



MIDWEST WIRELINE

# DUAL COMP POROSITY LOG

Company Ritchie Exploration, Inc.

Well Scheuerman-Hrbek Trust #1

Field

County Scott

State Kansas

Location: API #: 15-171-21280-00-00

SEC 21 TWP 16S RGE 31W

Permanent Datum Ground Level Elevation 2921

Log Measured From Kelly Bushing

Drilling Measured From Kelly Bushing

K.B. 2932  
D.F.  
G.L. 2921

Other Services  
DIL/MEL  
BHCS

Date 12/5/2021

Run Number One

Type Log CNL/CDL

Depth Driller 4695

Depth Logger 4695

Bottom Logged Interval 4666

Top Logged Interval 3500

Type Fluid In Hole Chemical

Salinity, PPM CL 3100

Density 9.3

Level Full

Max. Rec. Temp. F 123

Operating Rig Time 5 Hours

Equipment -- Location P-24 Hays

Recorded By D. Schmidt

Witnessed By John Goldsmith

## Borehole Record

## Casing Record

Run No.

Bit

From

To

Size

Wgt.

From

To

One 12.25

0

219

8.625

23

0

219

Two 7.875

219

TD

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest 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.

Healy,  
West to Taos Rd, 3 1/2 North, 1/2 East,  
South into

Log Measured From: Kelly Bushing

11 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
785-625-3858

## Your Midwest Wireline Crew

Engineer: D. Schmidt  
Operator:  
Operator:  
Operator:

## This Log Record Was Witnessed By

Primary Witness: John Goldsmith  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:



# Log Variables

DatabaseC:\ProgramData\Warrior\Data\ritchie\_scheurmanhrbek trust 1.db  
Dataset field/well/stkml/pass3.5/\_vars\_

## Top - Bottom

|           |              |                  |                   |                |                  |       |                  |
|-----------|--------------|------------------|-------------------|----------------|------------------|-------|------------------|
| A         | BOREID<br>in | BOTTEMP<br>degF  | CASEOD<br>in      | CASETHCK<br>in | FLUIDDEN<br>g/cc | M     | MATRXDEN<br>g/cc |
| 1         | 7.875        | 123              | 5.5               | 0              | 1                | 2     | 2.71             |
| NPORSEL   | PERFS        | SNDERR<br>mmho/m | SNDERRM<br>mmho/m | SPSHIFT<br>mV  | SRFTEMP<br>degF  | SZCOR | TDEPTH<br>ft     |
| Limestone | 0            | 0                | 0                 | 230            | 40               | Off   | 4695             |

## Variable Description

A : Cement Factor (a)  
BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
FLUIDDEN : Fluid Density  
M : Cement Exp (m)  
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
PERFS : Perforation Flag  
SNDERR : Deep Sonde Error Correction  
SNDERRM : Medium Sonde Error Correction  
SPSHIFT : S.P. Baseline Offset  
SRFTEMP : Surface Temperature  
SZCOR : CN Size Cor. ?  
TDEPTH : Total Depth



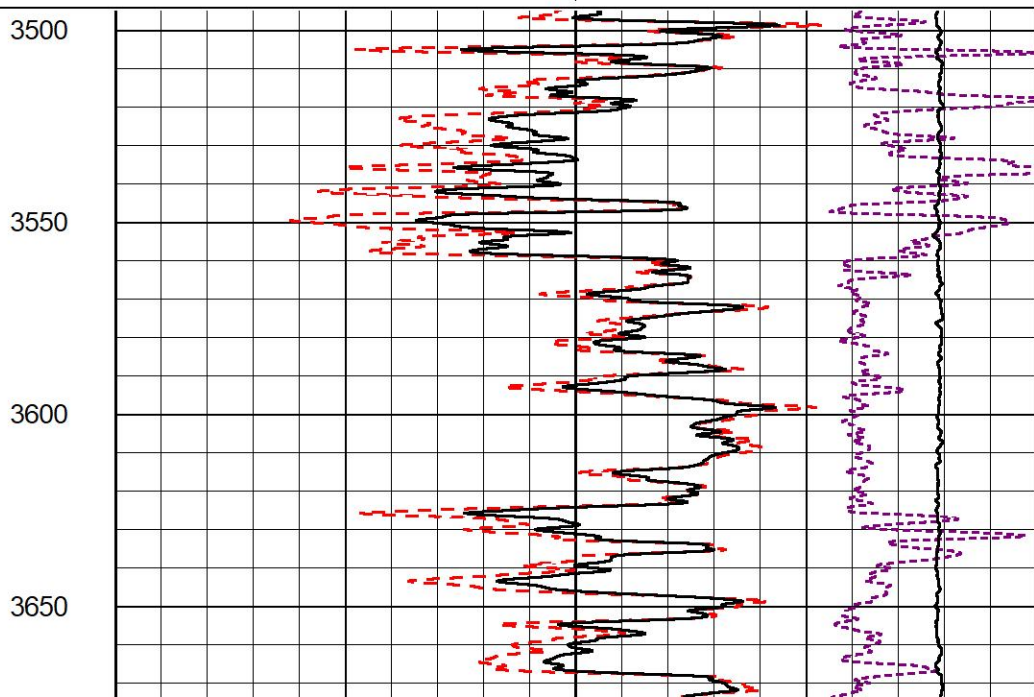
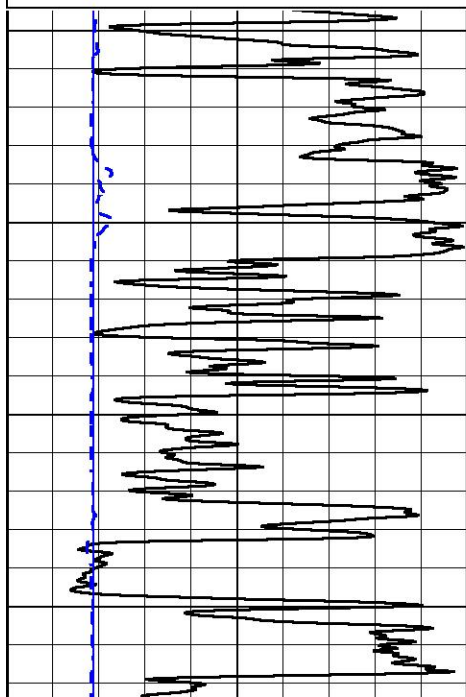
## 2" SCALE BULK DENSITY

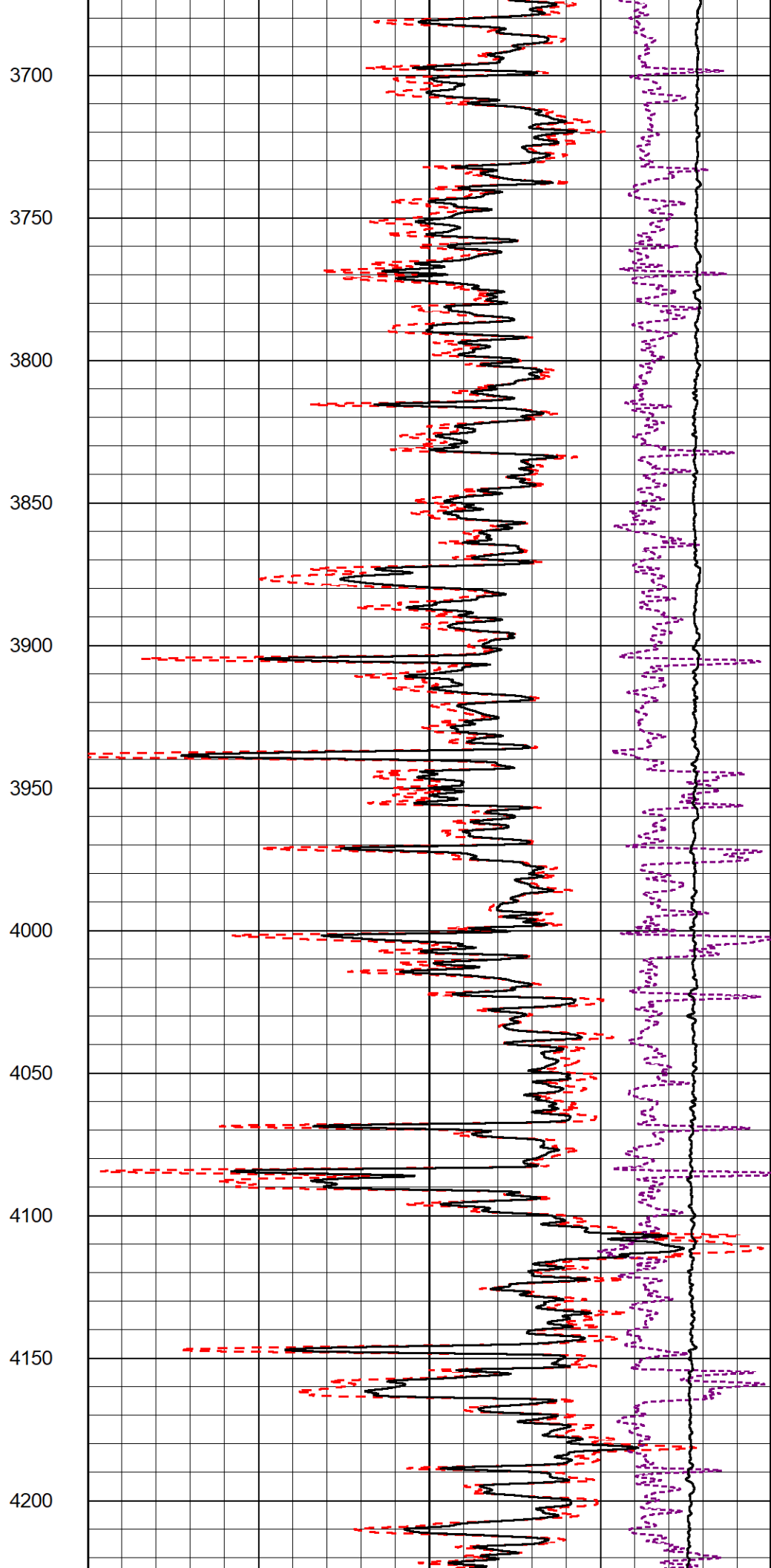
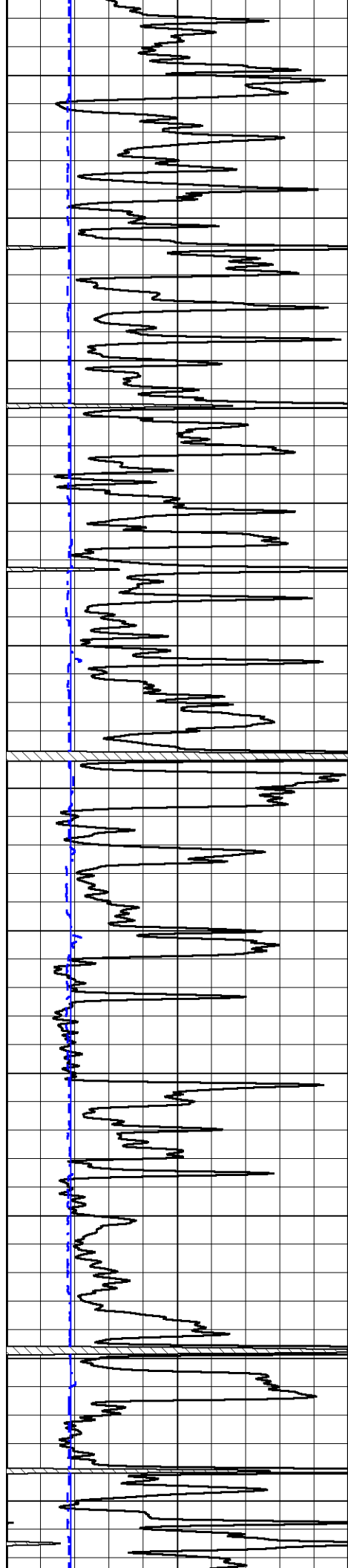
### MAIN PASS

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Dataset Pathname stkml/pass4.1  
Presentation Format \_cdl  
Dataset Creation Sun Dec 05 04:02:23 2021  
Charted by Depth in Feet scaled 1:600

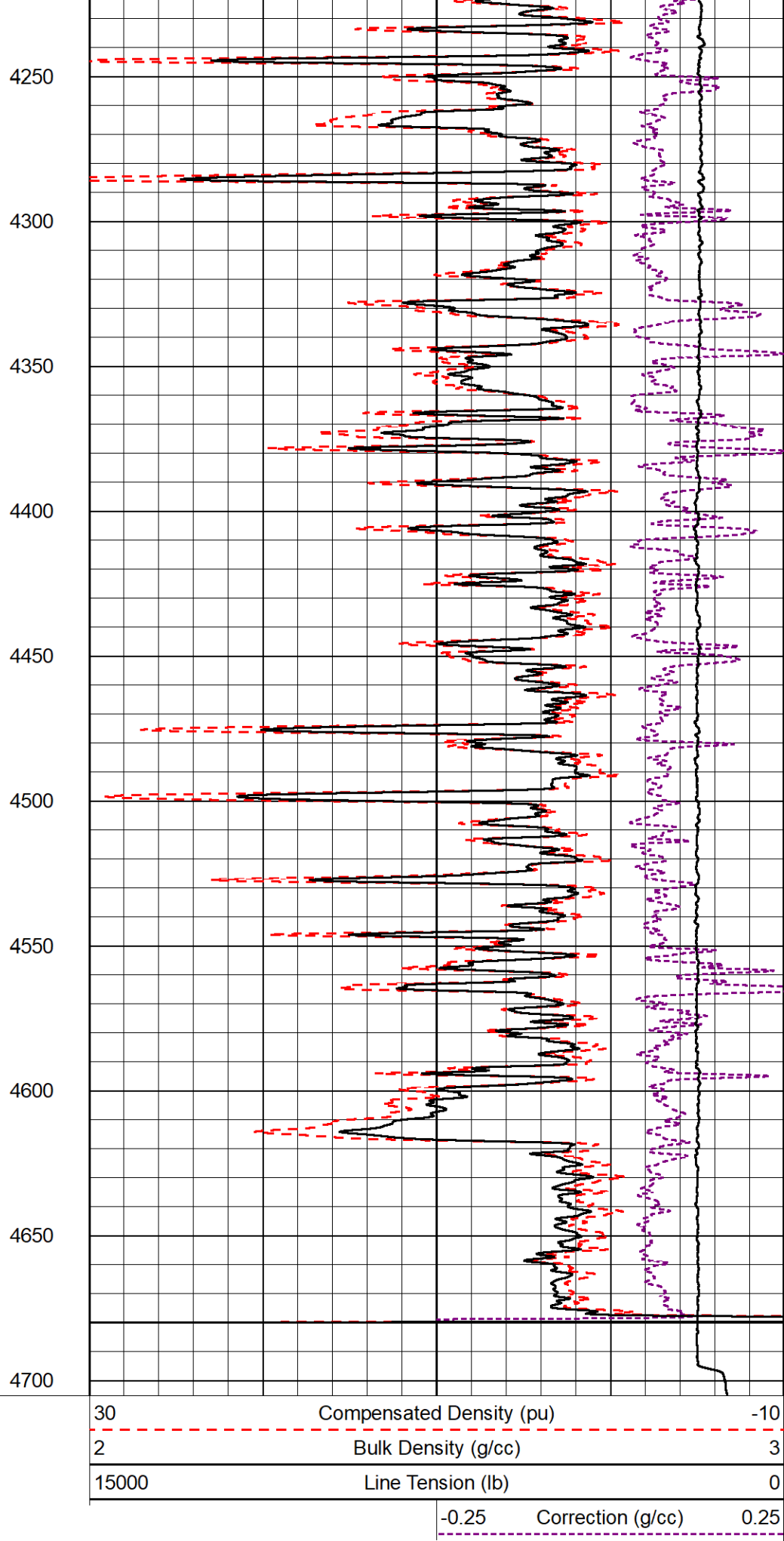
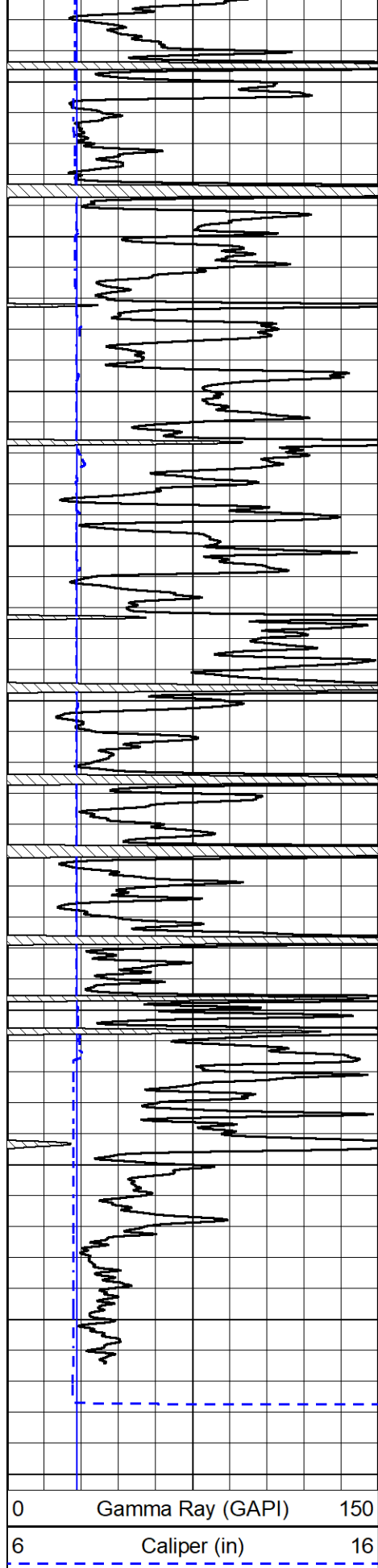
|   |                  |     |
|---|------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 |
| 6 | Caliper (in)     | 16  |

|       |                          |      |
|-------|--------------------------|------|
| 30    | Compensated Density (pu) | -10  |
| 2     | Bulk Density (g/cc)      | 3    |
| 15000 | Line Tension (lb)        | 0    |
| -0.25 | Correction (g/cc)        | 0.25 |











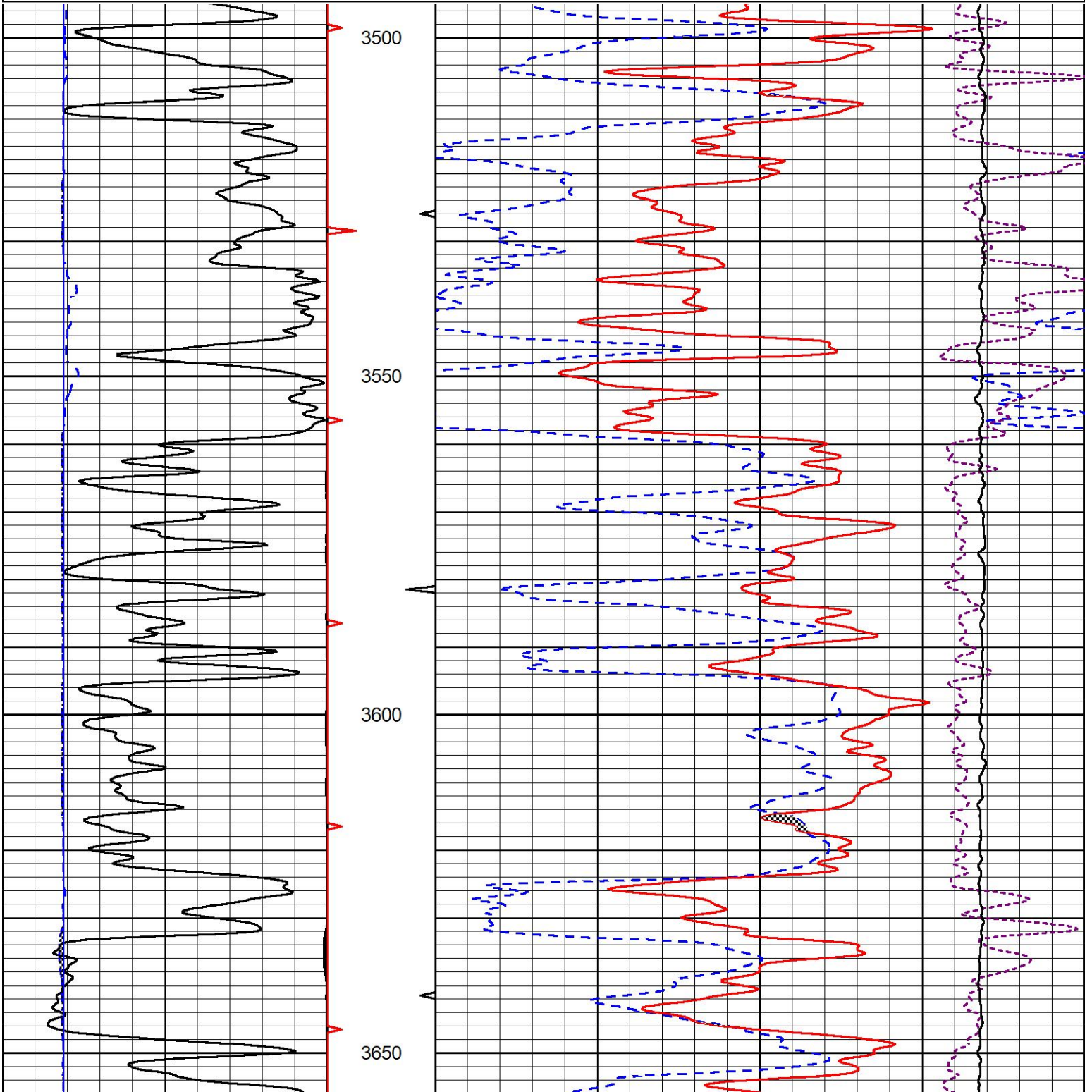
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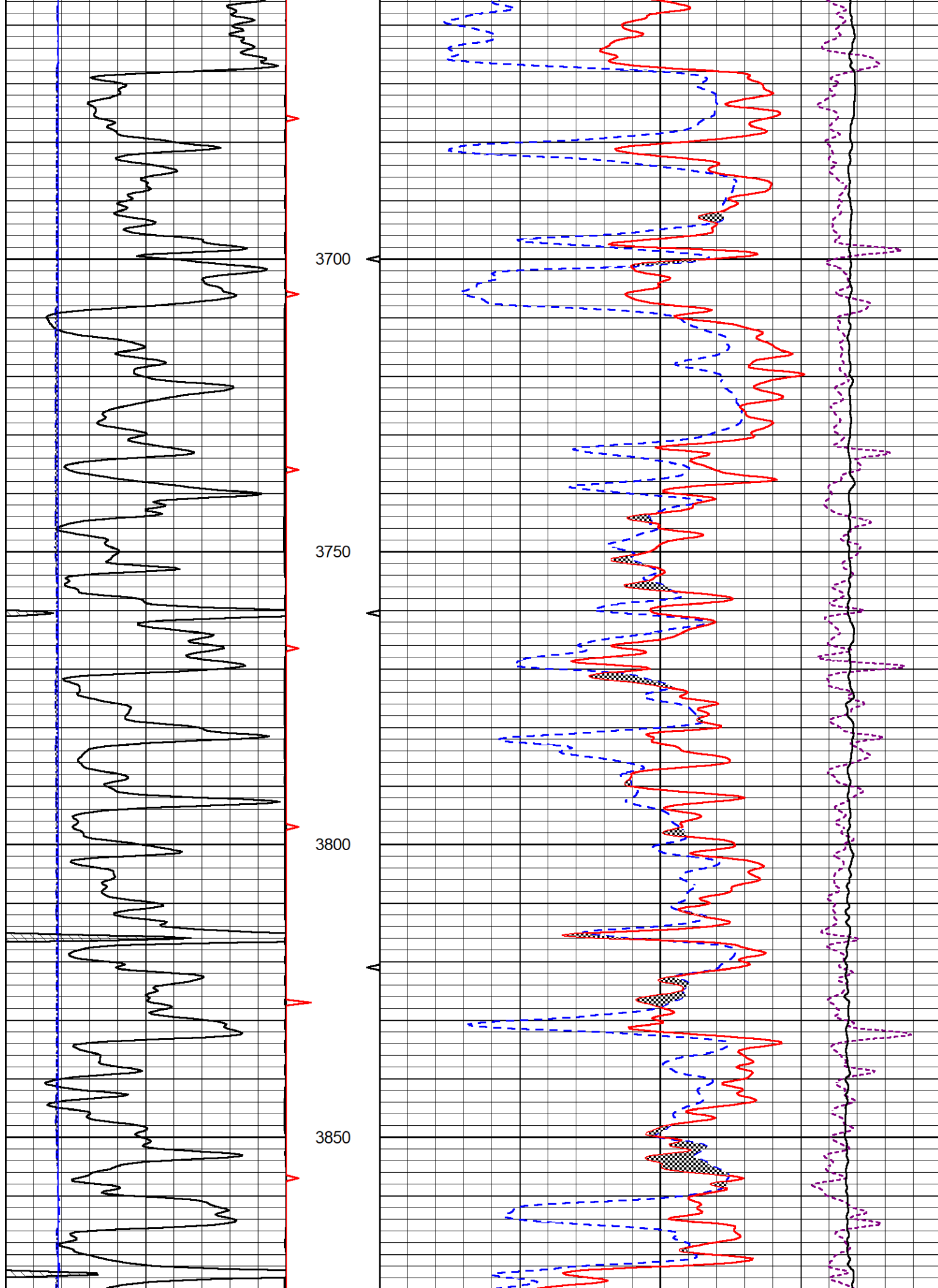
## MAIN PASS

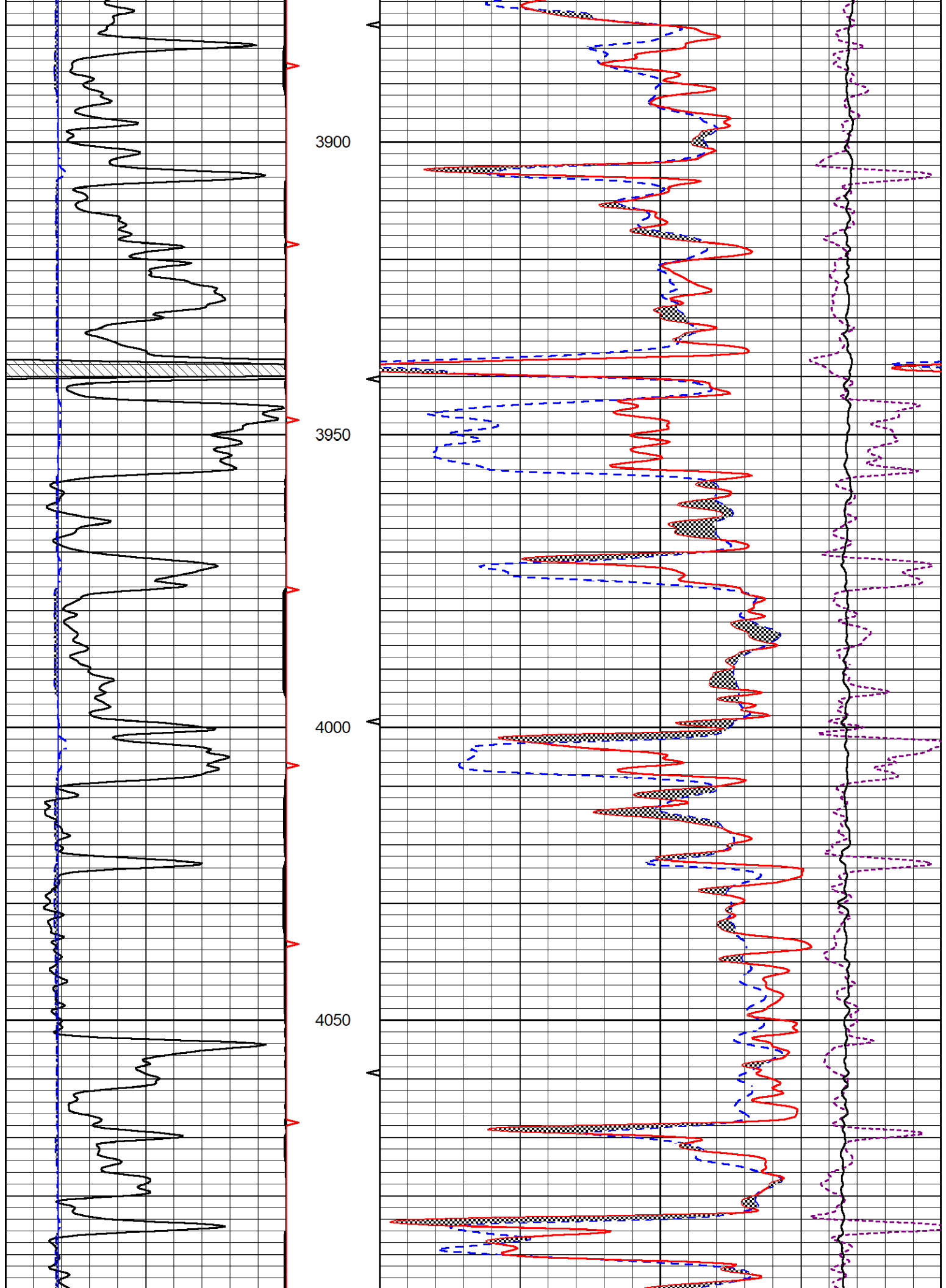
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Dataset Pathname    stkml/pass3.1  
Presentation Format   \_CNDLS~1  
Dataset Creation     Sun Dec 05 03:53:46 2021  
Charted by           Depth in Feet scaled 1:240

|   |                  |     |
|---|------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 |
| 6 | Caliper (in)     | 16  |

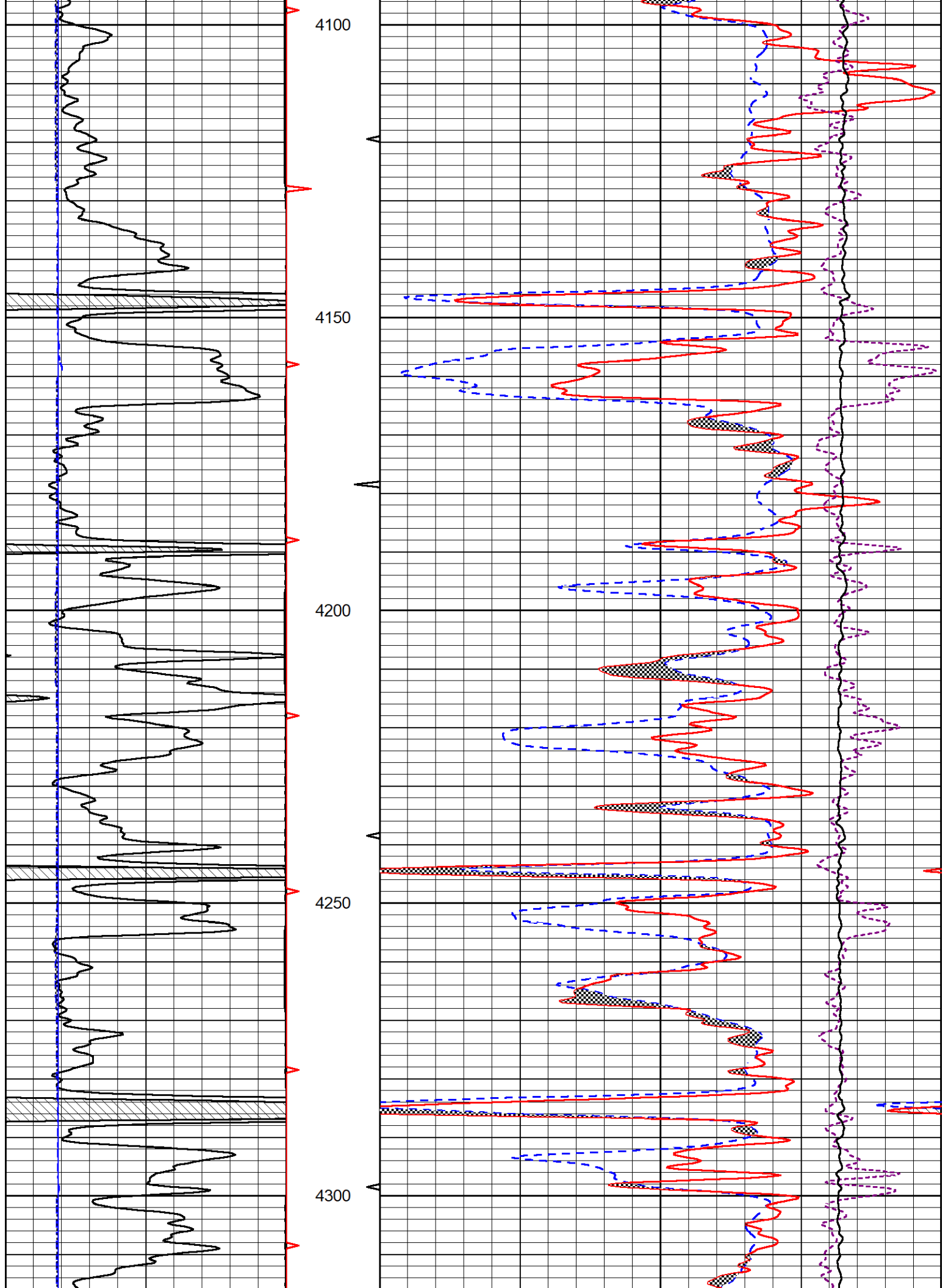
|       |                          |      |
|-------|--------------------------|------|
| 30    | Compensated Neutron (pu) | -10  |
| 30    | Compensated Density (pu) | -10  |
| 10000 | Line Tension (lb)        | 0    |
| -0.25 | Correction (g/cc)        | 0.25 |

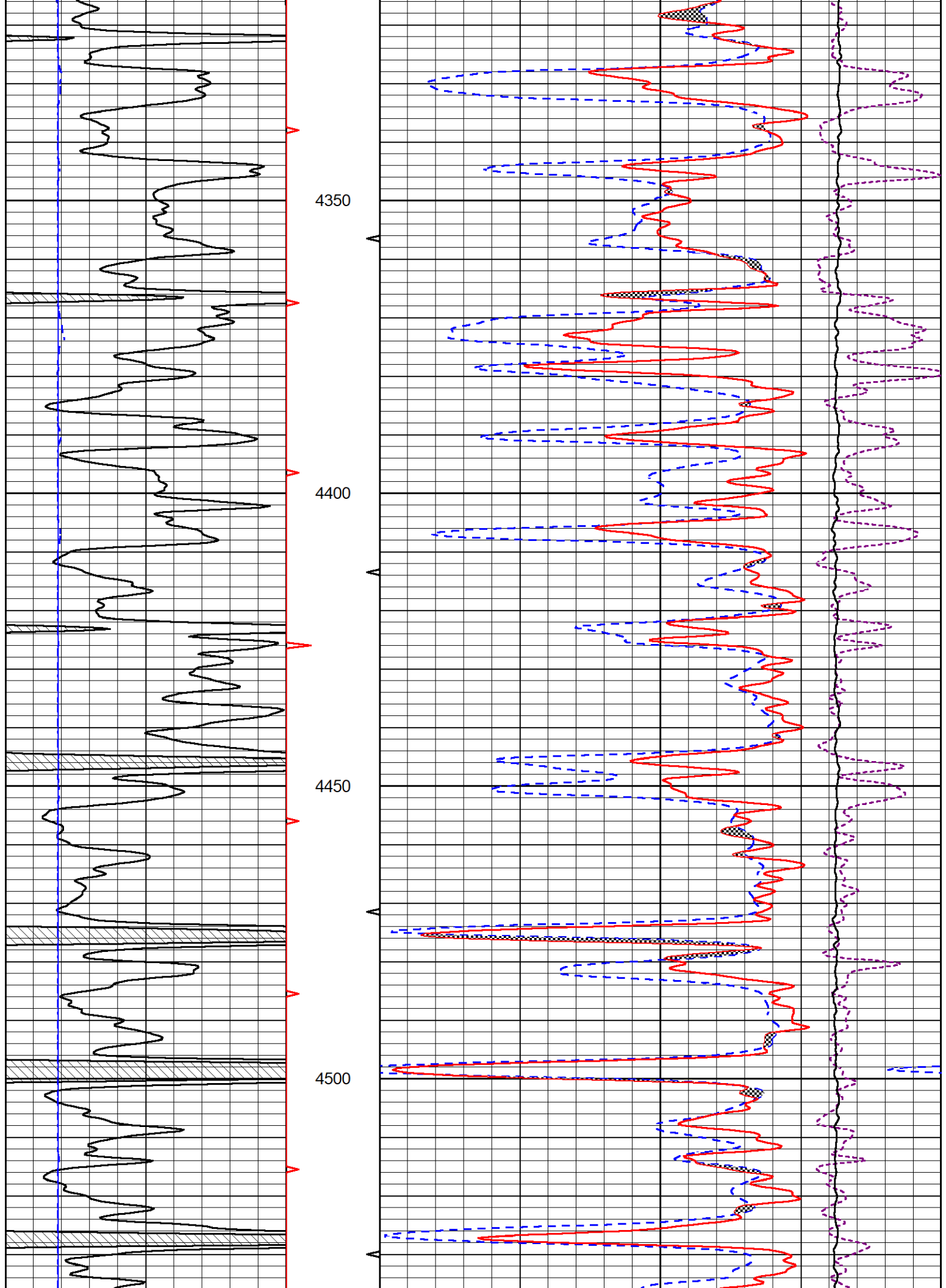


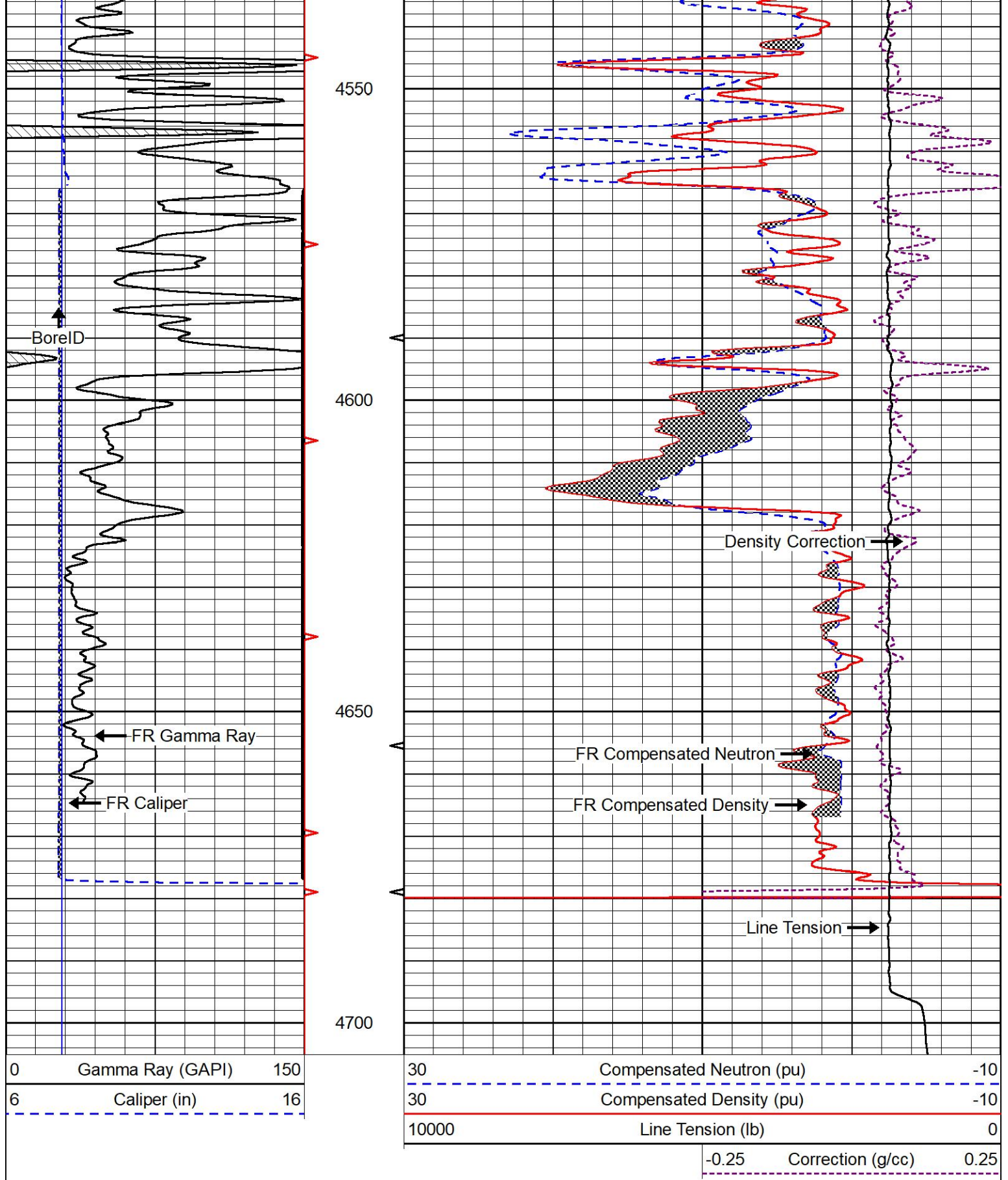








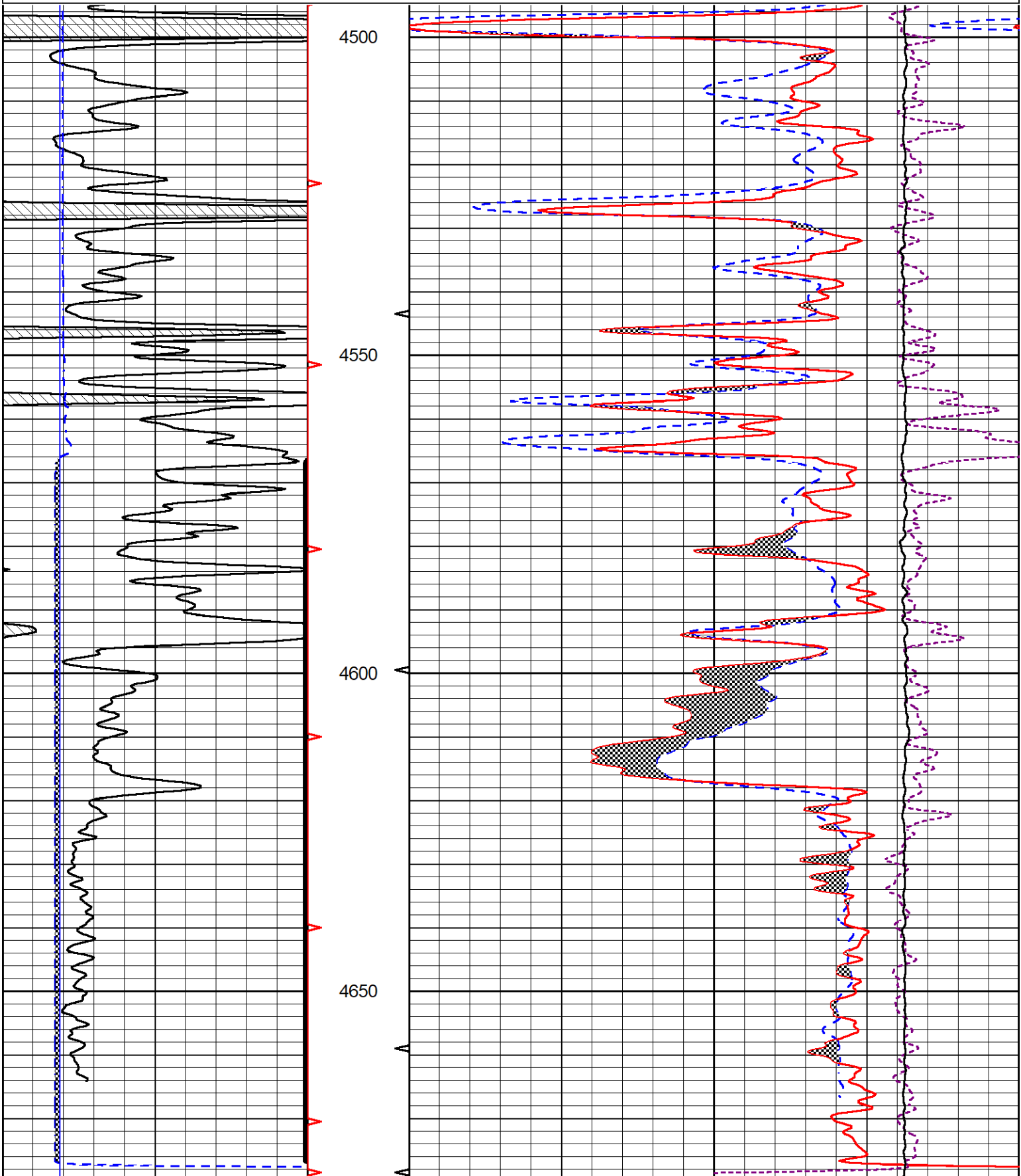




REPEAT SECTION

REPEAT PASS

|   |                  |     |       |                          |                        |
|---|------------------|-----|-------|--------------------------|------------------------|
| 0 | Gamma Ray (GAPI) | 150 | 30    | Compensated Neutron (pu) | -10                    |
| 6 | Caliper (in)     | 16  | 30    | Compensated Density (pu) | -10                    |
|   |                  |     | 10000 | Line Tension (lb)        | 0                      |
|   |                  |     |       | -0.25                    | Correction (g/cc) 0.25 |





|   |                  |     |      |       |                          |                   |
|---|------------------|-----|------|-------|--------------------------|-------------------|
|   |                  |     | 4700 |       |                          |                   |
| 0 | Gamma Ray (GAPI) | 150 |      | 30    | Compensated Neutron (pu) | -10               |
| 6 | Caliper (in)     | 16  |      | 30    | Compensated Density (pu) | -10               |
|   |                  |     |      | 10000 | Line Tension (lb)        | 0                 |
|   |                  |     |      |       | -0.25                    | Correction (g/cc) |
|   |                  |     |      |       | 0.25                     |                   |

| Master Calibration  |         |      |                             |               |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
|                     | Density |      | Far Detector                | Near Detector |     |
| Magnesium           | 1.755   | g/cc | 3330.50                     | 2332.69       | cps |
| Aluminum            | 2.650   | g/cc | 627.41                      | 1482.87       | cps |
| Spine Angle = 74.82 |         |      | Density/Spine Ratio = 0.517 |               |     |
|                     | Size    |      | Reading                     |               |     |
| Small Ring          | 8.00    | in   | 1.16                        |               |     |

|            |       |    |      |
|------------|-------|----|------|
| Small Ring | 0.00  | in | 1.01 |
| Large Ring | 13.00 | in |      |

|                                        |
|----------------------------------------|
| Compensated Neutron Calibration Report |
|----------------------------------------|

|                               |                          |
|-------------------------------|--------------------------|
| Serial-Model:                 | 207-MW-M&W               |
| Source #:                     | 100046B                  |
| Master Calibration Performed: | Mon Nov 29 15:06:24 2021 |

|                    |          |     |         |     |               |
|--------------------|----------|-----|---------|-----|---------------|
| Master Calibration |          |     |         |     |               |
| 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:      | 233-M&W                 |          |
| Tool Model:         | M&W                     |          |
| Performed:          | Fri Dec 3 15:10:46 2021 |          |
| Calibrator Value:   | 500.0                   | GAPI     |
| Background Reading: | 24.0                    | cps      |
| Calibrator Reading: | 637.0                   | cps      |
| Sensitivity:        | 0.5500                  | GAPI/cps |

|                                                                                    |         |                           |
|------------------------------------------------------------------------------------|---------|---------------------------|
|  | Company | Ritchie Exploration, Inc. |
|                                                                                    | Well    | Scheuerman-Hrbek Trust #1 |
|                                                                                    | Field   |                           |
|                                                                                    | County  | Scott                     |
|                                                                                    | State   | Kansas                    |