**PRECISION**
**Wireline Technologies**

SPECTRAL PE DENSITY
COMPENSATED NEUTRON
GAMMA RAY LOG

N.E.B. COPY

| | |
|---|---|
| PROVINCE | NORTHWEST TERRITORIES |
| FIELD | NETLA |
| WELL | ANADARKO EMILE LAKE A-77 |
| COMPANY | ANADARKO CANADA CORPORATION. |

| | |
|---|---|
| COMPANY | ANADARKO CANADA CORPORATION |
| WELL | ANADARKO EMILE LAKE A-77 |
| FIELD | NETLA |
| PROVINCE | NORTHWEST TERRITORIES |

LSD A Sec. 77 Twp. Rge.
Perm. Datum GROUND LEVEL Elev. 524.[illegible] m
Log measured from KB [illegible] m above
Permanent Datum

| | | | |
|---|---|---|---|
| Date | 16-MAR-2004 | | |
| Run No. | ONE | | |
| Bot. Driller | 2265.0 m | | |
| Bot. Logger | 2261.5 m | | |
| First Reading | 2260.9 m | | |
| Last Reading | 1966.7 m | | |
| Meters Meas. | 294.[illegible] m | | |
| Csg. Driller | 1969.[illegible] m | 177.8mm [illegible] KG | |
| Csg. Logger | 1969.[illegible] m | | |
| Bit Size | 155.6 mm | | |
| Fluid Type | GEL CHEMICAL | | |
| Dens. \| Visc. | 1090 \| 47 | | |
| pH \| Fluid Loss | 10.0 \| N/A | | |
| Sample Source | FLOWLINE | | |
| Rm | 1.8 @ 21 °C | @ °C | @ °C |
| Rmf | N/A @ N/A °C | @ °C | @ °C |
| Rmc | N/A @ N/A °C | @ °C | @ °C |
| Rm @ BHT | 0.6 @ 99 °C | @ °C | @ °C |
| Max Rec. Temp | 102 °C | | |
| Spacing | N/A | | |
| Operating Time | 4.5 HRS | | |
| Unit # | 360 | | |
| Location | GRANDE PRAIRIE OH | | |
| Recorded By | V. LONG | | |
| Witnessed By | H. COWAN | | |

**REMARKS** Rig: AKITA 37 Service Order # 30028933

Drilling Stopped 13:00/16 Circulation Stopped 13:45/16 Tool on Bottom 00:45/16 BHT 102 °C

SPED-CNT-GR-CAL-DLL LOGGED IN COMBINATION

Prints: 2

PRESENTATION AS PER CUSTOMER REQUEST

| CHANGES IN MUD TYPE OR NEW SAMPLE | | |
|---|---|---|
| Date \| Sample No. | | |
| Depth - Driller | | |
| Type Fluid in Hole | | |
| Dens. \| Visc. | | |
| pH \| Water Loss | | |
| Source of Sample | | |
| Rm @ Meas. Temp. | @ | °C |
| Rmf @ Meas. Temp. | @ | °C |
| Rmc @ Meas. Temp. | @ | °C |
| Source Rmf \| Rmc | | |
| Rm @ BHT | @ | °C |
| Rmf @ BHT | @ | °C |
| Rmc @ BHT | @ | °C |

SCALE CHANGES

| Type Log | Interval | Scale |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

EQUIPMENT DATA

| Run No. | Tool Type | Tool No. | Other |
|---|---|---|---|
| ONE | | | |
| | UGR-JB | 202 | RA-20S-677 |
| | CAL-FA | 166 | Y-AXIS CALIPER |
| | SPED-BA | 134134 | 1904-GW |
| | CNT-SB | 112 | 5763-NE |
| | | | |

**REMARKS**

**MAIN PASS**
**1:600 SCALE**

**BULK DENSITY PRESENTATION**

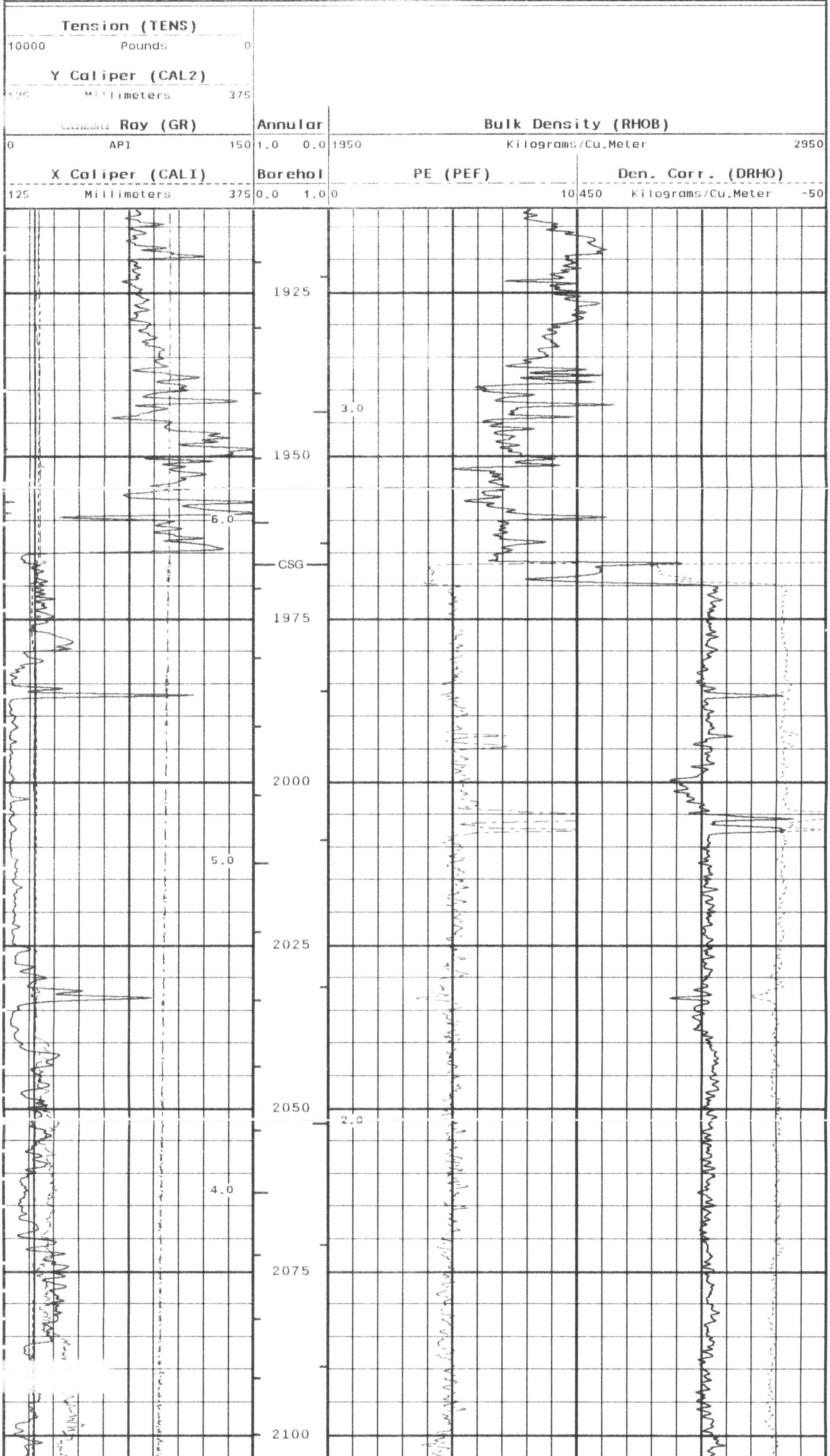
DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

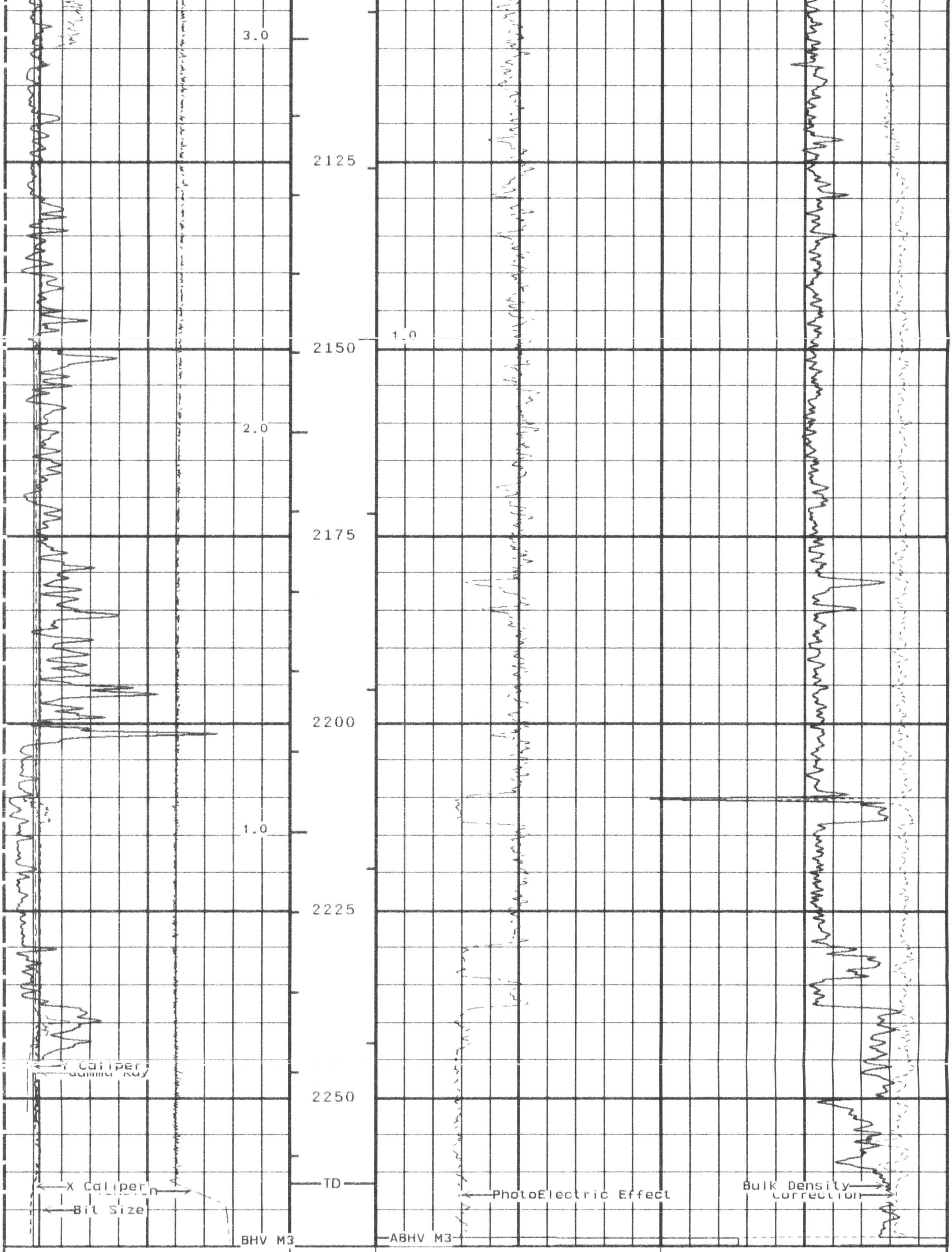
MAIN PASS

30028933 SPD1MP

BHV CASING SIZE: **114.30** Millimeters CALIPERS: CALI,CAL2,None

FINISH DEPTH: **0.0** Meters DIRECTION: UP DATE: TIME: MODE: **TRACE PLAYBACK**





X Caliper (CALI)
125 Millimeters 375

Borehol
0.0 1.0

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50

Gamma Ray (GR)
API 150

Annular
1.0 0.0

Bulk Density (RHOB)
1950 Kilograms/Cu.Meter 2950

Y Caliper (CAL2)
125 Millimeters 375

Tension (TENS)
10000 Pounds 0

START DEPTH: **2269.9** DIRECTION: **UP** DATE: **03/17/2004** TIME: **11:38** MODE: **TRACE PLAYBACK**

BHV CASING SIZE: **114.30** Millimeters CALIPERS: CALI,CAL2,None

30028933 SPD1MP

## MAIN PASS

DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

### SYSTEM CONSTANTS

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2261.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient | |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF | |
| OCOR | Cnt Environ.correction | OFF | |
| SPTL | Log With SP From | WCS | |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper | |
| SCAL | Density BH Diam Source | X Caliper | |
| BHC1 | BHV Caliper Source 1 | CALI | |
| BHC2 | BHV Caliper Source 2 | CAL2 | |
| BHC3 | BHV Caliper Source 3 | None | |
| BDC1 | BHV Diff Cal Source | CALI | |
| BHC4 | BHV Casing Size | 114.30 | Millimeters |
| BHC6 | BHV Method | Standard BHV | |
| BHC5 | BHV Calipers | CALI,CAL2,None | |

### REMARKS

MAIN PASS 1:240 SCALE

LIMESTONE MATRIX (2710 kg/m3)

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

## MAIN PASS

30028933 SPD1MP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)
10000 Pounds 0

Y Caliper (CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

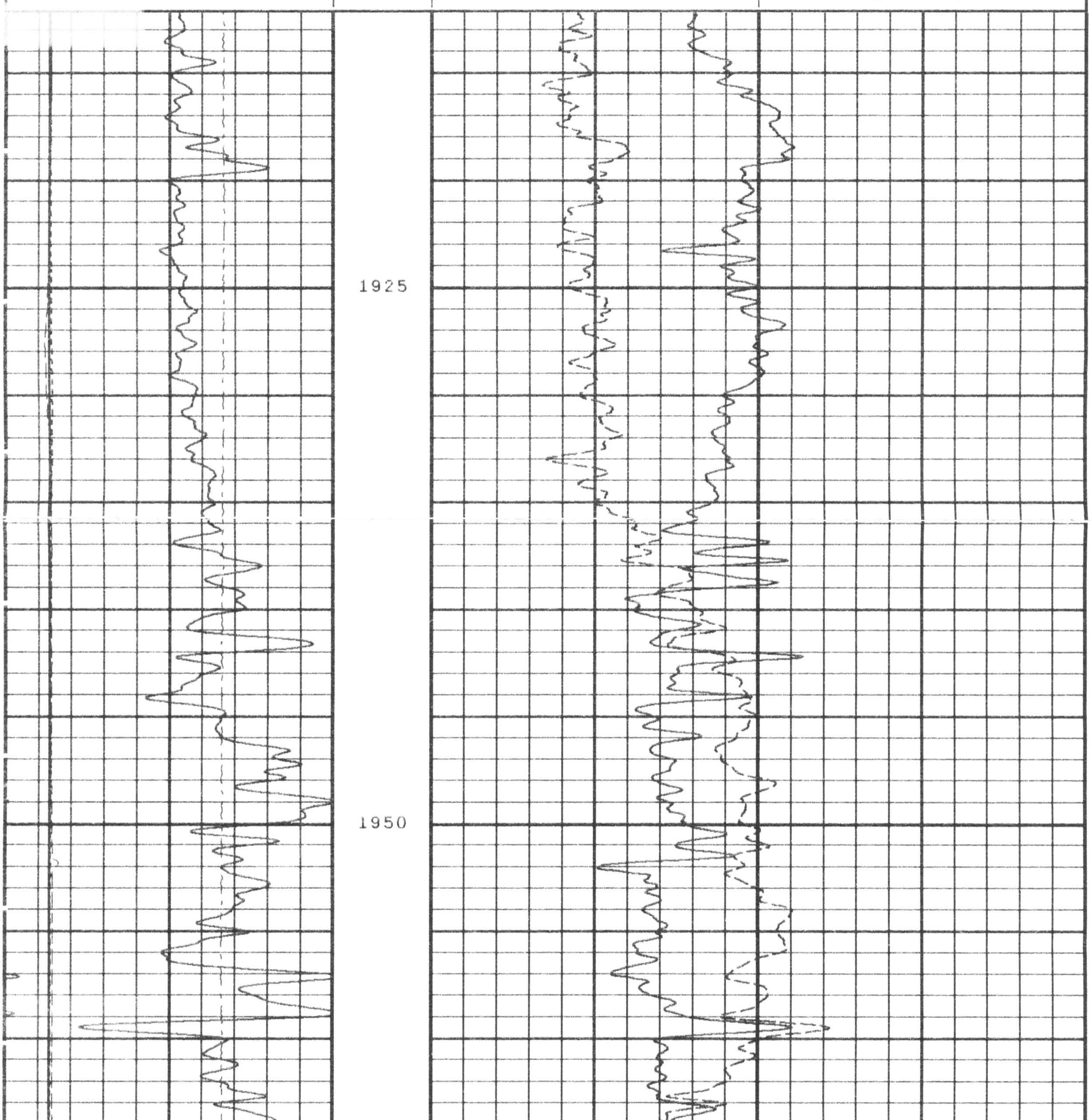
X Caliper (CALI)
125 Millimeters 375

Neut. Por. (NPHI)
45.0 Percent -15.0

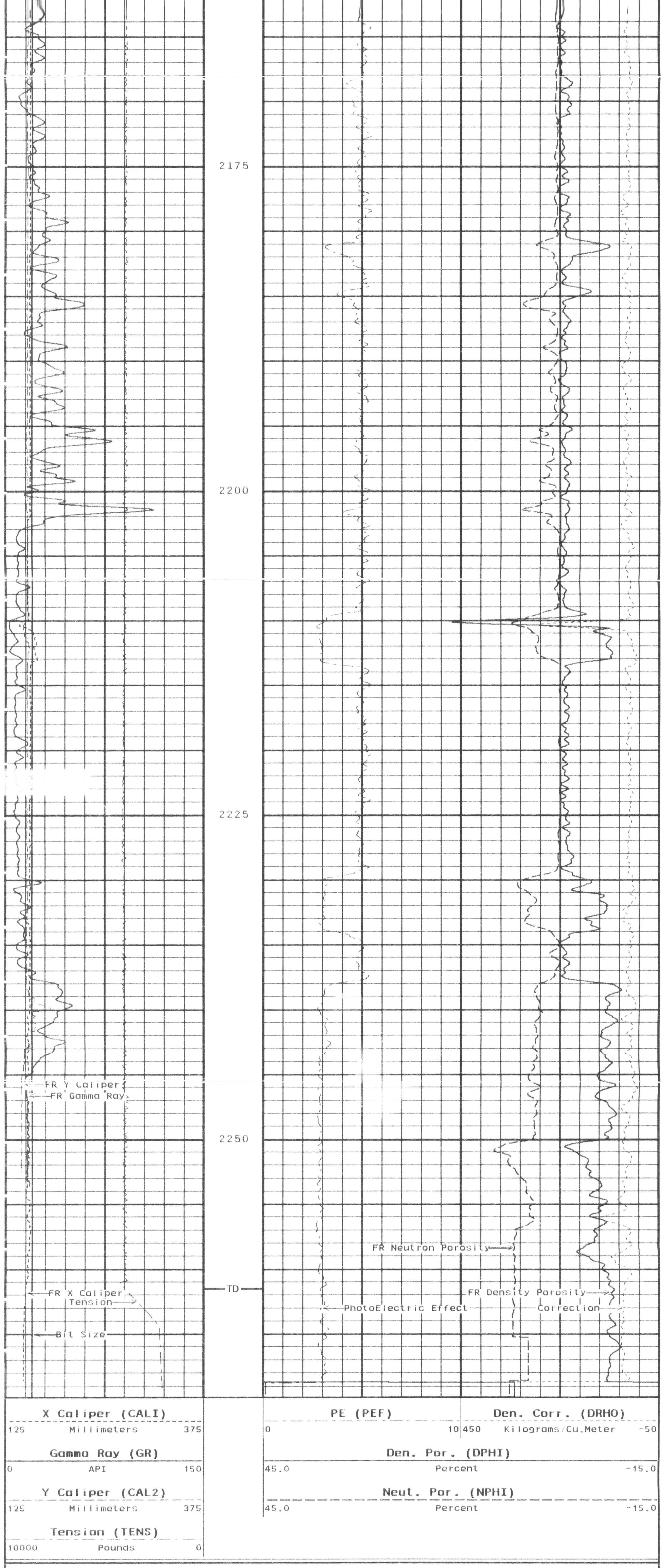
Den. Por. (DPHI)
45.0 Percent -15.0

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50




CSG
1975
2000
2025
2050
2075
2100
2125
2150



START DEPTH: **2263.5** DIRECTION: **UP** DATE: **03/17/2004** TIME: **11:38** MODE: **TRACE PLAYBACK**

30028933 SPD1MP

## MAIN PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

### SYSTEM CONSTANTS

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2262.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient | |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF | |
| OCOR | Cnt Environ.correction | OFF | |
| SPTL | Log With SP From | WCS | |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper | |
| SCAL | Density BH Diam Source | X Caliper | |

### REMARKS

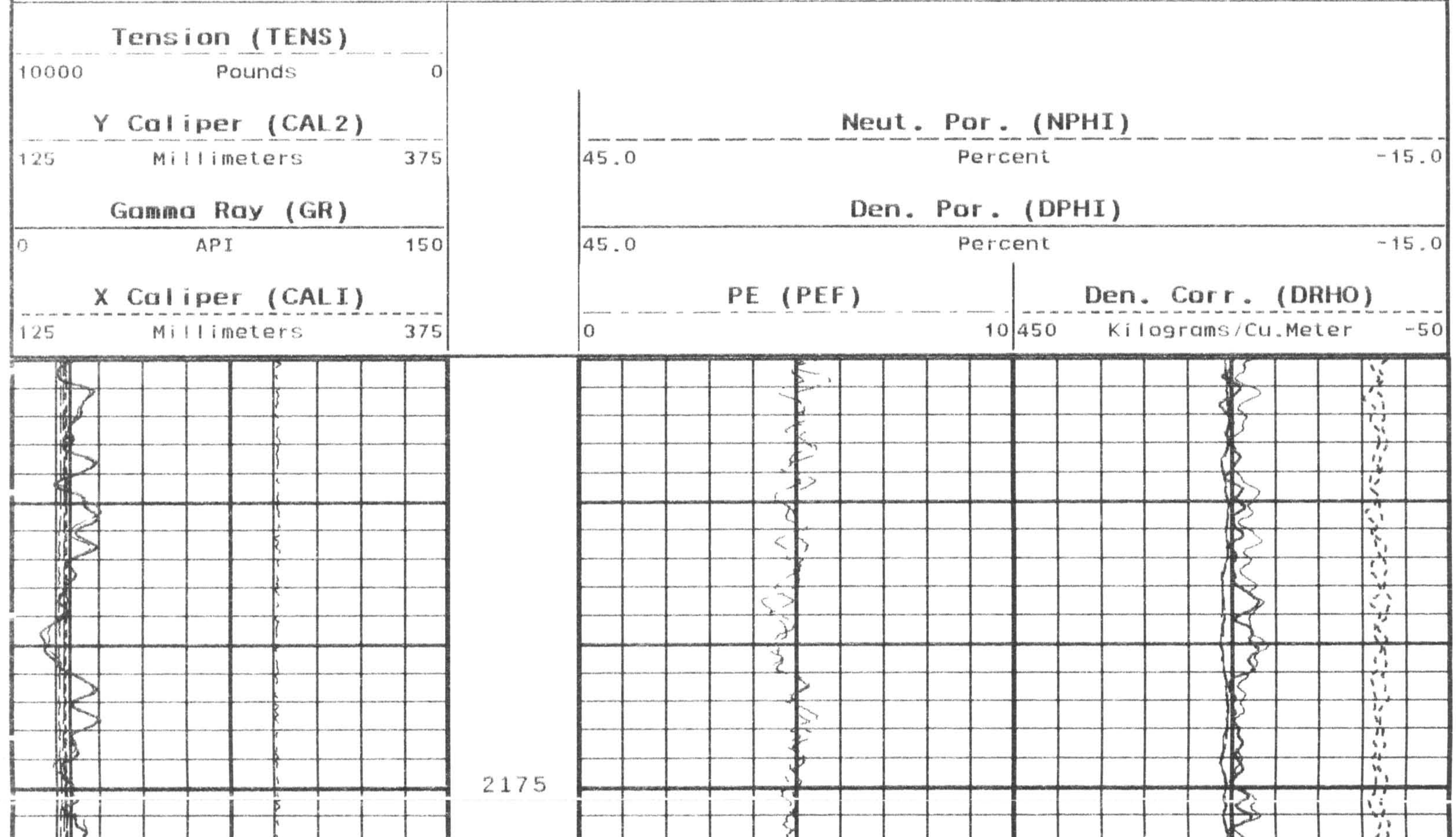
REPEAT PASS 1:240 SCALE

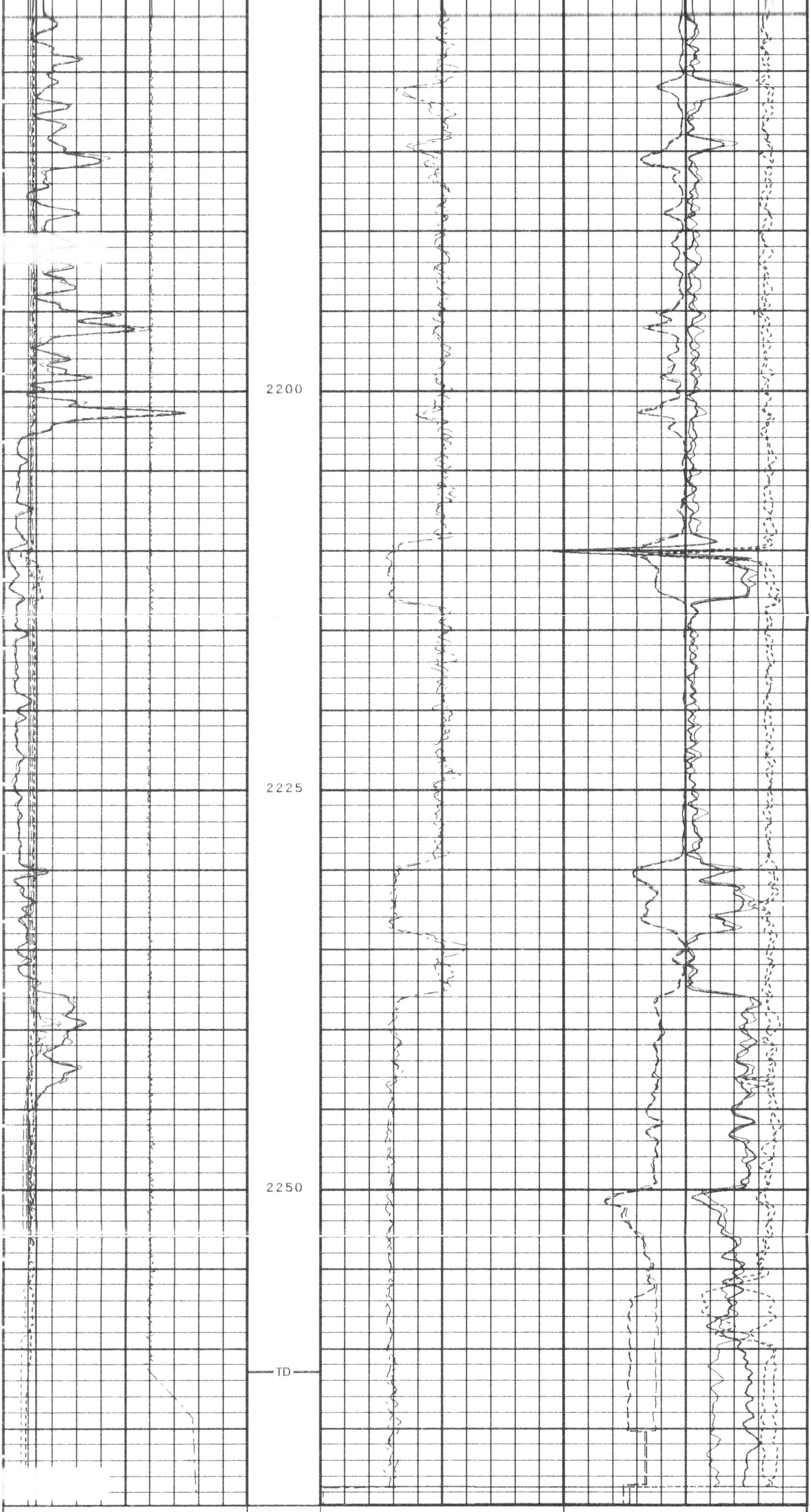
**LIMESTONE MATRIX (2710 kg/m3)**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

30028933

FINISH DEPTH: **2162.5** Meters DIRECTION: **UP** DATE: **03/17/2004** TIME: **12:52** MODE: **TRACE PLAYBACK**





X Caliper (CALI)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

Y Caliper (CAL2)
125 Millimeters 375

Tension (TENS)
10000 Pounds 0

PE (PEF)
0 10

Den. Por. (DPHI)
45.0 Percent -15.0

Neut. Por. (NPHI)
45.0 Percent -15.0

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50

START DEPTH: **2269.9** DIRECTION: **UP** DATE: **03/17/2004** TIME: **12:52** MODE: **TRACE PLAYBACK**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

**SYSTEM CONSTANTS**

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2261.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient | |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF | |
| OCOR | Cnt Environ.correction | OFF | |
| SPTL | Log With SP From | WCS | |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper | |
| SCAL | Density BH Diam Source | X Caliper | |

**REMARKS**

**MAIN PASS 1:240 SCALE**

**LIMESTONE MATRIX (2710 kg/m3)**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

**MAIN PASS**

30028933 SPD1MP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)
10000 Pounds 0

Y Caliper (CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

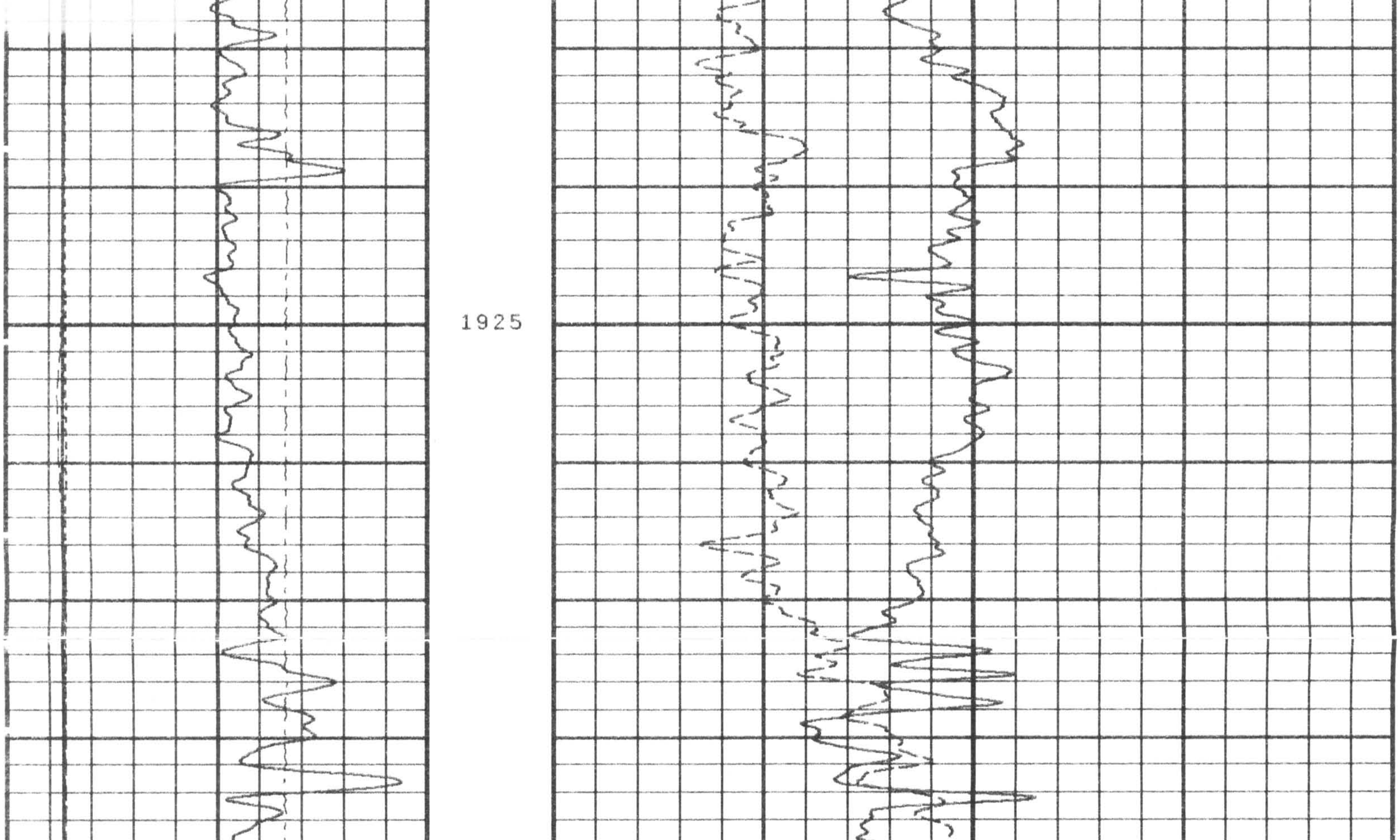
X Caliper (CALI)
125 Millimeters 375

Neut. Por. (NPHI)
45.0 Percent -15.0

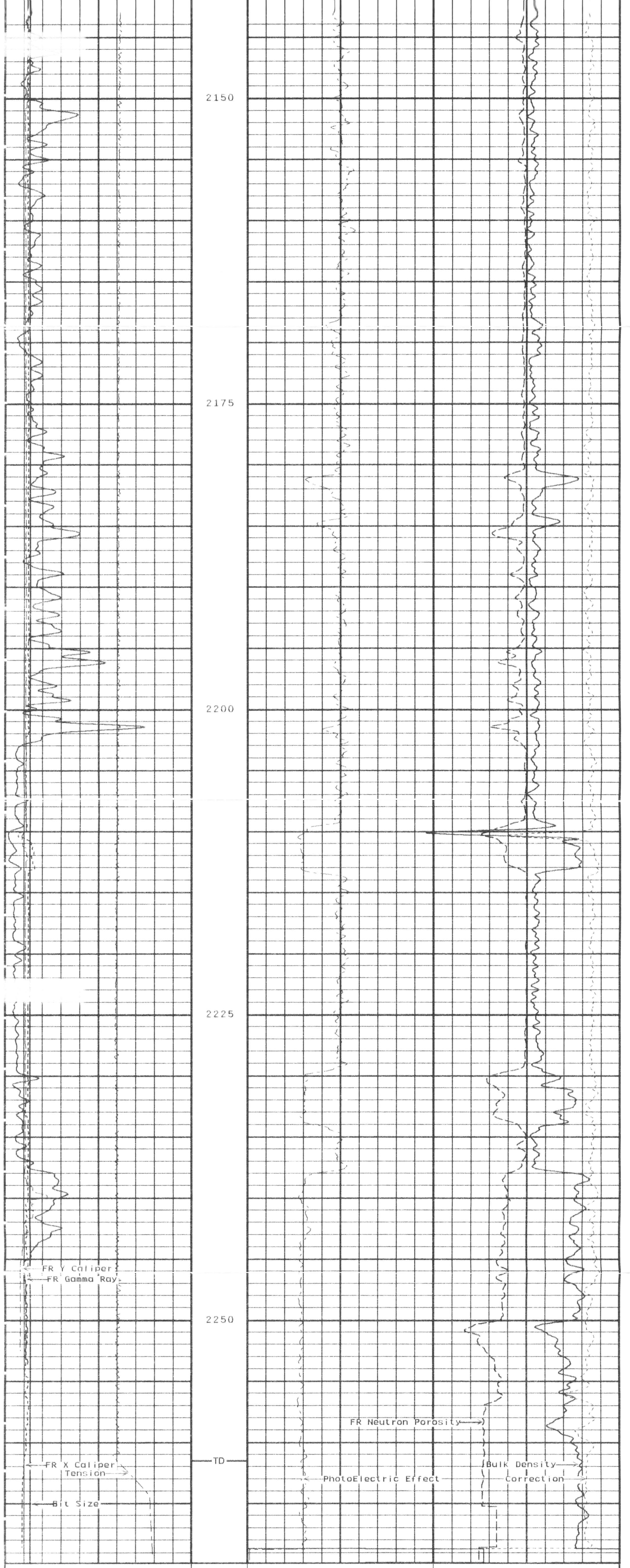
Bulk Density (RHOB)
1950 Kilograms/Cu.Meter 2950

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50




1950
CSG
1975
2000
2025
2050
2075
2100
2125



X Caliper (CALI)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

Y Caliper (CAL2)
125 Millimeters 375

Tension (TENS)
10000 Pounds 0

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50

Bulk Density (RHOB)
1950 Kilograms/Cu.Meter 2950

Neut. Por. (NPHI)
45.0 Percent -15.0

START DEPTH: **2269.9** DIRECTION: **UP** DATE: **03/17/2004** TIME: **11:38** MODE: **TRACE PLAYBACK**

30028933 SPD1MP

**MAIN PASS**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

**SYSTEM CONSTANTS**

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2262.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient | |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF | |
| OCOR | Cnt Environ.correction | OFF | |
| SPTL | Log With SP From | WCS | |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper | |
| SCAL | Density BH Diam Source | X Caliper | |

**REMARKS**

MAIN PASS 1:240 SCALE

DOLOMITE MATRIX (2870 kg/m3)

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

**MAIN PASS**

30028933 SPD1MP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)
10000 Pounds 0

Y Caliper (CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

Neut. Porosity (DL)
45.0 Percent -15.0

Den. Porosity (DL)
45.0 Percent -15.0


X Caliper (CALI)
125 Millimeters 375
PE (PEF)
0 10
Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50
1925
1950
CSG
1975
2000
2025
2050
2075
2100

START DEPTH: **2269.9** DIRECTION: **UP** DATE: **03/17/2004** TIME: **11:38** MODE: **TRACE PLAYBACK**

30028933 SPD1MP

## MAIN PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

### SYSTEM CONSTANTS

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2262.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |

|  |  |  |  |
|---|---|---|---|
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient |  |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF |  |
| OCOR | Cnt Environ.correction | OFF |  |
| SPTL | Log With SP From | WCS |  |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper |  |
| SCAL | Density BH Diam Source | X Caliper |  |

**REMARKS**

HIGH RESOLUTION PASS
LOGGED AT 40 SAMPLES/METRE
1:120 SCALE

DEPTH SCALE: 1:120 VERSION: 2004.02.11.263

HIGH RESOLUTION PASS

30028933 SPD2HRES

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension (TENS)
10000 Pounds 0

Y Caliper (CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

X Caliper (CALI)
125 Millimeters 375

Neut. Por. (NPHI)
45.0 Percent -15.0

Bulk Density (RHOB)
1950 Kilograms/Cu.Meter 2950

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50


2000
2025
2050
2075


2100
2125
2150
2175

START DEPTH: **2269.9** DIRECTION: **UP** DATE: **03/17/2004** TIME: **11:52** MODE: **TRACE PLAYBACK**

30028933 SPD2HRES

HIGH RESOLUTION PASS

DEPTH SCALE: **1:120** VERSION: **2004.02.11.263**

**SYSTEM CONSTANTS**

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2261.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 102.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF | |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN | |
| NGAI | K Factor-NEU | 1.026 | |
| BHS | Open/Cased Hole | Open | |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper | |
| NTLS | Tool Type-CNT | CNT-S | |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient | |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF | |
| OCOR | Cnt Environ.correction | OFF | |
| SPTL | Log With SP From | WCS | |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |

|  |  |  |  |
|---|---|---|---|
| NCAL | LIS Caliper Name-CNT | X Caliper |  |
| SCAL | Density BH Diam Source | X Caliper |  |

**REMARKS**

**CASING CHECK**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

CSG CHECK

30028933 SPD1CSG

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)
10000 Pounds 0

Y Caliper (CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

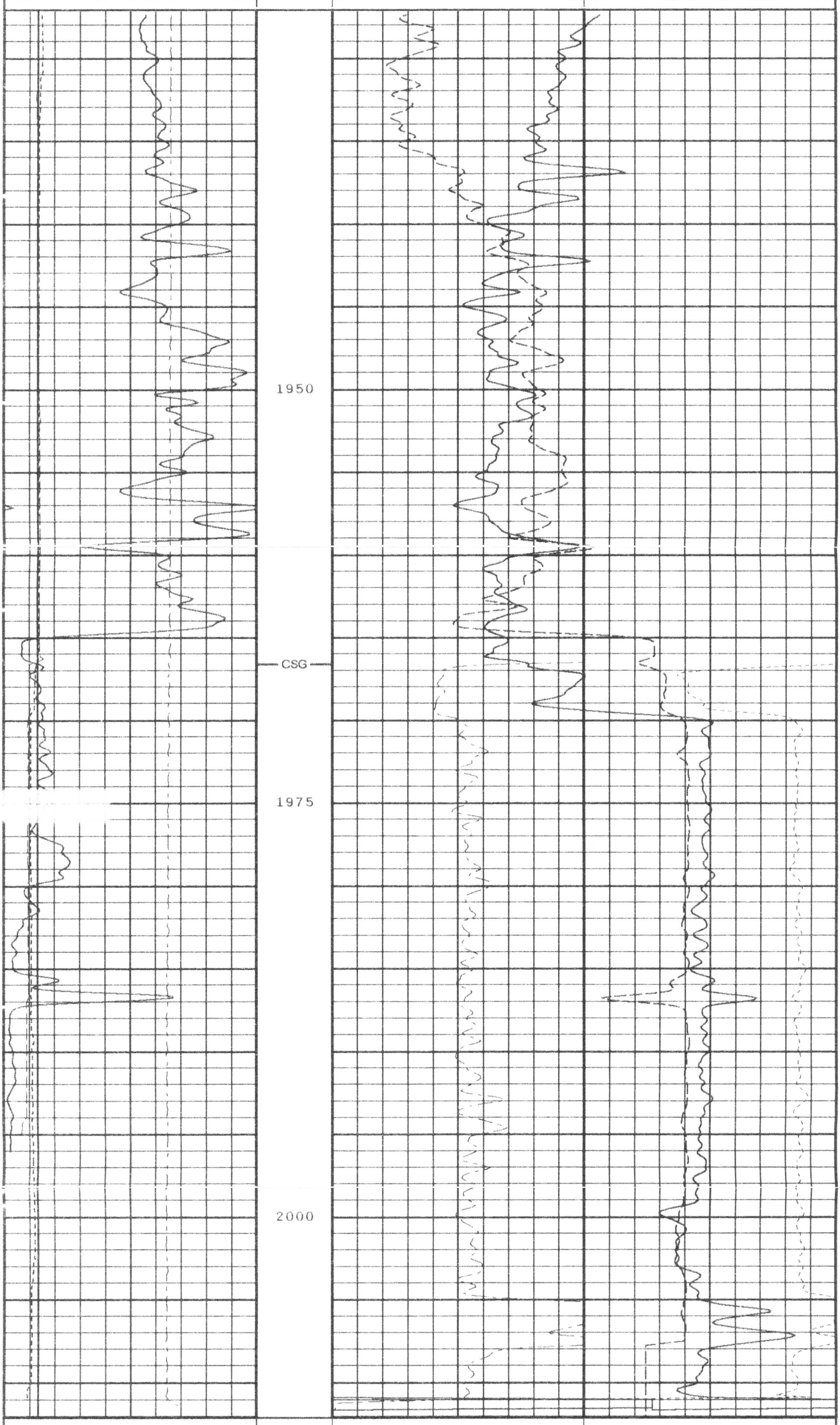
X Caliper (CALI)
125 Millimeters 375

Neut. Por. (NPHI)
45.0 Percent -15.0

Den. Por. (DPHI)
45.0 Percent -15.0

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50



X Caliper (CALI)
125 Millimeters 375

PE (PEF)
0 10

Den. Corr. (DRHO)
450 Kilograms/Cu.Meter -50

Gamma Ray (GR)
0 API 150

Den. Por. (DPHI)
45.0 Percent -15.0

Y Caliper (CAL2)
125 Millimeters 375

Neut. Por. (NPHI)
45.0 Percent -15.0

Tension (TENS)
10000 Pounds 0

START DEPTH: **2012.1** DIRECTION: **UP** DATE: **03/17/2004** TIME: **10:31** MODE: **TRACE PLAYBACK**

30028933 SPD1CSG

CSG CHECK

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

**SYSTEM CONSTANTS**

| NAME | DESCRIPTION | VALUE | UNITS |
|---|---|---|---|
| TDL | TD-Logger | 2262.50 | Meters |
| CSIZ | Casing Size | 177.8 | Millimeters |
| CWEI | Casing Weight | 25.30 | Kilograms/Meter |
| BS | Bit Size | 155.6 | Millimeters |
| BHT | Bottom Hole Temp | 98.0 | DegreesCentigrade |
| SFT | Mean Annual Surf Temp | 5.0 | DegreesCentigrade |
| SACC | Accumulation Time | 100 | Seconds |
| BARI | Barite Correction | OFF |  |
| MW | Mud Weight | 1025.0 | Kilograms/Cu.Meter |
| MDEN | Matrix Density | 2710 | Kilograms/Cu.Meter |
| FD | Fluid Density | 1000 | Kilograms/Cu.Meter |
| SPVS | SPeD Valve Status | IN |  |
| NGAI | K Factor-NEU | 1.026 |  |
| BHS | Open/Cased Hole | Open |  |
| BSAL | Borehole Salinity | 0 | Parts/Million |
| FSAL | Formation Salinity | 0 | Parts/Million |
| NBCS | Bitsize/Calp Sel-CNT | Caliper |  |
| NTLS | Tool Type-CNT | CNT-S |  |
| TGRD | Temperature Gradient | 0.555 | DegC/100Meters |
| NTMS | Temp Source-CNT | Gradient |  |
| NCOT | Constant Temp-CNT | 21.0 | DegreesCentigrade |
| NCOR | Cnt Ch Corr Offset | OFF |  |
| OCOR | Cnt Environ.correction | OFF |  |
| SPTL | Log With SP From | WCS |  |
| SPDD | SP Drift Corr. mV | 0 | Millivolts |
| SPBR | SP Bridle Depth Offset | 1.60 | Meters |
| SWAN | Sheave Wheel Angle | 0.00 | Degrees |
| NCAL | LIS Caliper Name-CNT | X Caliper |  |
| SCAL | Density BH Diam Source | X Caliper |  |

---

**03/16/04 07:08 0.0 M Ver 40211263 Job 30028933**

**Caliper Before Survey Calibration**

**Tool Type: CAL-FA Serial No:calf166**

|  | Measured |  |  | Calibrated |  |  |
|---|---|---|---|---|---|---|
|  | Small | Large | Units | Small | Large | Units |
| MCLO | 811.7 | 1448.6 | mv | 177.8 | 355.6 | mm |

---

**03/16/04 07:06 0.0 M Ver 40211263 Job 30028933**

**Gamma Ray Before Survey Calibration**

**Tool Type: UGR-JA Serial No: ugrj202**
**Calibrator No: RA20S-677**

| Background | Calibrator | Standard | Units |
|---|---|---|---|
| 107.8 | 615.9 | 140.0 | API |

**Delta Counts Per Sec: 508.1 CPS/API = 3.629**

---

**02/23/04 19:56 0.0 M Ver 40211263 Job shop**

**Compensated Neutron Shop Calibration**

**Tool Type: CNT-S Serial No: cnts112**
**Verifier No: 196 Source No: 5763-NE**
**Tank Type: NCT-AA**

```
                 Low Porosity   Med Porosity   High Porosity  Units
Tank Ratio:         0.713          1.457          2.294       SS/LS
Tank Porosity:     -0.76          10.25          25.73        LM-PU

LS Detector:     1481.5          359.3          147.9         CPS
SS Detector:     1022.8          510.2          340.7         CPS

Tool Ratio:         0.690          1.420          2.303       SS/LS
Tool Porosity:     -0.81          10.25          27.19        LM-PU
```

```
Tool Constant:      1.026
Surface Temperature:   21 DegC
```

```
        SS Detector   LS Detector    Ratio   Porosity

         284.0 CPS     172.5 CPS     1.646    14.39
```

---

```
03/16/04         07:06             0.0 M       Ver 40211263        Job 30028933

              Compensated Neutron Before Survey Calibration

                Tool Type: CNT-S            Serial No: cnts112
              Verifier No: 196              Source No: 5763-NE

                          Verifier Check   Units
LS Detector:                  182.5         CPS

SS Detector:                  293.1         CPS

Tool Ratio:                   1.606         SS/LS

Tool Porosity:                13.59         LM-PU

Tool Constant:      1.026
```

---

```
03/17/04         13:39             0.0 M       Ver 40211263        Job 30028933

              Compensated Neutron After Survey Calibration

                Tool Type: CNT-S            Serial No: cnts112
              Verifier No: 196              Source No: 5763-NE

                          Verifier Check
                         Before    After     Units

LS Detector:             182.5     181.5     CPS

SS Detector:             293.1     293.7     CPS

Tool Ratio:              1.606     1.618     SS/LS

Tool Porosity:           13.59     13.82     LM-PU

Tool Constant:      1.026
```

---

```
02/23/04         19:06             0.0 M       Ver 40211263        Job SHOP

                     Spectral Pe Density Shop Calibration

                Tool Type:  SPS-AB                 Sonde No:  SPSB134
                                             Electronics No:  SPCB134
             Firmware Ver:    . 0                 Source No:  1904-GM
         Aluminum Blk No:  ALBA109        Magnesium Blk No:  MGBA109


              Bkg          Al         Al+Fe           Mg      Units

Cs Pk       109.79       110.51      110.39        110.04     Ch
Gain         0.166        0.167       0.167         0.166     Ch/Kev
Tng Pk       11.43
Off         -0.015
Res           9.62         9.54        9.59          9.69     %
LLPE           173         1450         989          9644     cps
LUPE            93         1101         878          6704     cps
LSUC           551         1021         941          5866     cps
LCMP          1112         3981        3593         23276     cps

Cs Pk       110.01       109.90      110.76        109.97     Ch
Gain         0.167        0.166       0.168         0.166     Ch/Kev
Tng Pk       11.26
Off         -0.231
Res           9.46         9.70        9.52          9.96     %
SLPE           167         2288        1599          3482     cps
SUPE            87         1698        1297          2485     cps
SSUC           489         4102        3722          5773     cps
SCMP          1028         9926        8798         14701     cps

Acc            250          250         250           250     Secs

                       Density Calibration

                              Fresh    Barite
             Spine Angle  =   77.46     78.94
             Spine Length =  199.56    196.52

                          Pe Calibration

                              Fresh     Barite
           LS Slope      =   1.7312     0.3889
           LS Intercept  =  -0.2669    -0.1886
```

---

```
03/16/04         07:06             0.0 M       Ver 40211263        Job 30028933

                 Spectral Pe Density Before Survey Tool Check

                Tool Type:  SPS-AB                 Sonde No:  SPSB134
                                             Electronics No:  SPCB134
             Firmware Ver:    . 0                 Source No:  1904-GM
         Aluminum Blk No:  ALBA109        Magnesium Blk No:  MGBA109


              Shop                 Before               Units

Cs Pk       109.79                 111.04               Ch
Gain         0.166                  0.168               Ch/Kev
Tng Pk       11.43                  11.42               Ch
Off         -0.015                 -0.168               Ch
Res           9.62                   9.32               %
LLPE           173                    173
LUPE            93                     92
LSUC           551                    559
LCMP          1112                   1122

Cs Pk       110.01                 110.90               Ch
Gain         0.167                  0.168               Ch/Kev
Tng Pk       11.26                  11.18               Ch
Off         -0.231                 -0.201               Ch
Res           9.46                   9.25               %
SLPE           167                    166
SUPE            87                     87
SSUC           489                    497
SCMP          1028                   1038

Acc            250                    100               Secs
```

---

```
03/17/04         13:39             0.0 M       Ver 40211263        Job 30028933

                 Spectral Pe Density After Survey Tool Check

                Tool Type:  SPS-AB                 Sonde No:  SPSB134
                                             Electronics No:  SPCB134
             Firmware Ver:    . 0                 Source No:  1904-GM
         Aluminum Blk No:  ALBA109        Magnesium Blk No:  MGBA109


              Shop                 Before          After      Units

Cs Pk       109.79                 111.04         110.66      Ch
Gain         0.166                  0.168          0.167      Ch/Kev
Tng Pk       11.43                  11.42          11.64      Ch
Off         -0.015                 -0.168          0.122      Ch
Res           9.62                   9.32           9.73      %
LLPE           173                    173            173      cps
LUPE            93                     92             94      cps
LSUC           551                    559            556      cps
LCMP          1112                   1122           1115      cps

Cs Pk       110.01                 110.90         111.27      Ch
Gain         0.167                  0.168          0.168      Ch/Kev
Tng Pk       11.26                  11.18          11.49      Ch
Off         -0.231                 -0.201         -0.124      Ch
Res           9.46                   9.25           9.67      %
SLPE           167                    166            167      cps
SUPE            87                     87             87      cps
SSUC           489                    497            493      cps
SCMP          1028                   1038           1035      cps

Acc            250                    100            100      Secs
```

---

```
03/16/04         07:08             0.0 M       Ver 40211263        Job 30028933

                 Caliper Before Survey Calibration

                 Tool Type: SPD-CL              Serial No:spsb134

                        Measured                  Calibrated
                   Small    Large   Units     Small   Large   Units

NCL2               2241.5   3580.6  mv        177.8   355.6   mm
```

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## O.H. Adaptor Head

| | |
|---|---|
| Weight | 18.0 kg |
| Length | 0.74 m |
| Max. Diameter | 8.9 cm |

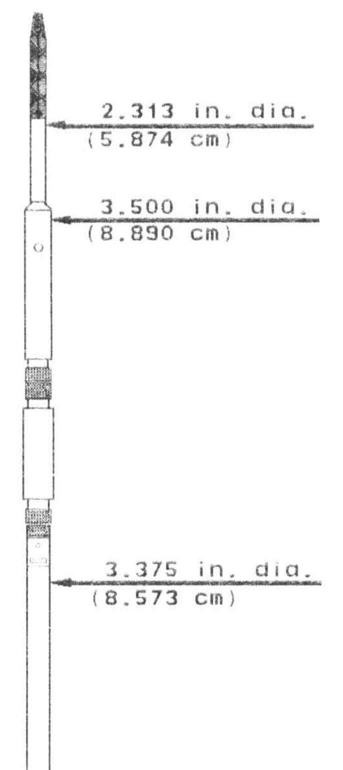
Total Stack Weight 597.5 kg in air
Total Stack Length 21.28 m

## Crossover

| | |
|---|---|
| Weight | 6.8 kg |
| Length | 0.27 m |

## Wireline Communications Cartridge

| | |
|---|---|
| Weight | 53.6 kg |
| Length | 2.31 m |
| Max. Diameter | 8.6 cm |



### 2-Arm Caliper

| | |
|---|---|
| Weight | 79.4 kg |
| Length | 2.40 m |
| Max. Diameter | 10.2 cm |

### Universal GR

| | |
|---|---|
| Weight | 37.3 kg |
| Length | 1.40 m |
| Max. Diameter | 8.6 cm |

### SPeD 400 Electronics

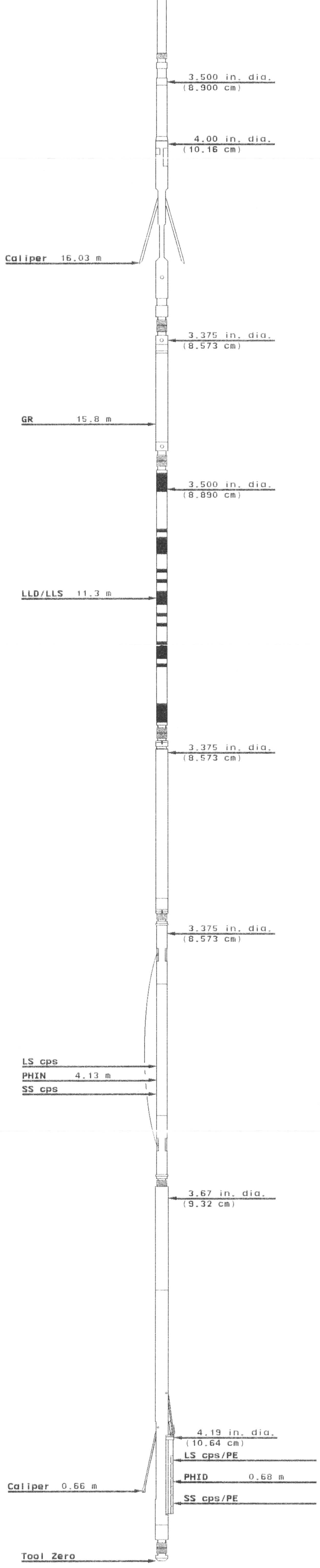
| | |
|---|---|
| Weight | 56.7 kg |
| Length | 2.92 m |
| Max. Diameter | 8.6 cm |

### Mandrel Neutron

| | |
|---|---|
| Weight | 45.4 kg |
| Length | 2.07 m |
| Max. Diameter | 8.6 cm |

### SPeD 400 Pad Section

| | |
|---|---|
| Weight | 141.5 kg |
| Length | 3.38 m |
| Max. Diameter | 11.4 cm |



| | |
|---|---|
| COMPANY | ANADARKO CANADA CORPORATION |
| WELL | ANADARKO EMILE LAKE A-77 |
| FIELD | NETLA |
| PROVINCE | N.W.T. |

PRECISION
Wireline Technologies