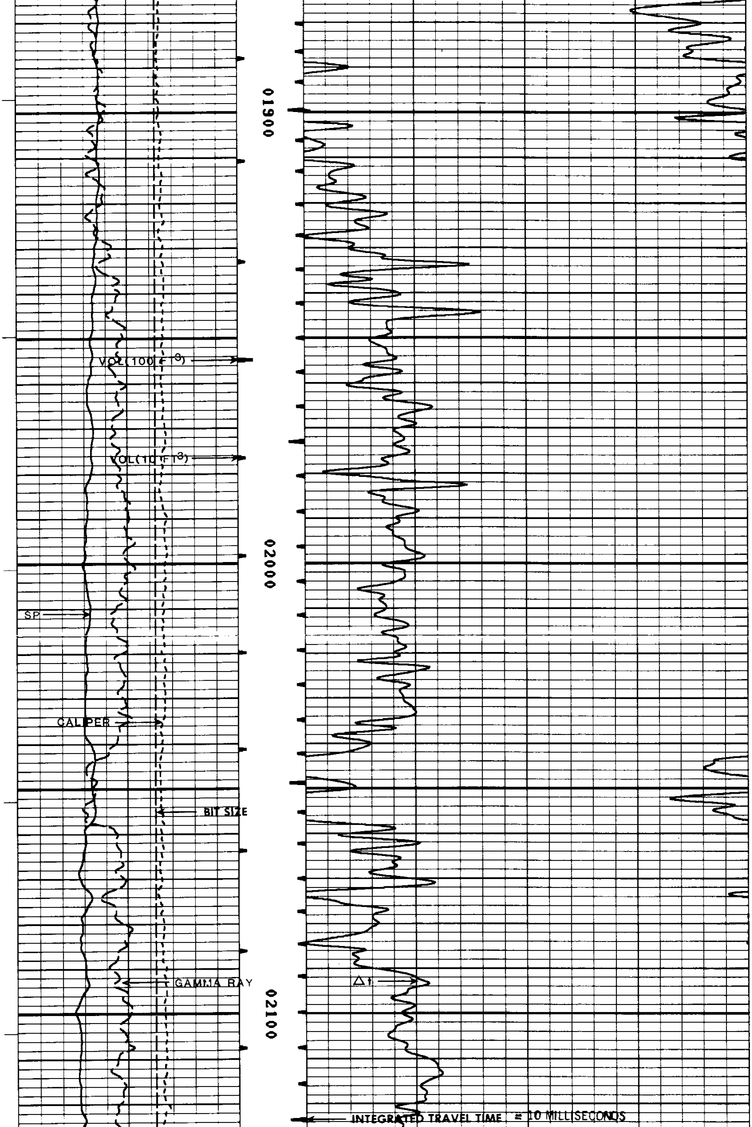


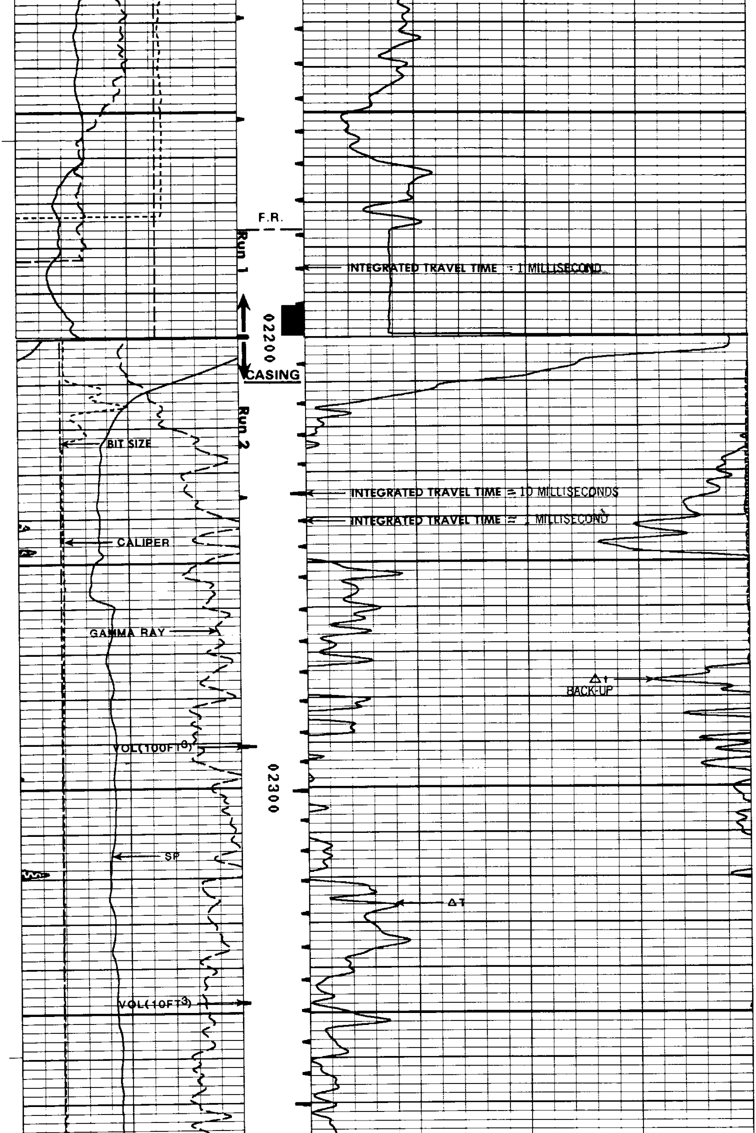


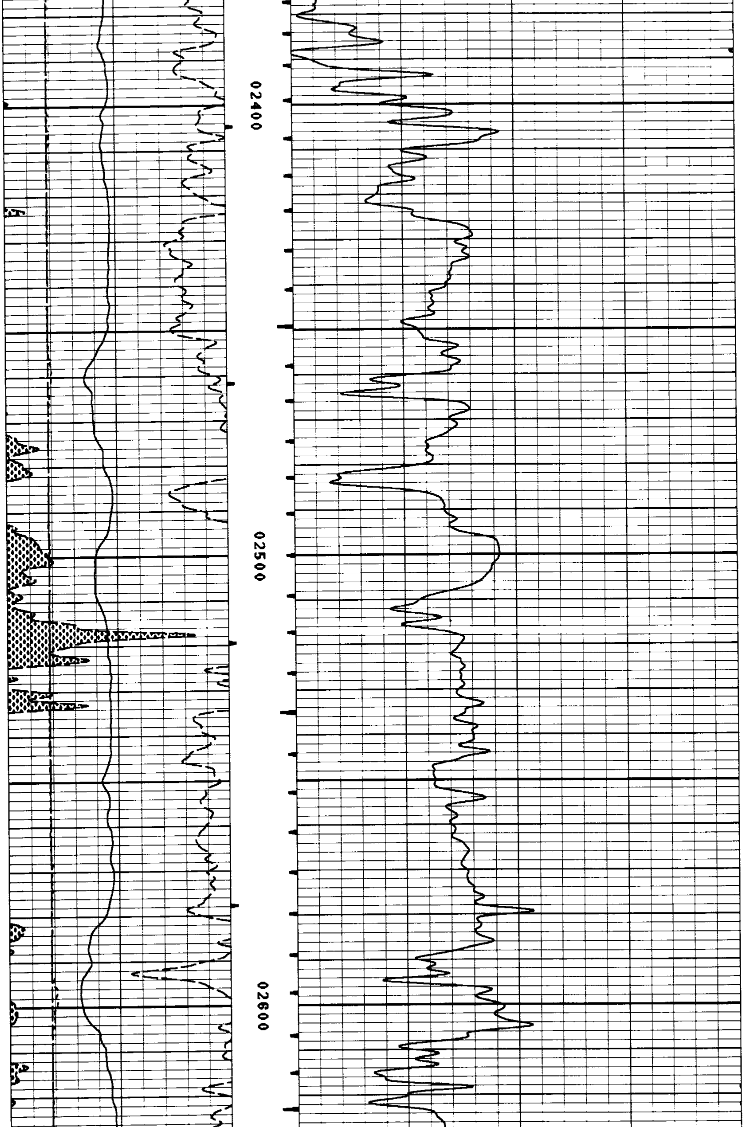


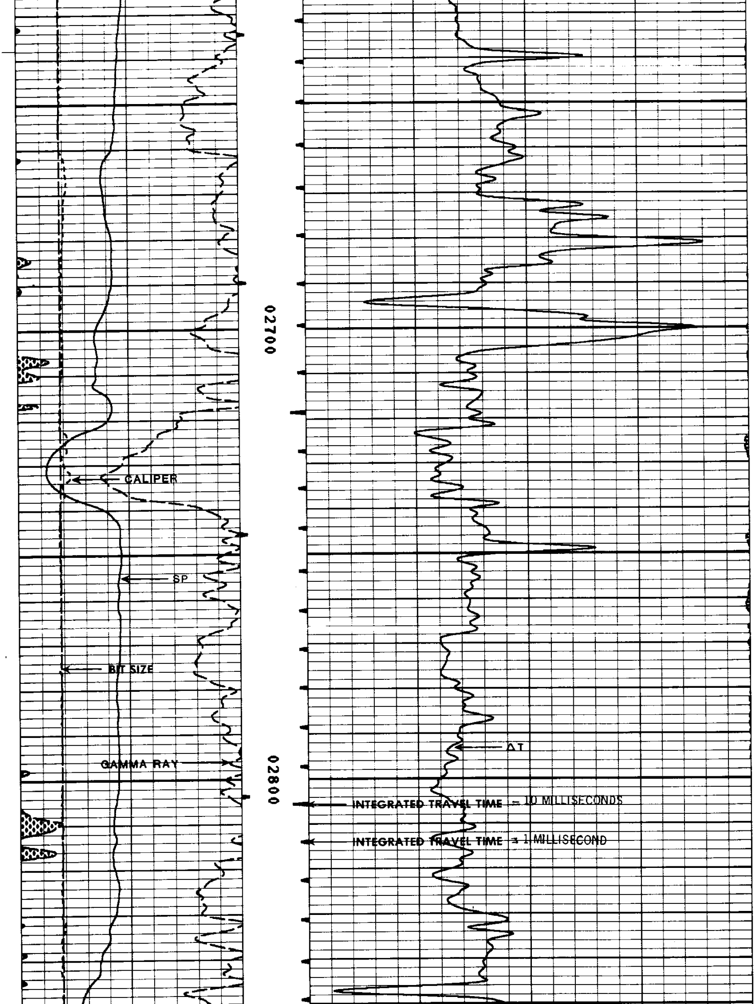


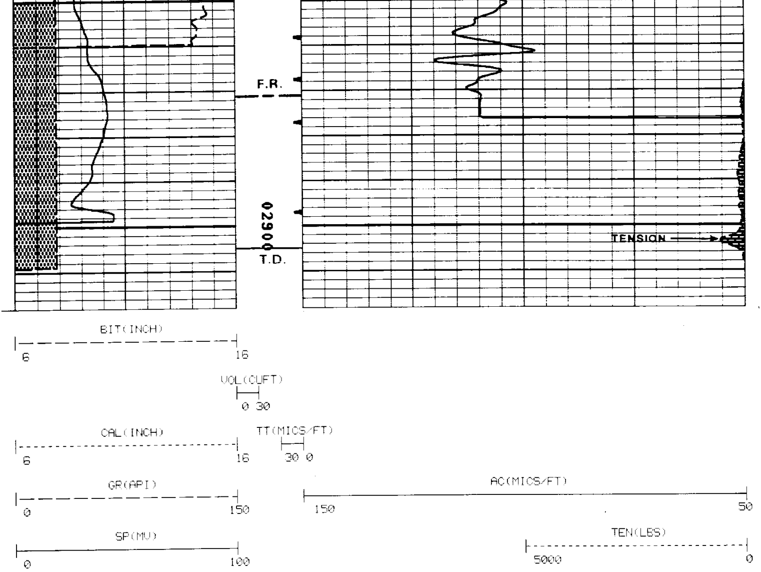












FILE: 3

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REPEAT SECTION

* * *

FILE: 2

PARAMETERS

NAME	DEPTH INTERVAL	VALUE	UNITS
A	2237 TO 1937	1.000	
DEL-T F	2237 TO 1937	189.000	MICS/FT
DEL-T M	2237 TO 1937	55.500	MICS/FT
DEL-T S	2237 TO 1937	100.000	MICS/FT
M	2237 TO 1937	2.000	
O.D.	2237 TO 1937	8.625	INCH
PORA	2237 TO 1937	WYLLIE	

DISPLAY SCALE CHANGES

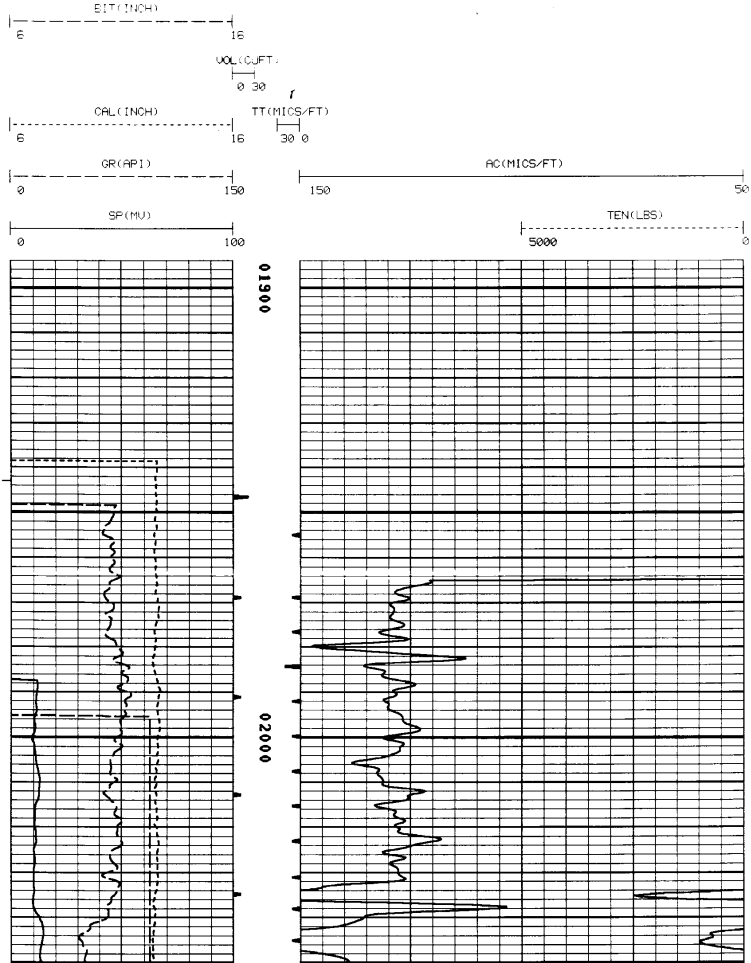
*** NONE ***

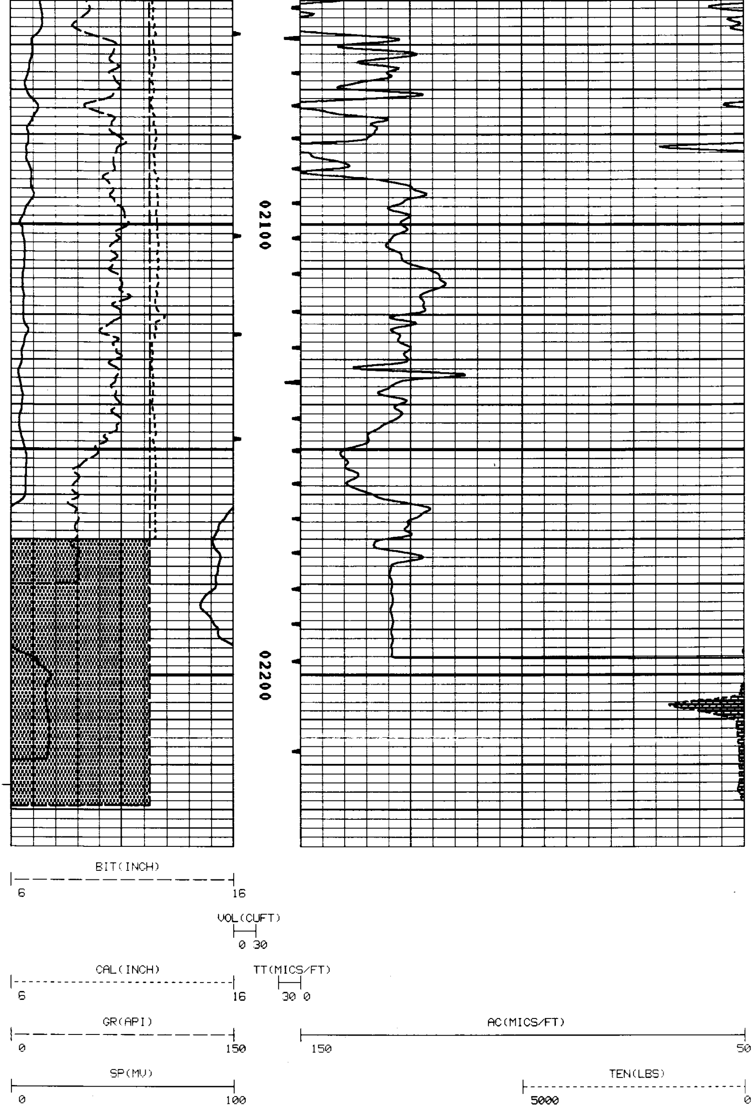
COMPANY: OREGON NATURAL GAS DEVELOPMENT CORP. RUN: 1

WELL NAME: I. W. 13b - 11 TRIP: 1

SERVICE: BK214M FILE: 2 DATE: 09/24/91 TIME: 20:09:57

REVISION: FS/5256 REV:G002 VER:2.0 MODE: PLAYBACK





FILE: 2

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REPEAT SECTION

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                                  FILE:   3

          CURVE  DELAY  REPORT
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                                         PHYS.
                                 CURVE   DELAY    UNITS
                                 -----   -----    -----

                                 SFCC        0    FT,IN
                                 ILM       6,0    FT,IN
                                 CILD      3,3    FT,IN
                                 SP        3,3    FT,IN
                                 GR       43,3    FT,IN
                                 CAL      53,0    FT,IN
                                 ACQ      31,3    FT,IN
                                 AC       31,3    FT,IN


          PARAMETERS
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                        NAME       DEPTH INTERVAL      VALUE      UNITS
                      --------    ---------------   ----------    -----
                      A           2925 TO  2553        1.000
                      DEL-T F     2925 TO  2553      189.000   MICS/FT
                      DEL-T M     2925 TO  2553       55.500   MICS/FT
                      DEL-T S     2925 TO  2553      100.000   MICS/FT
                      M           2925 TO  2553        2.000
                      O.D.        2925 TO  2553        5.500   INCH
                      PORA        2925 TO  2553       WYLLIE


          DISPLAY SCALE CHANGES
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                                 *** NONE ***


   COMPANY:    OREGON NATURAL GAS DEVELOPMENT CORP.                  RUN:  2

   WELL NAME:  I.  . 13b - 11                                        TRIP: 1

   SERVICE:    BK214M          FILE:   3          DATE:  03 23 81    TIME: 21:18:43

   REVISION:   FS 2250 FE 10002  EF:3.0                              MODE: RECORD
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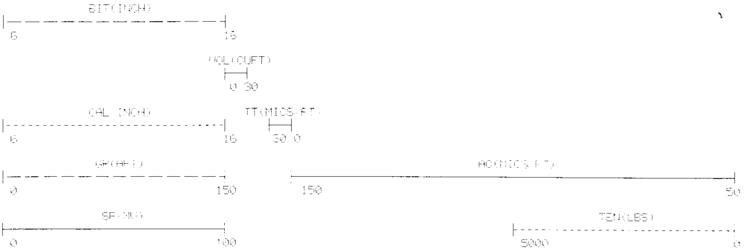

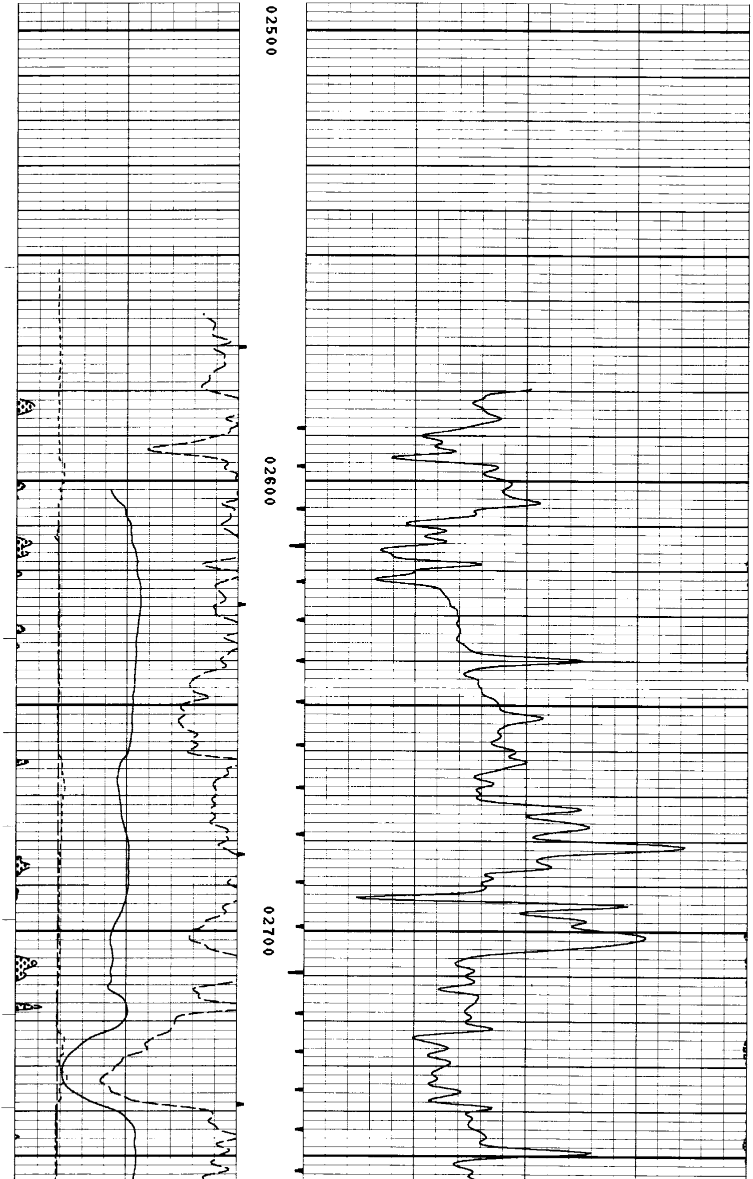

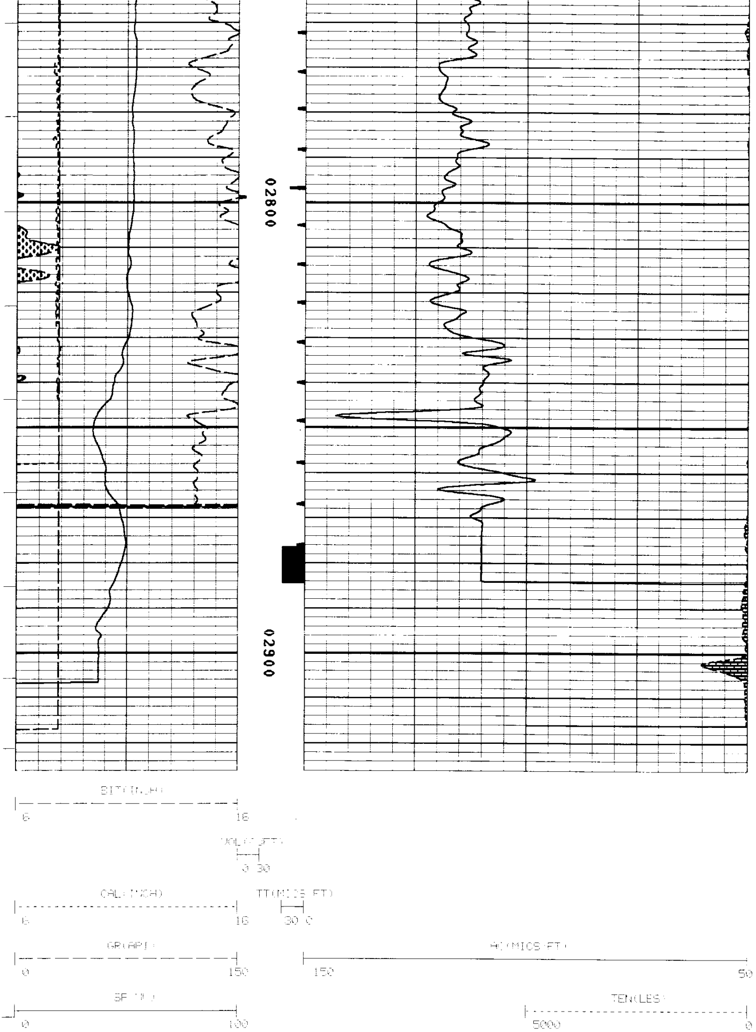

FILE: 2

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     *  CALIBRATION VERIFICATION SUMMARIES  *
     *  DATE 09/28/91          TIME 23:58:11 *
     *  RUN  2                 TRIP 1        *
     *                                       *
     *****************************************


        LOG NAME DIFL    ASSET NO. [illegible]    UNIT NO. HL 6399
   CALIBRATION ENTERED ON  09/28/91 AT 18:[illegible]:42

CURVE    MILLIVOLTS      SCALING FACTORS    ENGINEERING VALUES   UNITS
          LOW    HIGH    ADD.     MULT.         LOW        HIGH
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     DATE 09/19/91          CALIBRATION          TIME 08:04:17

CILD       -1.0   483.1    1.340     2.0137       0.500     500.000 MMHO
CILM       -0.4   485.0    0.914     2.3227       0.500     500.000 MMHO
CFOC        4.7   501.2   -3.759     2.4523       1.000     500.000 MMHO

     DATE 09/19/91     PRIMARY VERIFICATION      TIME 08:11:27

CILD       -0.5   487.5    1.340     2.0137       0.959     504.775 MMHO
CILM        0.0   487.4    0.914     2.3227       0.948     502.631 MMHO
CFOC        5.1   523.5   -3.759     2.4523       1.337     522.377 MMHO

     DATE 09/28/91    BEFORE LOG VERIFICATION    TIME 20:54:37

CILD       -0.4   484.6    1.273     2.0382       0.959     504.775 MMHO
CILM       -0.0   483.1    0.985     2.3423       0.948     502.632 MMHO
CFOC        5.3   528.7   -3.977     2.4282       1.337     522.377 MMHO

     DATE 09/28/91     AFTER LOG VERIFICATION    TIME 22:20:47

CILD       -0.3   485.4    1.273     2.0382       0.985     505.342 MMHO
CILM        0.1   483.6    0.985     2.3423       1.099     503.176 MMHO
CFOC        5.7   532.2   -3.977     2.4282       1.740     525.339 MMHO


        LOG NAME GR      ASSET NO. 60519    UNIT NO. HL 6399
   CALIBRATION ENTERED ON  09/28/91 AT 18:59:56

CURVE   COUNTS/SEC.      SCALING FACTORS    ENGINEERING VALUES   UNITS
          LOW    HIGH    ADD.     MULT.         LOW        HIGH
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     DATE 09/19/91          CALIBRATION          TIME [illegible]

GR          63.2   257.2    0.000    0.7729       0.000     150.000 API

     DATE 09/19/91     PRIMARY VERIFICATION      TIME 16:47:12

GR          63.0   254.1    0.000    0.7729      48.673     196.355 API

     DATE 09/28/91    BEFORE LOG VERIFICATION    TIME 19:10:50

GR          50.2   246.3    0.000    0.7729      38.838     190.365 API

     DATE 09/28/91     AFTER LOG VERIFICATION    TIME 23:20:08

GR          61.3   258.5    0.000    0.7729      47.379     198.229 API


        LOG NAME CAL     ASSET NO. 55718    UNIT NO. HL 6399
   CALIBRATION ENTERED ON  09/28/91 AT 19:00:32

CURVE    MILLIVOLTS      SCALING FACTORS    ENGINEERING VALUES   UNITS
          LOW    HIGH    ADD.     MULT.         LOW        HIGH
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     DATE 09/19/91          CALIBRATION          TIME 16:14:46

CAL     4591.9 11166.3    1.412    0.0089       7.000      15.000 INCH

                       PRIMARY VERIFICATION             .NOT DONE

     DATE 09/28/91    BEFORE LOG VERIFICATION    TIME 20:50:07

CAL        E    5159.0    1.662    0.0089       E              7.940 INCH

     DATE 09/23/91     AFTER LOG VERIFICATION    TIME 22:36:25

CAL        E    5150.3    1.662    0.0089       E              7.930 INCH
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