Western Atlas International

ATLAS WIRELINE SERVICES

COMPENSATED DENSILOG® COMPENSATED NEUTRON GAMMA RAY

FILE NO.

API NO.

5" = 100'

NORTHWEST NATURAL GAS
COMPANY OREGON NATURAL GAS DEVELOPMENT CORP.
WELL IW33AC-3
FIELD MIST
COUNTY COLUMBIA STATE OR.

LOCATION:
1469.94' N & 1706.49' W
FROM THE SW CORNER OF:
SEC 3 TWP 6N RGE 5W

OTHER SERVICES
DIFL//AC/GR
DIPLOG

PERMANENT DATUM GL ELEV. 1075.1
LOGGING MEASURED FROM KB 11.5 FT. ABOVE P.D.
DRILLING MEASURED FROM KB

ELEVATIONS
KB 1086.6'
DF --
GL 1075.1'

DATE	11-29-90							
RUN	1							
SERVICE ORDER	65504							
DEPTH-DRILLER	2621'							
DEPTH-LOGGER	2620'							
BOTTOM LOGGED INTERVAL	2618'							
TOP LOGGED INTERVAL	572'							
CASING - DRILLER	17 1/2"	@ 572'		@		@		@
CASING - LOGGER	572'							
BIT SIZE	12 1/4"							
TYPE FLUID IN HOLE	GEL							
DENSITY / VISCOSITY	8.0	40						
PH / FLUID LOSS	8.5	5.8						
SOURCE OF SAMPLE	FLOWLINE							
RM AT MEAS. TEMP.	3.40	@ 65 DEG. F		@		@		@
RMF AT MEAS. TEMP.	2.50	@ 65 DEG. F		@		@		@
RMC AT MEAS. TEMP.	4.20	@ 65 DEG. F		@		@		@
SOURCE OF RMF / RMC	M	M						
RM AT BHT	2.10	@ 105 DEG. F		@		@		@
TIME SINCE CIRCULATION	7 HRS							
MAX. REC. TEMP. DEG. F	105 DEG. F							
EQUIP. NO. / LOC.	6399	BAKS.						
RECORDED BY	M. HINDS							
WITNESSED BY	MR. ROTH/THOMAS							

FINAL PRINT

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)

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
1	1	CDL	74178	~~2227A~~	~~DE-CENT~~
1	1	CAL	74178	2227XA	1-ARM
1	1	CN	52364	2435XA	DECENT
1	1	GR	60484	1309XA	DE-CENT
1	1	TEMP			
1	1	PCM	73003	~~3506XA~~	~~DE-CENT~~

****

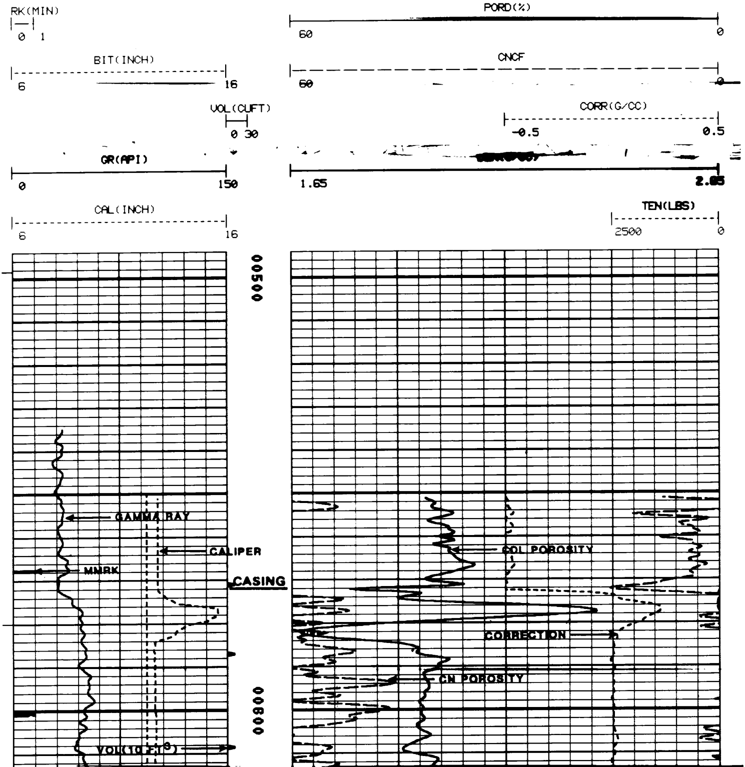
FILE: 2

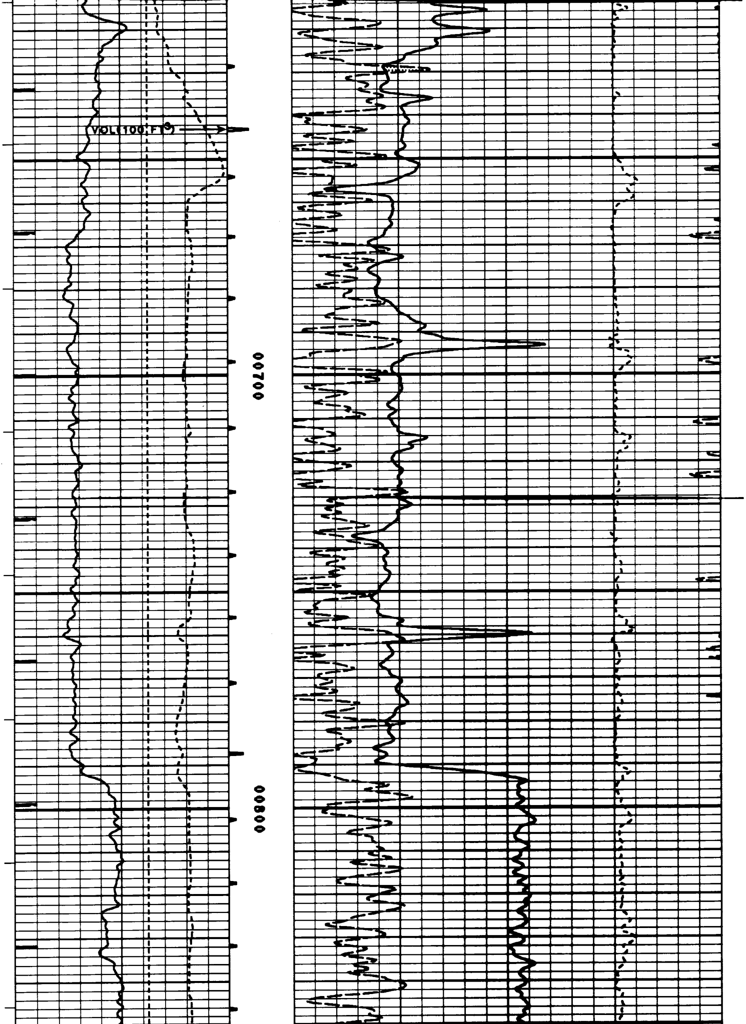
COMPANY: OREGON NATURAL GAS DEVELOPMENT CORP. ~~RUN: 1~~

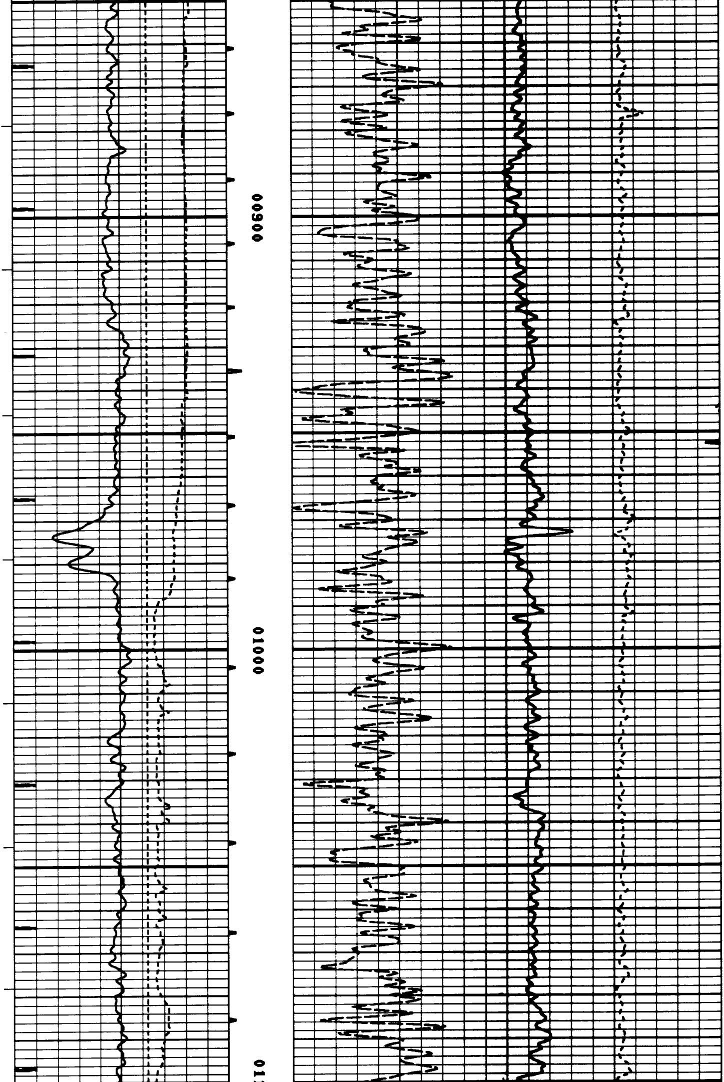
WELL NAME: IW33AC-3 TRIP: 1

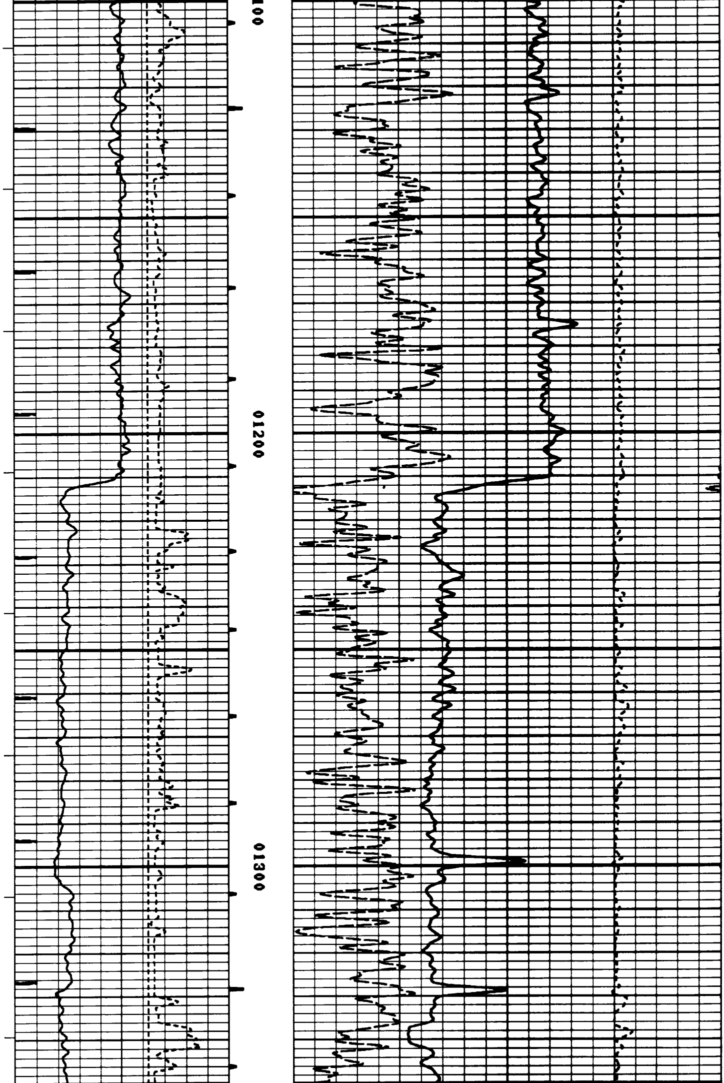
SERVICE: X2C013 FILE: 2 DATE: 11/29/90 TIME: 14:53:40

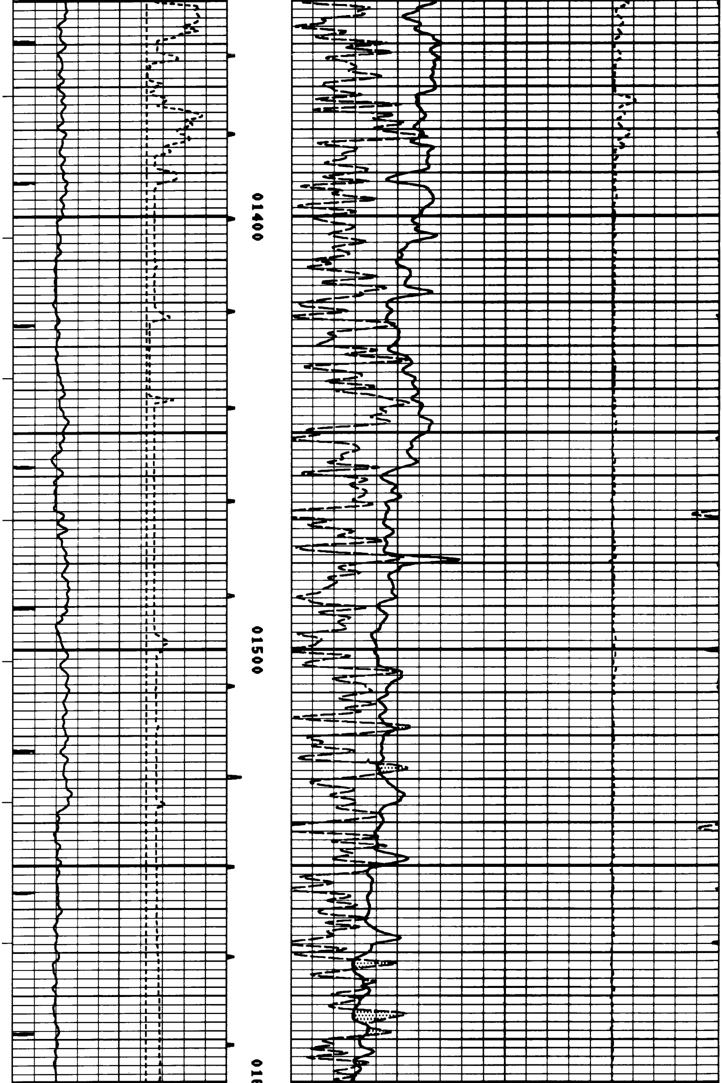
REVISION: FSYS256 REV:G002 VER:2.0 MODE: RECORD

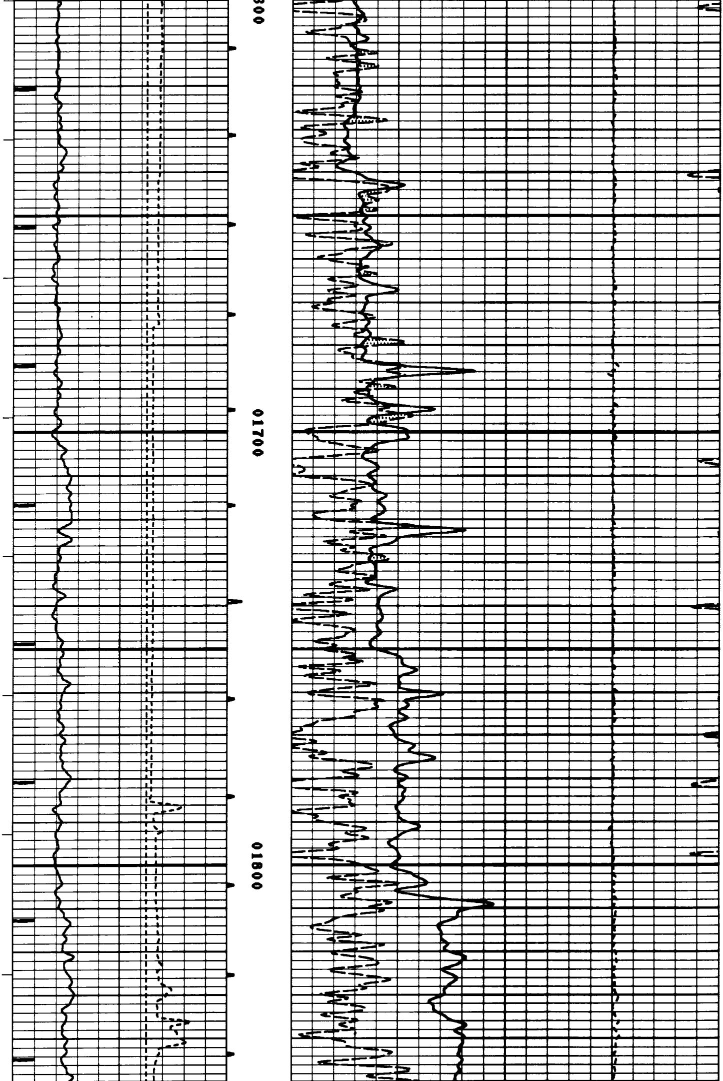


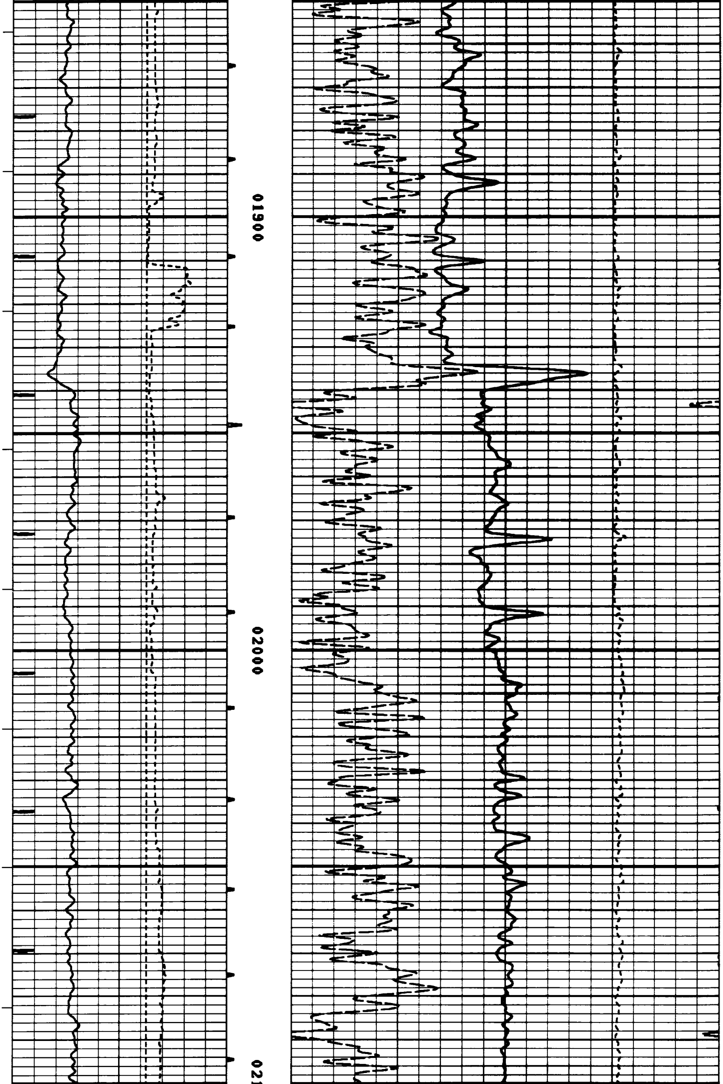


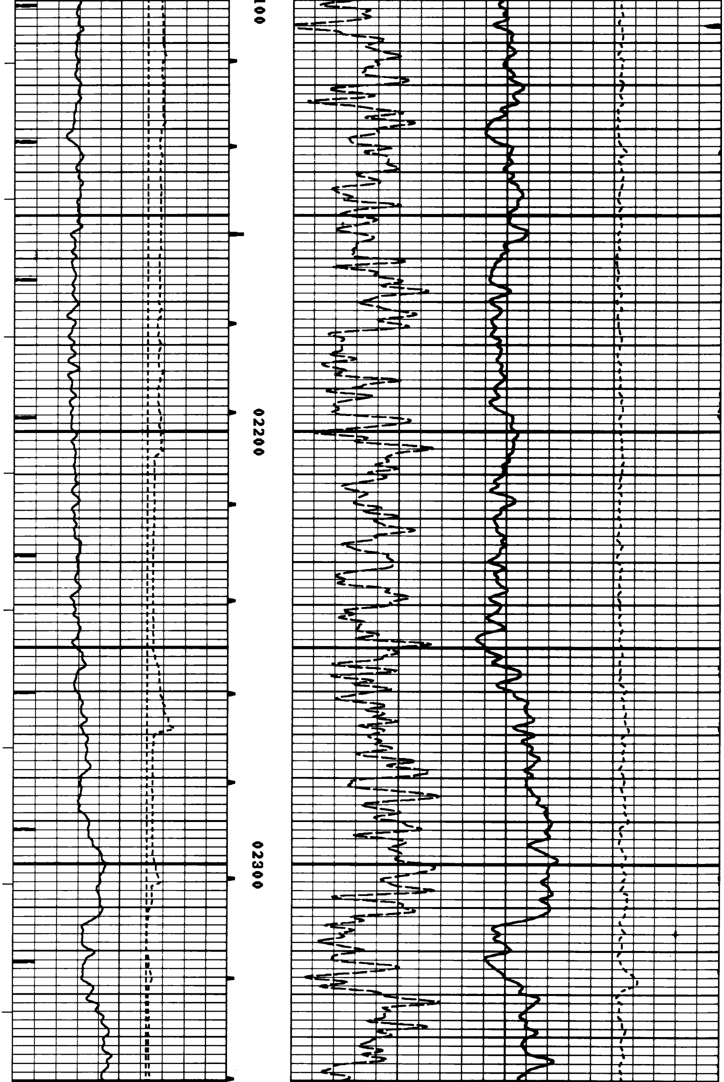


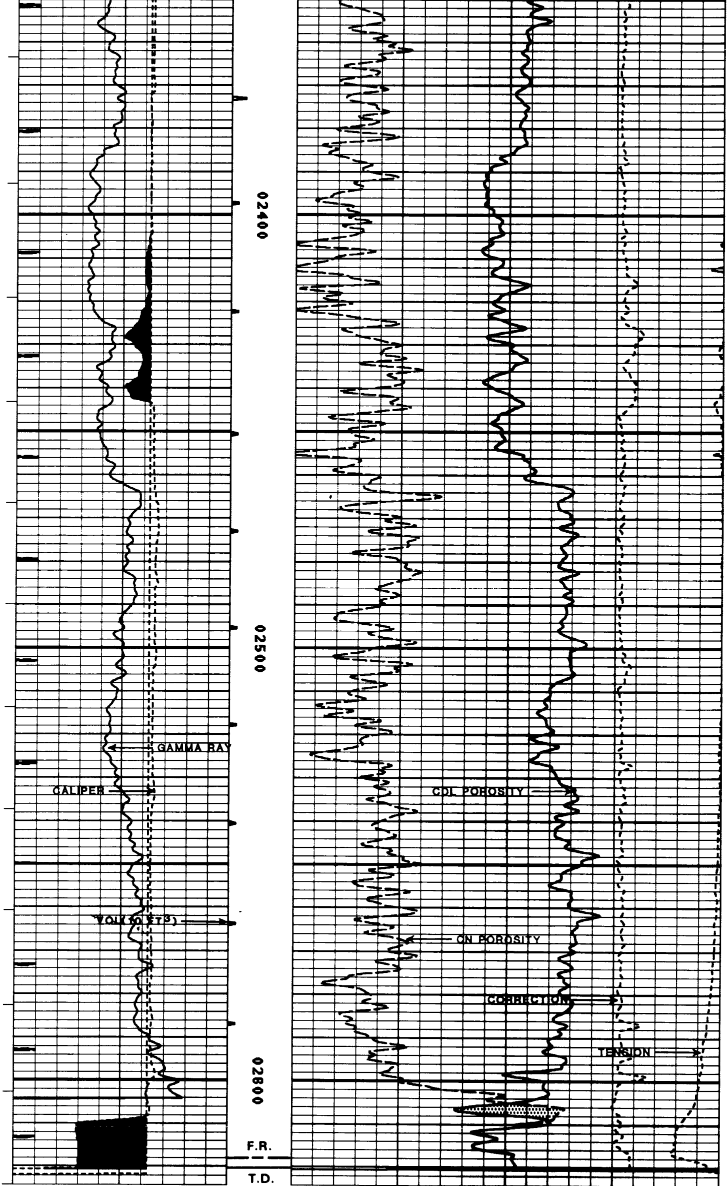












RK(MIN) 0 1

PORD(%) 60 0

BIT(INCH) 6 16

CNCF 60 0

VOL(CUFT) 0 30

CORR(G/CC) -0.5 0.5

GR(API) 0 150

DEN(G/CC) 1.65 2.65

CAL(INCH) 6 16

TEN(LBS) 2500 0

FILE: 2

* * *

REPEAT SECTION

* * *

FILE: 1

CURVE DELAY REPORT

CURVE	PHYS. DELAY	UNITS
SSD	0,3	FT,IN
LSD	0	FT,IN
CAL	0,3	FT,IN
SSN	10,3	FT,IN
LSN	10,9	FT,IN
GR	16,6	FT,IN
TEMP	27,6	FT,IN
DTEM	27,6	FT,IN

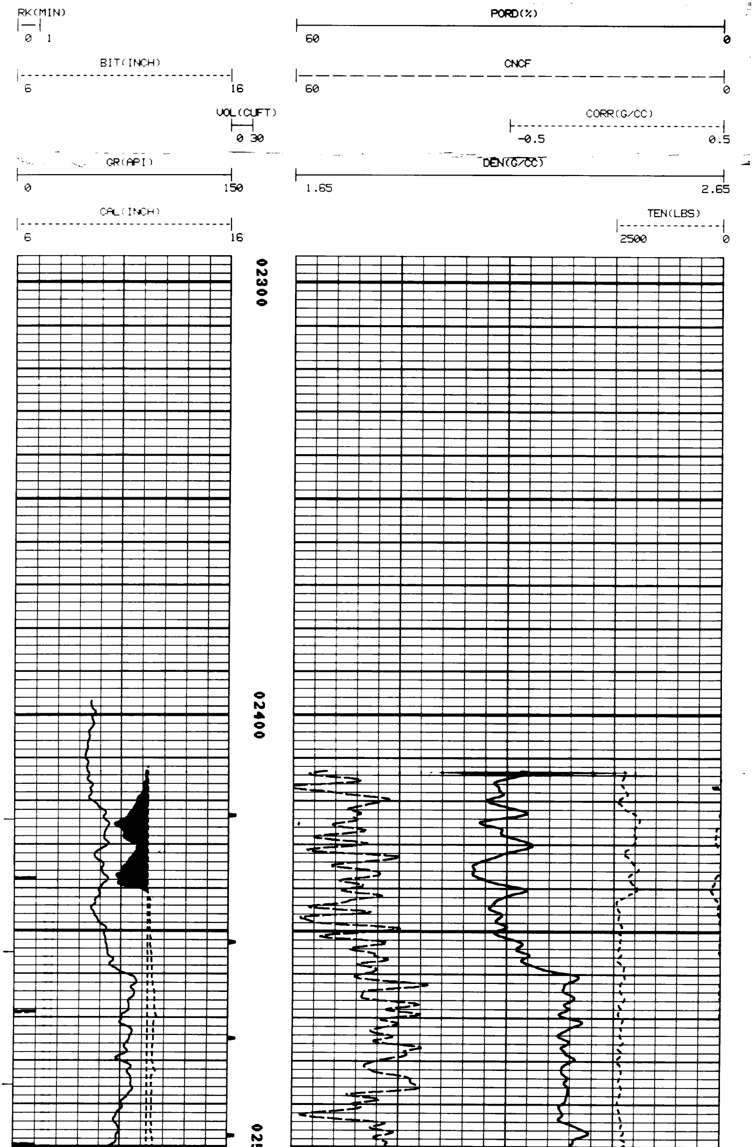
PARAMETERS

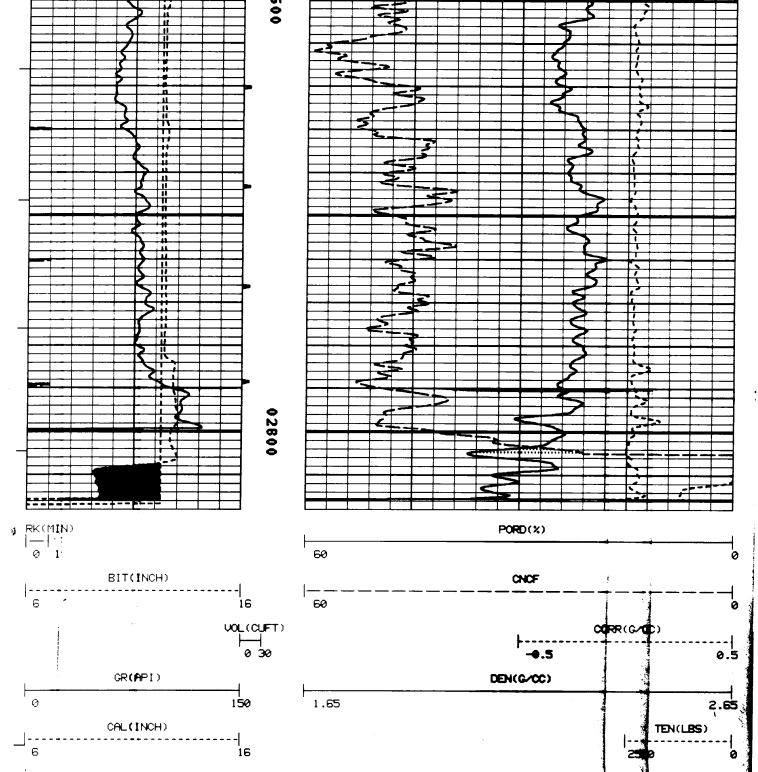
NAME	DEPTH INTERVAL	VALUE	
A	2618 TO 2386	0.000	
CAL COR	2618 TO 2386	CAL	
CASING CNC	2618 TO 2386	NOT ACTIVE	
CHISM CN	2618 TO 2386	NOT ACTIVE	
CHISM DEN	2618 TO 2386	NOT ACTIVE	
~~M~~	~~2618 TO 2386~~	~~0.000~~	
MATRIX	2618 TO 2386	SANDSTONE	
O.D.	2618 TO 2386	8.625	INCH
RHO F	2618 TO 2386	0.980	G/CC
RHO M	2618 TO 2386	2.650	G/CC
SALINITY	2618 TO 2386	0.000	PPK

DISPLAY SCALE CHANGES

*** NONE ***

COMPANY:	OREGON NATURAL GAS DEVELOPMENT CORP.		RUN: 1
WELL NAME:	IW33AC-3		TRIP: 1
SERVICE:	X2C013 FILE: 1	DATE: 11/29/90	TIME: 14:39:06
REVISION:	FSYS256 REV:G002 VER:2.0		MODE: RECORD





FILE: 1

```
***********************************************************************************

***************************************************
*                                                 *
*  CALIBRATION/VERIFICATION SUMMARIES             *
*  DATE 11/29/90           TIME 17:20:29          *
*  RUN  1                  TRIP 1                 *
*                                                 *
***************************************************


      LOG NAME CDL     ASSET NO. 74178     UNIT NO. BBB0A=BoQD
  CALIBRATION ENTERED ON  11/29/90 AT 08:59:06      2227 DUAL SCINT.
                   SOURCE NUMBER   845

CURVE   COUNTS/SEC.    SCALING FACTORS    RATIO     ENG. VALUE  UNITS
        BLOCK  VALUE   ADD.      MULT.    MG/AL
----    -----------    ----------------   -------   ----------  -----

     DATE 11/21/90          CALIBRATION          TIME 17:46:37
```

```
   LSD     MG       349.9
   SSD              212.0
   DEN                                                        1.706  G/CC
   CORR                                                      -0.007  G/CC
   DENP                                                       1.685  G/CC
   CORP                                                      -0.041  G/CC
   LSD     AL        33.8    0.000      1.0000   10.3663
   SSD               97.4    0.000      1.0000    2.1762
   DEN                                                        2.697  G/CC
   CORR                                                      -0.006  G/CC
   DENP                                                       2.682  G/CC
   CORP                                                      -0.039  G/CC
   LSD     RIBL      63.5
   SSD              142.7
   DEN                                                        2.591  G/CC
   CORR                                                       0.138  G/CC
   LSD     RIBH     148.2
   SSD               97.7
   DEN                                                        1.731  G/CC
   CORR                                                      -0.324  G/CC

        DATE 11/21/90    PRIMARY VERIFICATION       TIME 18:13:23

   LSD     JIG      125.7    0.000      1.0000
   SSD              171.1    0.000      1.0000
   DEN                                                        2.227  G/CC
   CORR                                                       0.111  G/CC

        DATE 11/29/90   BEFORE LOG VERIFICATION    TIME 09:13:19

   LSD     JIG      125.7    0.000      1.0000
   SSD              168.1    0.000      1.0000
   DEN                                                        2.208  G/CC
   CORR                                                       0.092  G/CC

        DATE 11/29/90    AFTER LOG VERIFICATION    TIME 17:17:40

   LSD     JIG      127.5    0.000      1.0000
   SSD              165.5    0.000      1.0000
   DEN                                                        2.212  G/CC
   CORR                                                       0.071  G/CC


          LOG NAME CAL      ASSET NO. 74178     UNIT NO. 6399
      CALIBRATION ENTERED ON  11/29/90 AT 09:18:42

   CURVE   MILLIVOLTS     SCALING FACTORS    ENGINEERING VALUES   UNITS
             LOW    HIGH    ADD.     MULT.        LOW        HIGH
   ----   -------------  ---------------   -------------------  -----

        DATE 11/29/90          CALIBRATION            TIME [illegible]

   CAL     2661.2  4269.6   -3.927     0.0273       6.000      12.000 INCH

                           PRIMARY VERIFICATION              NOT DONE

        DATE 11/29/90   BEFORE LOG VERIFICATION    TIME 14:26:56

   CAL       E     4381.3   -3.527     0.0273         E        12.817 INCH

        DATE 11/29/90    AFTER LOG VERIFICATION    TIME 16:02:07

   CAL       E     4471.4   -3.927     0.0273         E        12.753 INCH


          LOG NAME CN       ASSET NO. 52364     UNIT NO. BBB0A=B▵@□
      CALIBRATION ENTERED ON  11/29/90 AT 08:50:03               2435
                    SOURCE NUMBER    117836

   CURVE   COUNTS/SEC.    SCALING FACTORS     RATIO     ENG. VALUE   UNITS
                            ADD.      MULT.  LSN/(SSN*4)
   ----   -----------   ---------------   ---------   ----------   -----

        DATE 11/21/90           CALIBRATION            TIME 15:41:07

   LSN          76.9         0.000      1.0000
   SSN         153.0         0.000      1.0000
   CN                                            0.1257        25.738  %

        DATE 11/21/90    PRIMARY VERIFICATION      TIME 16:08:24

   LSN          91.4         0.000      1.0000
   SSN         144.9         0.000      1.0000
   CN                                            0.1576        16.108  %

        DATE 11/29/90   BEFORE LOG VERIFICATION    TIME 09:09:27

   LSN          87.7         0.000      1.0000
   SSN         142.5         0.000      1.0000
   CN                                            0.1538        16.963  %

        DATE 11/29/90    AFTER LOG VERIFICATION    TIME 16:53:52
```

```
LSN        89.4          0.000    1.0000
SSN       141.0          0.000    1.0000
CN
                                            0.1584       15.921  %


     LOG NAME GR      ASSET NO. 60484    UNIT NO. XP$ΓCDXXDD
  CALIBRATION ENTERED ON  11/29/90 AT 08:58:40

CURVE    COUNTS/SEC.      SCALING FACTORS     ENGINEERING VALUES   UNITS
           LOW    HIGH     ADD.    MULT.        LOW        HIGH
----    -------------   ---------------    -----------------   -----

     DATE 11/21/90           CALIBRATION           TIME 11:42:19

GR          68.1   268.1    0.000    0.7497       0.000     150.000 API

                         PRIMARY VERIFICATION            NOT DONE

     DATE 11/29/90    BEFORE LOG VERIFICATION    TIME 09:02:33

GR        104.8   300.0    0.000    0.7497      78.589     224.916 API

     DATE 11/29/90    AFTER LOG VERIFICATION     TIME 16:49:27

GR         75.0   283.0    0.000    0.7497      56.248     212.152 API
```