



## Pioneer Energy Services

## DUAL COMP POROSITY LOG

|         |                      |         |
|---------|----------------------|---------|
| Company | FUNK PETROLEUM LLC   |         |
| Well    | CALLIHAM TRUST #1-18 |         |
| Field   | WILDCAT              |         |
| County  | THOMAS               | State K |

Location: API #: 15-193-20975-00-00

API #: 15-193-20975-00-00

NE SW SE NW  
2297' FNL & 1959' FWL

SEC 18 TWP 9S RGE 35W

|                        |               |           |      |
|------------------------|---------------|-----------|------|
| Permanent Datum        | GROUND LEVEL  | Elevation | 3380 |
| Log Measured From      | KELLY BUSHING |           |      |
| Drilling Measured From | KELLY BUSHING |           |      |

|           |       |
|-----------|-------|
| Elevation |       |
| K.B.      | 3385' |
| D.F.      | N/A   |
| G.L.      | 3380' |

|      |            |
|------|------------|
| Date | 10/15/2016 |
|------|------------|

| Run Number | ONE |
|------------|-----|
|------------|-----|

| Type Log | CNLC/DL |
|----------|---------|
|          |         |

|              |       |
|--------------|-------|
| Depth Logger | 4899' |
|--------------|-------|

|                        |       |
|------------------------|-------|
| Bottom Logged Interval | 4871' |
|------------------------|-------|

|              |       |
|--------------|-------|
| Log Interval | 3800' |
|--------------|-------|

|                    |          |
|--------------------|----------|
| Type Fluid in Hole | CHEMICAL |
|--------------------|----------|

|                  |      |
|------------------|------|
| Density:         | 0.3  |
| Calinity, FIM CL | 0000 |

| Level | FULL |
|-------|------|
|-------|------|

|                 |          |
|-----------------|----------|
| Max. Rec. Temp. | 125 DEGH |
|-----------------|----------|

|                    |            |
|--------------------|------------|
| Operating Rig Time | 4 1/2 HOUR |
|--------------------|------------|

|                       |          |     |
|-----------------------|----------|-----|
| Equipment -- Location | 91       | CON |
| Decoded By:           | T MARTIN |     |

|              |            |
|--------------|------------|
| Witnessed By | TIM PRIEST |
| Received By  | I: WILSON  |

|                 |            |
|-----------------|------------|
| XXXXXXXXXX      | XXXXXXXXXX |
| Borehole Record |            |

| Run No. | Bit | From | To |
|---------|-----|------|----|
|---------|-----|------|----|

|     |        |     |      |
|-----|--------|-----|------|
| ONE | 12.25" | 00' | 303' |
|-----|--------|-----|------|

|     |        |      |    |
|-----|--------|------|----|
| TWO | 7.875" | 303' | TD |
|-----|--------|------|----|

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not warrant the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

## Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

LEVANT, 6 S TO K RD,  
3 1/2 W, S INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
www.pioneerenergy.com 785-625-3858

## Your Pioneer Energy Services Crew

This Log Record Was Witnessed By

Engineer: T. MARTIN

Primary Witness: TIM PRIEST

Operator:

Secondary Witness:

Operator:

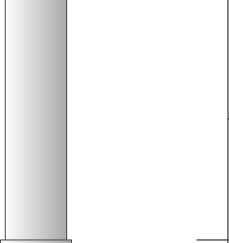
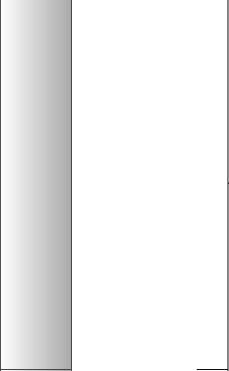
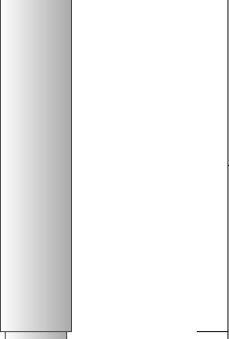
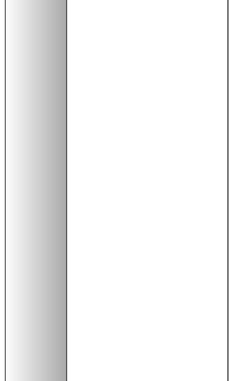
Secondary Witness:

Operator:

Secondary Witness:

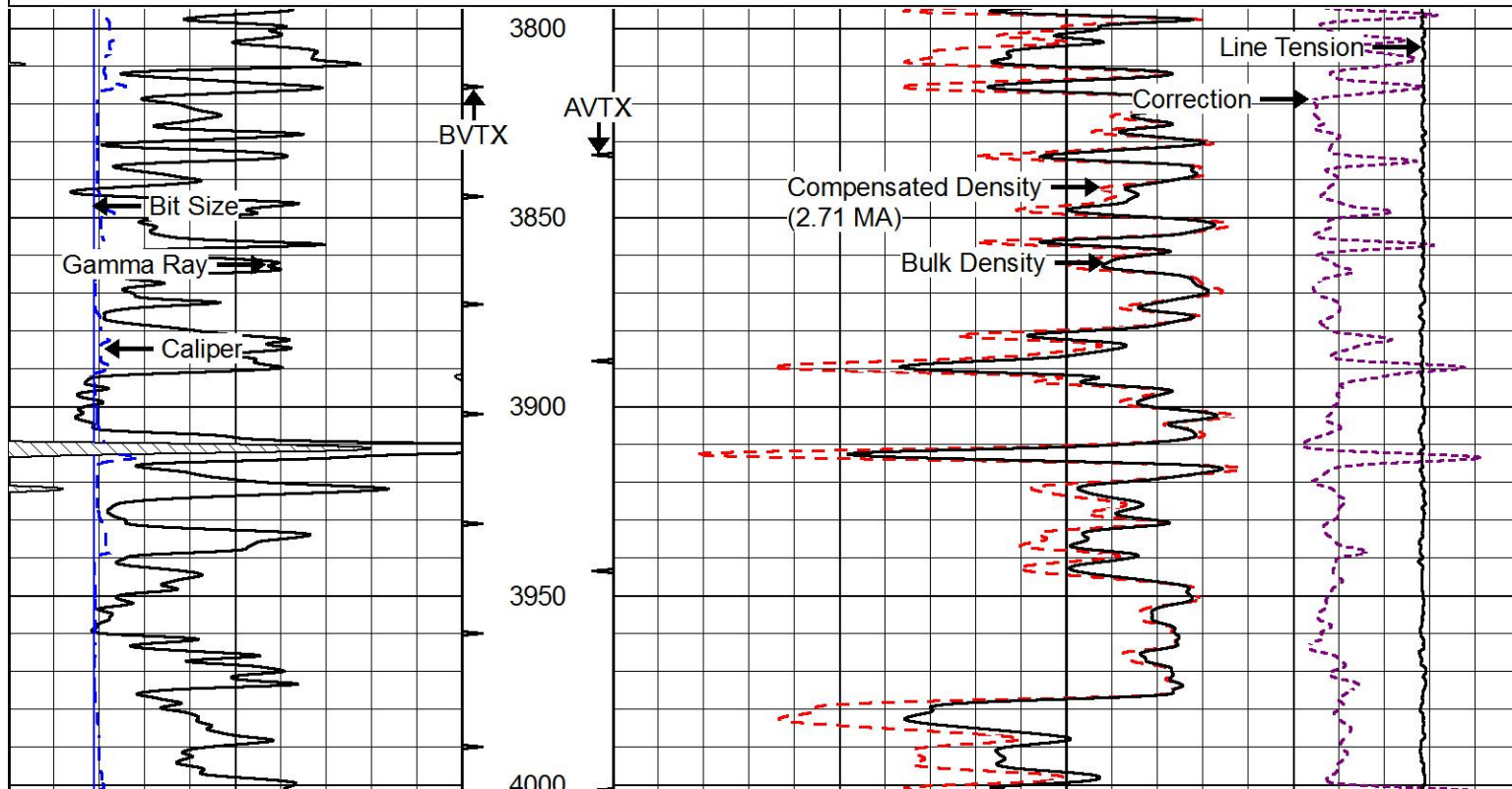
Top - Bottom

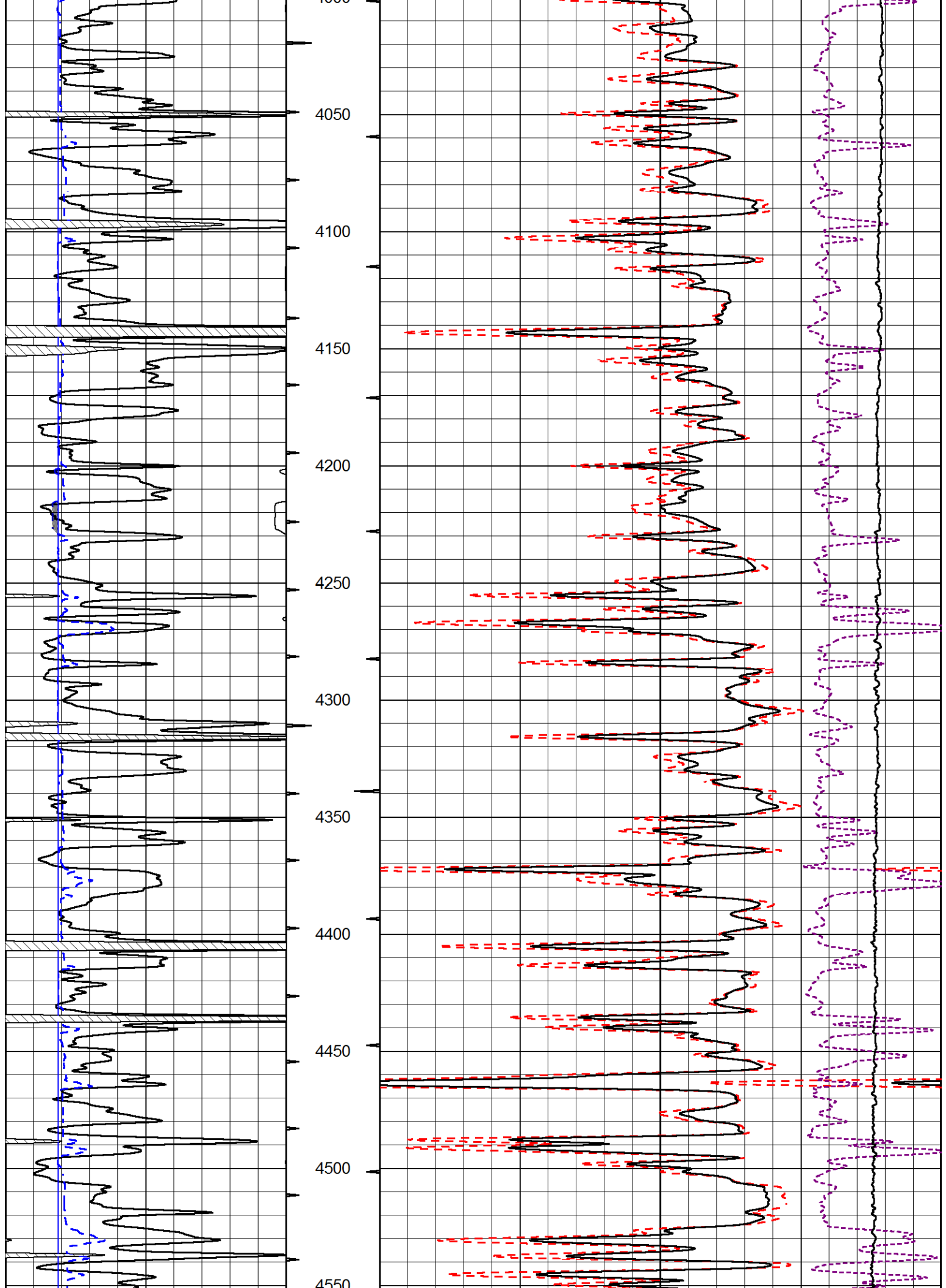
|                  |                 |                |              |                  |                  |                 |                   |
|------------------|-----------------|----------------|--------------|------------------|------------------|-----------------|-------------------|
| M                | A               | SZCOR          | NPORSEL      | FLUIDDEN<br>g/cc | MATRXDEN<br>g/cc | SPSHIFT<br>mV   | SNDERRM<br>mmho/m |
| 2                | 1               | Off            | Limestone    | 1                | 2.71             | -115            | 0                 |
| SNDERR<br>mmho/m | SRFTEMP<br>degF | CASETHCK<br>in | CASEOD<br>in | PERFS            | TDEPTH<br>ft     | BOTTEMP<br>degF | BOREID<br>in      |
| 0                | 75              | 0              | 5.5          | 0                | 4899             | 125             | 7.875             |

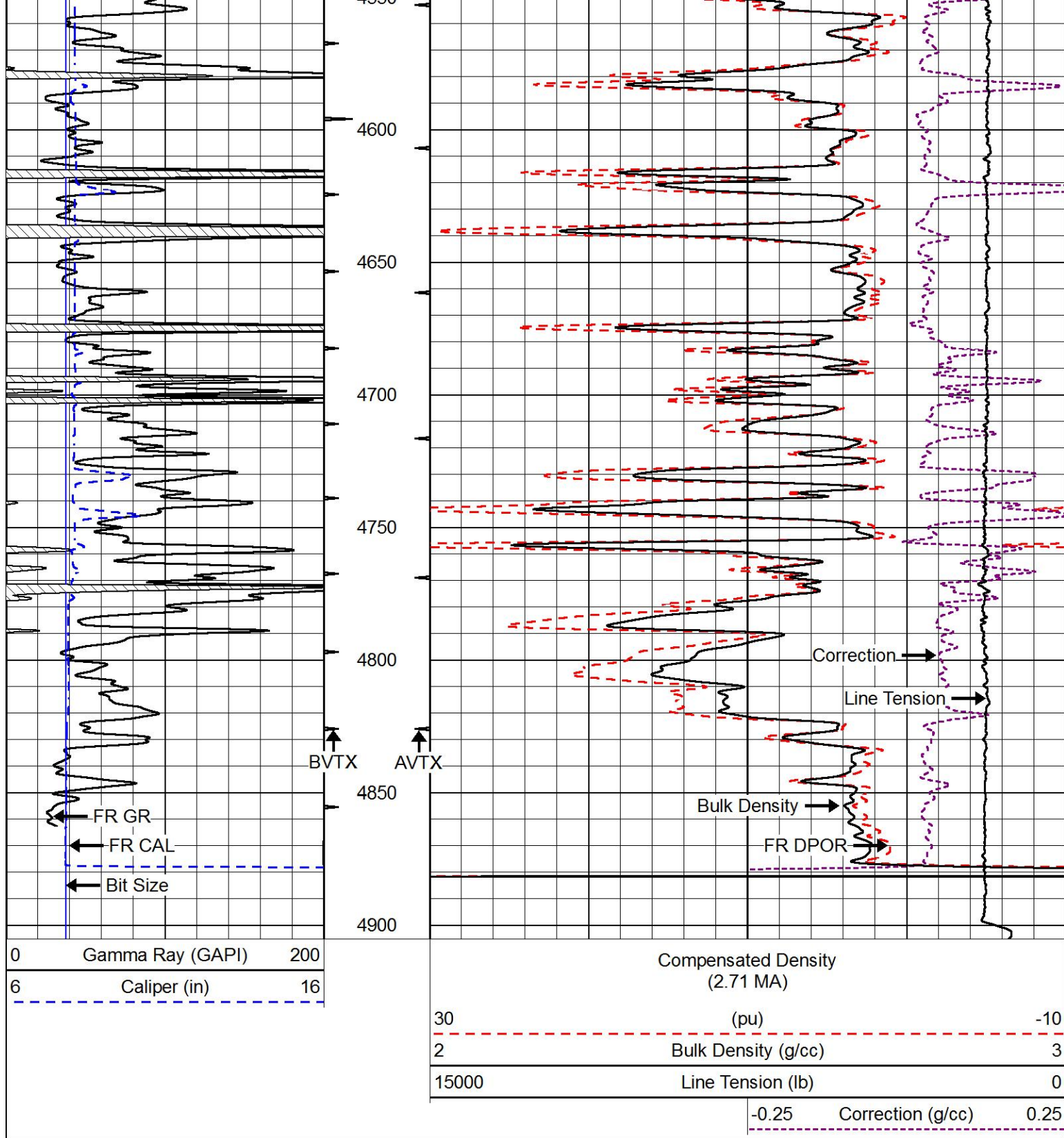
| Sensor             | Offset (ft)             | Schematic                                                                           | Description                                                              | Length (ft) | O.D. (in) | Weight (lb) |
|--------------------|-------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------|-----------|-------------|
| GR                 | 40.58                   |    | GR-M&W (89)                                                              | 3.00        | 3.50      | 50.00       |
| CNLSC<br>CNSSC     | 37.48<br>36.73          |   | CNT-M&W (207-MW)                                                         | 5.50        | 3.50      | 100.00      |
| LSD<br>DCAL<br>SSD | 28.43<br>28.42<br>27.93 |  | CDL-M&W (90-1031)                                                        | 8.50        | 4.00      | 250.00      |
| MCAL<br>MI<br>MN   | 19.83<br>19.83<br>19.83 |  | ML-PSIML (PSI-01)<br>GO Micro log tools converted to Simplec electronics | 7.58        | 4.00      | 65.00       |
| RLL3F<br>RLL3      | 15.80<br>15.80          |  |                                                                          |             |           |             |

|                                                                                                                                        |      |  |                  |       |      |        |
|----------------------------------------------------------------------------------------------------------------------------------------|------|--|------------------|-------|------|--------|
|                                                                                                                                        |      |  | DIL-M&W (PSI 13) | 18.50 | 3.50 | 220.00 |
| CILD                                                                                                                                   | 8.00 |  |                  |       |      |        |
| CILM                                                                                                                                   | 4.70 |  |                  |       |      |        |
| SP                                                                                                                                     | 0.20 |  |                  |       |      |        |
| Dataset: funk_calliham trust_#1-18.db: field/well/stckml/pass4.1<br>Total length: 43.08 ft<br>Total weight: 685.00 lb<br>O.D.: 4.00 in |      |  |                  |       |      |        |

|                                                                                                                                                                                                |                  |     |                                                                                                     |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----|-----------------------------------------------------------------------------------------------------|--|--|
|                                                                                                                |                  |     | 2" SCALE BULK DENSITY<br>MAIN PASS                                                                  |  |  |
| Database File funk_calliham trust_#1-18.db<br>Dataset Pathname stckml/pass4.3<br>Presentation Format cdl<br>Dataset Creation Sat Oct 15 14:42:46 2016<br>Charted by Depth in Feet scaled 1:600 |                  |     |                                                                                                     |  |  |
| 0                                                                                                                                                                                              | Gamma Ray (GAPI) | 200 | Compensated Density (2.71 MA)                                                                       |  |  |
| 6                                                                                                                                                                                              | Caliper (in)     | 16  | 30 (pu) -10<br>2 Bulk Density (g/cc) 3<br>15000 Line Tension (lb) 0<br>-0.25 Correction (g/cc) 0.25 |  |  |









**PIONEER**  
Pioneer Energy Services

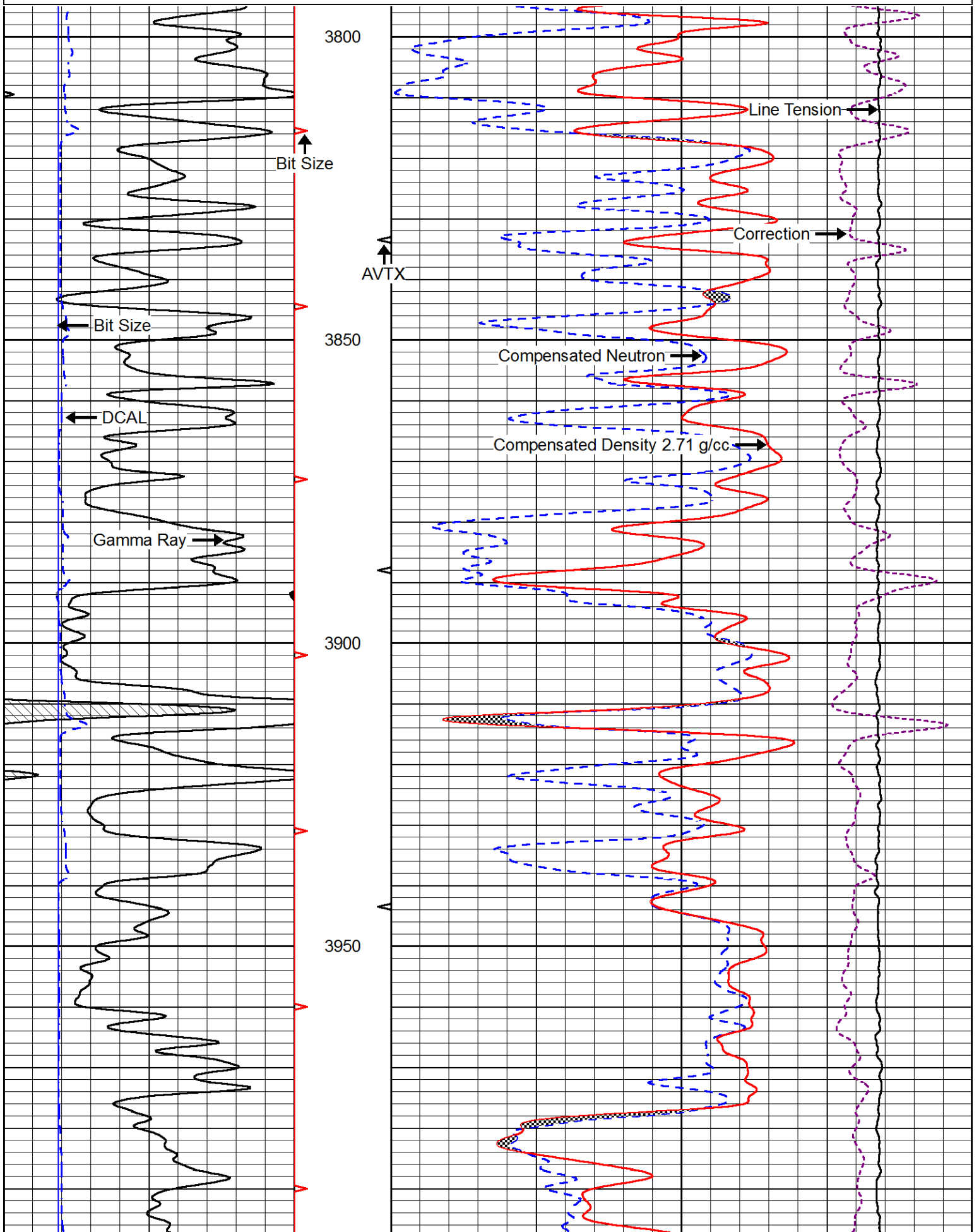
# MAIN PASS

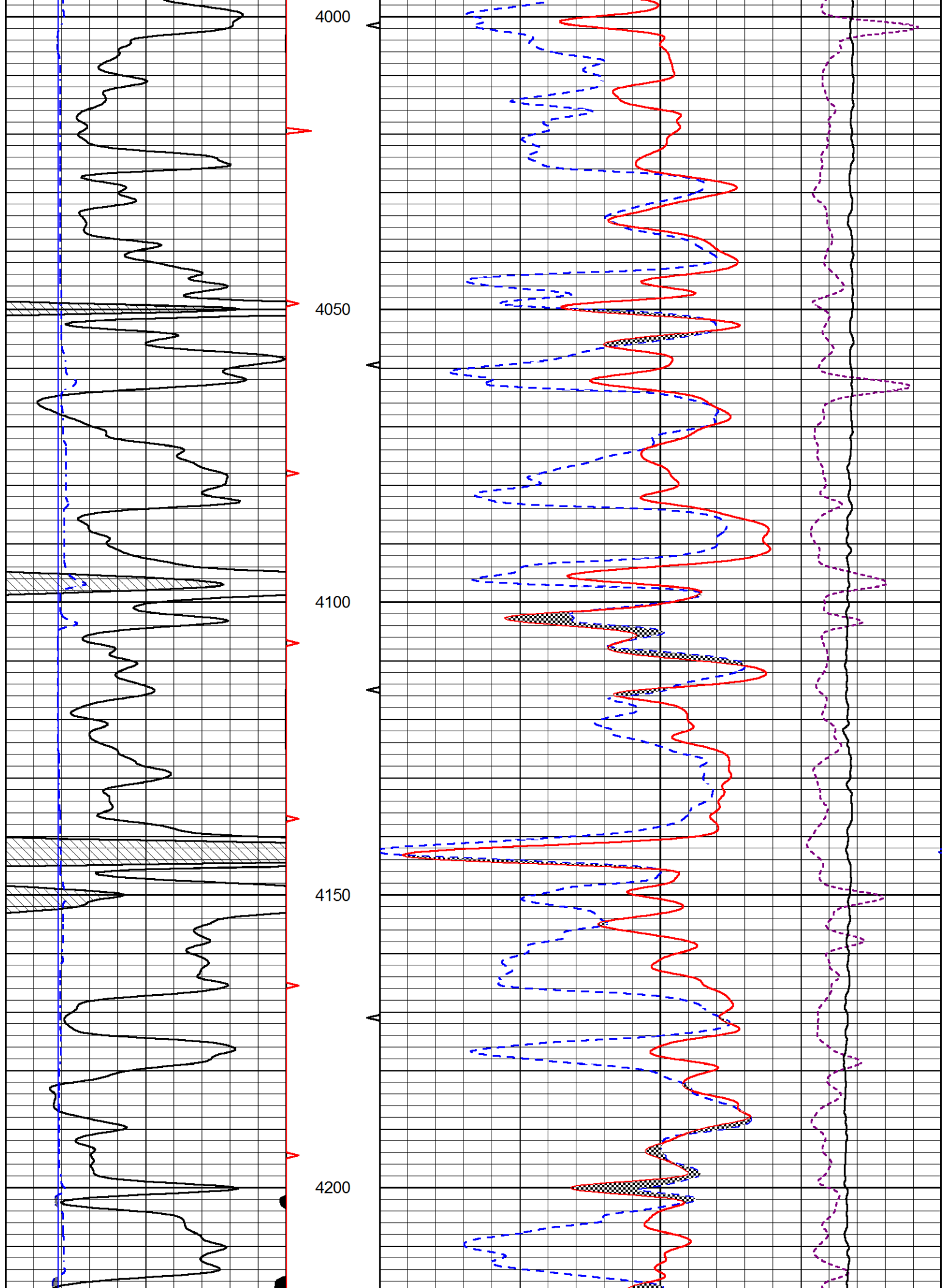
|                     |                              |
|---------------------|------------------------------|
| Database File       | funk_calliham trust_#1-18.db |
| Dataset Pathname    | stckml/pass4.1               |
| Presentation Format | cnldspec                     |
| Dataset Creation    | Sat Oct 15 15:27:40 2016     |
| Charted by          | Depth in Feet scaled 1:240   |

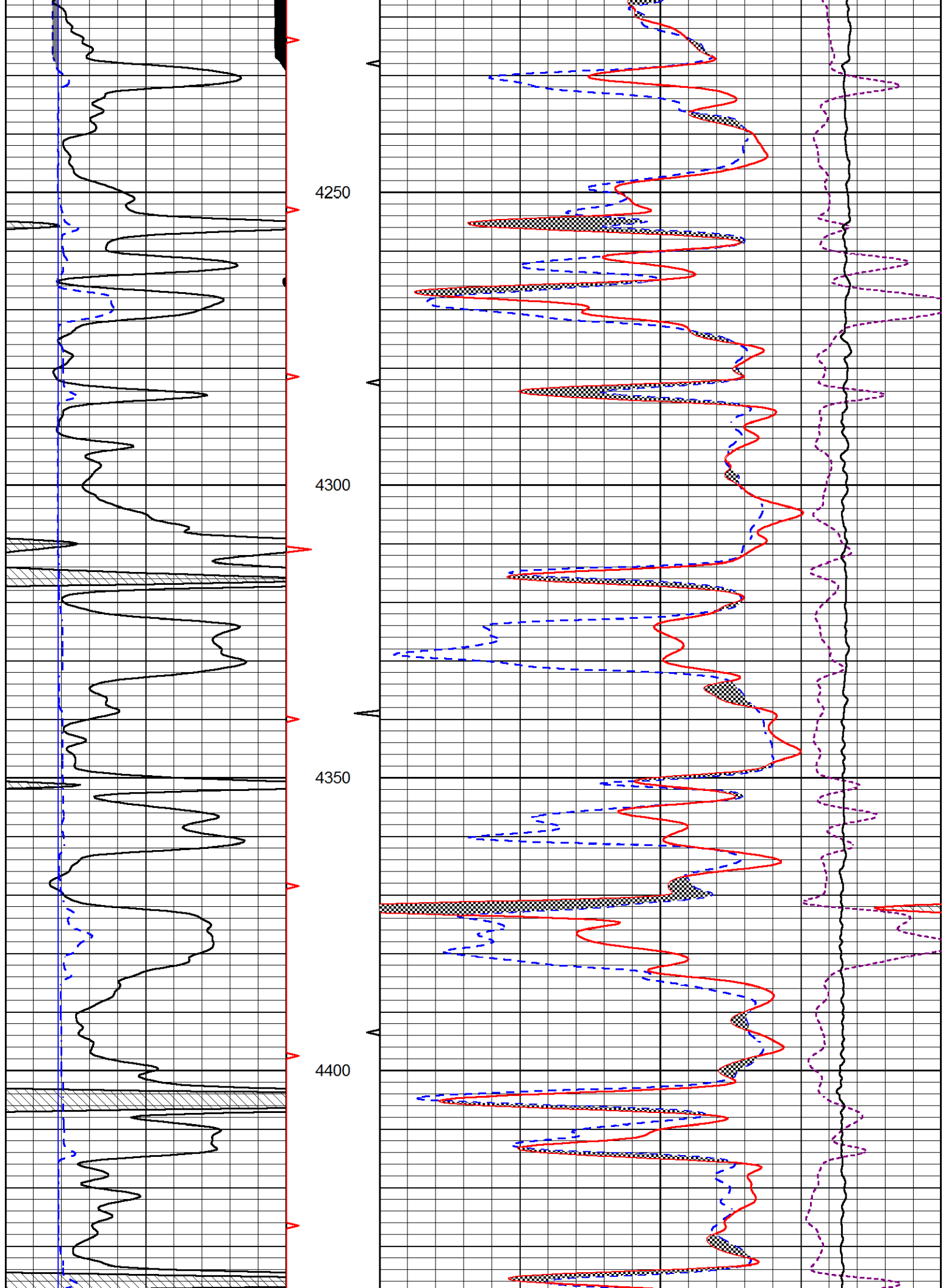


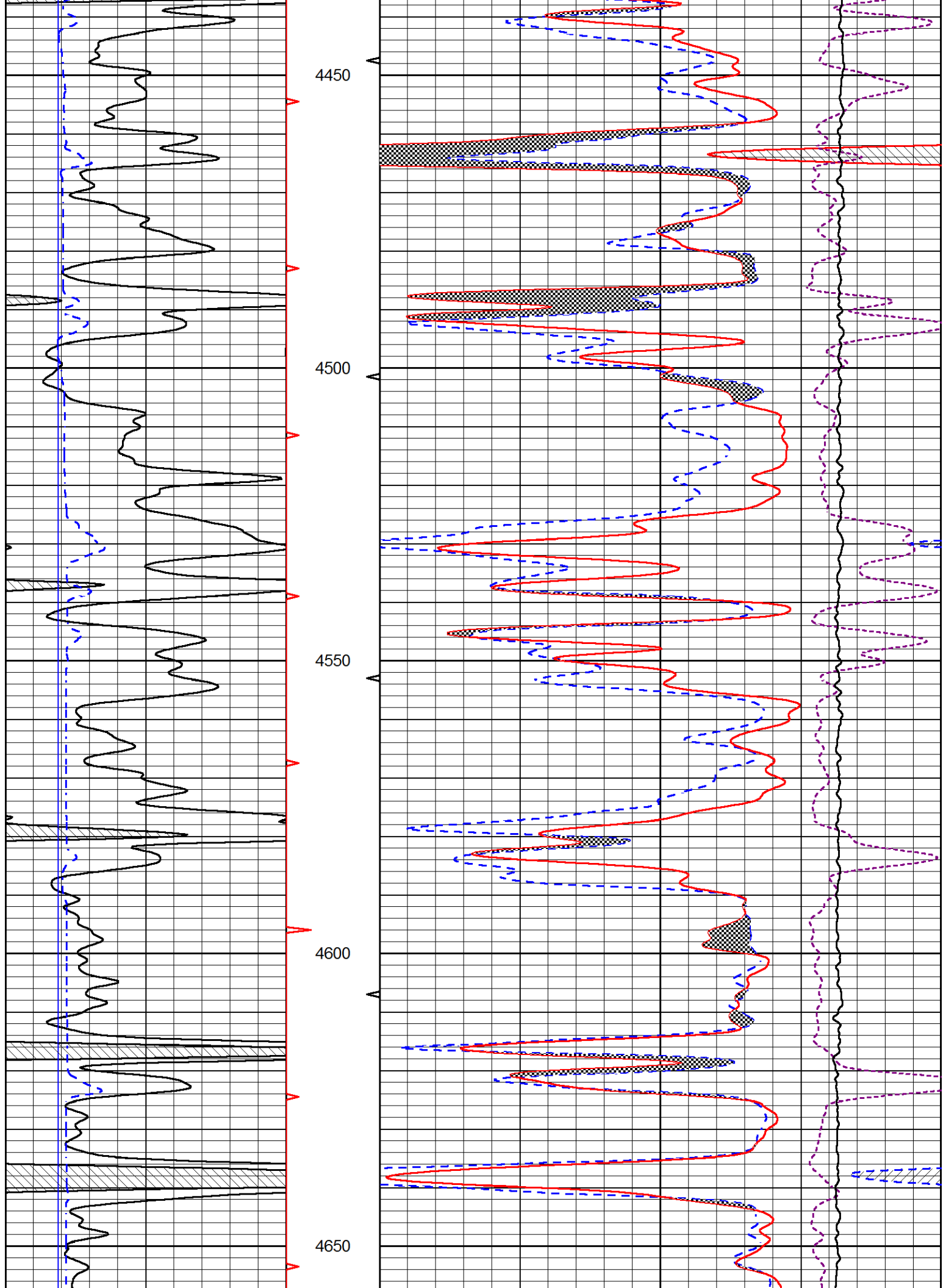
Gamma Ray (API) 6 DCAL (in) 16

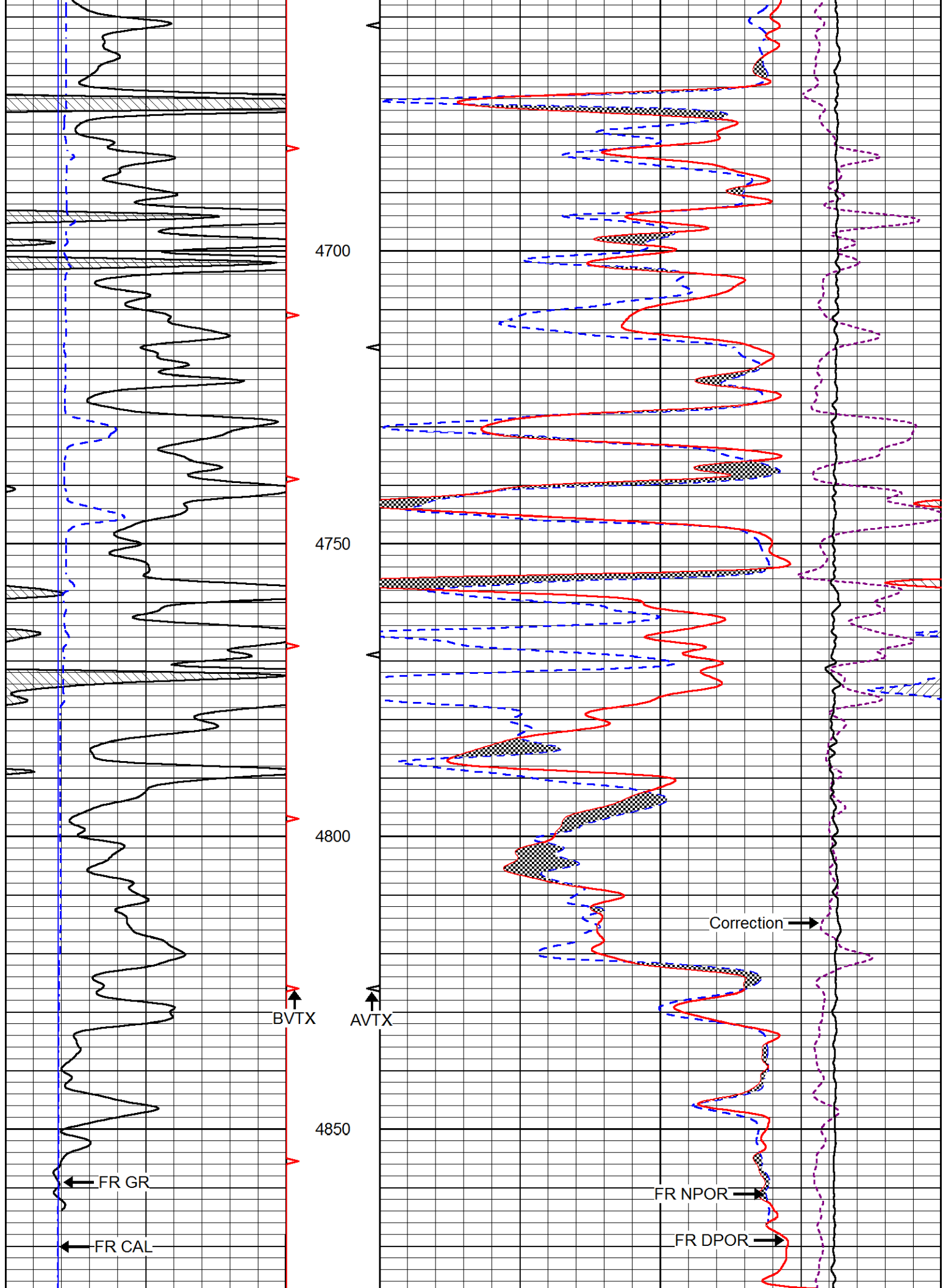
30 Compensated Density 2.71 g/cc (pu) -10  
10000 Line Tension (lb) 0  
-0.25 Correction (g/cc) 0.25

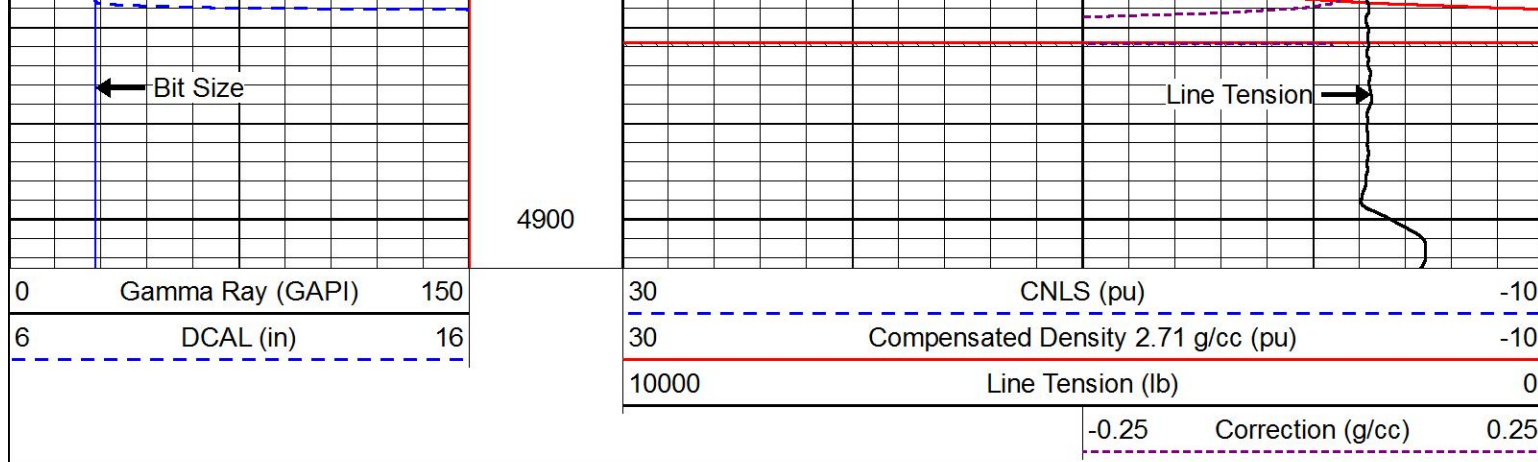






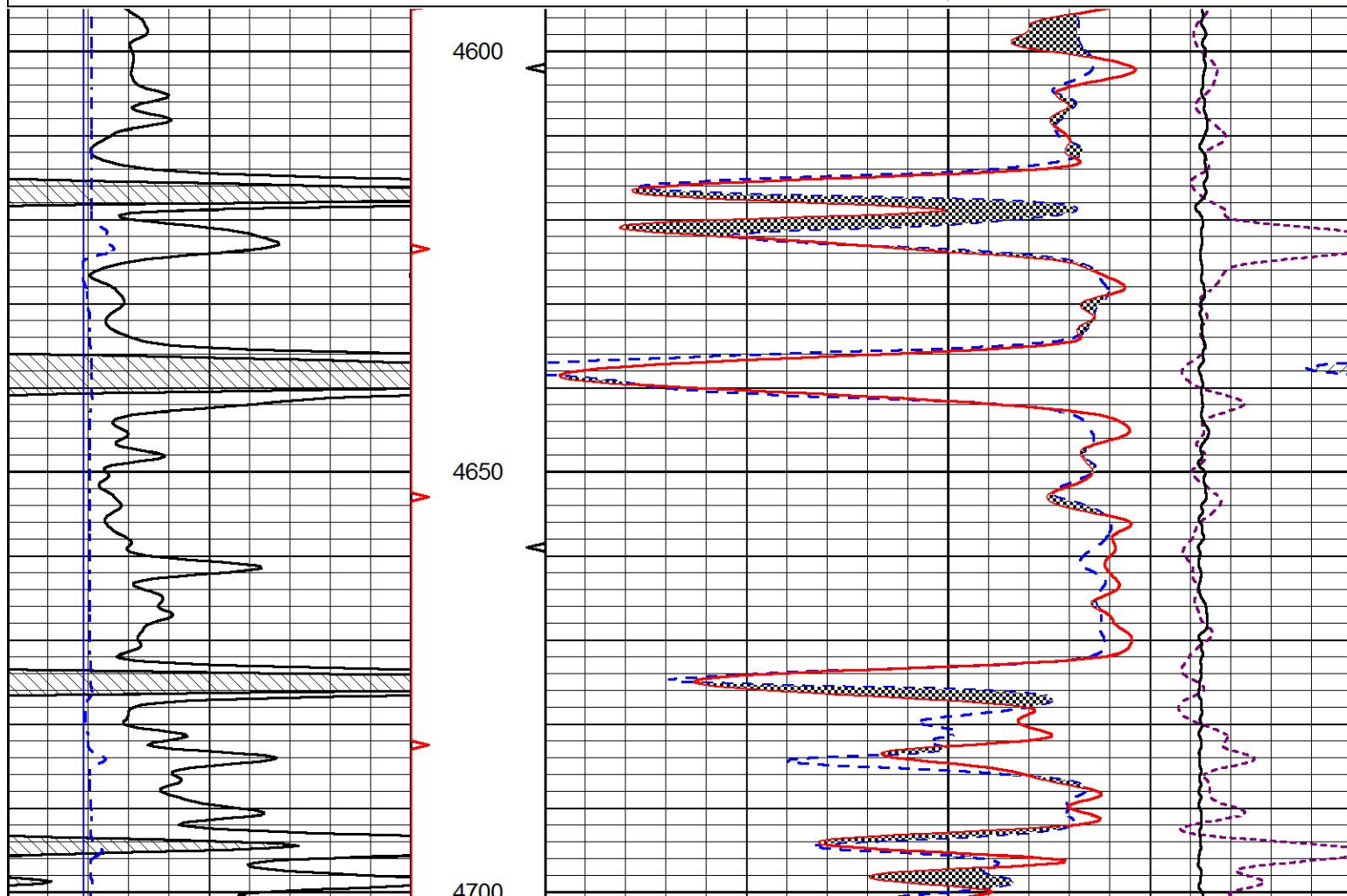
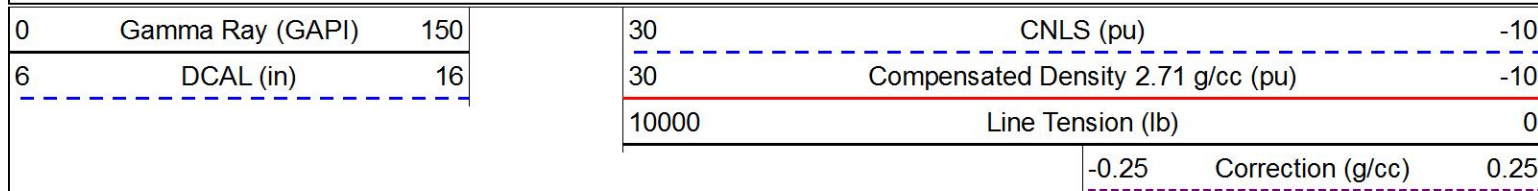


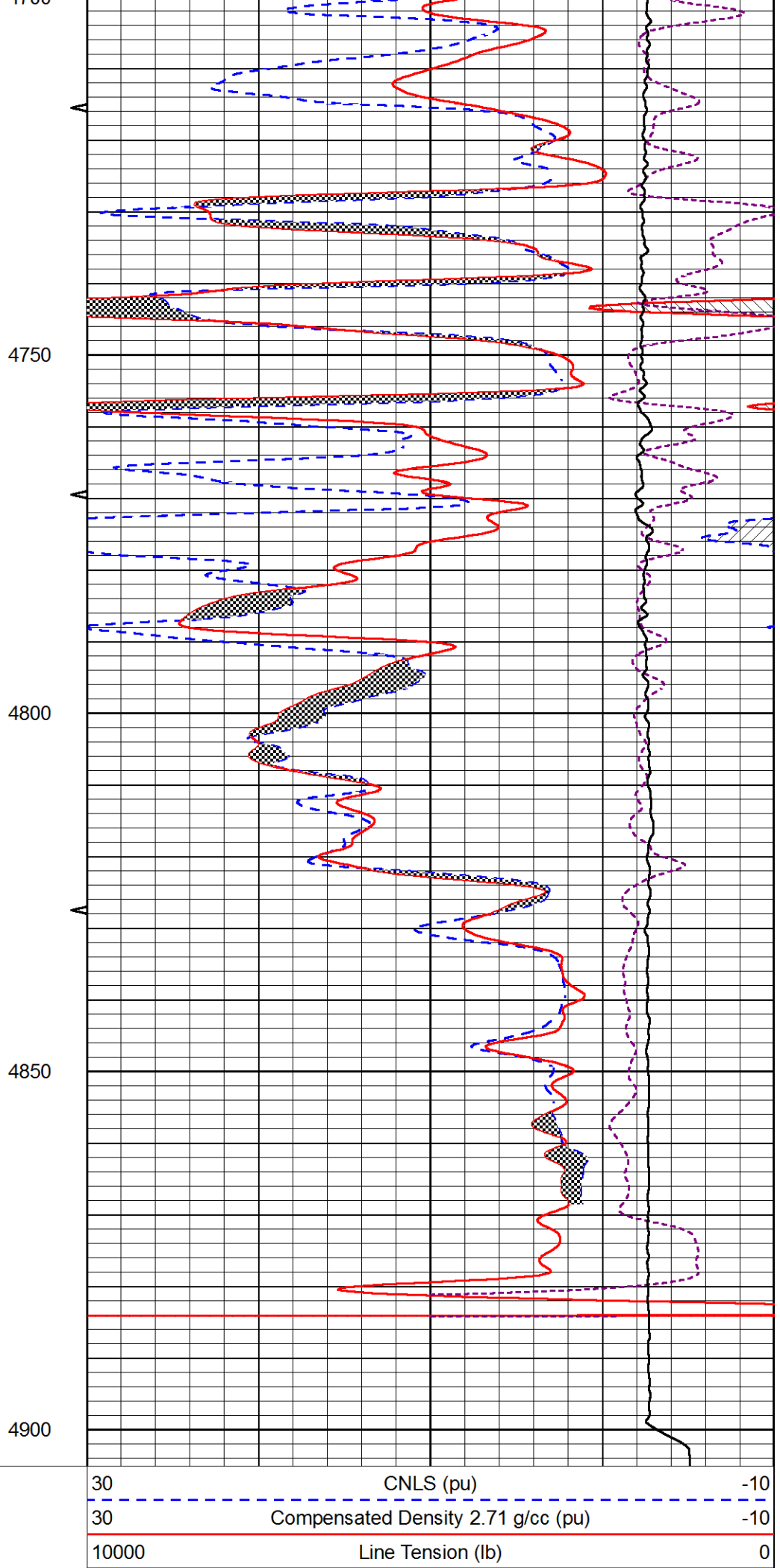
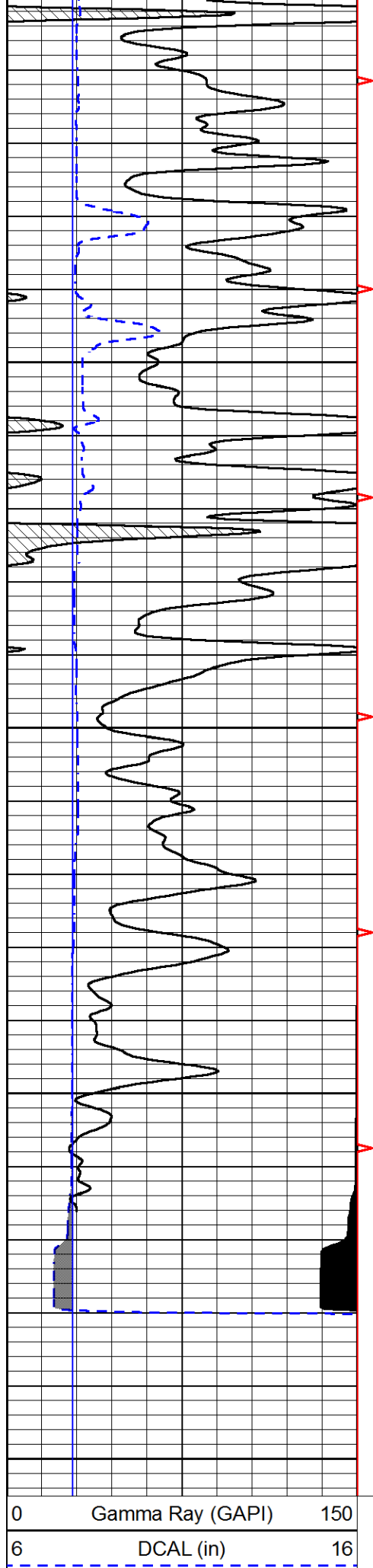




# REPEAT SECTION

Database File funk\_calliham trust\_#1-18.db  
 Dataset Pathname stckml/pass2.1  
 Presentation Format cndlspec  
 Dataset Creation Sat Oct 15 14:35:25 2016  
 Charted by Depth in Feet scaled 1:240





| Calibration Report |                              |
|--------------------|------------------------------|
| Database File      | funk_calliham trust_#1-18.db |
| Dataset Pathname   | stckml/pass4.1               |
| Dataset Creation   | Sat Oct 15 15:27:40 2016     |

Dual Induction Calibration Report

|                        |                          |
|------------------------|--------------------------|
| Serial-Model:          | PSI 13-M&W               |
| Calibration Performed: | Thu Oct 06 06:17:37 2016 |

| Readings |         | References |       | Results        |                  |
|----------|---------|------------|-------|----------------|------------------|
| Loop:    | Air     | Loop       | Air   | Loop           | Gain      Offset |
| Deep     | 166.796 | 835.089    | 0.000 | 255.800 mmho/m | 0.450    -29.500 |
| Medium   | 142.009 | 1348.560   | 0.000 | 255.800 mmho/m | 0.370    -25.000 |

Microlog Calibration Report

|               |                          |
|---------------|--------------------------|
| Serial-Model: | PSI-01-PSIML             |
| Performed:    | Thu Sep 29 18:47:00 2016 |

| Readings |        | References |        | Results      |                       |
|----------|--------|------------|--------|--------------|-----------------------|
|          | Zero   | Cal        | Zero   | Cal          | m      b              |
| Normal   | 0.0000 | 1.0000     | 0.0000 | 1.0000 Ohm-m | 25000.0000    -0.6000 |
| Inverse  | 0.0000 | 1.0000     | 0.0000 | 1.0000 Ohm-m | 29500.0000    -0.5000 |
| Caliper  | 1.0001 | 1.1397     | 6.5000 | 18.5000 in   | 70.0000    -65.6000   |

Compensated Density Calibration Report

|                               |                          |
|-------------------------------|--------------------------|
| Serial-Model:                 | 90-1031-M&W              |
| Source / Verifier:            | 16955B / 2ci             |
| Master Calibration Performed: | Thu Sep 29 18:47:07 2016 |

| Master Calibration  |       |      |                             |               |     |
|---------------------|-------|------|-----------------------------|---------------|-----|
| Density             |       |      | Far Detector                | Near Detector |     |
| Magnesium           | 1.755 | g/cc | 5174.18                     | 6425.27       | cps |
| Aluminum            | 2.665 | g/cc | 963.17                      | 4037.42       | cps |
| Spine Angle = 74.55 |       |      | Density/Spine Ratio = 0.522 |               |     |
| Size                |       |      | Reading                     |               |     |
| Small Ring          | 6.00  | in   | 1.83                        |               |     |
| Large Ring          | 16.00 | in   | 1.48                        |               |     |

Compensated Neutron Calibration Report

|                        |                          |
|------------------------|--------------------------|
| Serial Number:         | 207-MW                   |
| Tool Model:            | M&W                      |
| Calibration Performed: | Wed Sep 28 10:30:30 2016 |

| Detector | Readings | Target | Normalization |
|----------|----------|--------|---------------|
|----------|----------|--------|---------------|

|             |         |     |         |     |        |
|-------------|---------|-----|---------|-----|--------|
| Short Space | 6240.00 | cps | 1000.00 | cps | 1.6025 |
| Long Space  | 460.00  | cps | 1000.00 | cps | 1.9500 |

# Gamma Ray Calibration Report

|                        |                          |          |
|------------------------|--------------------------|----------|
| Serial Number:         | 89                       |          |
| Tool Model:            | M&W                      |          |
| Calibration Performed: | Thu Sep 29 18:47:18 2016 |          |
| Calibrator Value:      | 1.0                      | GAPI     |
| Background Reading:    | 0.0                      | cps      |
| Calibrator Reading:    | 1.0                      | cps      |
| Sensitivity:           | 0.6000                   | GAPI/cps |



|         |                      |
|---------|----------------------|
| Company | FUNK PETROLEUM LLC   |
| Well    | CALLIHAM TRUST #1-18 |
| Field   | WILDCAT              |
| County  | THOMAS               |
| State   | KANSAS               |