

# STEP

## MICRO

### energy services

### LOG

|                                                                                                                                                                                      |                       |                                                                                                                                                                                                                                 |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Company</b> VAL ENERGY, INC<br><b>Well</b> CRUMRINE #1-4<br><b>Field</b> THOMAS<br><b>County</b> KANSAS<br><b>State</b> USA<br><b>Country</b> 15-193-21051-0000<br><b>API No.</b> |                       | <b>File No</b> : TUL-70324<br><b>Company</b> : VAL ENERGY, INC<br><b>Well</b> : CRUMRINE #1-4<br><b>Field</b> :<br><b>County</b> : THOMAS<br><b>State</b> : KANSAS<br><b>Country</b> : USA<br><b>API No</b> : 15-193-21051-0000 |  |
| <b>Location</b> :<br>788' FSL & 1414' FWL<br>SW NW SE SW                                                                                                                             |                       | <b>LSD</b> : <b>Sect</b> : 4 <b>Twp</b> : 8S <b>Rge</b> : 36W                                                                                                                                                                   |  |
| <b>Permanent Datum:</b><br><b>Drilling Measured From:</b> GL<br><b>Log Measured From:</b> KB<br><b>Above Permanent Datum:</b> 5.00 Ft                                                |                       | <b>Elevations:</b><br>KB 3330.00 Ft<br>DF 3329.00 Ft<br>GL 3325.00 Ft                                                                                                                                                           |  |
| <b>Services:</b><br>CNT<br>LDT<br>MLT                                                                                                                                                |                       |                                                                                                                                                                                                                                 |  |
| <b>Date</b> 08-06-2019                                                                                                                                                               |                       |                                                                                                                                                                                                                                 |  |
| <b>Run Number</b>                                                                                                                                                                    | 1                     |                                                                                                                                                                                                                                 |  |
| <b>Depth--Driller</b>                                                                                                                                                                | 4880.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>Depth--Logger</b>                                                                                                                                                                 | 4878.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>First Reading</b>                                                                                                                                                                 | 4855.0 Ft             |                                                                                                                                                                                                                                 |  |
| <b>Last Reading</b>                                                                                                                                                                  | 285.0 Ft              |                                                                                                                                                                                                                                 |  |
| <b>Casing--Driller</b>                                                                                                                                                               | 285.0 Ft              |                                                                                                                                                                                                                                 |  |
| <b>Casing--Logger</b>                                                                                                                                                                | 285.0 Ft              |                                                                                                                                                                                                                                 |  |
| <b>Bit Size</b>                                                                                                                                                                      | 7.875 In              |                                                                                                                                                                                                                                 |  |
| <b>Casing Size</b>                                                                                                                                                                   | 8.625 In              |                                                                                                                                                                                                                                 |  |
| <b>Hole Fluid Type</b>                                                                                                                                                               | WBM                   |                                                                                                                                                                                                                                 |  |
| <b>Density</b>                                                                                                                                                                       | 9.3                   |                                                                                                                                                                                                                                 |  |
| <b>Fluid Loss</b>                                                                                                                                                                    | 8.0                   |                                                                                                                                                                                                                                 |  |
| <b>PH/Viscosity</b>                                                                                                                                                                  | 11.0      59.0        |                                                                                                                                                                                                                                 |  |
| <b>Sample Source</b>                                                                                                                                                                 | MEASURED              |                                                                                                                                                                                                                                 |  |
| <b>RM@Measured Temp.</b>                                                                                                                                                             | 0.500 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>RMF@Measured Temp</b>                                                                                                                                                             | 0.400 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>RMG@Measured Temp.</b>                                                                                                                                                            | 0.600 @ 70 F          |                                                                                                                                                                                                                                 |  |
| <b>Source RMF/RMC</b>                                                                                                                                                                | CALCULATED/CALCULATED |                                                                                                                                                                                                                                 |  |
| <b>RM@BHT</b>                                                                                                                                                                        | 0.290 @ 125 F         |                                                                                                                                                                                                                                 |  |
| <b>Time Circulation Stopped</b>                                                                                                                                                      | 08-06-2019 19:30      |                                                                                                                                                                                                                                 |  |
| <b>Max Recorded Temp.</b>                                                                                                                                                            | 125 F                 |                                                                                                                                                                                                                                 |  |
| <b>Equipment/Base</b>                                                                                                                                                                | 1022 TULSA, OK        |                                                                                                                                                                                                                                 |  |
| <b>Recorded By</b>                                                                                                                                                                   | SHELDON TYLER         |                                                                                                                                                                                                                                 |  |
| <b>Witnessed By</b>                                                                                                                                                                  | TIM PRIEST            |                                                                                                                                                                                                                                 |  |

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by STEP Energy Services personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by STEP Energy Services for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

| Bitsize Intervals |             | Casing Strings |              |             |          |
|-------------------|-------------|----------------|--------------|-------------|----------|
| Size (In)         | Bottom (Ft) | Size (In)      | Weight (Lbs) | Bottom (Ft) | Top (Ft) |
| 7.875             | 4880.00     | 8.625          | 32.00        | 285.00      | 0.00     |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |
|                   |             |                |              |             |          |

|                            |                  |  |
|----------------------------|------------------|--|
| <b>Run Number</b>          | 1                |  |
| <b>Date</b>                | 08-06-2019       |  |
| <b>Date/Time On Bottom</b> | 08-06-2019 22:30 |  |
| <b>Depth to Fluid</b>      | 0.0 Ft           |  |
| <b>Salinity</b>            | 5800.000         |  |
| <b>RMF@BHT</b>             | 0.230 @ 125 F    |  |
| <b>RMC@BHT</b>             | 0.350 @ 125 F    |  |

ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED

CUSTOMER REQUESTED DETAIL PULLED TO 3900'

GRT: GRP, GRX

CNT: PHIN, CLCNIN, PHXN

LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX

MLT: NOR\_RF, INV\_RF, MSCLPIN

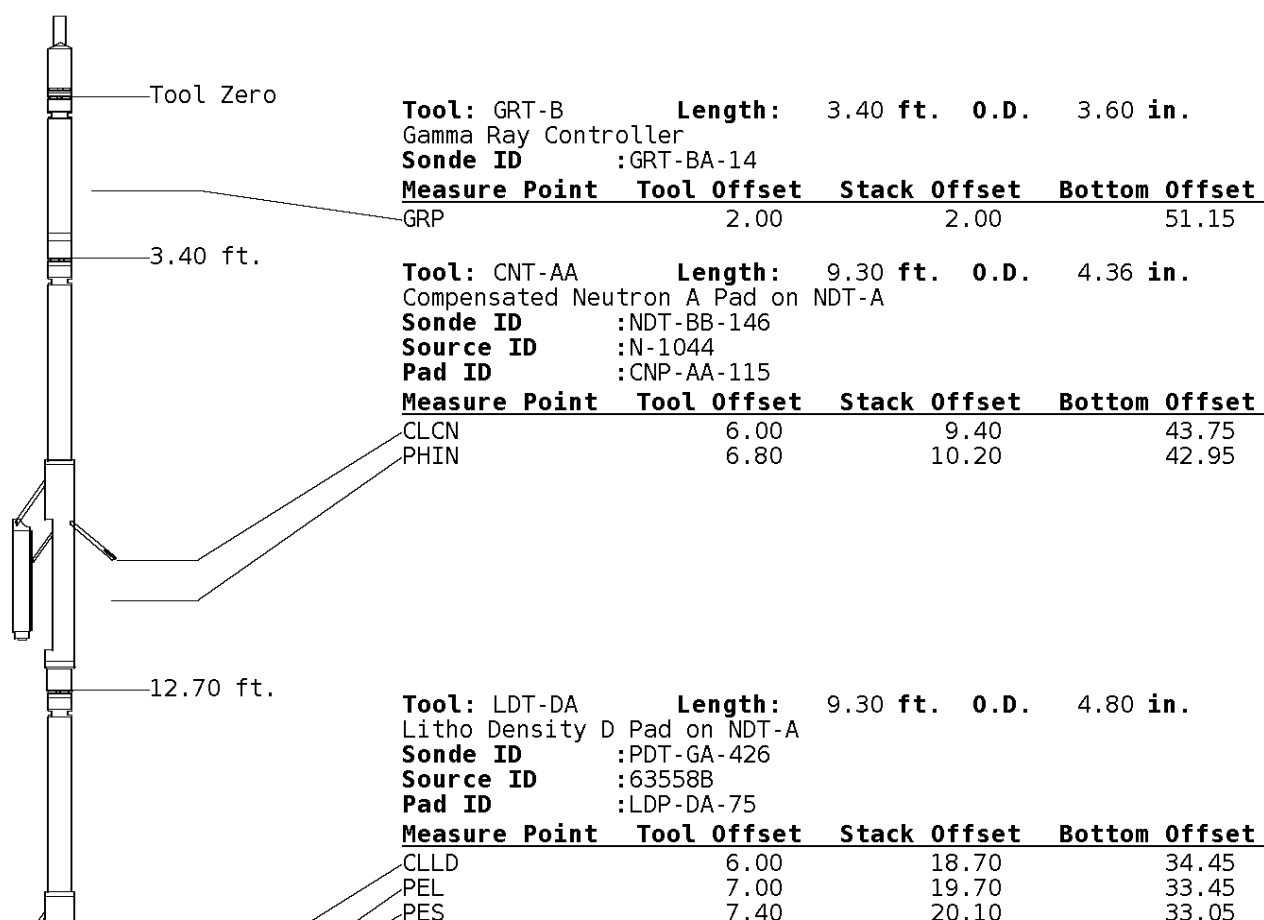
PIT: ILD, ILM, SPU, SFLAEC, CIRD

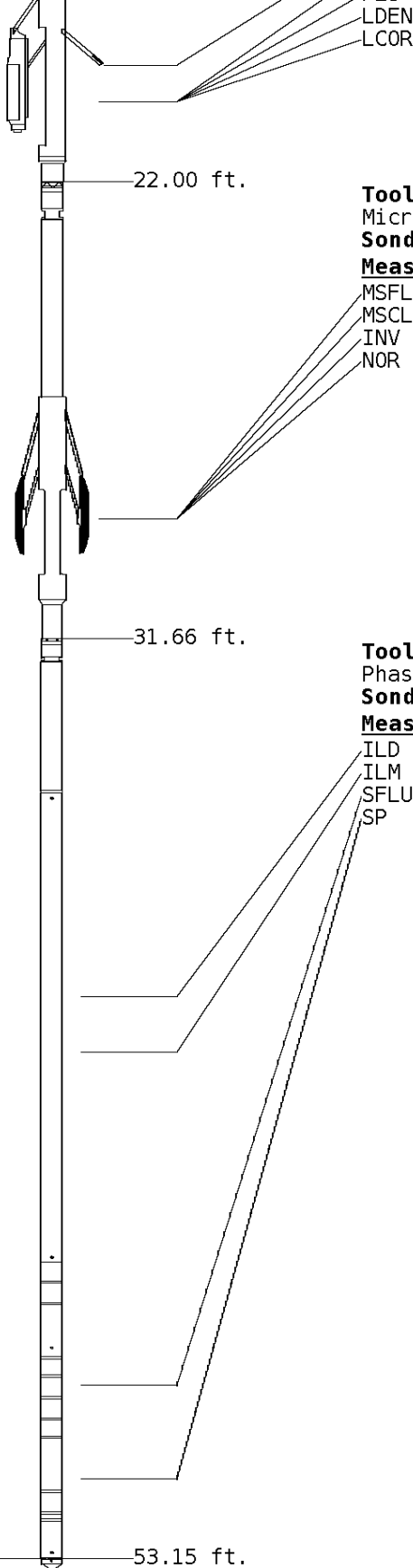
OPERATORS:

K.WARREN

## Tool String Schematic

**Total Tool Length** - 53.15 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 943.00 lbs.





| Measure | Point | Tool | Offset | Stack | Offset | Bottom | Offset |
|---------|-------|------|--------|-------|--------|--------|--------|
| MSFL    |       |      | 7.60   |       | 29.60  |        | 23.55  |
| MSCLP   |       |      | 7.60   |       | 29.60  |        | 23.55  |
| INV     |       |      | 7.60   |       | 29.60  |        | 23.55  |
| NOR     |       |      | 7.60   |       | 29.60  |        | 23.55  |

| Measure | Point | Tool | Offset | Stack | Offset | Bottom | Offset |
|---------|-------|------|--------|-------|--------|--------|--------|
| ILD     |       |      | 8.92   |       | 40.58  |        | 12.56  |
| ILM     |       |      | 10.10  |       | 41.76  |        | 11.39  |
| SFLU    |       |      | 17.49  |       | 49.15  |        | 4.00   |
| SP      |       |      | 20.60  |       | 52.26  |        | 0.88   |

**Scale:** 1:240      **Format:** MST-240

**Acquired:** 2019-08/06 22:52 3.4.1-13968

**Processed:** 2019-08/07 00:05 3.4.1-13968

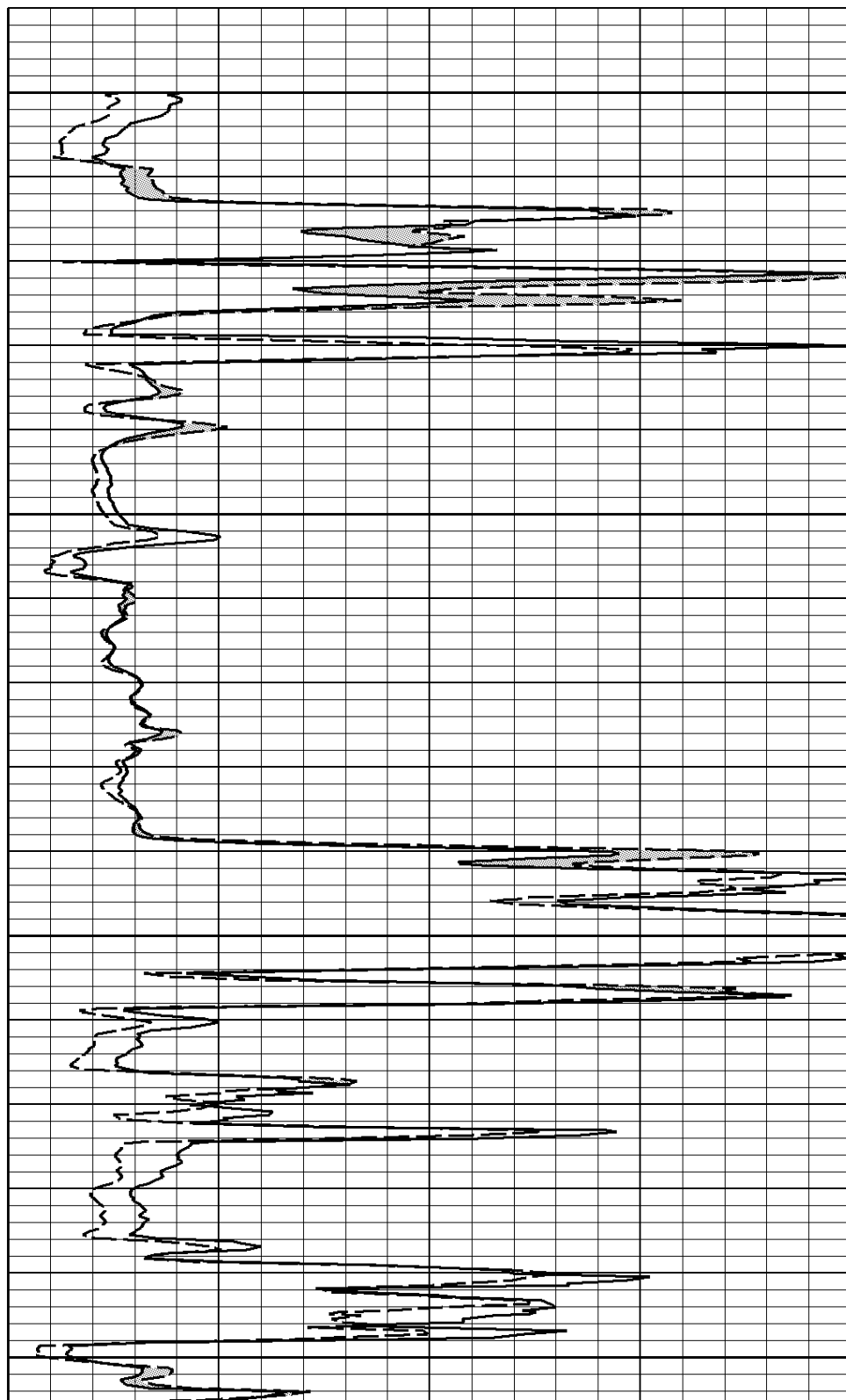
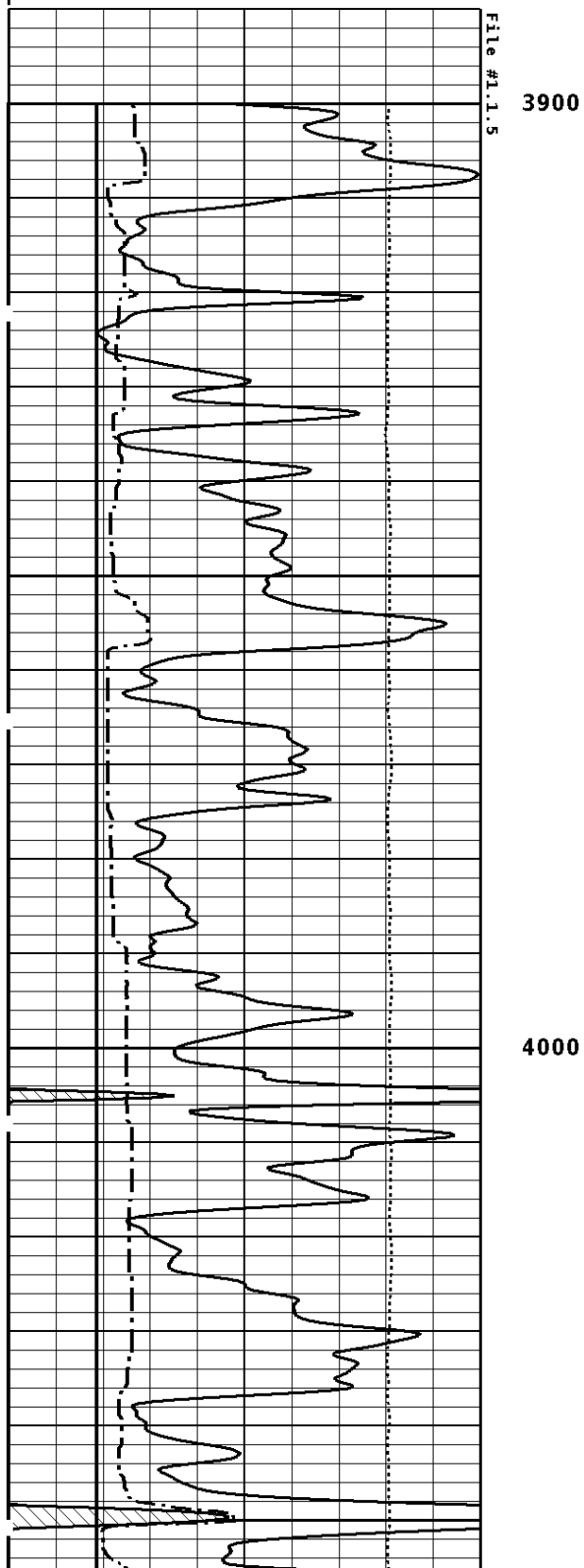
|          |           |
|----------|-----------|
| <b>6</b> | <b>16</b> |
|----------|-----------|

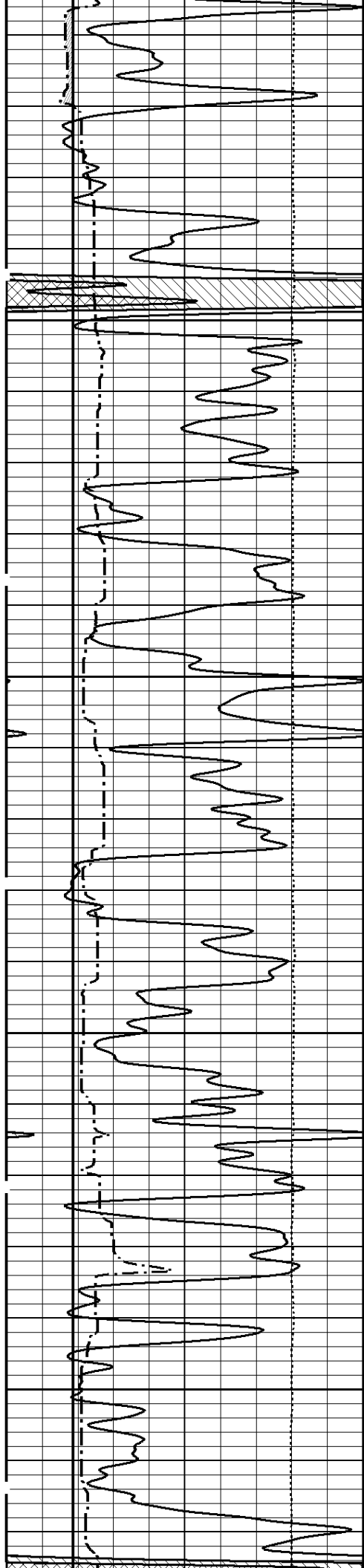
16 36

|                        |     |
|------------------------|-----|
| 16                     | 26  |
| 6                      | 16  |
| TENSION<br>LBS         |     |
| 10000                  | 0   |
| GAMMA RAY<br>API UNITS |     |
| 150                    | 300 |
| 0                      | 150 |

|                 |    |
|-----------------|----|
| INVERSE<br>OHMM |    |
| 0               | 40 |
| NORMAL<br>OHMM  |    |
| 0               | 40 |

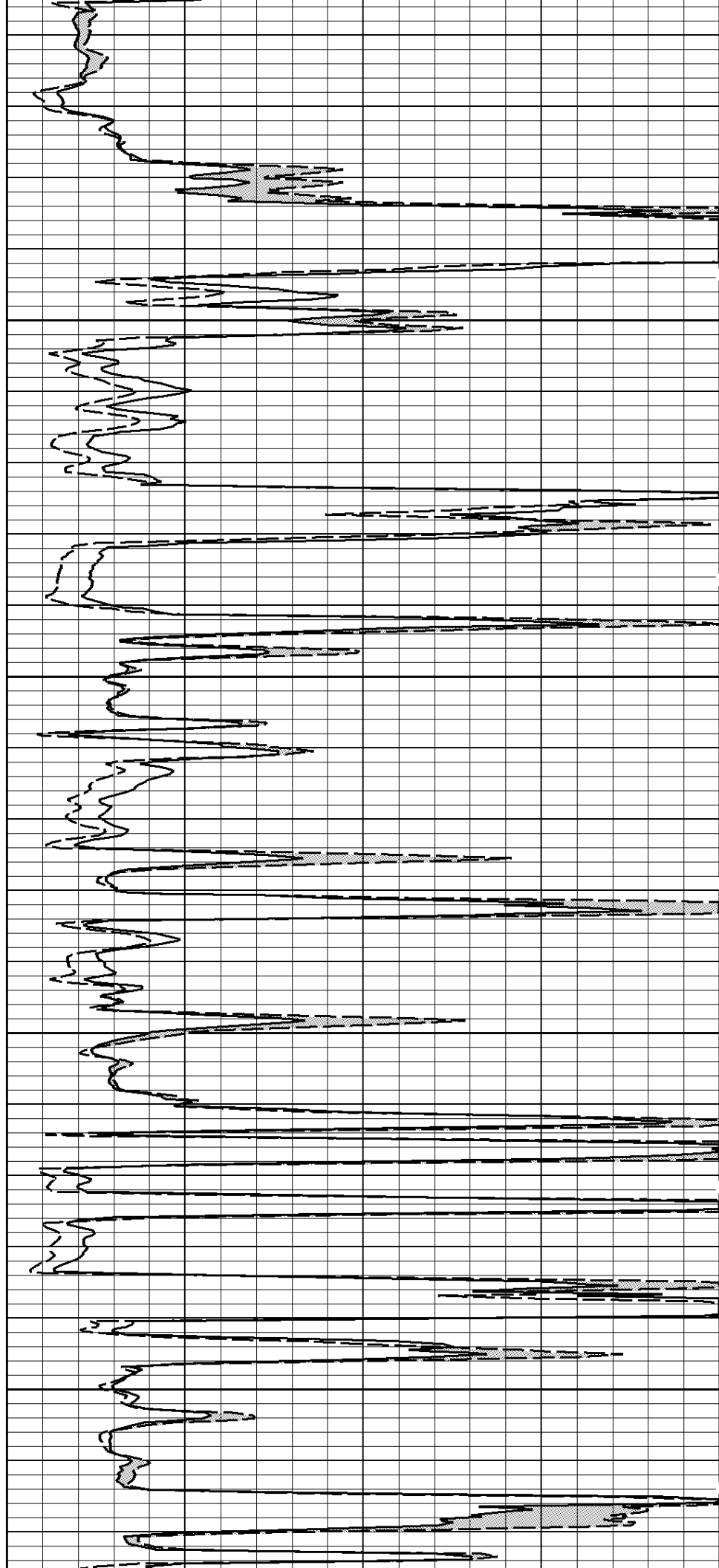
1:240 MAIN SECTION

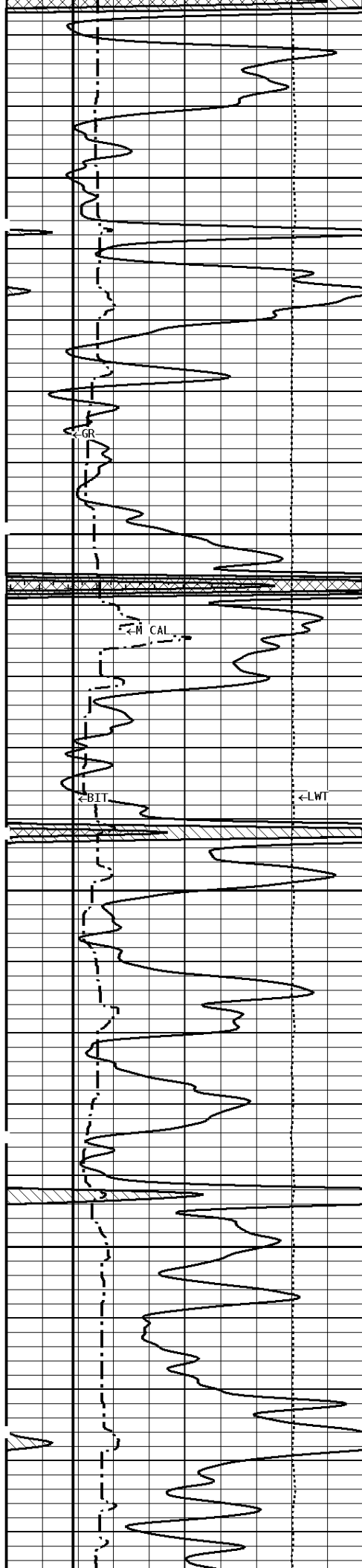




4100

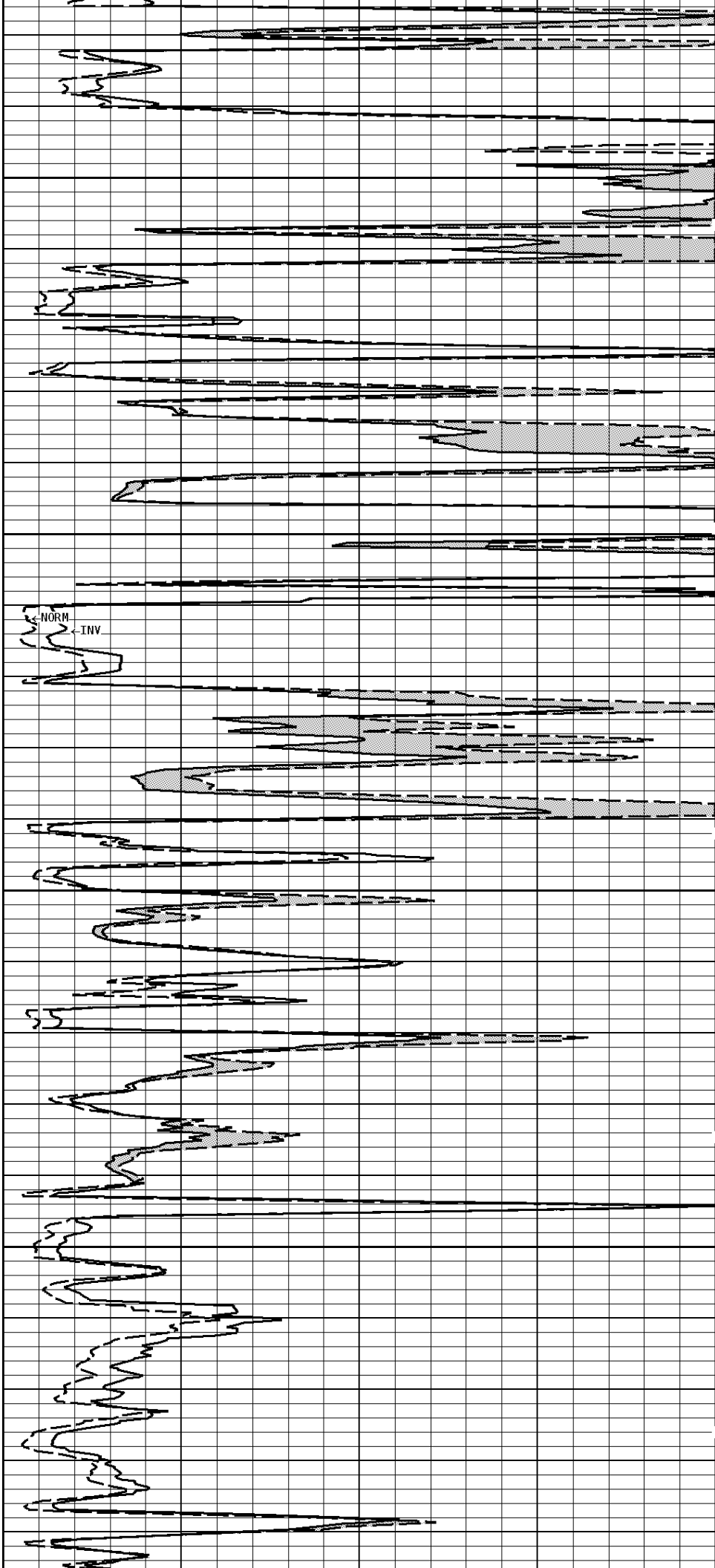
4200

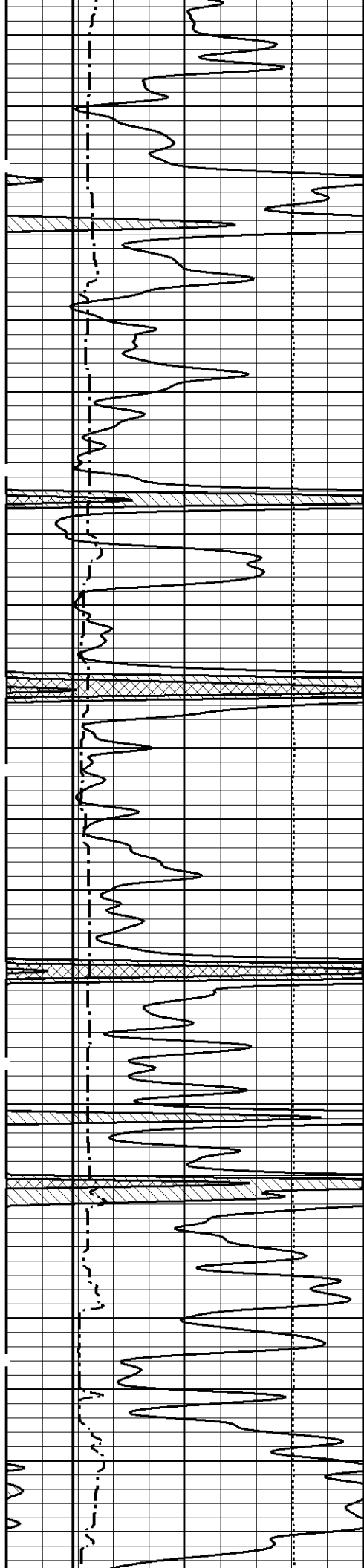




4300

4400

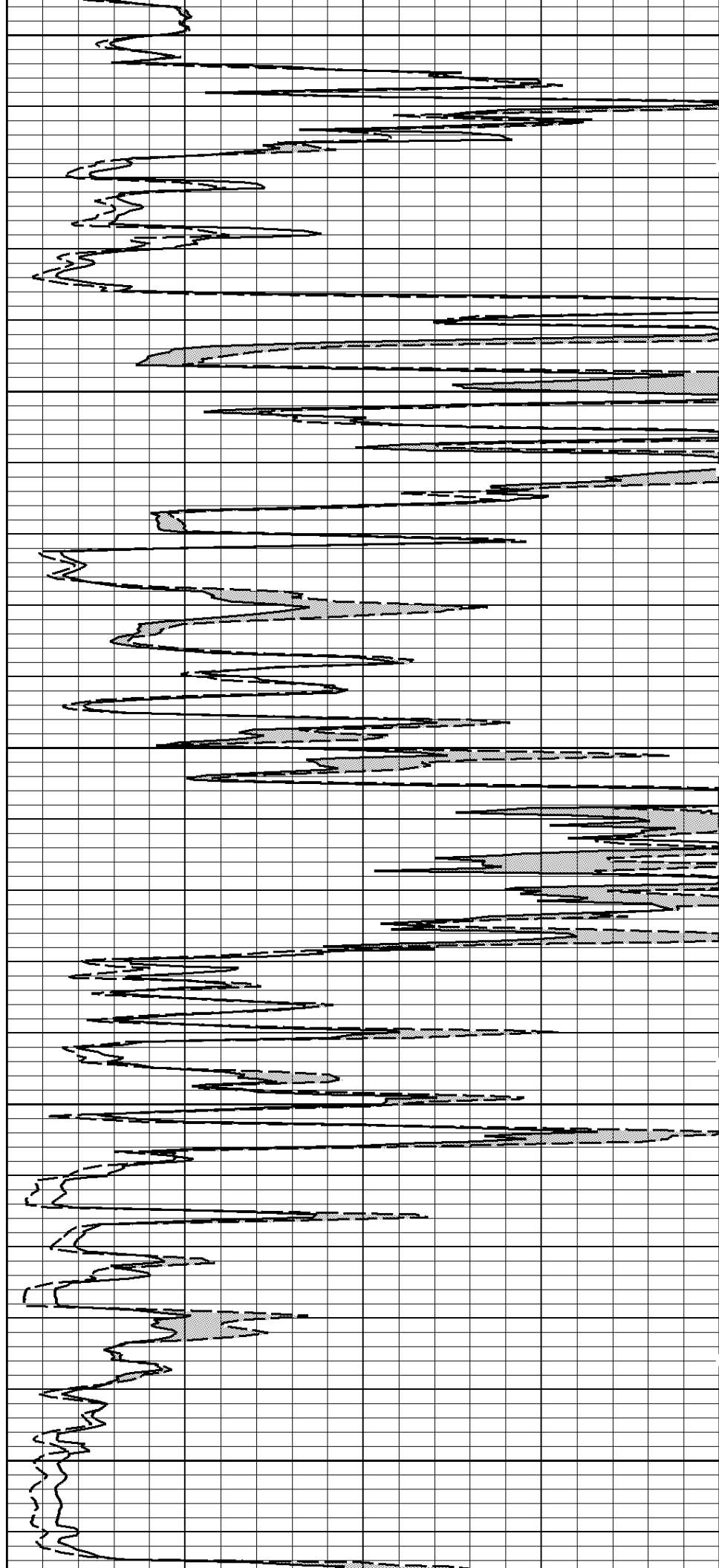


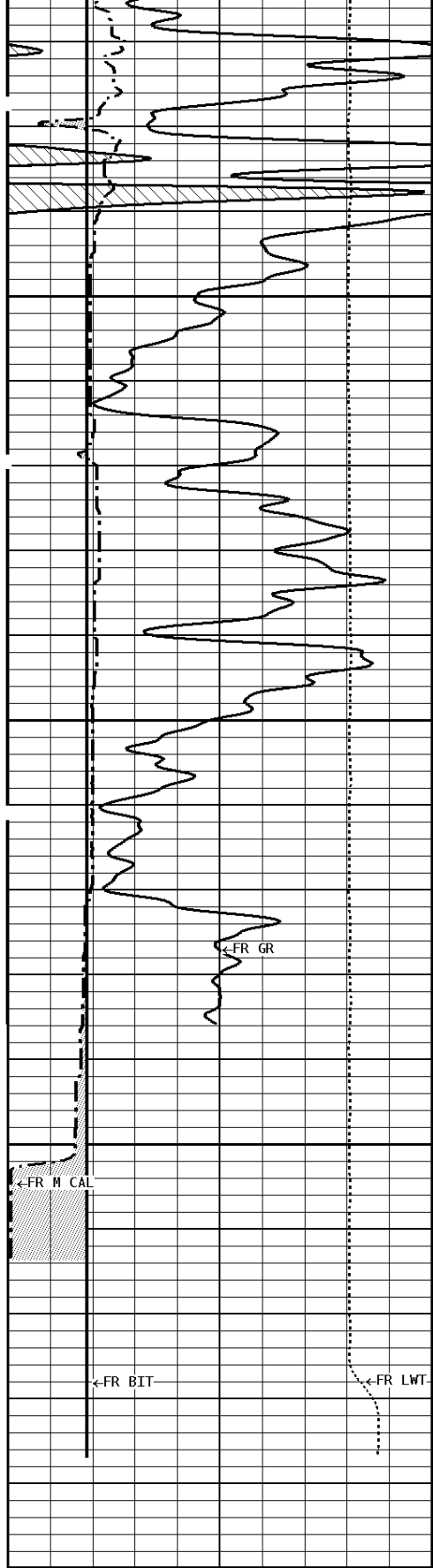


4500

4600

4700

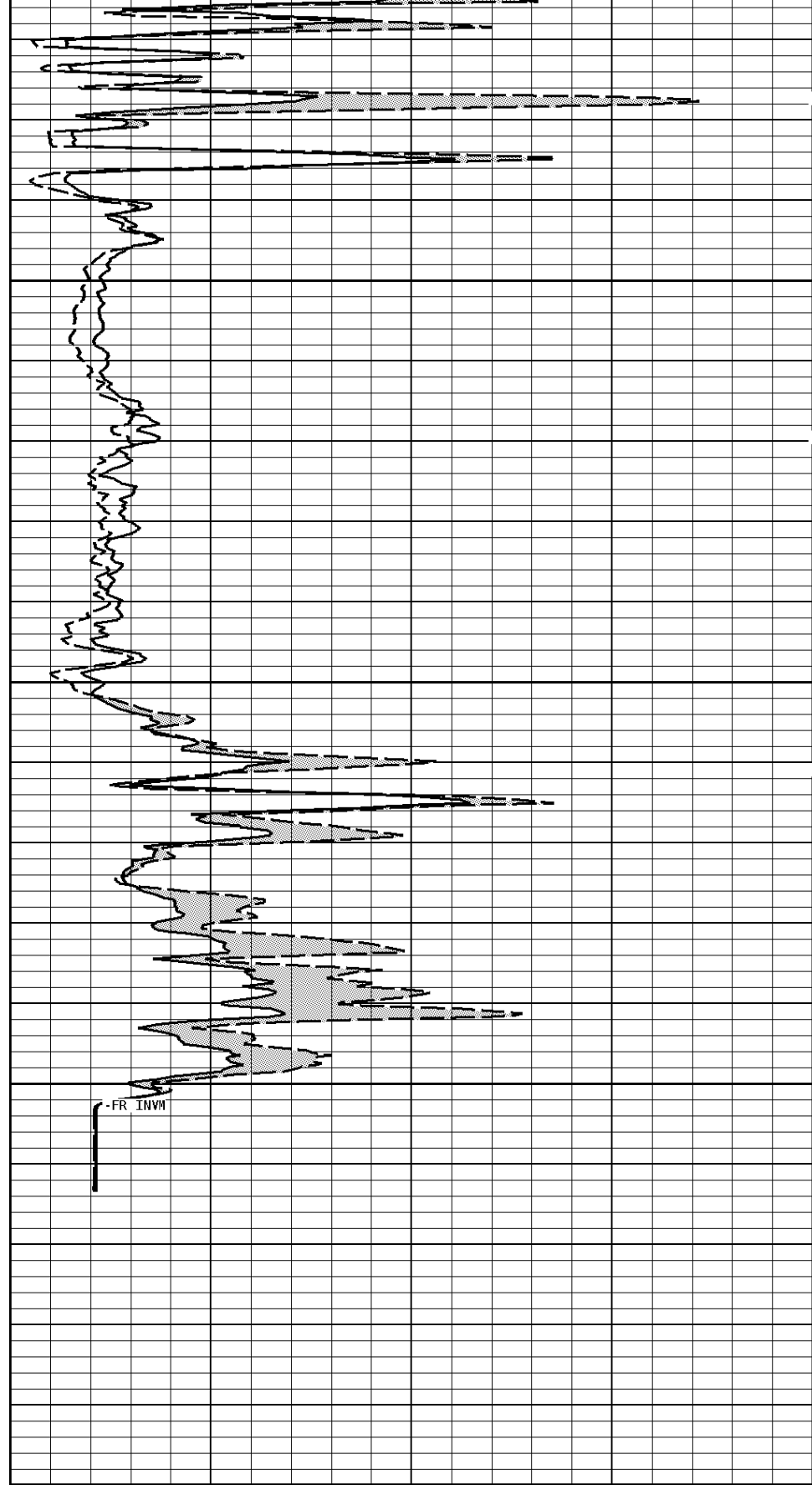




4800

4878

# 1:240 MAIN SECTION



GAMMA RAY  
API UNITS

150 0 300 150

TENSION

NORMAL  
OHMM

0

40

INVERSE



|                           |    |
|---------------------------|----|
| LBS                       |    |
| 10000                     | 0  |
| -----                     |    |
| CALIPER MICRO INCHES (IN) |    |
| 16                        | 26 |
| 6                         | 16 |
| -----                     |    |
| BIT SIZE INCHES (IN)      |    |
| 6                         | 16 |
| -----                     |    |

|       |    |
|-------|----|
| OHMM  |    |
| 0     | 40 |
| ----- |    |

**\* Borehole Zone Factors \***

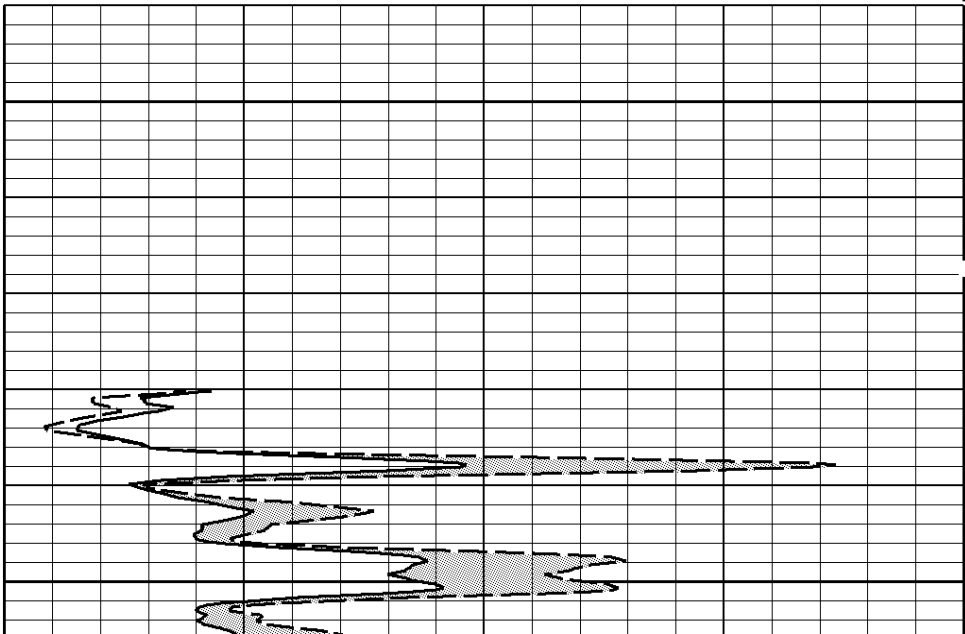
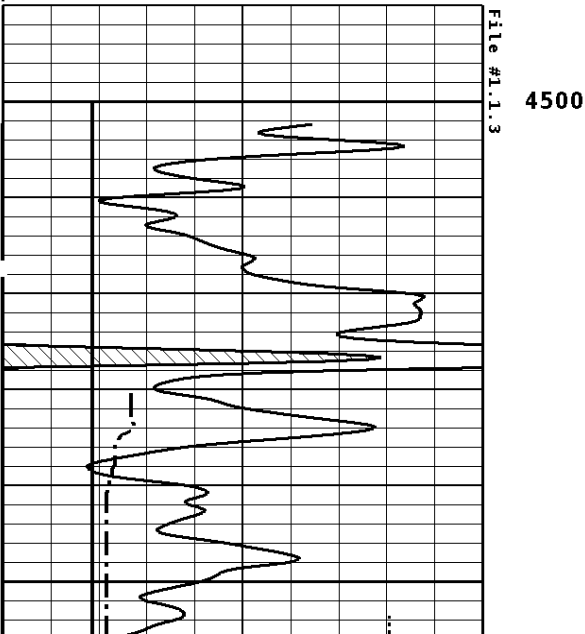
|                          |  |           |    |     |      |
|--------------------------|--|-----------|----|-----|------|
| Zone 1                   |  | 99999.0   | to | 0.0 | Feet |
| Drill Bit Size           |  | 7.875 in  |    |     |      |
| MSTNG Normal Correction  |  | 0.00 ohmm |    |     |      |
| MSTNG Inverse Correction |  | 2.00 ohmm |    |     |      |

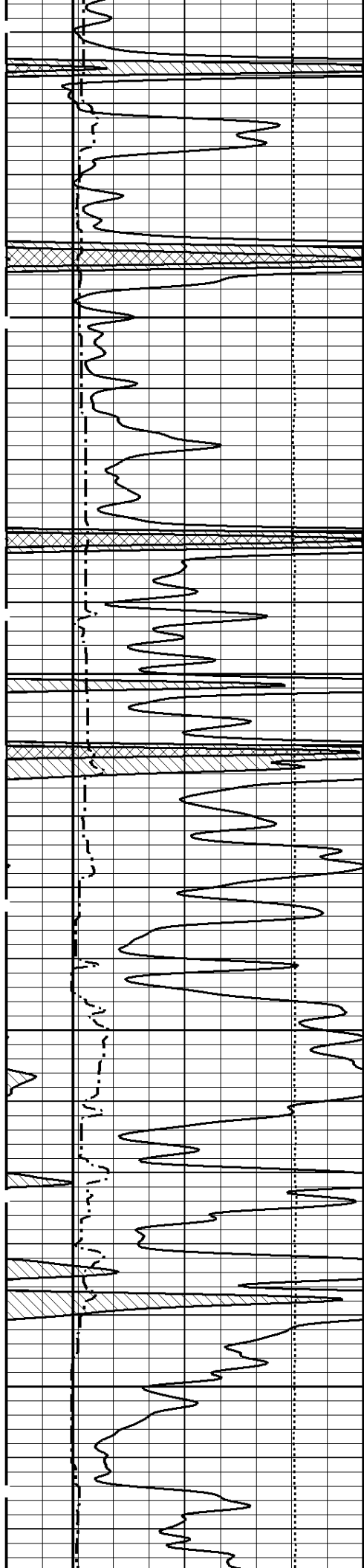
|                                                        |                                                |                        |
|--------------------------------------------------------|------------------------------------------------|------------------------|
| <b>Well File:</b> VAL ENERGY CRUMRINE 1-4 AUGUST6_MSTK | <b>Scale:</b> 1:240                            | <b>Format:</b> MST-240 |
| <b>Segment:</b> V1.D1.S3 Reprocess of REPEAT           | <b>Acquired:</b> 2019-08/06 22:38 3.4.1-13968  |                        |
| <b>Reference:</b> 0                                    | <b>Processed:</b> 2019-08/06 22:48 3.4.1-13968 |                        |

|                           |     |
|---------------------------|-----|
| BIT SIZE INCHES (IN)      |     |
| 6                         | 16  |
| -----                     |     |
| CALIPER MICRO INCHES (IN) |     |
| 16                        | 26  |
| 6                         | 16  |
| -----                     |     |
| TENSION LBS               |     |
| 10000                     | 0   |
| -----                     |     |
| GAMMA RAY API UNITS       |     |
| 150                       | 300 |
| 0                         | 150 |
| -----                     |     |

|              |    |
|--------------|----|
| INVERSE OHMM |    |
| 0            | 40 |
| -----        |    |
| NORMAL OHMM  |    |
| 0            | 40 |
| -----        |    |

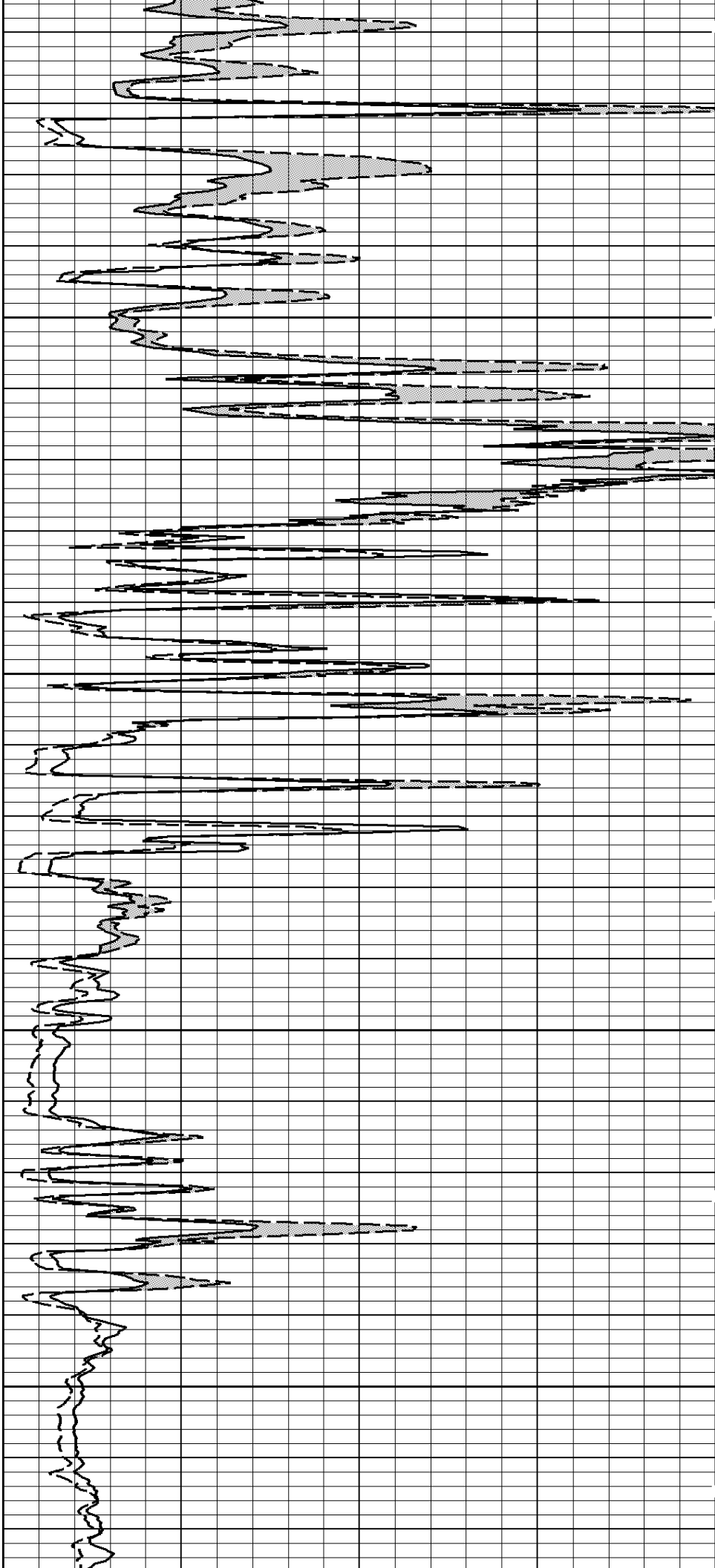
**1:240 REPEAT SECTION**

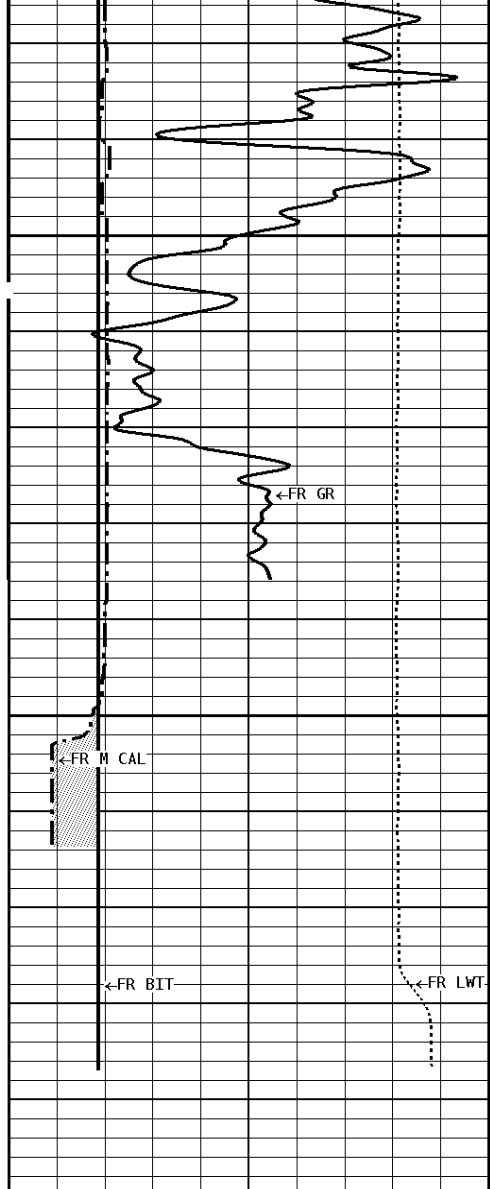




4600

4700

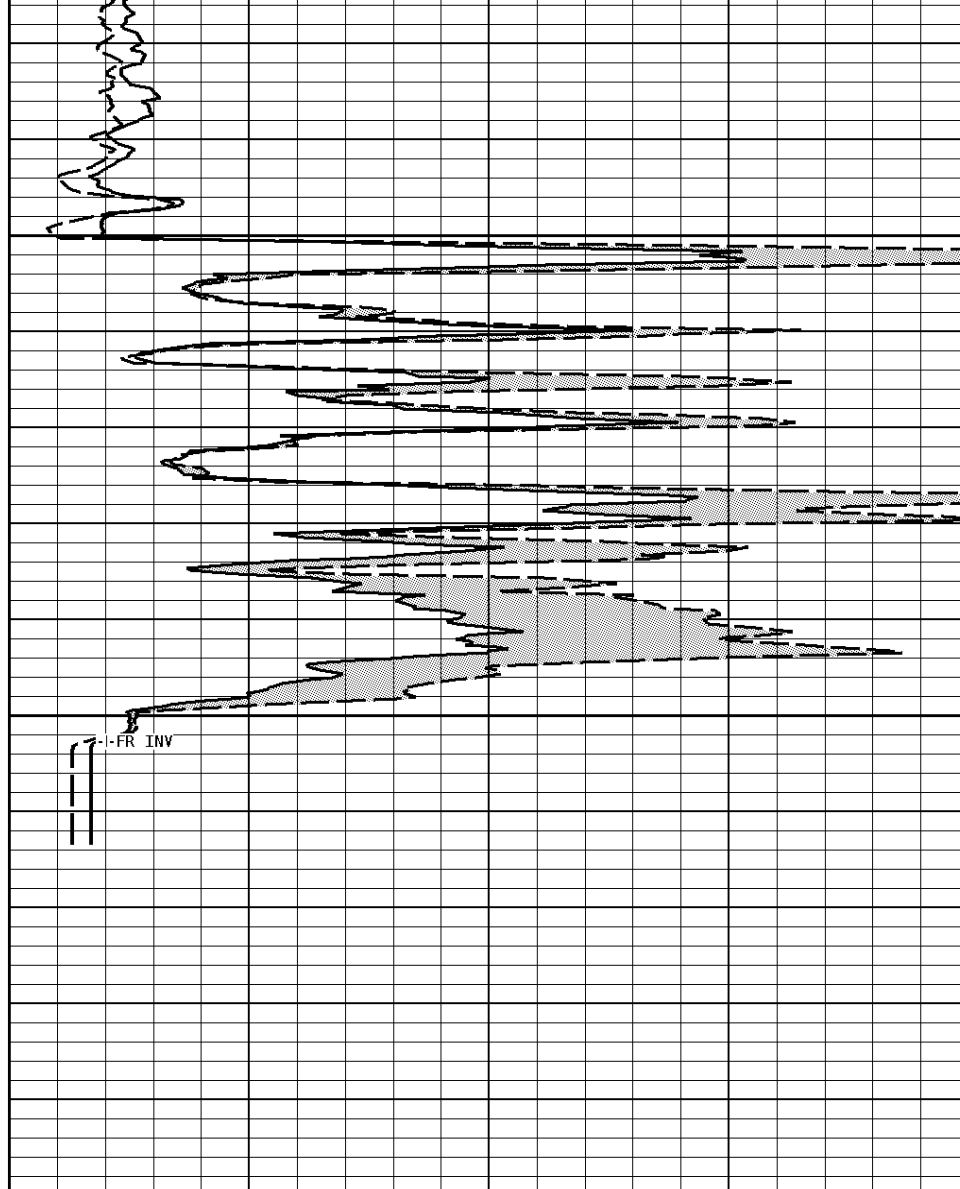




4800

4878

File #1.1.3



## 1:240 REPEAT SECTION

| GAMMA RAY<br>API UNITS       |            |
|------------------------------|------------|
| 150<br>0                     | 300<br>150 |
| TENSION<br>LBS               |            |
| 10000                        | 0          |
| CALIPER MICRO<br>INCHES (IN) |            |
| 16<br>6                      | 26<br>16   |
| BIT SIZE<br>INCHES (IN)      |            |
| 6                            | 16         |

| NORMAL<br>OHMM  |    |
|-----------------|----|
| 0               | 40 |
| INVERSE<br>OHMM |    |
| 0               | 40 |

### \* Borehole Zone Factors \*

| Zone 1 99999.0 to 0.0 Feet |           |
|----------------------------|-----------|
| Drill Bit Size             | 7.875 in  |
| MSTNG Normal Correction    | 0.00 ohmm |

MSTNG Inverse Correction

2.00

ohmm

**\* Calibration Summary \***

| Shop Calibration        |            |          |       |                |  |       |
|-------------------------|------------|----------|-------|----------------|--|-------|
| GRT-B                   |            |          |       |                |  |       |
| Performed : 16-May-2019 |            |          |       | Time : 10:26   |  |       |
| Sensor Suite : GR-GR5   |            |          |       | ID : GRT-BA-14 |  |       |
| GR                      | Background | Measured | Units | Calibrated     |  | Units |
|                         |            | Jig      |       | Jig            |  |       |
|                         | 64         | 323      | CPS   | 160            |  | GRAPI |

| Shop Calibration        |                |        |                  |                 |       |  |
|-------------------------|----------------|--------|------------------|-----------------|-------|--|
| MST-DA                  |                |        |                  |                 |       |  |
| Performed : 15-MAY-2019 |                |        |                  | Time : 10:36    |       |  |
| Sensor Suite : CALI-MSN |                |        |                  | ID : MST-DA-024 |       |  |
| CL # 1                  | Jig - Measured |        | Jig - Calibrated |                 | Units |  |
|                         | Ring#1         | Ring#2 | Ring#1           | Ring#2          |       |  |
|                         | 6.8            | 11.2   | 6.0              | 12.0            | IN.   |  |

|                         |      |           |       |                 |            |       |
|-------------------------|------|-----------|-------|-----------------|------------|-------|
| Performed : 15-MAY-2019 |      |           |       | Time : 10:37    |            |       |
| Sensor Suite : MSTDA-NI |      |           |       | ID : MST-DA-024 |            |       |
| Internal                |      |           |       |                 |            |       |
| INV-V                   | Zero | Measured  | Units | Zero            | Calibrated | Units |
|                         |      | Reference |       |                 | Reference  |       |
|                         | 0.0  | 29853.4   |       | 0.00            | 1546.00    | MV    |
| NOR-V                   | 0.0  | 29711.1   |       | 0.00            | 1646.00    | MV    |
| IN-C                    | 0.0  | 58914.6   |       | 0.00            | 15.46      | UA    |
| INV-R                   |      |           |       |                 | 32.34      | OHMM  |
| NOR-R                   |      |           |       |                 | 58.67      | OHMM  |

# STEP

energy services

Company: VAL ENERGY, INC

Well: CRUMRINE #1-4

Location: 788' FSL &amp; 1414' FWL

Logged: 08-06-2019

K.B. Elev: 3330.0 Ft