

Schlumberger

sonicVISION

1:500 Measured Depth

Recorded Mode Log

Company: Beach Petroleum Ltd

Well: Spikey Beach-1

Field: Exploration

Rig Name: Ocean Patriot

State: Tasmania

Country: Australia

Latitude: 40° 28' 53.9" S

Longitude: 145° 52' 24.71" E

Block:

FL: Exploration

FL1:

FL2:

Custom:

Rig Name: Ocean Patriot

Rig Type: Semi Submersible

Log Measured From - Drill Floor: 21.5 m
Permanent Datum - Mean Sea Level



Ground Level: 74.0 m

Acquisition Dates: 07 Sep 09 to 13 Sep 09

Print Interval: 163.7(m) to 2100.2(m)

Index Types: Measured Depth

Index Scales: 1:500

Depth Source: Driller's Depth

Depth Sensor: DES

Conveyance: Drill Pipe

Print Type: Field

Spud Date: 05-Sep-2009

Other Services:

Directional Surveys



Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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Composite 2

Software Version

| | | | |
|---------------------------|---|--------------------------------|-------------------------|
| Acquisition System | | Version | |
| MaxWell | | 1.2.8706.0 | |
| Framework Patch | | FWK-BGC-20090709-1.2.8706.1016 | |
| Application Patch | | APL-BGC-DnM-1.2.8706.1021 | |
| Computation | Description | Version | |
| ARC9GammaRayComputation | ARC9 Gamma Ray Computation Package for both Real-time and Recorded Mode | 1.2.8706.1021 | |
| ARC8GammaRayComputation | ARC8 Gamma Ray Computation Package for both Real-time and Recorded Mode | 1.2.8706.1021 | |
| Tool Elements | Description | Software Version | Firmware Version |
| ARDC | ARC 8.25 Inch Tool Drilling Collar | 1.2.8706.1021 | V9.4B |
| DRILLING_SURFACE | DRILLING_SURFACE | 1.2.8706.1016 | |

Composite Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Acquisition Start Date | Acquisition Start Time |
|----------|----------------|-----------|----------|-----------|------------------------|------------------------|
| Run 1 | Drilling | Down | 42.14 m | 816.61 m | 07-Sep-2009 | 20:16:27 |
| Run 2 | Drilling | Down | 804.72 m | 2100.35 m | 11-Sep-2009 | 01:32:19 |
| Run 2 | Ream Up 1 | Up | 808.84 m | 2091.26 m | 13-Sep-2009 | 09:45:06 |

All depths are referenced to toolstring zero

Log

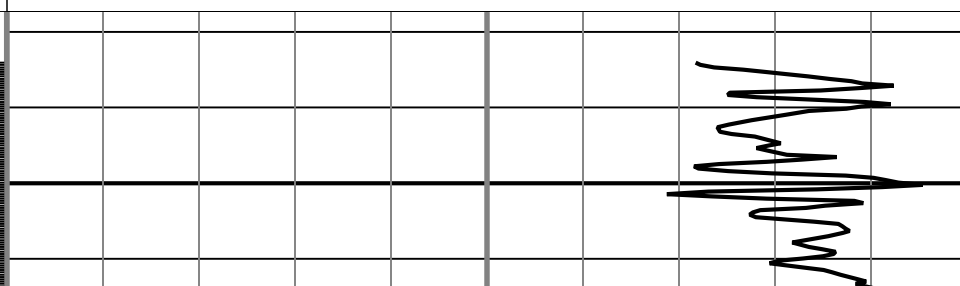
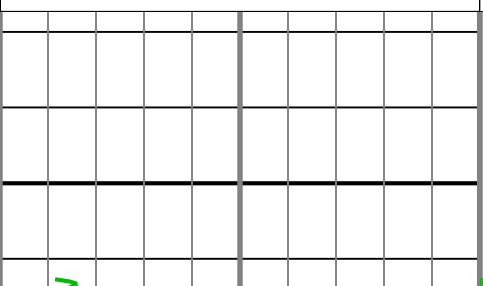
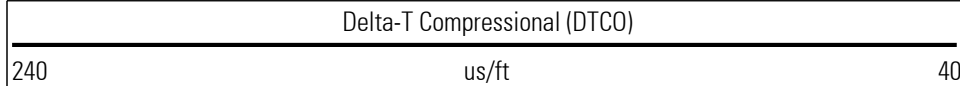
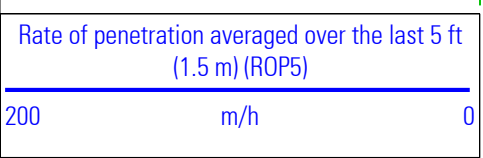
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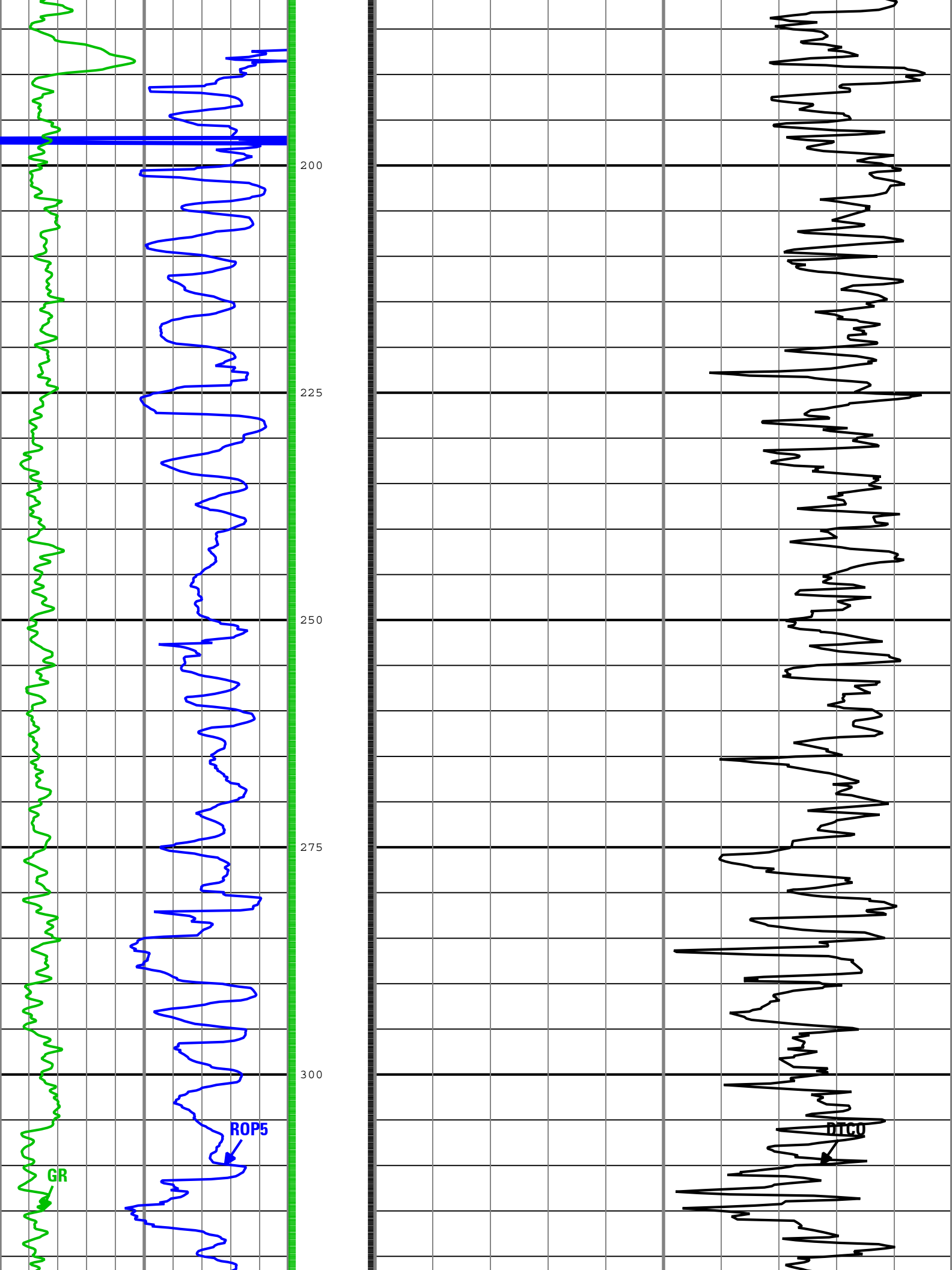
Description: ARC + sonicVISION Format: Log (Spikey Beach-1 RT ARC+Sonic) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 14-Sep-2009 04:42:06

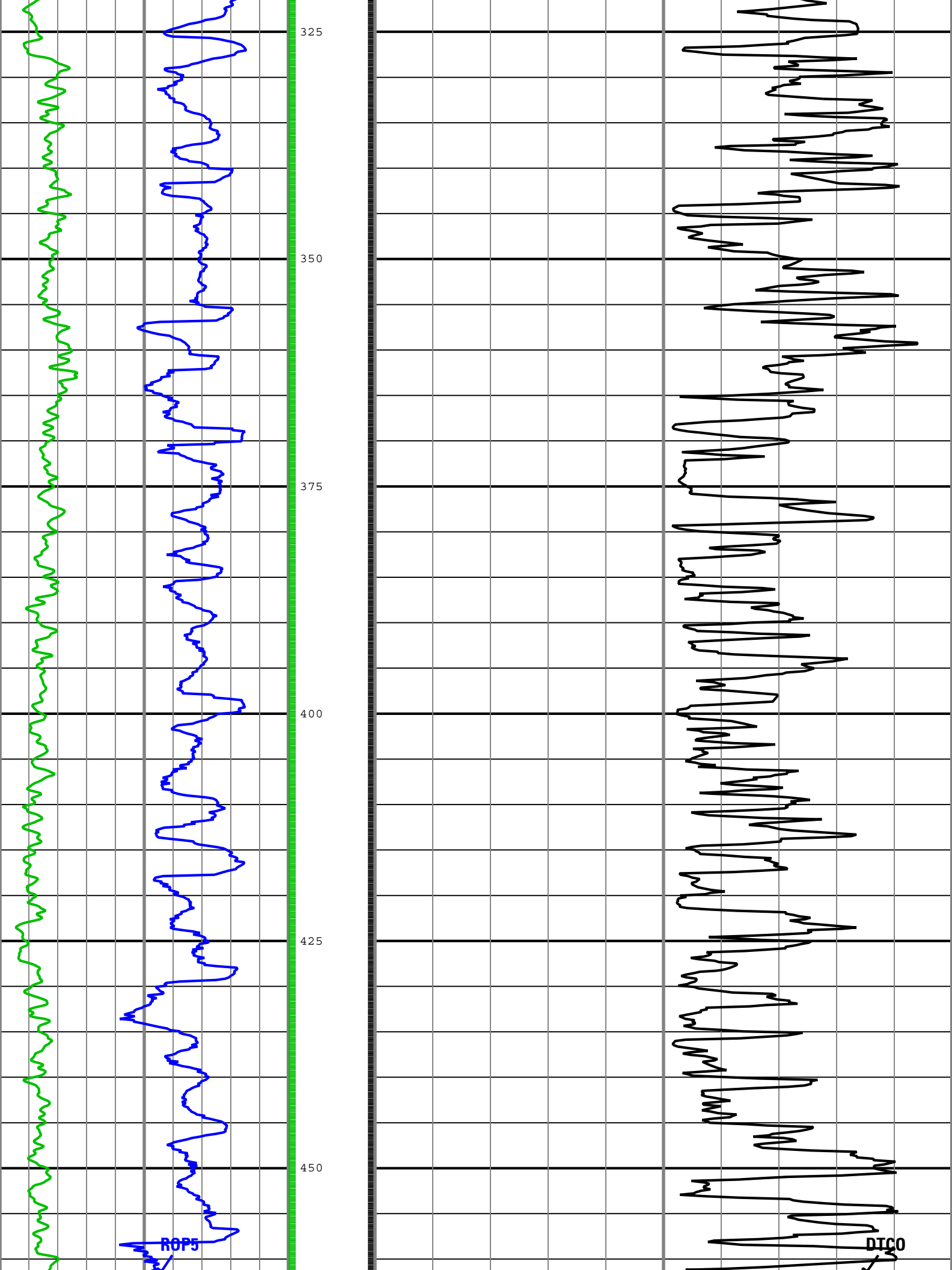
DTCO sonicVISION[1]:sonicVISION[1] 6in - RM
 GR ARC[1]:ARC[1]:ARDC[1] 6in - RM
 ROP5 DRILLING_SURFACE 6in - RT

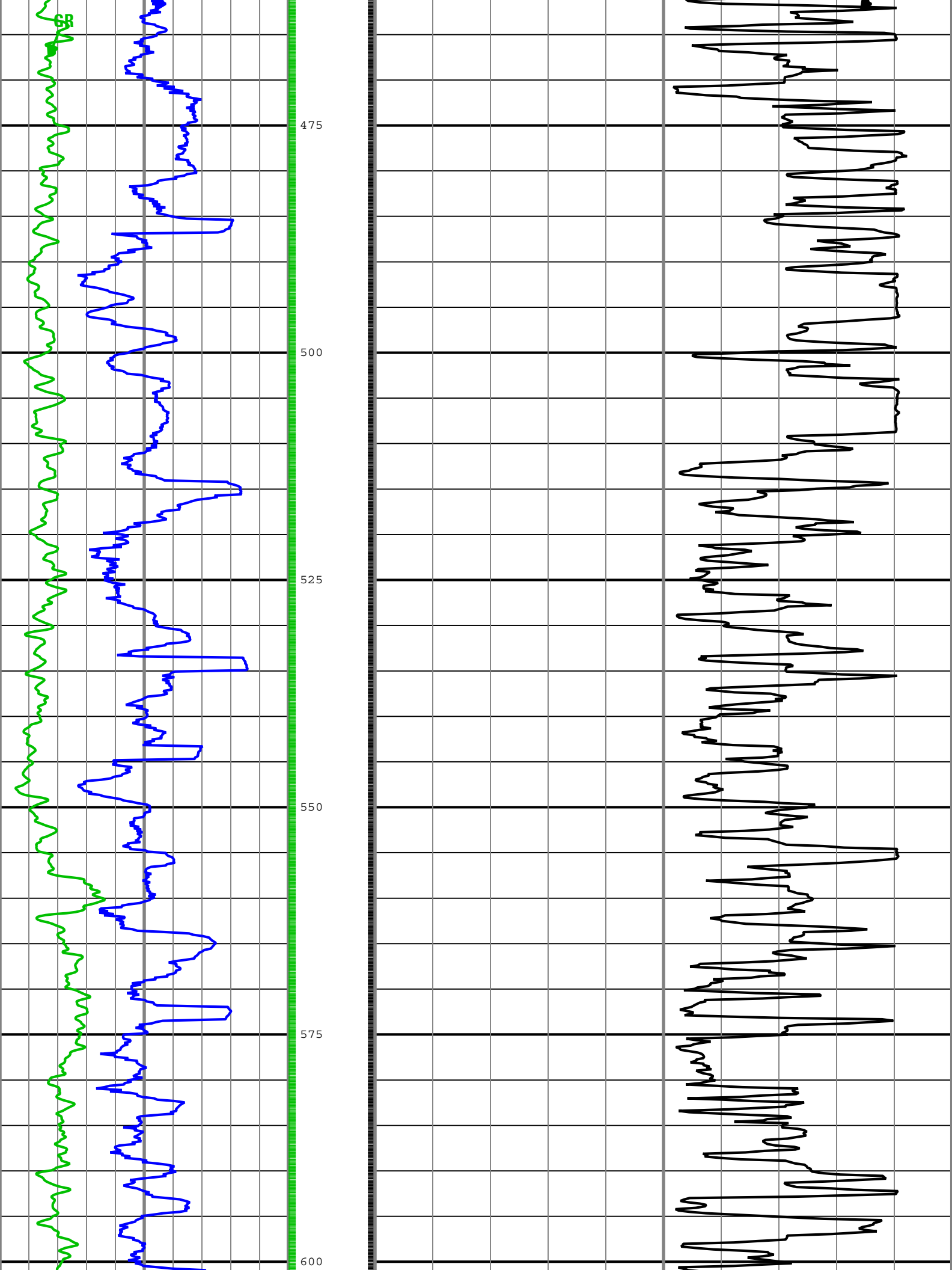
-|DTCO - Delta-T Compressional

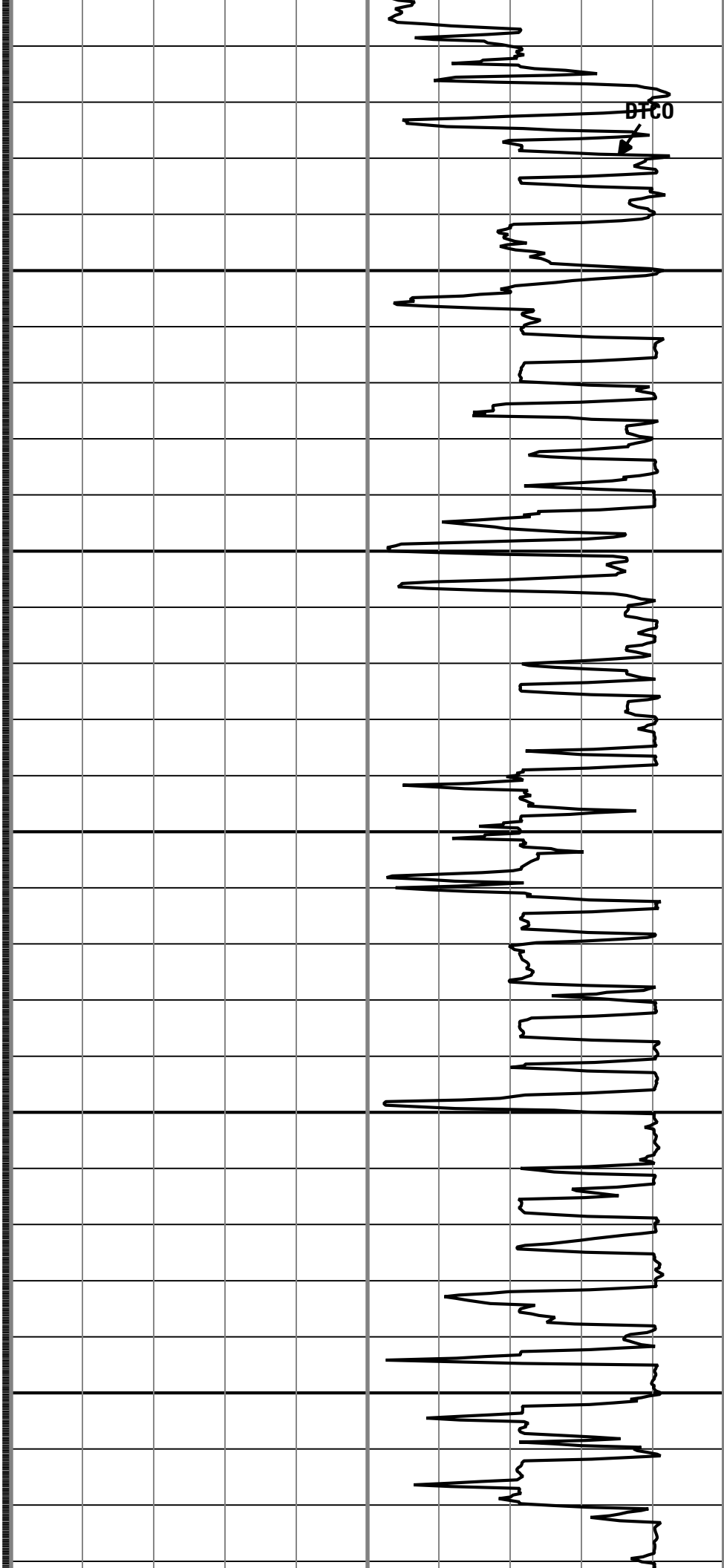
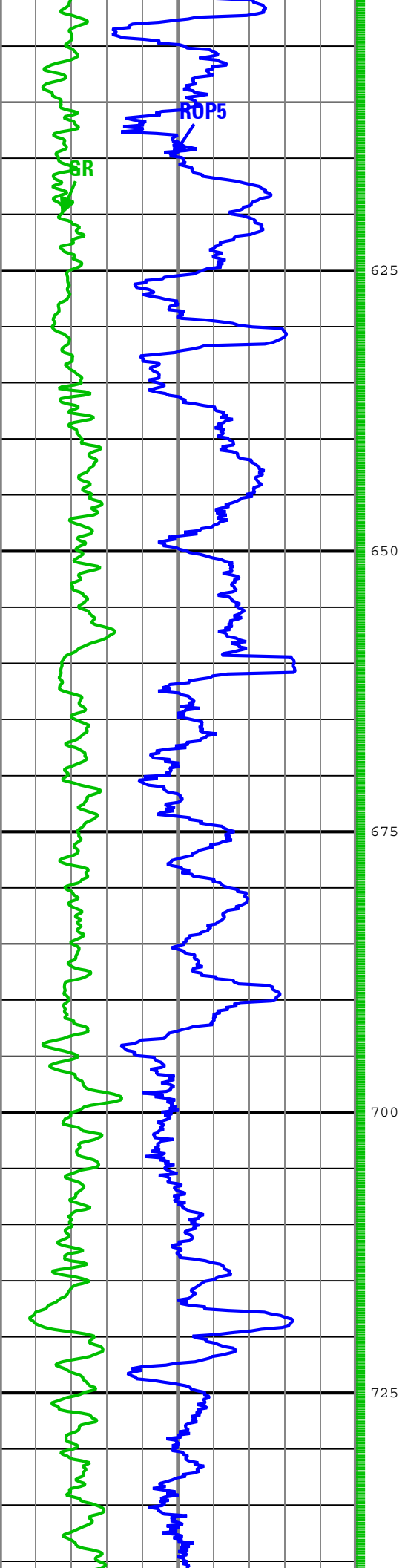
-|GR - Gamma Ray

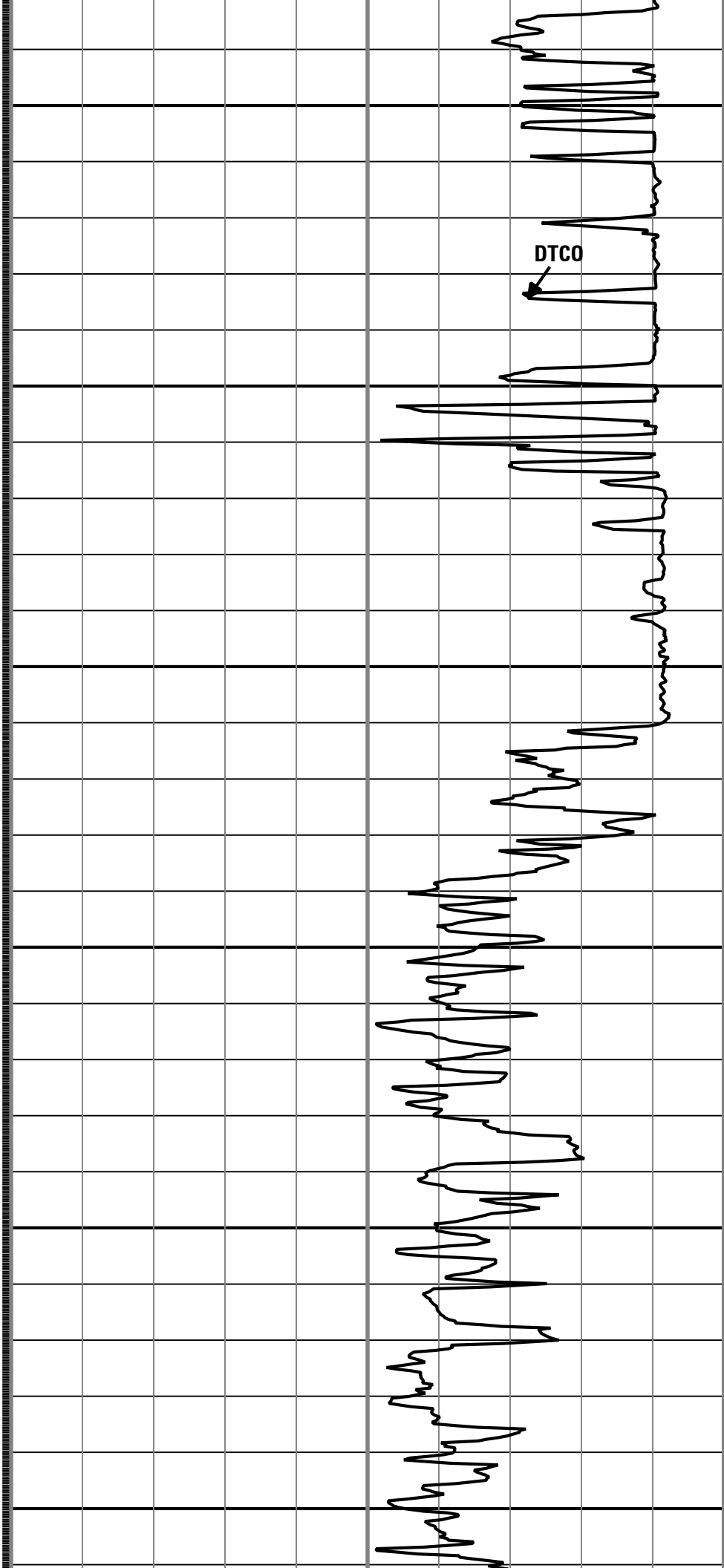
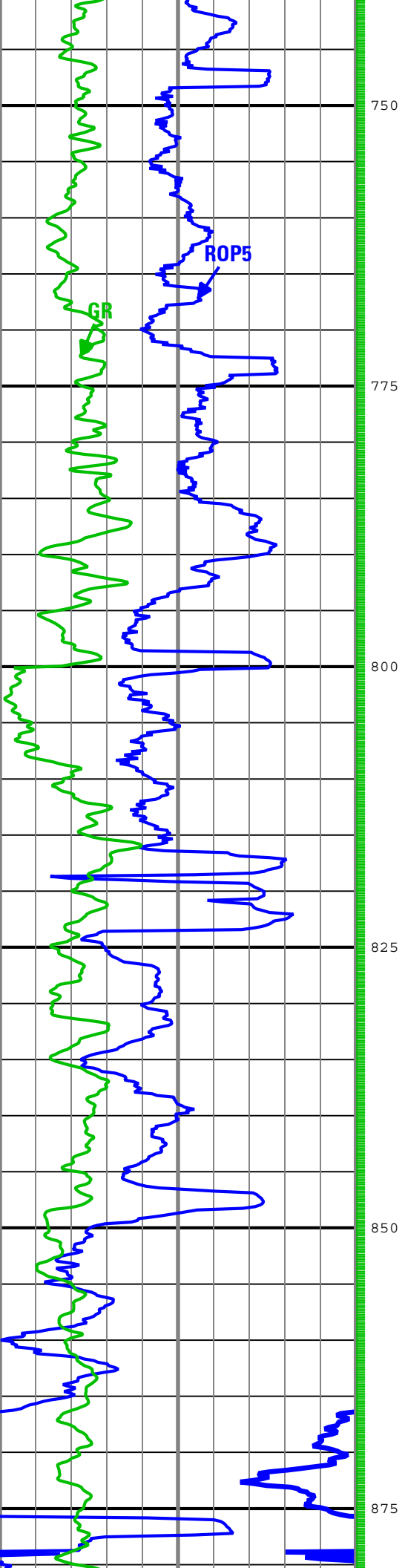


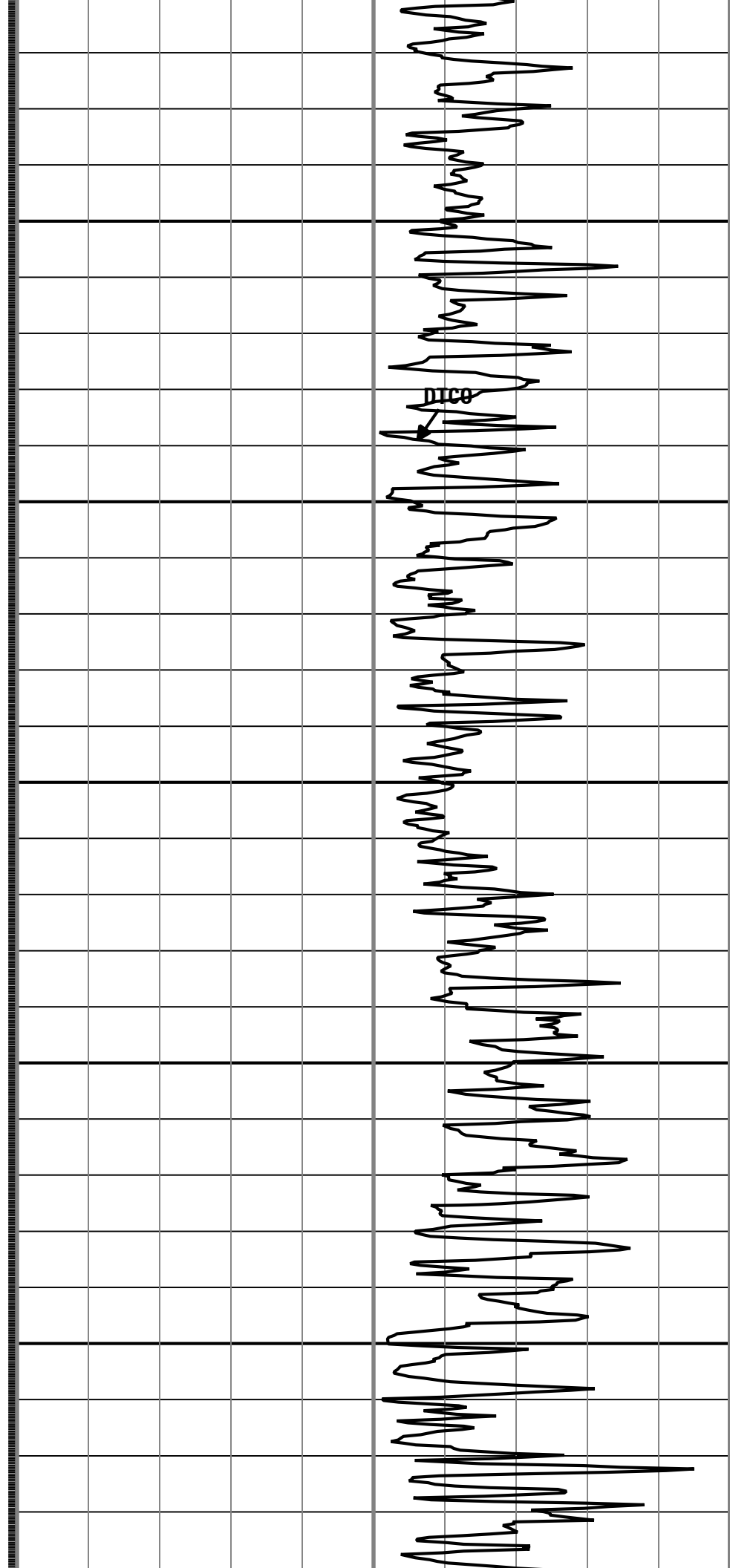
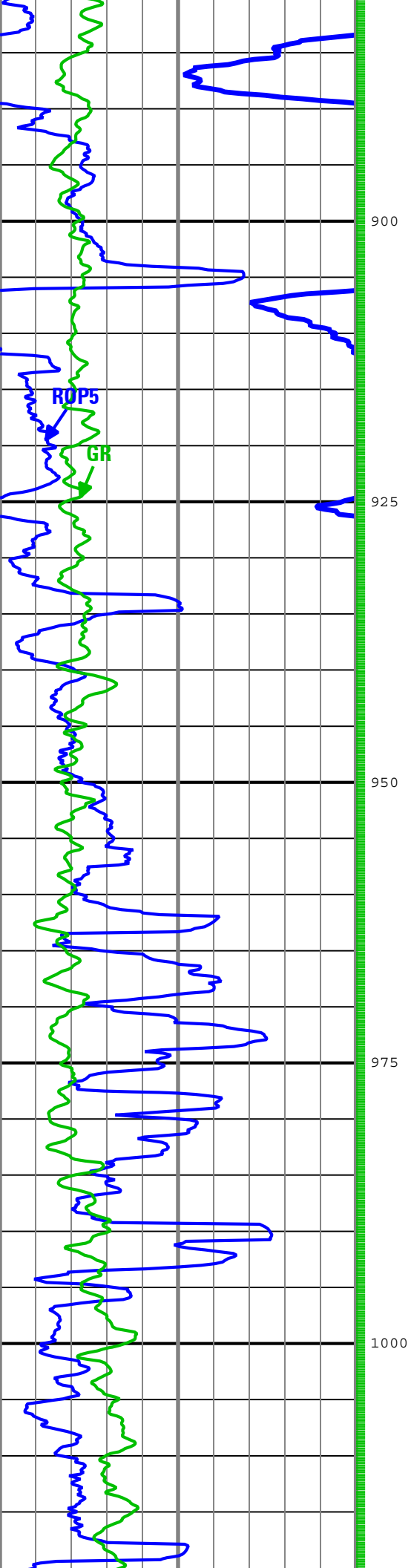


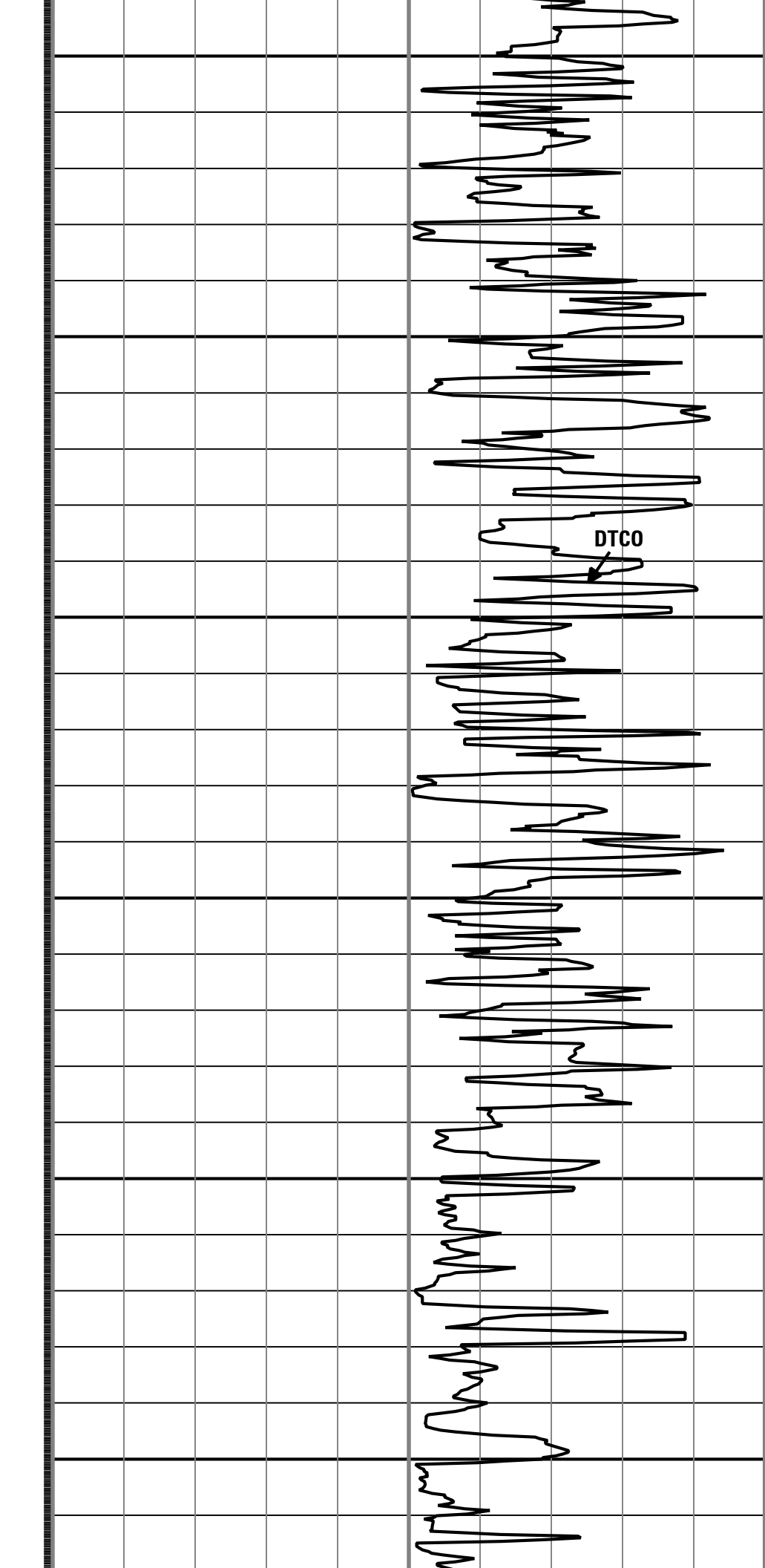
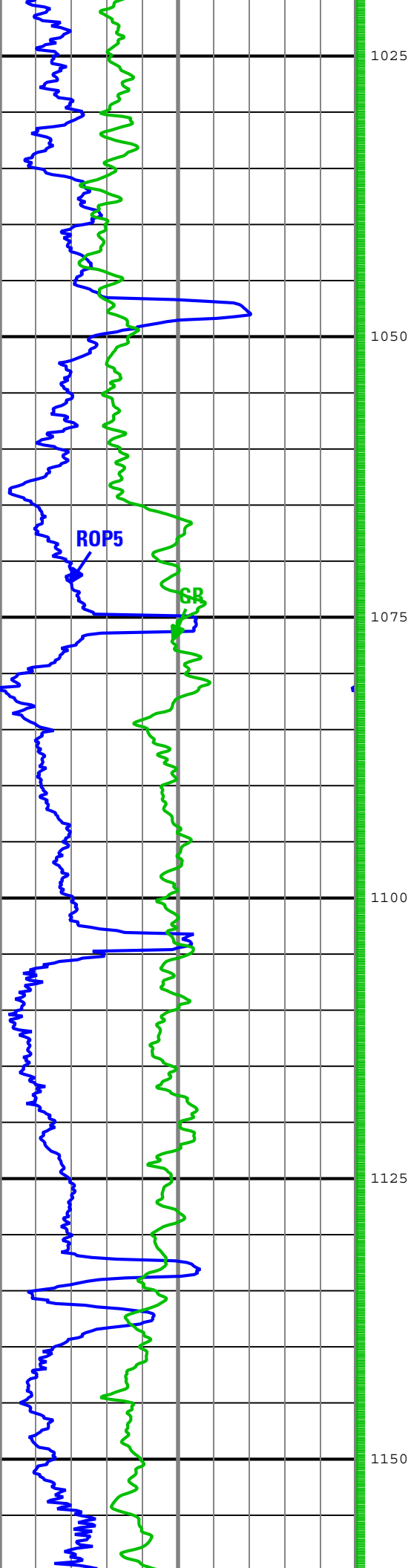


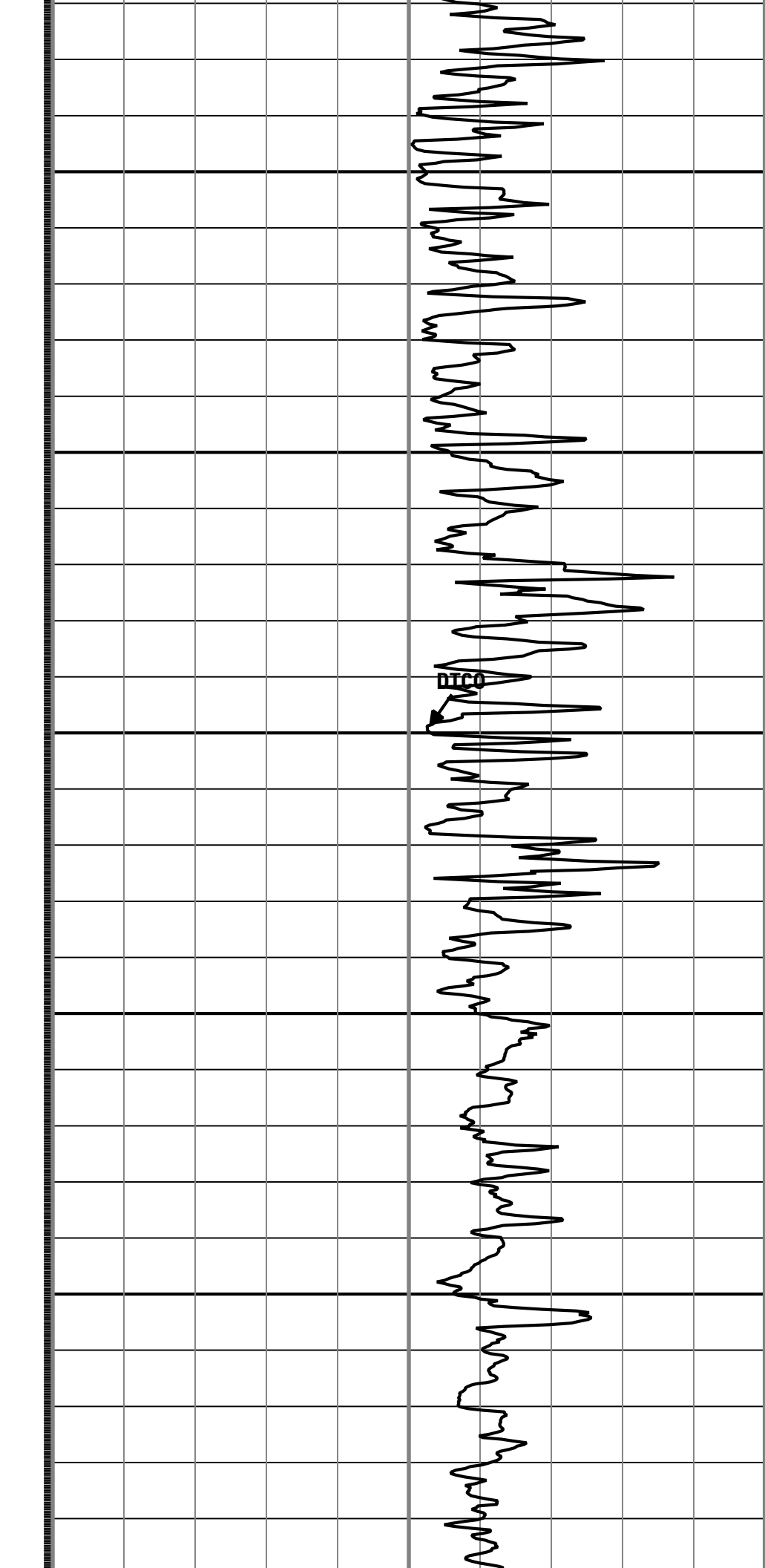
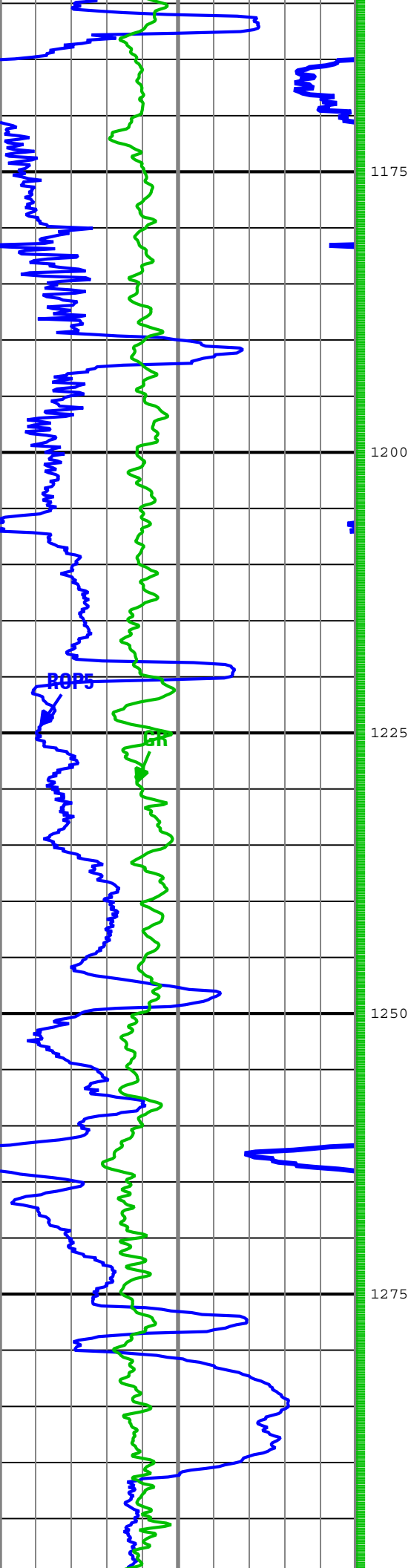


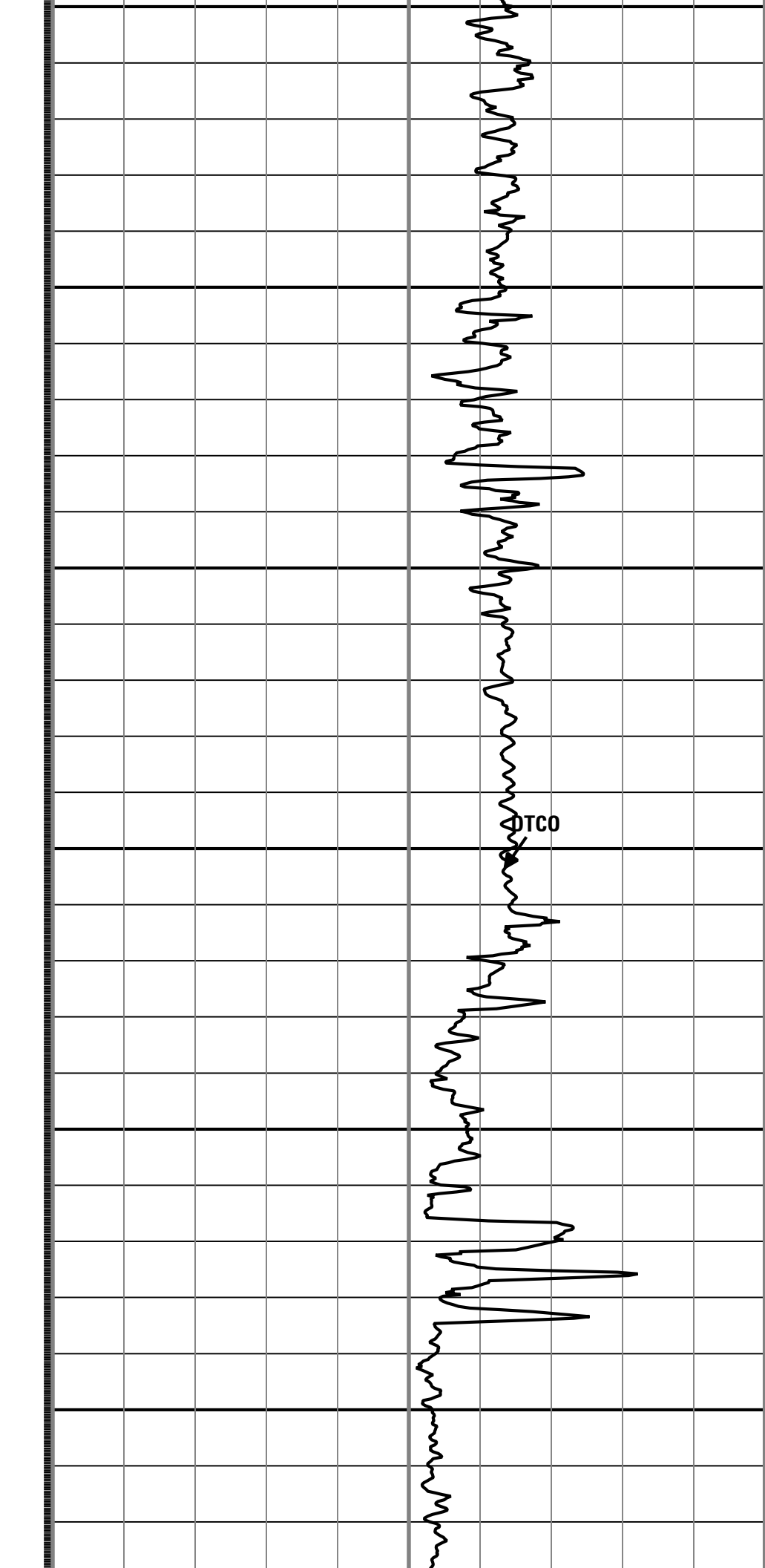
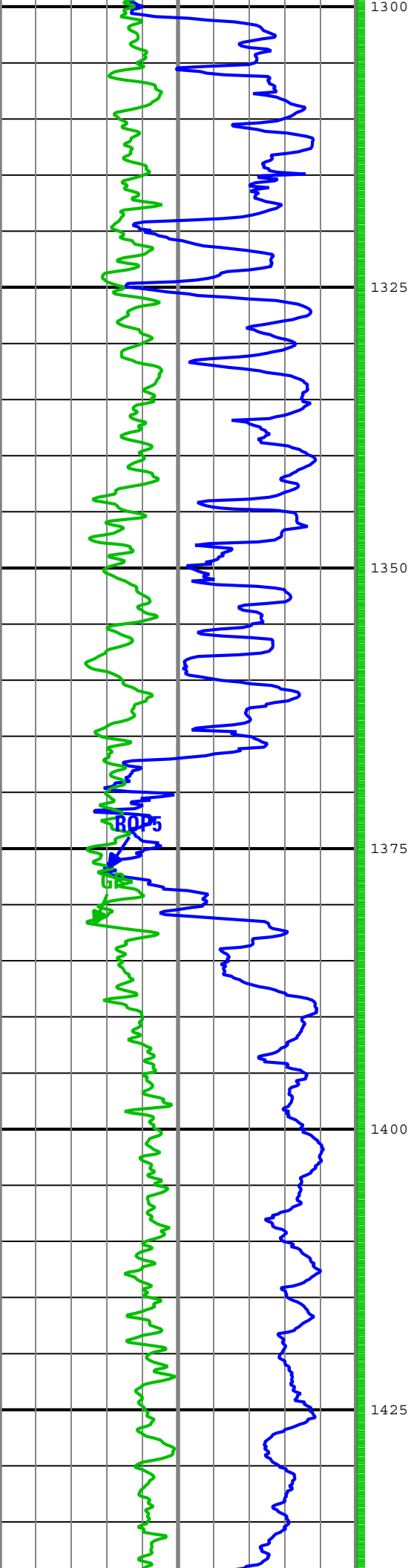


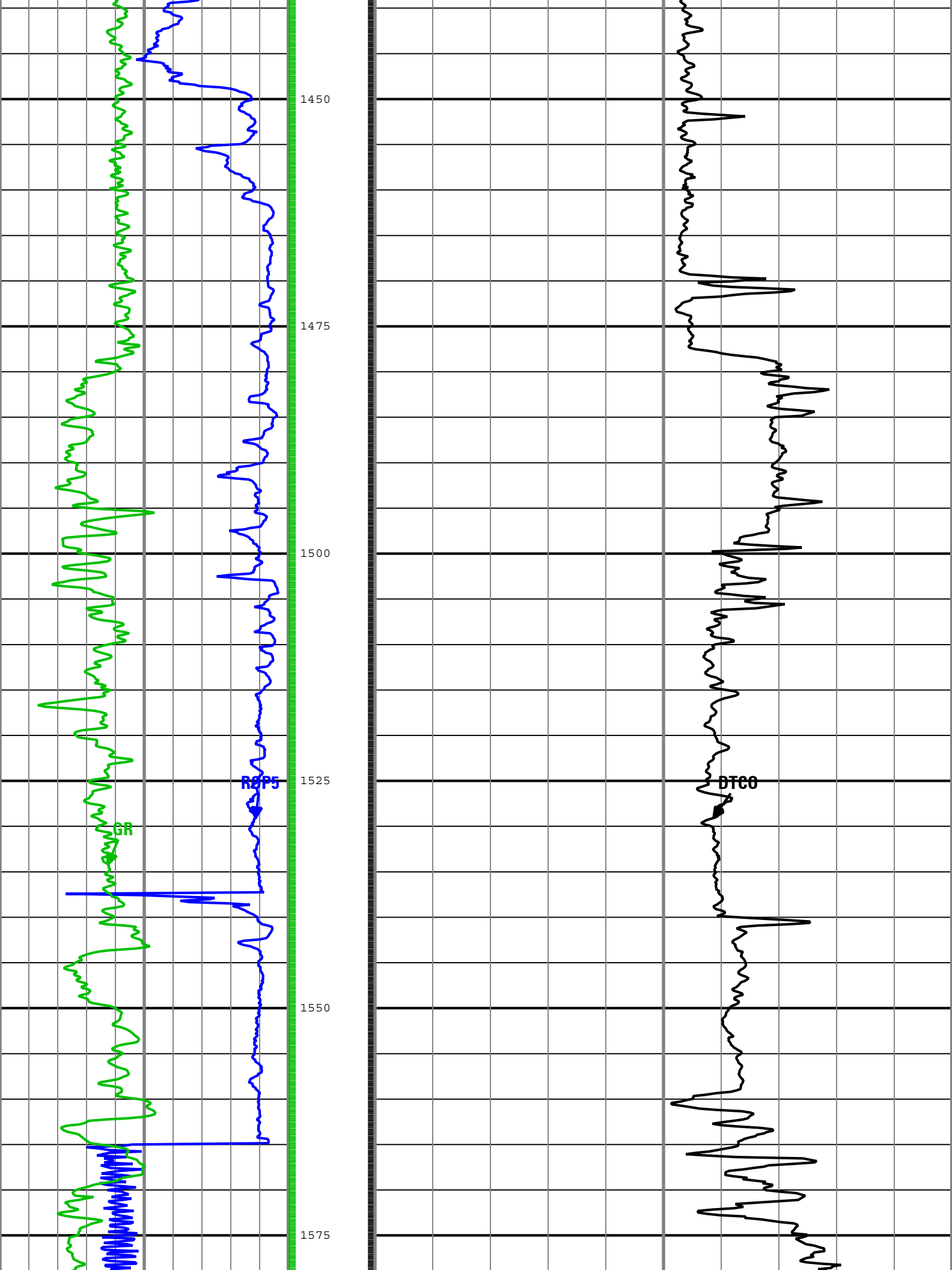


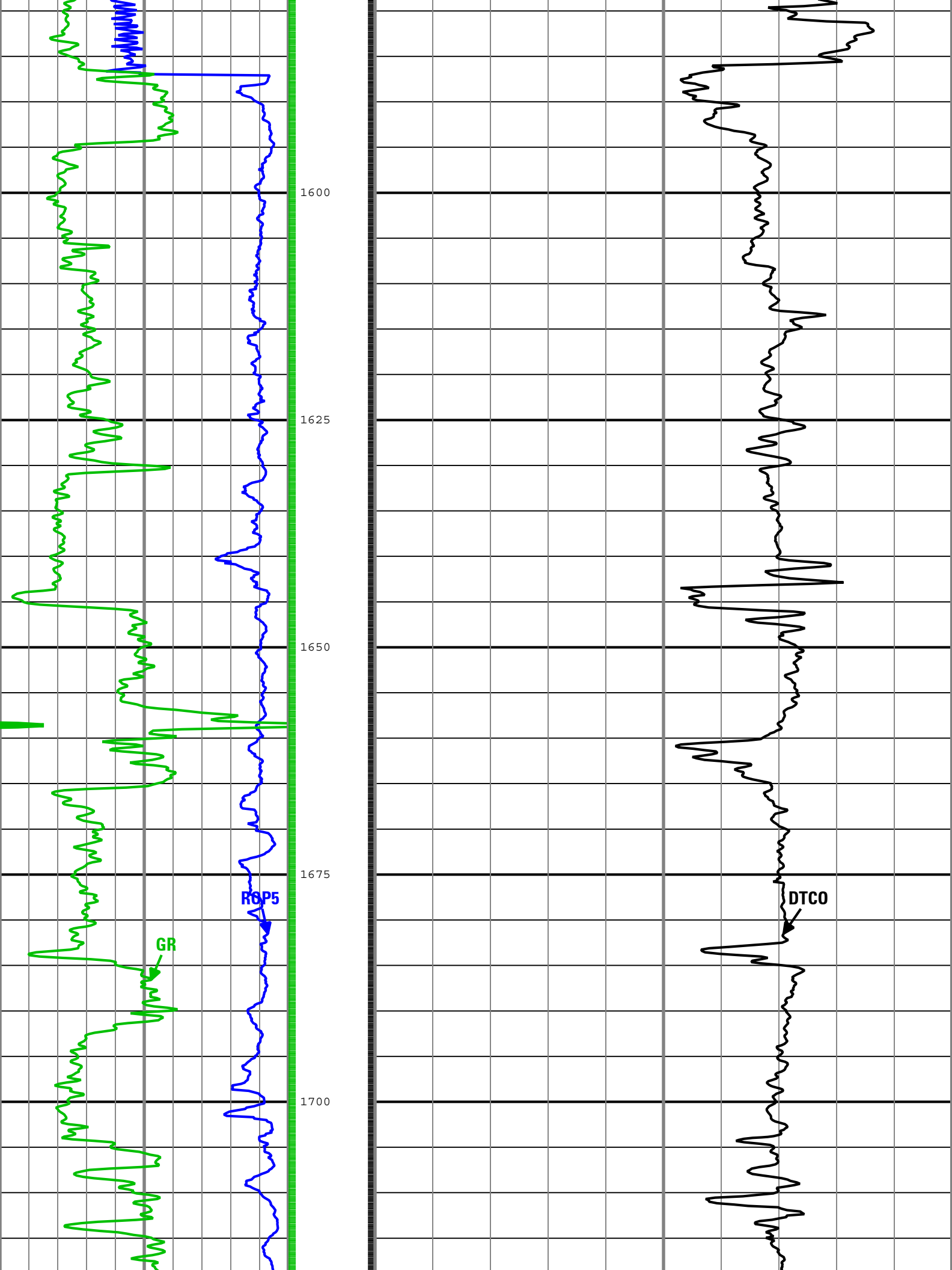


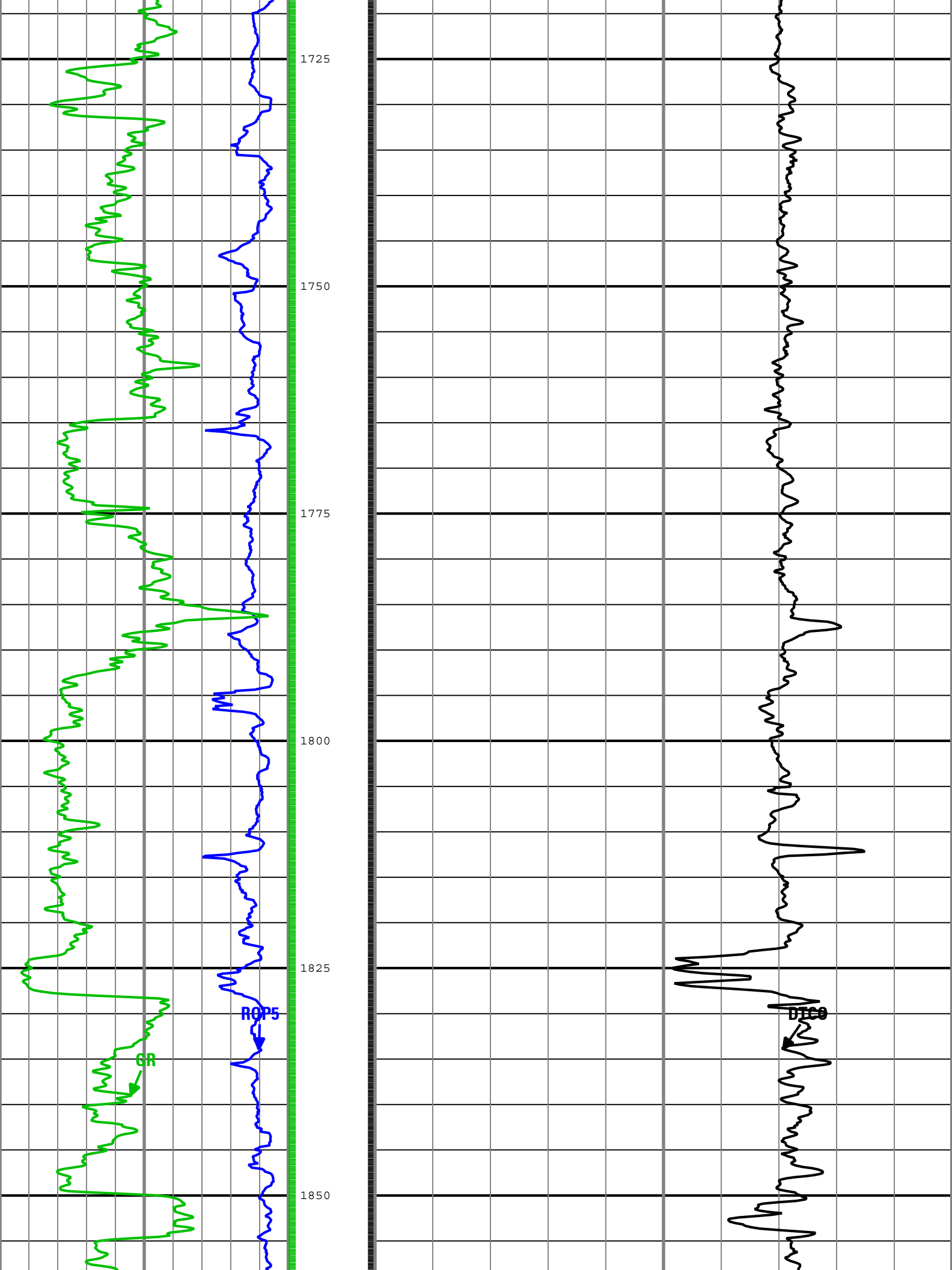


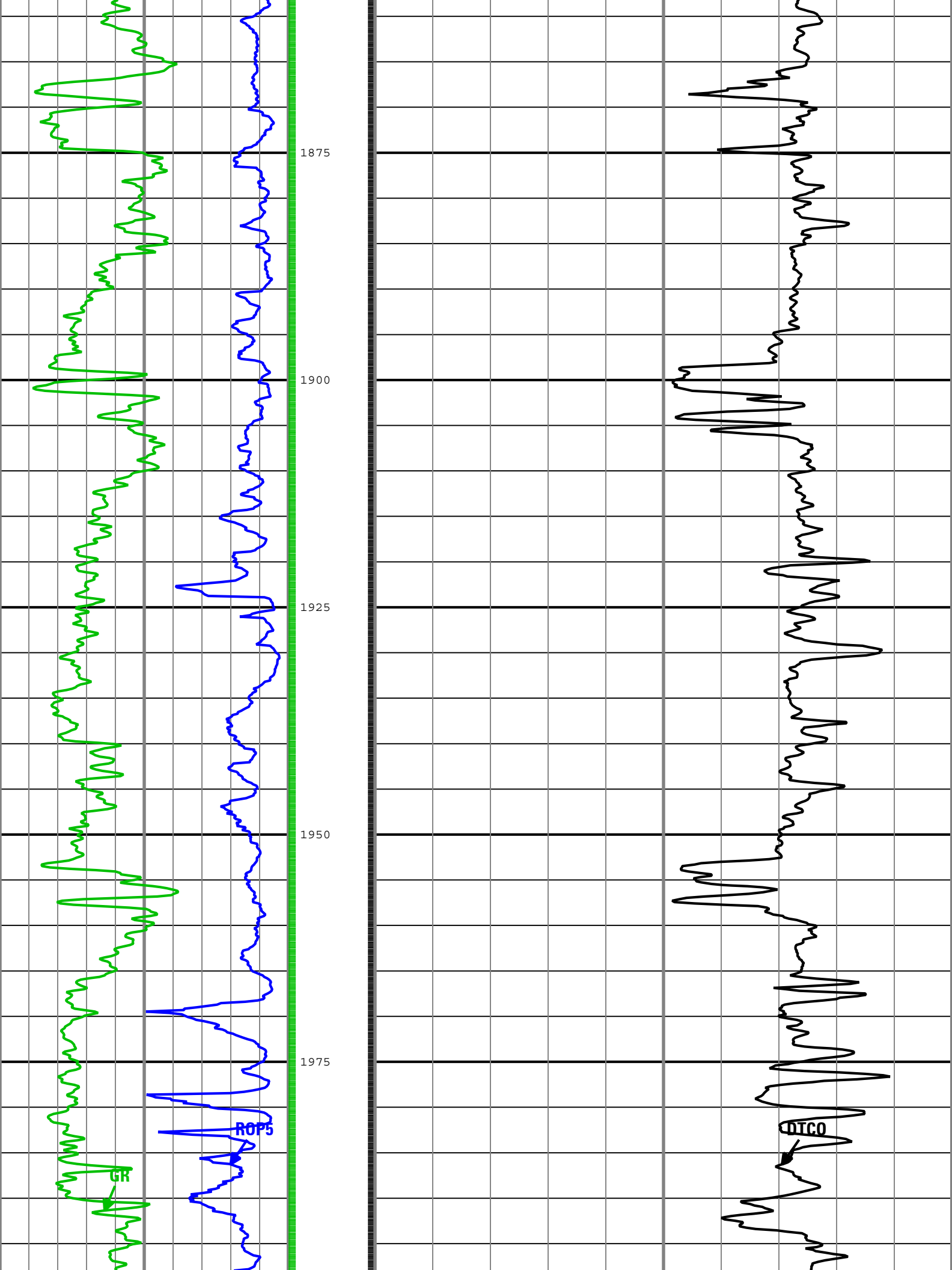


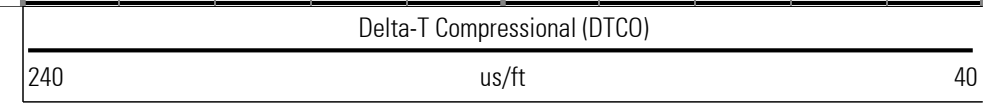
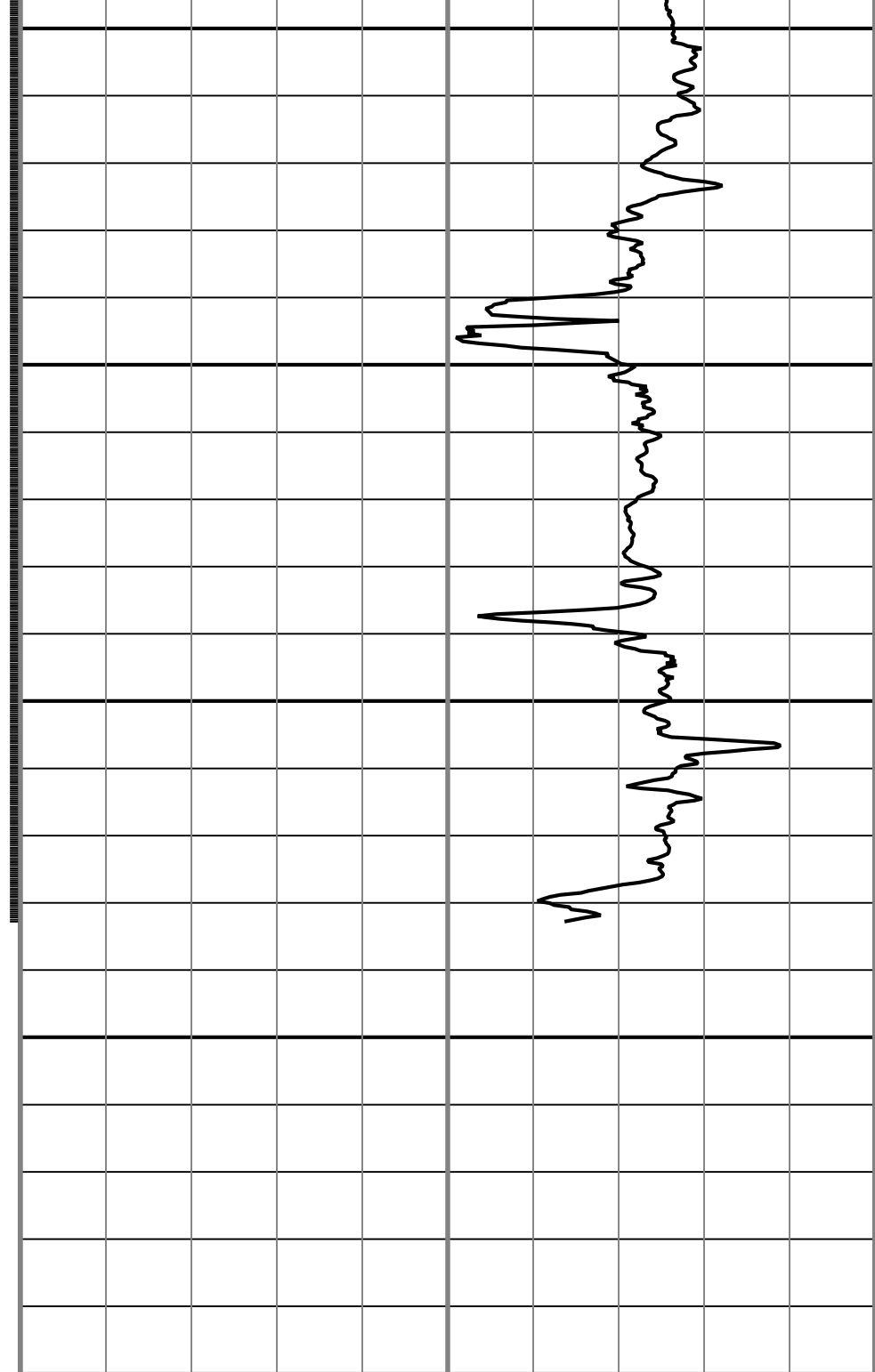
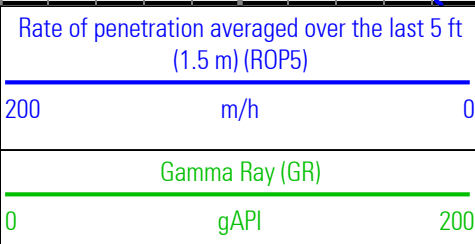
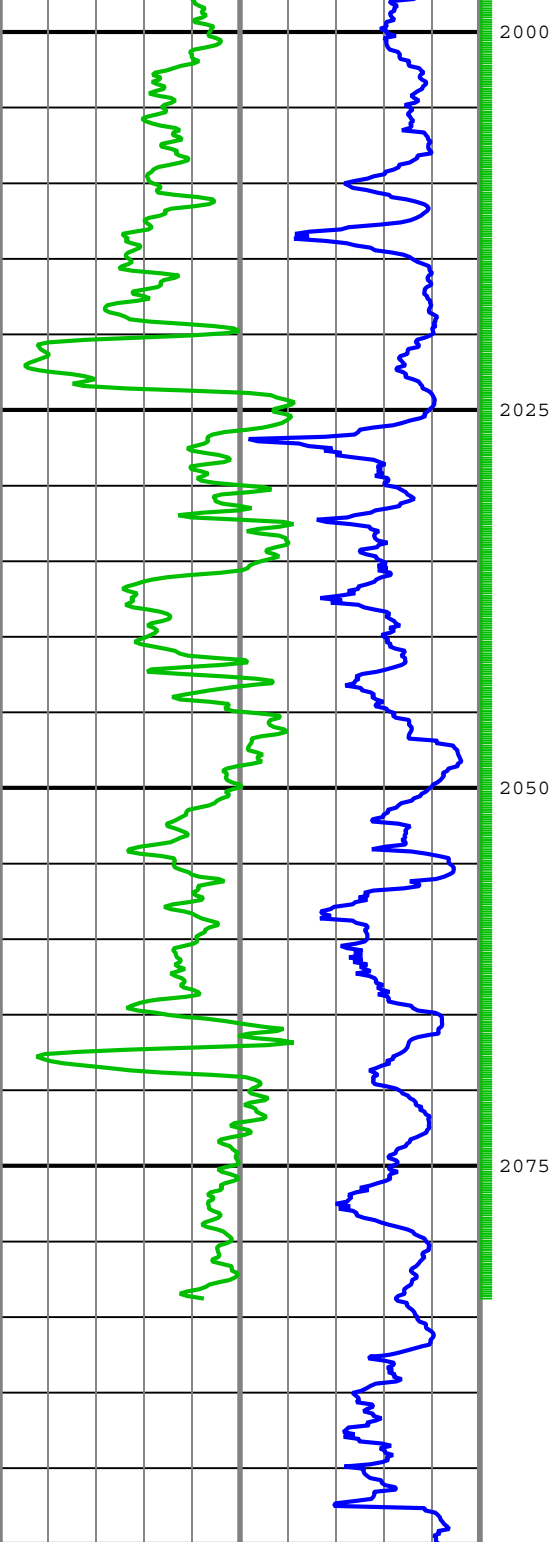












GR - Gamma Ray
 DTCO - Delta-T Compressional

Description: ARC + sonicVISION Format: Log (Spikey Beach-1 RT ARC+Sonic) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 14-Sep-2009 04:42:06

Channel Processing Parameters

Run 1: Parameters

| Parameter | Description | ToolPath | Value | Unit |
|-----------|-------------|----------|-------|------|
|-----------|-------------|----------|-------|------|

| | | | | |
|--------------|---|---------------------------|-------------|---------|
| BHK | Drilling Fluid Potassium Concentration | Borehole | 0 | % |
| BS | Bit Size | COMPLETION | 17.5 | in |
| CDTS | Correction for Delta-T Shale, Empirical | Borehole | 100 | us/ft |
| COLL | Label Slowness Lower Limit - Monopole P&S Compressional | SONICVISION9:SONICVISION9 | 40 | us/ft |
| COUL | Label Slowness Upper Limit - Monopole P&S Compressional | SONICVISION9:SONICVISION9 | 140 | us/ft |
| DDEL | Digitizing Delay | SONICVISION9:SONICVISION9 | 400 | us |
| DFD | Drilling Fluid Density | Borehole | 8.8 | lbm/gal |
| DTF | Delta-T Fluid | Borehole | 189 | us/ft |
| DTM | Delta-T Matrix | Borehole | 56 | us/ft |
| ITT_OFFSET | Integrated Transit Time Offset | SONICVISION9:SONICVISION9 | 0 | ms |
| NWED | Noise Window End | SONICVISION9:SONICVISION9 | 2200 | us |
| NWST | Noise Window Start | SONICVISION9:SONICVISION9 | 600 | us |
| SHLL | Label Slowness Lower Limit - Monopole P&S Shear | SONICVISION9:SONICVISION9 | 75 | us/ft |
| SHUL | Label Slowness Upper Limit - Monopole P&S Shear | SONICVISION9:SONICVISION9 | 240 | us/ft |
| SIGE | Waveform Signal End Time | SONICVISION9:SONICVISION9 | 2000 | us |
| SIGM | Waveform Signal Move Out | SONICVISION9:SONICVISION9 | 130 | us/ft |
| SIGST | Waveform Signal Start Time | SONICVISION9:SONICVISION9 | 1500 | us |
| SPFS | Sonic Porosity Formula | Borehole | Raymer-Hunt | |
| SPSO_LWD | Sonic Porosity Source Logging While Drilling | SONICVISION9:SONICVISION9 | DTRA | |
| SWD_FIL_HIGH | Pre-STC filter high frequency cutoff (in kHz) | SONICVISION9:SONICVISION9 | 0 | kHz |
| SWD_FIL_LENG | Pre-STC filter length | SONICVISION9:SONICVISION9 | 1 | |
| SWD_FIL_LOW | Pre-STC filter low frequency cutoff (in kHz) | SONICVISION9:SONICVISION9 | 0 | kHz |
| SWD_FILTER | Pre-STC Filter Selection | SONICVISION9:SONICVISION9 | No Filter | |
| SWD_PR_SEL | Sonic Processing Option | SONICVISION9:SONICVISION9 | Both | |

Run 2: Parameters

| Parameter | Description | ToolPath | Value | Unit |
|------------|---|---------------------------|-------------|---------|
| BHK | Drilling Fluid Potassium Concentration | Borehole | Time Zoned | % |
| BS | Bit Size | COMPLETION | Depth Zoned | in |
| CDTS | Correction for Delta-T Shale, Empirical | Borehole | 100 | us/ft |
| COLL | Label Slowness Lower Limit - Monopole P&S Compressional | SONICVISION8:SONICVISION8 | 40 | us/ft |
| COUL | Label Slowness Upper Limit - Monopole P&S Compressional | SONICVISION8:SONICVISION8 | 140 | us/ft |
| DDEL | Digitizing Delay | SONICVISION8:SONICVISION8 | 400 | us |
| DFD | Drilling Fluid Density | Borehole | Time Zoned | lbm/gal |
| DTF | Delta-T Fluid | Borehole | 189 | us/ft |
| DTM | Delta-T Matrix | Borehole | 56 | us/ft |
| ITT_OFFSET | Integrated Transit Time Offset | SONICVISION8:SONICVISION8 | 0 | ms |
| NWED | Noise Window End | SONICVISION8:SONICVISION8 | 2200 | us |
| NWST | Noise Window Start | SONICVISION8:SONICVISION8 | 600 | us |
| SHLL | Label Slowness Lower Limit - Monopole P&S Shear | SONICVISION8:SONICVISION8 | 75 | us/ft |
| SHUL | Label Slowness Upper Limit - Monopole P&S Shear | SONICVISION8:SONICVISION8 | 240 | us/ft |
| SIGE | Waveform Signal End Time | SONICVISION8:SONICVISION8 | 2000 | us |
| SIGM | Waveform Signal Move Out | SONICVISION8:SONICVISION8 | 130 | us/ft |
| SIGST | Waveform Signal Start Time | SONICVISION8:SONICVISION8 | 1500 | us |
| SPFS | Sonic Porosity Formula | Borehole | Raymer-Hunt | |
| SPSO_LWD | Sonic Porosity Source Logging While Drilling | SONICVISION8:SONICVISION8 | DTRA | |

| | | | | |
|--------------|---|---------------------------|-----------|-----|
| SPSO_LWD | Sonic Porosity Source Logging While Drilling | SONICVISION8:SONICVISION8 | DTRA | |
| SWD_FIL_HIGH | Pre-STC filter high frequency cutoff (in kHz) | SONICVISION8:SONICVISION8 | 0 | kHz |
| SWD_FIL_LENG | Pre-STC filter length | SONICVISION8:SONICVISION8 | 1 | |
| SWD_FIL_LOW | Pre-STC filter low frequency cutoff (in kHz) | SONICVISION8:SONICVISION8 | 0 | kHz |
| SWD_FILTER | Pre-STC Filter Selection | SONICVISION8:SONICVISION8 | No Filter | |
| SWD_PR_SEL | Sonic Processing Option | SONICVISION8:SONICVISION8 | Both | |

Run 2 : Depth Zoned Parameters

| Parameter | Value | Start (m) | Stop (m) |
|-----------|-------|-------------|------------|
| BS | 17.5 | 759.11 | 816.61 |
| BS | 12.25 | 816.61 | 2100.22 |

All depth are actual.

Run 2 : Time Zoned Parameters

Pass Drilling

| Parameter | Value | Start Time | Stop Time | Start Depth (m) | Stop Depth (m) |
|-----------|-------|----------------------|----------------------|-------------------|------------------|
| BHK | 5.77 | 11-Sep-2009 01:32:19 | 11-Sep-2009 11:30:28 | 816.56 | 1000.33 |
| BHK | 4.98 | 11-Sep-2009 11:30:28 | 12-Sep-2009 02:00:00 | 1000.33 | 1545.64 |
| BHK | 4.72 | 12-Sep-2009 02:00:00 | 13-Sep-2009 15:53:56 | 1545.64 | 2100.35 |
| DFD | 9 | 11-Sep-2009 01:32:19 | 11-Sep-2009 11:30:28 | 816.56 | 1000.33 |
| DFD | 9.1 | 11-Sep-2009 11:30:28 | 12-Sep-2009 02:00:00 | 1000.33 | 1545.64 |
| DFD | 9.5 | 12-Sep-2009 02:00:00 | 13-Sep-2009 15:53:56 | 1545.64 | 2100.35 |

Pass Ream Up 1

| | | | | | |
|-----|------|----------------------|----------------------|------|------|
| BHK | 4.72 | 13-Sep-2009 13:03:17 | 13-Sep-2009 15:53:56 | 1587 | 1565 |
| DFD | 9.5 | 13-Sep-2009 13:03:17 | 13-Sep-2009 15:53:56 | 1587 | 1565 |

All depth are at tool zero.

Detailed Calibration Record

Run 1: ARC9 : Calibration Resistivity

| Primary Set Components | Description | Tool Element | Serial Number |
|-----------------------------|---------------------------------|--------------|---------------|
| | DC with AIM | ARDC | |
| Calibration Dates | Shop Calibration | | |
| Date & Time / Date Validity | 27-Aug-2009 06:33:40 PM - Valid | | |
| Calibration Source | Time Frame File | | |

Calibration Type: Resistivity: Air

| Description | Min/Nominal/Max | Shop | Unit |
|--------------------------------------|------------------------|--------|------|
| ATT1F2AIR Attenuation T1 at 2 MHz | 6.500 / 8.500 / 10.500 | 8.303 | dB |
| ATT2F2AIR Attenuation T2 at 2 MHz | 4.500 / 6.500 / 8.500 | 6.206 | dB |
| ATT3F2AIR Attenuation T3 at 2 MHz | 2.500 / 4.500 / 6.500 | 5.075 | dB |
| ATT4F2AIR Attenuation T4 at 2 MHz | 2.600 / 4.600 / 6.600 | 4.190 | dB |
| ATT5F2AIR Attenuation T5 at 2 MHz | 1.600 / 3.600 / 5.600 | 3.684 | dB |
| PST1F2AIR Phase Shift T1 at 2 MHz | -3.900 / 0.100 / 4.100 | 1.617 | deg |
| PST2F2AIR Phase Shift T2 at 2 MHz | -3.900 / 0.100 / 4.100 | -1.579 | deg |
| PST3F2AIR Phase Shift T3 at 2 MHz | -3.900 / 0.100 / 4.100 | 1.555 | deg |
| PST4F2AIR Phase Shift T4 at 2 MHz | -3.900 / 0.100 / 4.100 | -1.623 | deg |
| PST5F2AIR | -3.900 / 0.100 / 4.100 | 1.556 | deg |

| | | | |
|--|------------------------|--------|-----|
| Phase Shift T5 at 2 MHz | | | |
| ATT1F4AIR Attenuation T1 at 400 KHz | 6.500 / 8.500 / 10.500 | 8.288 | dB |
| ATT2F4AIR Attenuation T2 at 400 KHz | 4.500 / 6.500 / 8.500 | 6.232 | dB |
| ATT3F4AIR Attenuation T3 at 400 KHz | 2.500 / 4.500 / 6.500 | 5.056 | dB |
| ATT4F4AIR Attenuation T4 at 400 KHz | 2.600 / 4.600 / 6.600 | 4.226 | dB |
| ATT5F4AIR Attenuation T5 at 400 KHz | 1.600 / 3.600 / 5.600 | 3.668 | dB |
| PST1F4AIR Phase Shift T1 at 400 KHz | -3.900 / 0.100 / 4.100 | -1.128 | deg |
| PST2F4AIR Phase Shift T2 at 400 KHz | -3.900 / 0.100 / 4.100 | 0.979 | deg |
| PST3F4AIR Phase Shift T3 at 400 KHz | -3.900 / 0.100 / 4.100 | -1.080 | deg |
| PST4F4AIR Phase Shift T4 at 400 KHz | -3.900 / 0.100 / 4.100 | 0.861 | deg |
| PST5F4AIR Phase Shift T5 at 400 KHz | -3.900 / 0.100 / 4.100 | -1.146 | deg |

Run 1: ARC9 : Calibration Gamma Ray

| Primary Set Components | Description | Tool Element | Serial Number |
|---|---------------------------------|--------------|---------------|
| | DC with AIM | ARDC | |
| Calibration Dates | Shop Calibration | | |
| Date & Time / Date Validity | 26-Aug-2009 08:02:43 PM - Valid | | |
| Calibration Source | Time Frame File | | |
| Calibration Type: Gamma Ray: Blanket | | | |
| Description | Min/Nominal/Max | Shop | Unit |
| GR_GAIN Gamma Ray Calibration Gain | 0.580 / 1.000 / 1.250 | 1.065 | |

Run 2: ARC8 : Calibration Resistivity

| Primary Set Components | Description | Tool Element | Serial Number |
|---|---------------------------------|--------------|---------------|
| | DC with AIM | ARDC | |
| Calibration Dates | Shop Calibration | | |
| Date & Time / Date Validity | 04-Sep-2009 10:51:30 AM - Valid | | |
| Calibration Source | Time Frame File | | |
| Calibration Type: Resistivity: Air | | | |
| Description | Min/Nominal/Max | Shop | Unit |
| ATT1F2AIR Attenuation T1 at 2 MHz | 6.500 / 8.500 / 10.500 | 8.079 | dB |
| ATT2F2AIR Attenuation T2 at 2 MHz | 4.500 / 6.500 / 8.500 | 6.594 | dB |
| ATT3F2AIR Attenuation T3 at 2 MHz | 2.500 / 4.500 / 6.500 | 4.786 | dB |
| ATT4F2AIR Attenuation T4 at 2 MHz | 2.600 / 4.600 / 6.600 | 4.546 | dB |
| ATT5F2AIR Attenuation T5 at 2 MHz | 1.600 / 3.600 / 5.600 | 3.373 | dB |
| PST1F2AIR Phase Shift T1 at 2 MHz | -3.900 / 0.100 / 4.100 | -0.298 | deg |
| PST2F2AIR Phase Shift T2 at 2 MHz | -3.900 / 0.100 / 4.100 | 0.371 | deg |
| PST3F2AIR Phase Shift T3 at 2 MHz | -3.900 / 0.100 / 4.100 | -0.408 | deg |
| PST4F2AIR Phase Shift T4 at 2 MHz | -3.900 / 0.100 / 4.100 | 0.352 | deg |
| PST5F2AIR Phase Shift T5 at 2 MHz | -3.900 / 0.100 / 4.100 | -0.404 | deg |
| ATT1F4AIR Attenuation T1 at 400 KHz | 6.500 / 8.500 / 10.500 | 8.139 | dB |
| ATT2F4AIR Attenuation T2 at 400 KHz | 4.500 / 6.500 / 8.500 | 6.536 | dB |
| ATT3F4AIR Attenuation T3 at 400 KHz | 2.500 / 4.500 / 6.500 | 4.844 | dB |

| | | | |
|--|------------------------|--------|-----|
| ATT4F4AIR Attenuation T4 at 400 KHz | 2.600 / 4.600 / 6.600 | 4.490 | dB |
| ATT5F4AIR Attenuation T5 at 400 KHz | 1.600 / 3.600 / 5.600 | 3.445 | dB |
| PST1F4AIR Phase Shift T1 at 400 KHz | -3.900 / 0.100 / 4.100 | 0.107 | deg |
| PST2F4AIR Phase Shift T2 at 400 KHz | -3.900 / 0.100 / 4.100 | -0.147 | deg |
| PST3F4AIR Phase Shift T3 at 400 KHz | -3.900 / 0.100 / 4.100 | 0.125 | deg |
| PST4F4AIR Phase Shift T4 at 400 KHz | -3.900 / 0.100 / 4.100 | -0.186 | deg |
| PST5F4AIR Phase Shift T5 at 400 KHz | -3.900 / 0.100 / 4.100 | 0.094 | deg |

Run 2: ARC8 : Calibration Gamma Ray

| | | | |
|---------------------------------------|---------------------------------|---------------------|----------------------|
| Primary Set Components | Description | Tool Element | Serial Number |
| | DC with AIM | ARDC | |
| Calibration Dates | Shop Calibration | | |
| Date & Time / Date Validity | 03-Sep-2009 04:16:18 PM - Valid | | |
| Calibration Source | Time Frame File | | |
| Calibration Type: | Gamma Ray: Blanket | | |
| Description | Min/Nominal/Max | Shop | Unit |
| GR_GAIN Gamma Ray Calibration Gain | 0.580 / 1.000 / 1.250 | 1.049 | |

Company: Beach Petroleum Ltd

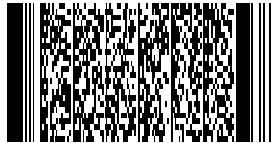
Well: Spikey Beach-1

Field: Exploration

Rig Name: Ocean Patriot

State: Tasmania

Country: Australia



Schlumberger sonicVISION
1:500 Measured Depth
Recorded Mode Log