SHORE-BASED LOG PROCESSING

Hole 1065A

Bottom felt: 4781 mbrf
Total penetration: 617 mbsf
Total core recovered: 46.5 m (12.4%)

Logging Runs

Logging string 1: DIT/HLDT/APS/HNGS (main and repeat)
Logging string 2: FMS/SDT/GPIT/NGT
Wireline heave compensator was used to counter ship heave.

Bottom-Hole Assembly

The following bottom-hole assembly depths are as they appear on the logs after differential depth shift (see "Depth shift" section) and depth shift to the sea floor. As such, there might be a discrepancy with the original depths given by the drillers on board. Possible reasons for depth discrepancies are ship heave, use of wireline heave compensator, and drill string and/or wireline stretch.

DIT/HLDT/APS/HNGS: Bottom-hole assembly at ~106 mbsf (main and repeat).

FMS/SDT/GPIT/NGT: Recorded open-hole.

Processing

Depth shift: Original logs have been interactively depth shifted with reference to HNGS from DIT/HLDT/APS/HNGS repeat run and to the seafloor (–4779 m). This water depth corresponds to the depth of the mudline as observed on the logs, and, as such, it differs 2 m from the "bottom felt" depth given by the drillers. Because of the bad hole conditions, depth correlation among runs is often difficult and, therefore, this should be taken into account when comparing data from different runs. The program used is an interactive, graphical depth-match program that allows logs to be visually correlated and appropriate shifts to be defined. The reference and match channels are displayed on the screen, with vectors connecting old (reference curve) and new (match curve) shift depths. The total gamma-ray curve (SGR) from the NGT or HGNS tool run on each logging string is used to correlate the logging runs most often. In general, the reference curve is chosen on the basis of constant, low cable tension, and high cable speed (tools run at faster speeds are less likely to stick and are less susceptible to data degradation caused by ship heave). Other factors, however, such as the length of the logged interval, the presence of drill pipe, and the statistical quality of the collected data (better statistics are obtained at lower logging speeds) are also considered in the selection. A list of the amount of differential depth shifts applied at this hole is available upon request.

Gamma-ray processing: NGT data from the FMS/GPIT/SDT/NGT runs have been processed to correct for borehole size and type of drilling fluid. HNGS data from the DIT/APS/HLDT/HNGS tool string were corrected in real-time during the recording.

Acoustic data processing: The array sonic tool was operated in standard depth-derived borehole compensated mode, including long-spacing (8-10-10-12 ft) and short-spacing (3-5-5-7 ft) logs. Because of the extremely noisy character and low quality of the sonic logs, no processing has been performed at this stage. Processing of full sonic waveforms is recommended in order to get better results. Uncompensated velocities have been calculated from the edited LTT2 measurements (8-ft spacing) and should be used qualitatively only.

High-resolution data: No high resolution data were recorded in Hole 1065A.

Quality Control

During the processing, quality control of the data is mainly performed by cross-correlation of all logging data. The large (15 in over most of the logged interval) and irregular borehole affects most recordings, particularly those that require eccentralization (APS, HLDT) and a good contact with the borehole wall. Both density and neutron porosity data recorded in this hole appear to be of very poor quality, a result of the lack of proper eccentralization during both the main and the repeat pass. The standoff data clearly show that the tool was not in contact with the borehole wall during most of the recording. Because of tool failure during the main pass, neutron porosity (APS) data were recorded only up to 325 mbsf; during the repeat pass the APS tool was fully functional. HLDT density data was collected during the entire main pass but only in the section below 325 mbsf did the caliper work and allow for the correction for borehole size. Above this depth, the tool could not be properly eccentralized as the caliper arm was closed because of the tool string sticking problems. Hole deviation can also affect the data negatively; the FMS, for example, is not designed to be run in holes deviated more than 10 degrees, as the tool weight might cause the caliper to close. Even though both density and neutron data are presented, extreme caution should be exercised when using them.

Data recorded through the bottom-hole assembly, such as the HNGS data above 106 mbsf, should be used qualitatively only because of the attenuation on the incoming signal.

Hole diameter was recorded by the hydraulic caliper on the HLDT tool (CALI) and on the FMS string (C1 and C2). Because of the tool string sticking problems, the CALI was used only during the repeat pass of the DIT/HLDT/APS/HNGS tool string; it indicated that the hole was greater than 15 in, with a standoff often as high as 1 in. The FMS caliper indicated as well that the hole was, for the most part, larger than the maximum caliper reading of the FMS (15 in). This greatly affected the quality of the FMS and acoustic data recorded.

Note: Additional information about the logs can be found in the "Explanatory Notes" chapter and the "Site 1065" chapter (this volume). For further questions about the logs, please contact:

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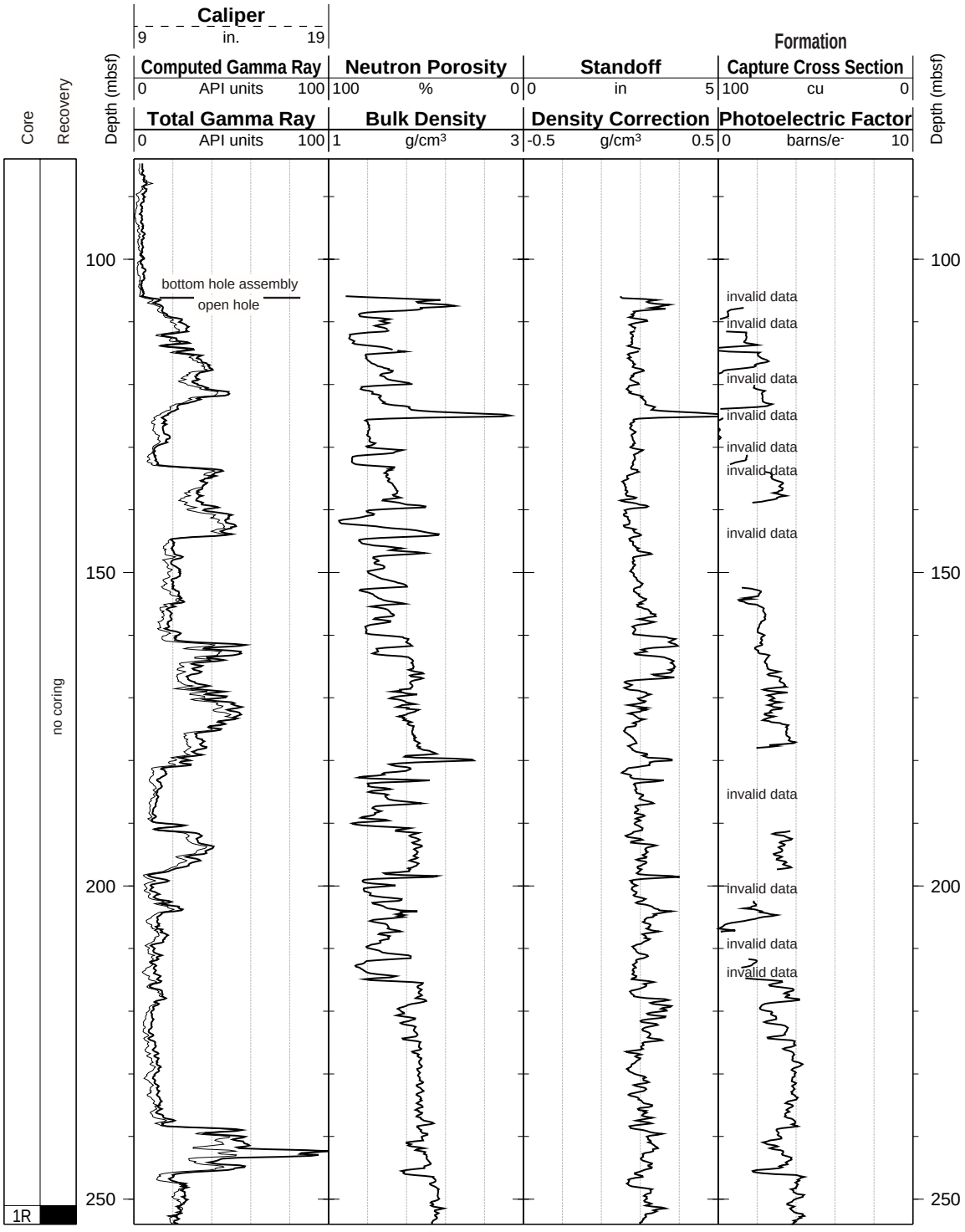
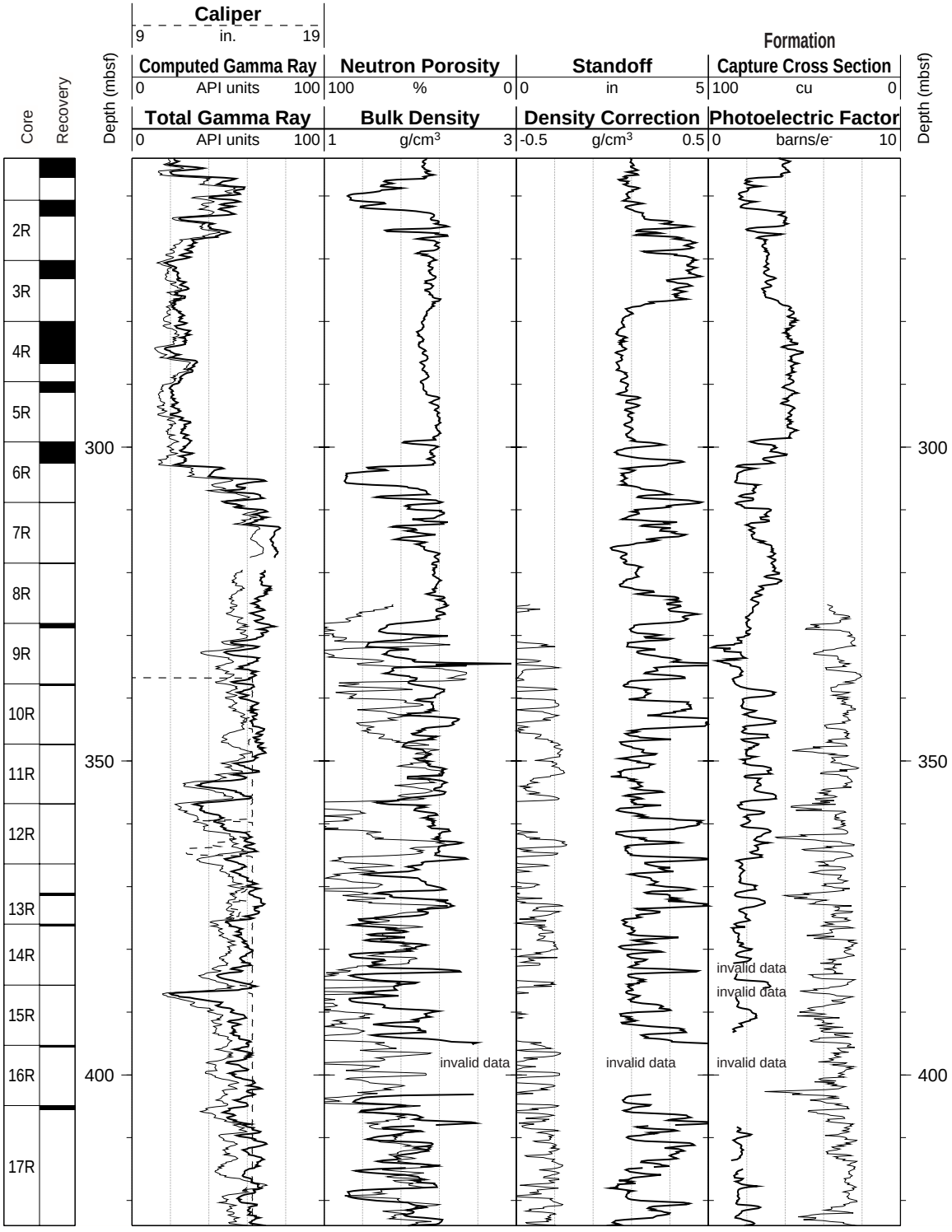
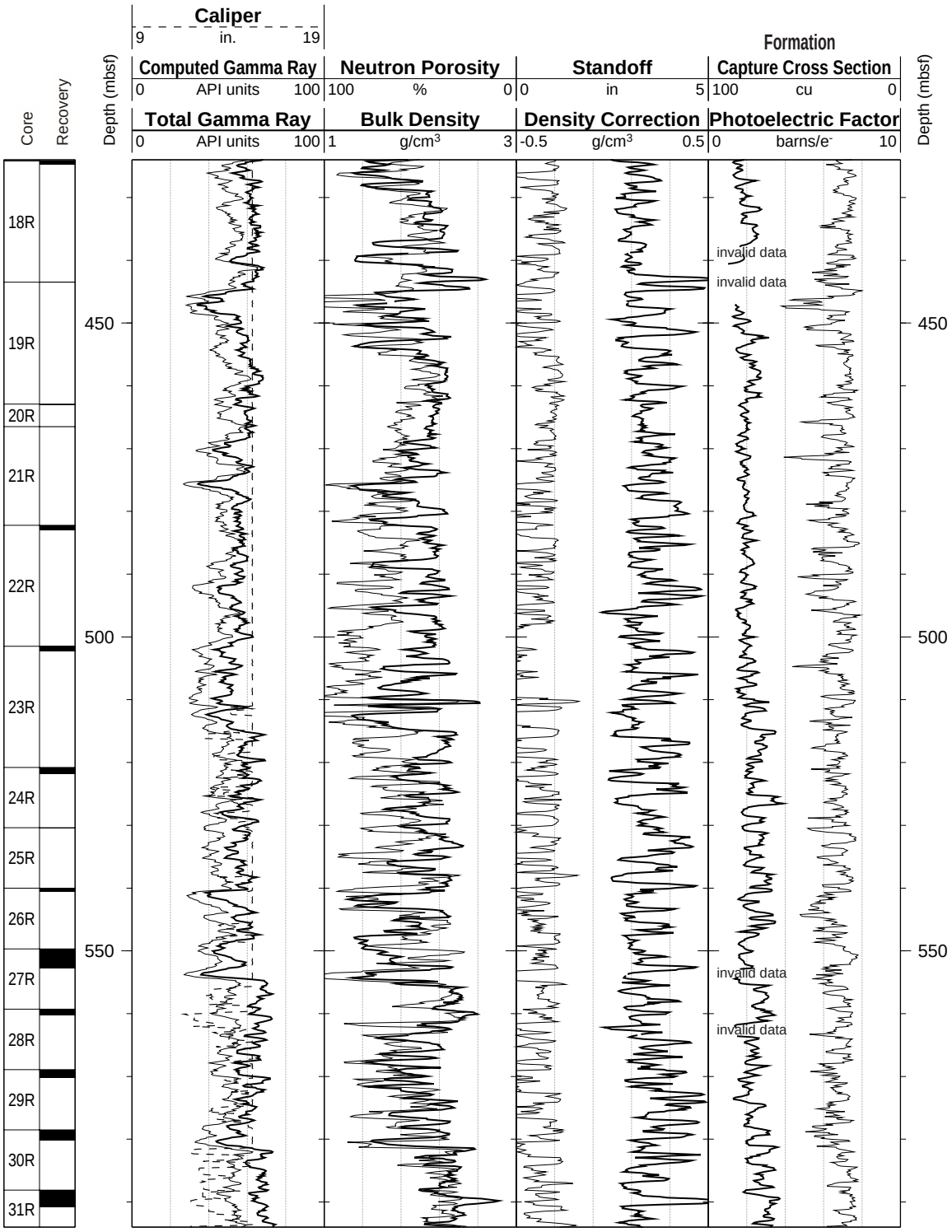
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Main



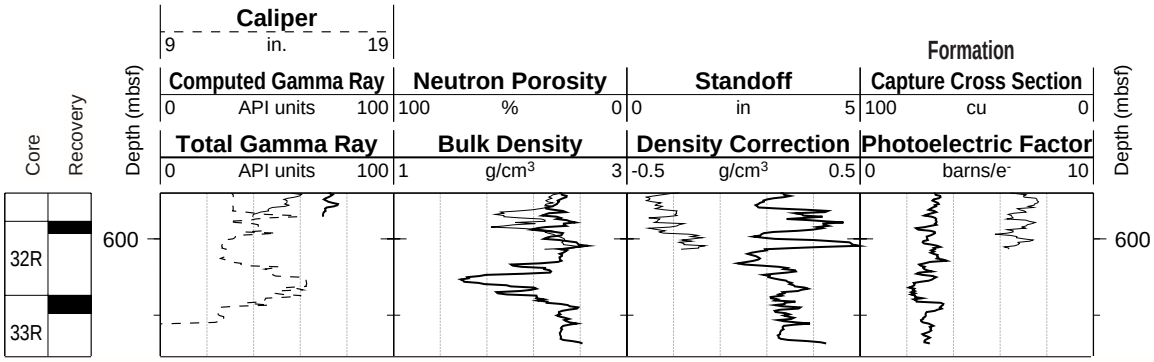
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Main (cont.)



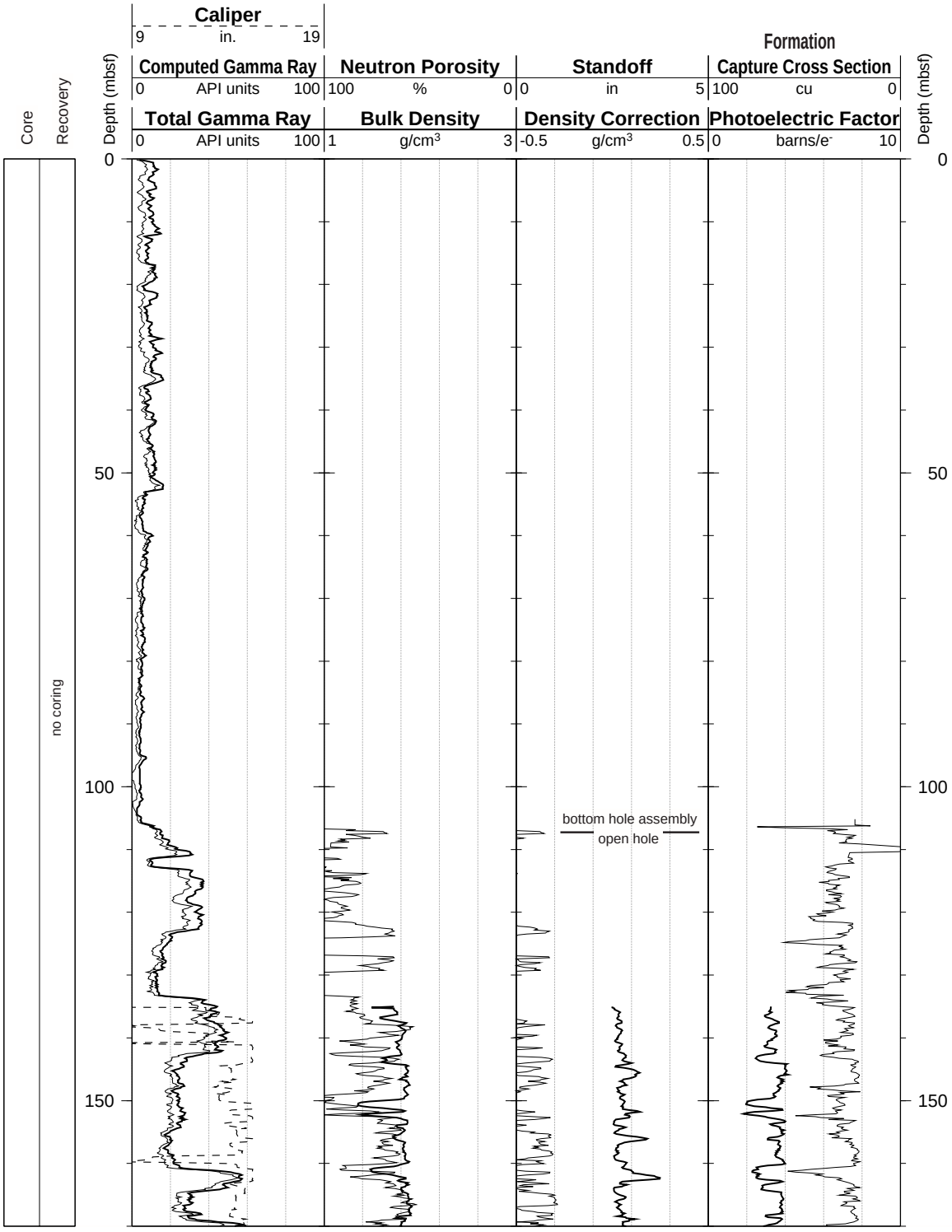
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Main (cont.)



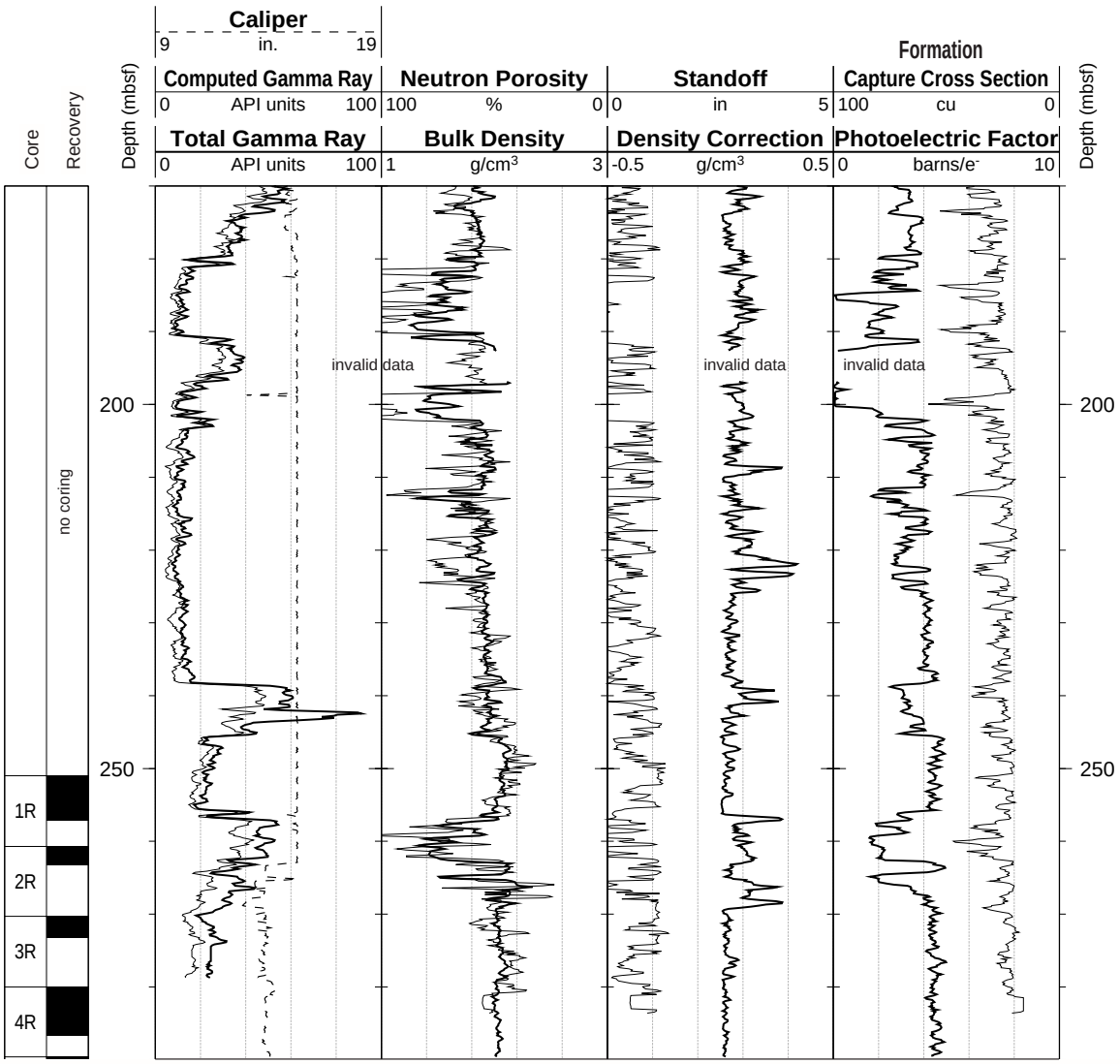
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Main (cont.)



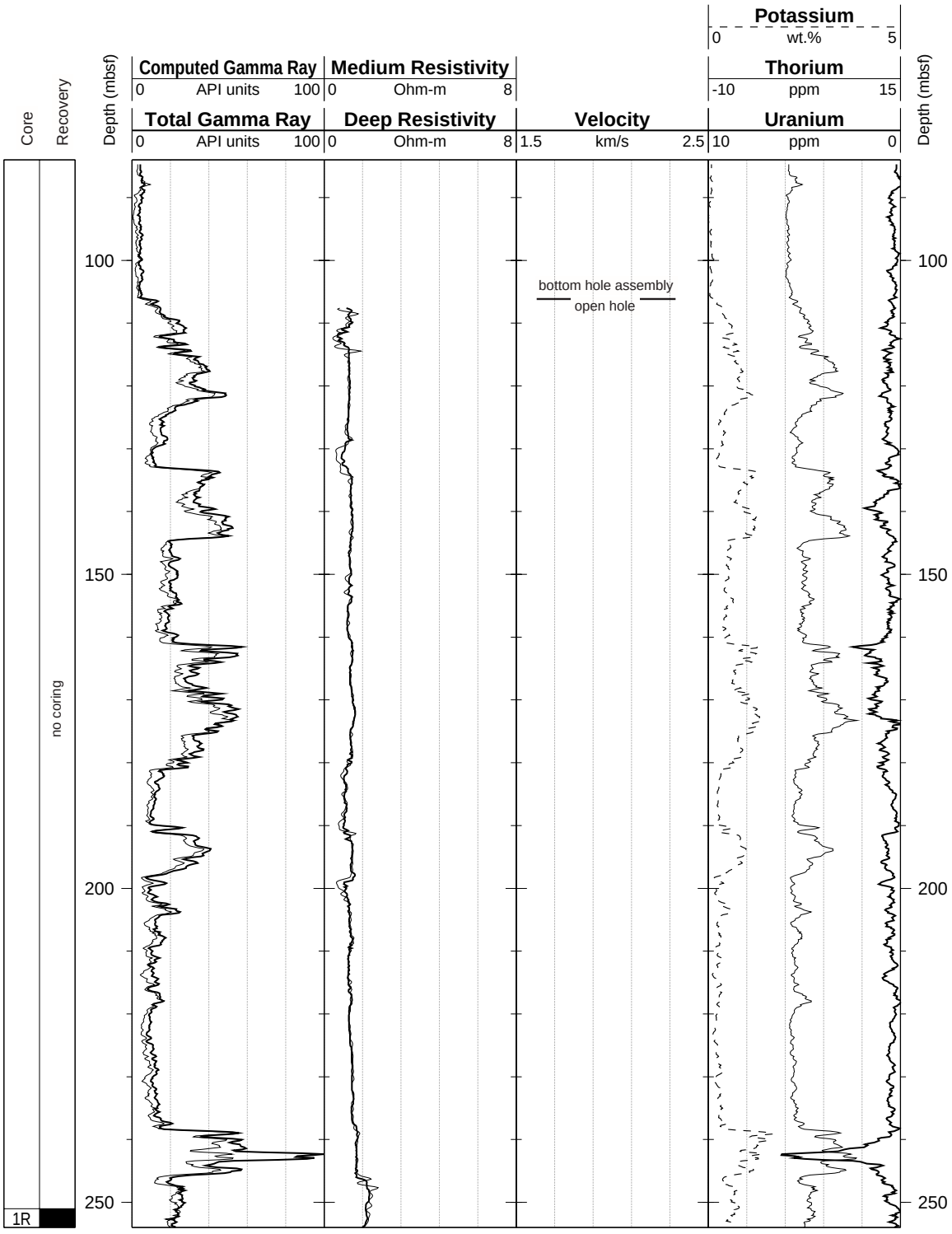
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Repeat



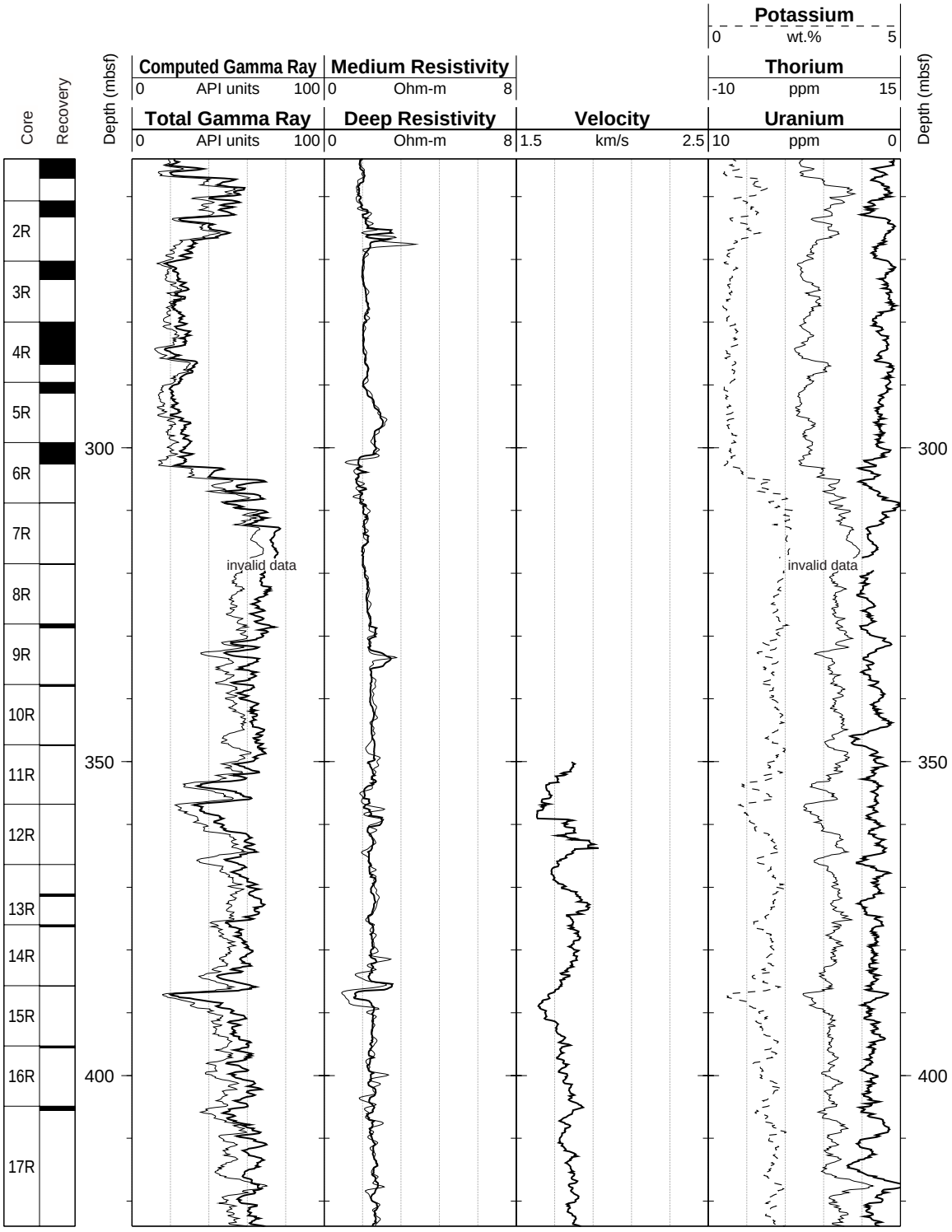
Hole 1065A: Natural Gamma Ray-Density-Porosity Logging Data - Repeat (cont.)



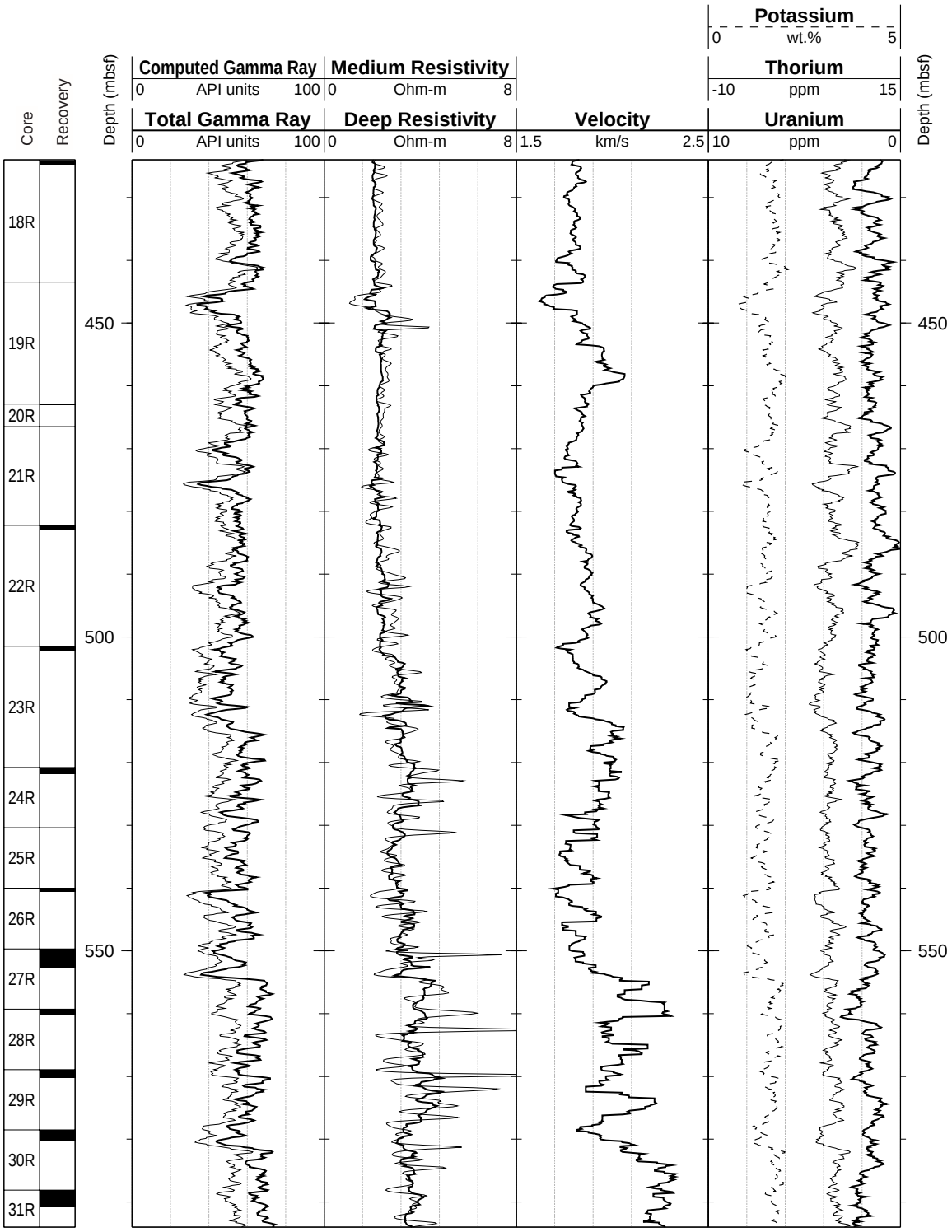
Hole 1065A: Natural Gamma Ray-Resistivity-Sonic Logging Data - Main



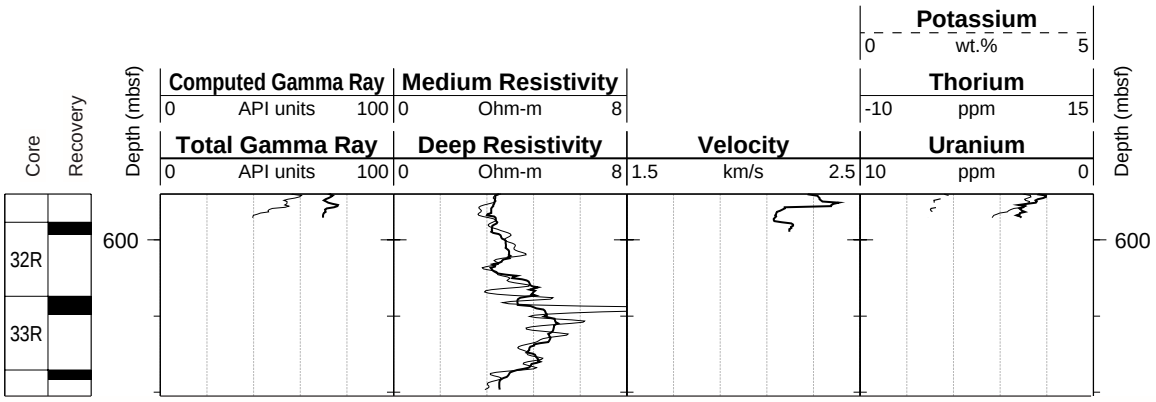
Hole 1065A: Natural Gamma Ray-Resistivity-Sonic Logging Data - Main (cont.)



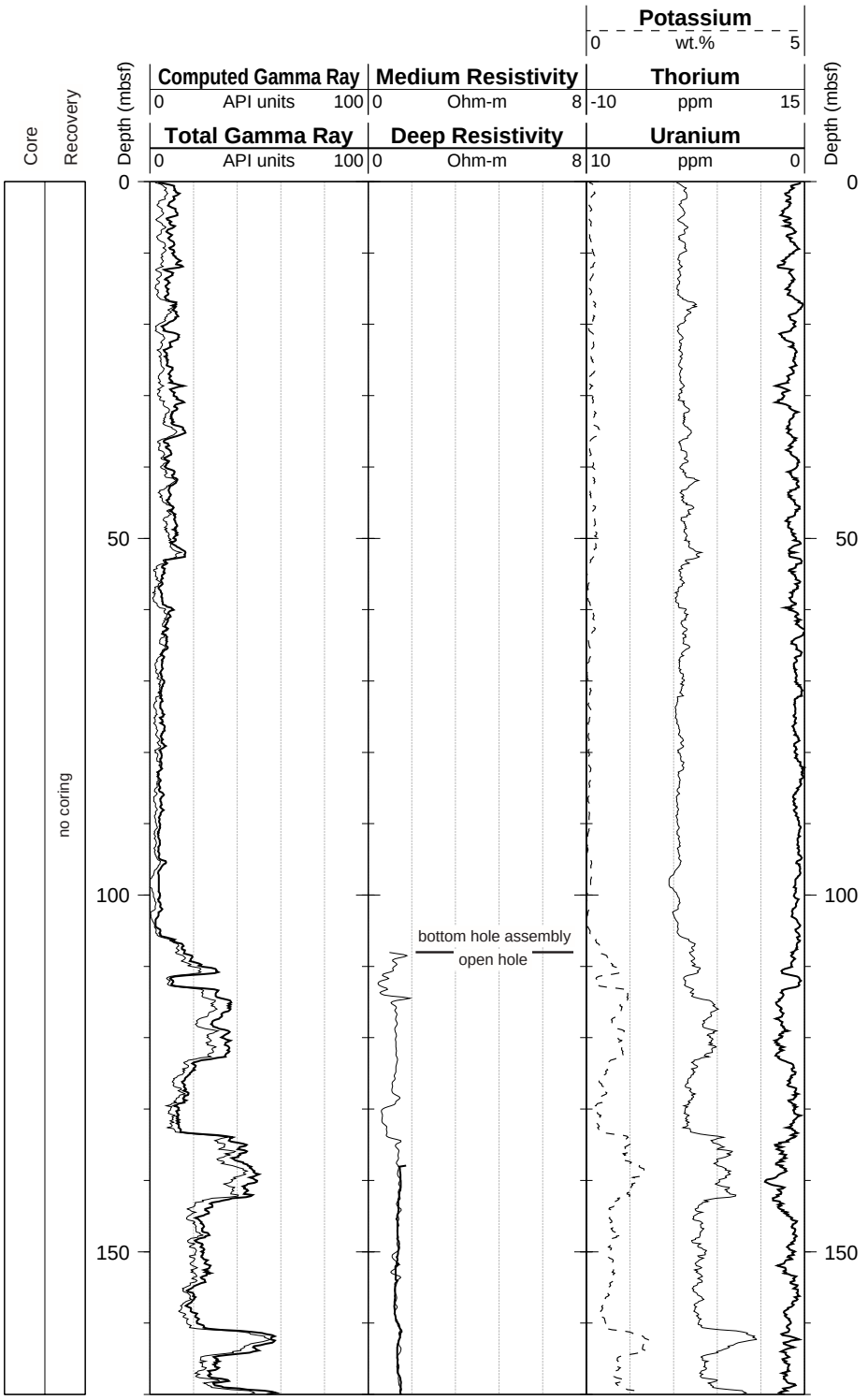
Hole 1065A: Natural Gamma Ray-Resistivity-Sonic Logging Data - Main (cont.)



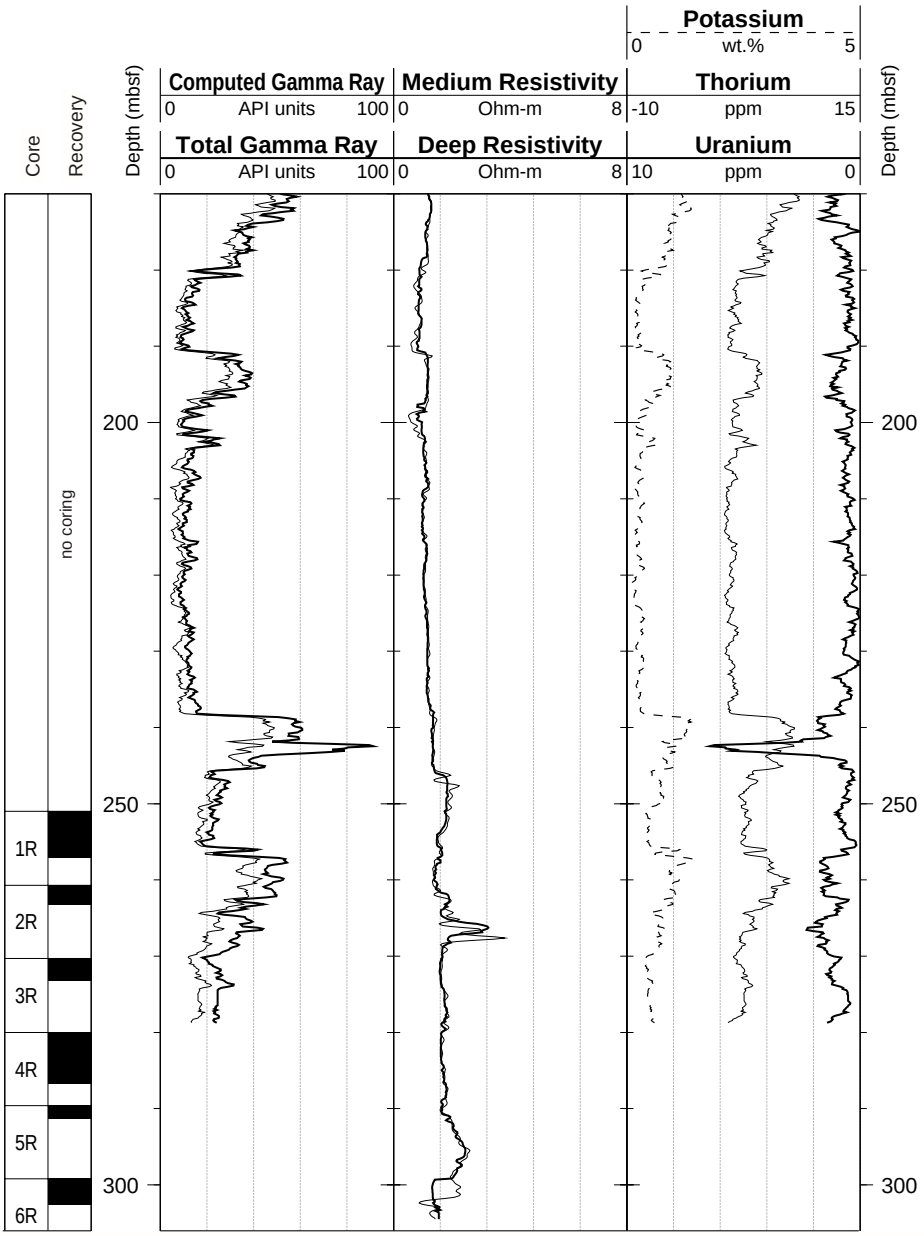
Hole 1065A: Natural Gamma Ray-Resistivity-Sonic Logging Data - Main (cont.)



Hole 1065A: Natural Gamma Ray-Resistivity Logging Data - Repeat



Hole 1065A: Natural Gamma Ray-Resistivity Logging Data - Repeat (cont.)



SHORE-BASED LOG PROCESSING
Hole 1068A

Bottom felt: 5055 mbrf
Total penetration: 955.8 mbsf
Total core recovered: 180.6 m (73.9 %)

Logging Runs

Logging string 1: DIT/HLDT/APS/HNGS (upper and lower sections)

Wireline heave compensator was used to counter ship heave.

Bottom-Hole Assembly

The following bottom-hole assembly depths are as they appear on the logs after differential depth shift (see "Depth shift" section) and depth shift to the seafloor. As such, there might be a discrepancy with the original depths given by the drillers onboard. Possible reasons for depth discrepancies are ship heave, use of wireline heave compensator, and drill string and/or wireline stretch.

DIT/APS/HLDT/HNGS: Bottom-hole assembly at ~124 mbsf (upper section).

DIT/APS/HLDT/HNGS: Bottom-hole assembly at ~625 mbsf (lower section).

Processing

Depth shift: No depth shift was required, as the two passes do not overlap. The original logs have been depth shifted to the seafloor (–5045 m).

Gamma-ray processing: HNGS data from the DIT/APS/HLDT/HNGS tool string were corrected in real-time during the recording.

High-resolution data: No high-resolution data was recorded in Hole 1068A.

Quality Control

During the processing, quality control of the data is mainly performed by cross-correlation of all logging data. Large (>12 in) and/or irregular borehole affects most recordings, particularly those that require eccentralization (APS, HLDT) and a good contact with the borehole wall. A large positive spike was observed on the density log between 295 and 309 mbsf; because no other log shows a similar deviation, the density data in this interval are considered invalid.

Data recorded through bottom-hole assembly, such as the gamma ray data above 124 and between 608 and 625 mbsf, should be used qualitatively only because of the attenuation on the incoming signal.

Hole diameter was recorded by the hydraulic caliper on the HLDT tool (CALI).

Note: Additional information about the logs can be found in the "Explanatory Notes" and the "Site 1068" chapter (this volume). For further questions about the logs, please contact:

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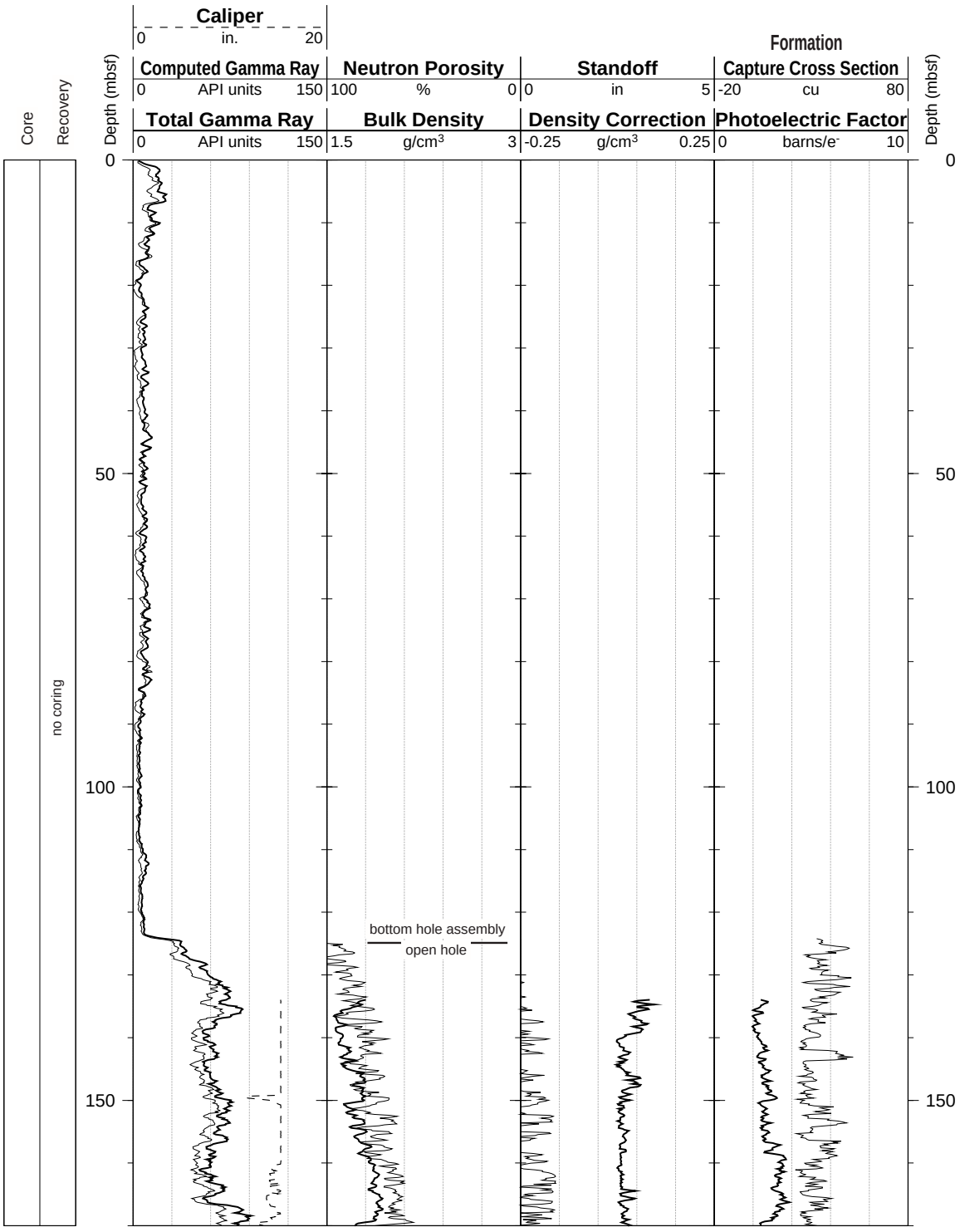
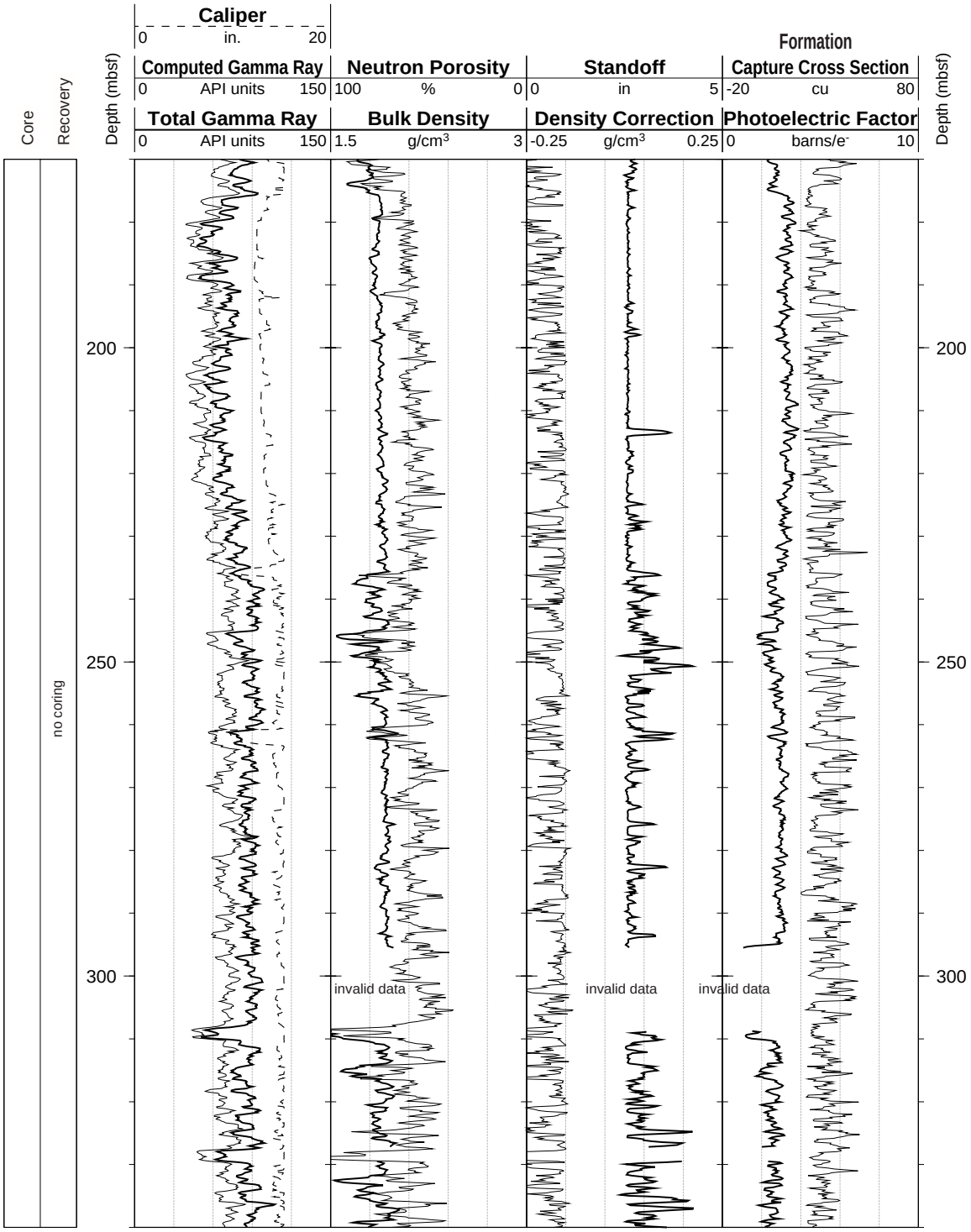
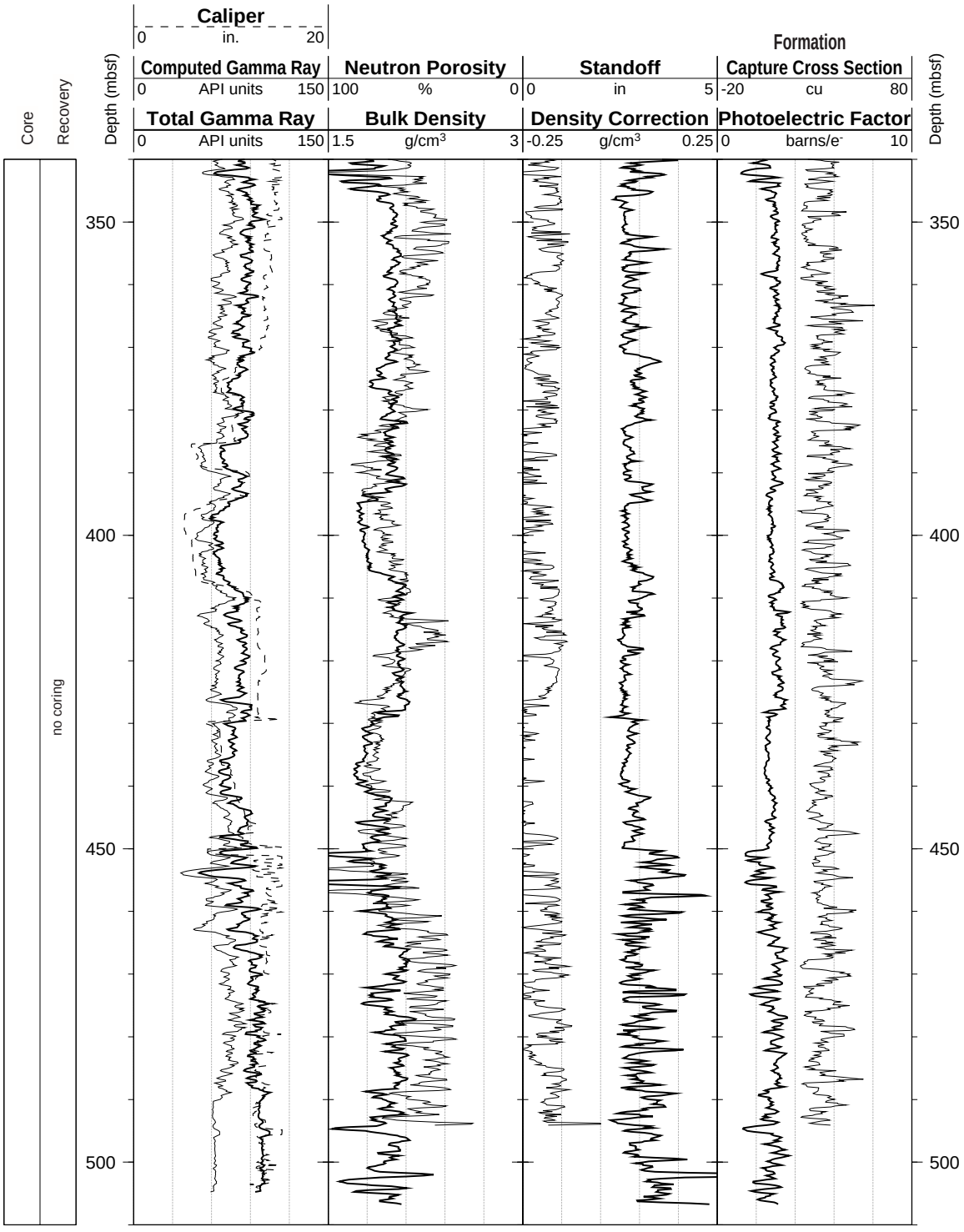
Hole 1068A: Natural Gamma Ray-Density-Porosity Logging Data



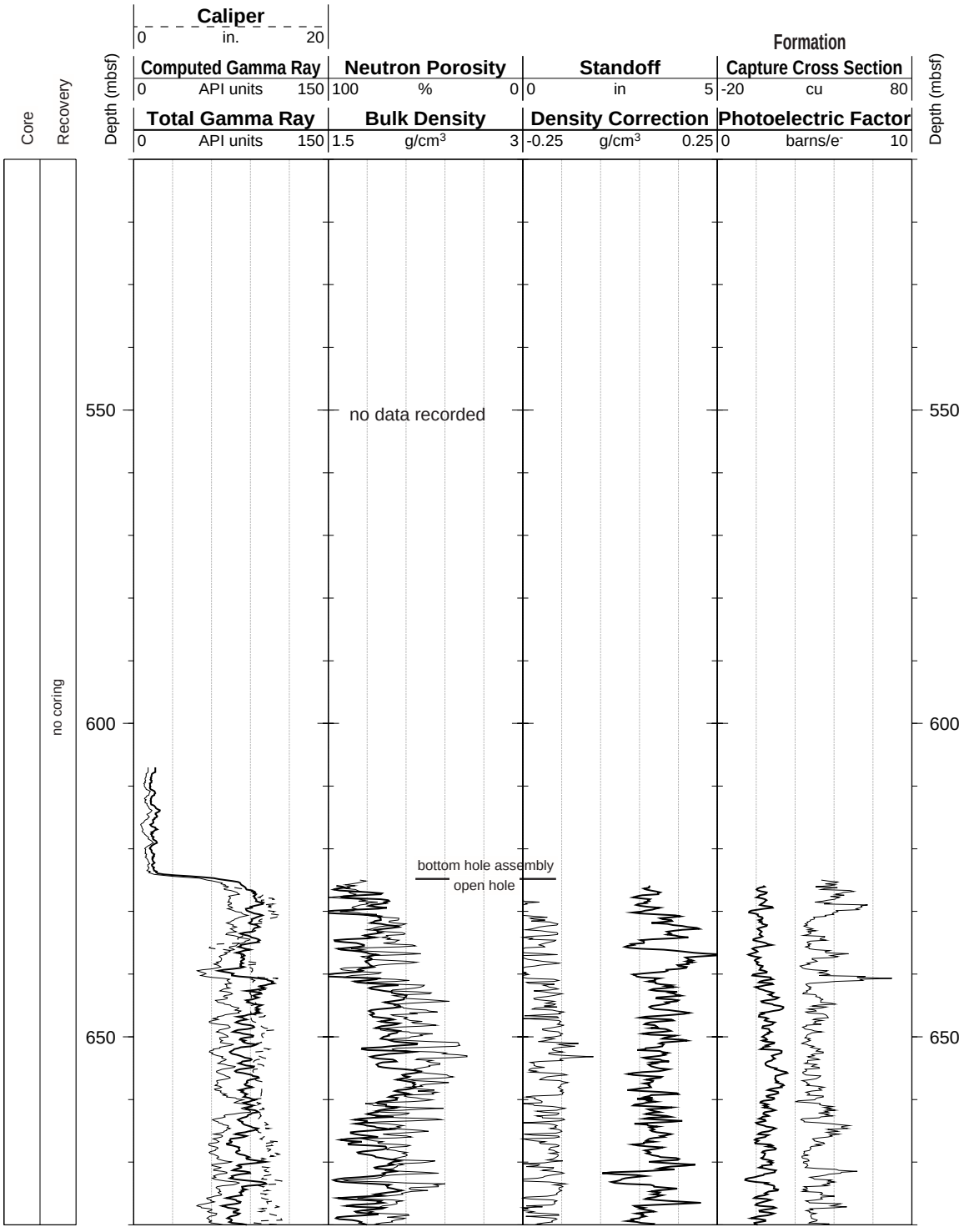
Hole 1068A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



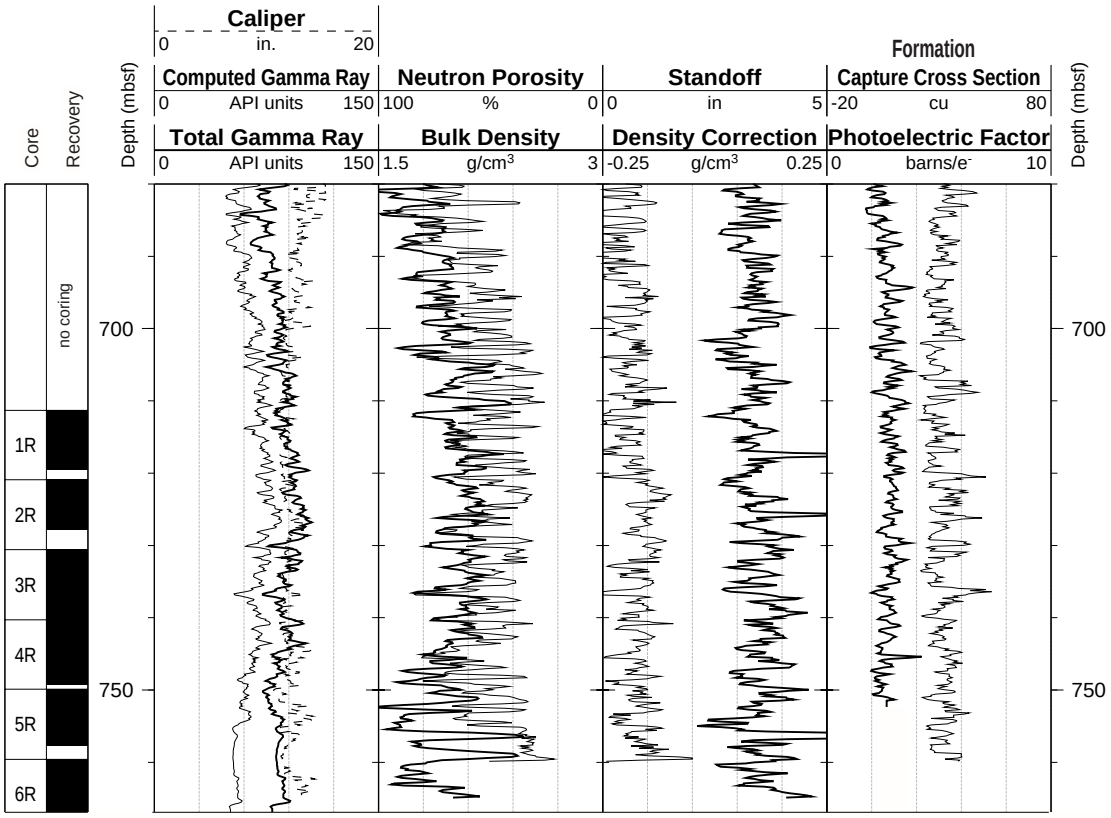
Hole 1068A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



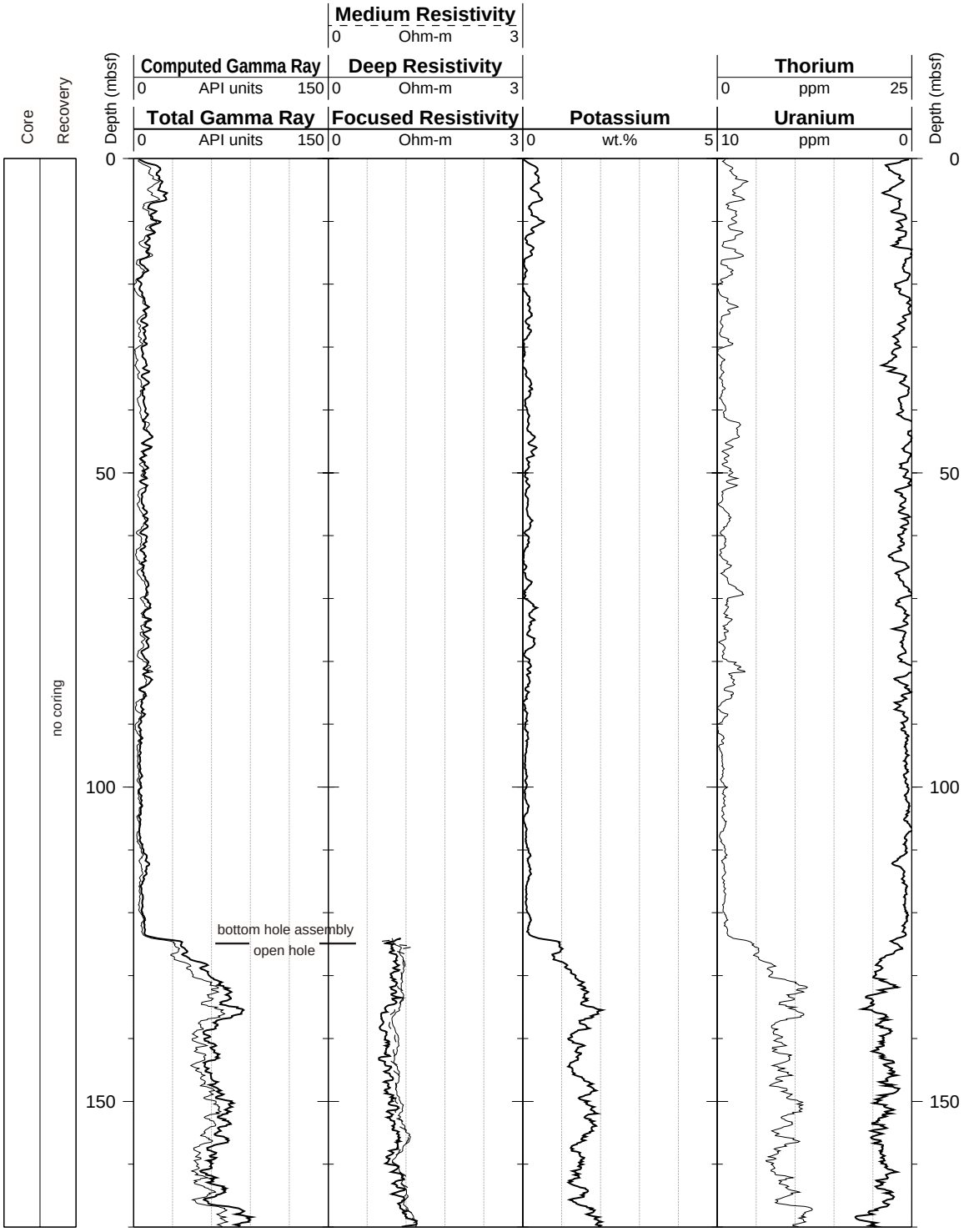
Hole 1068A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



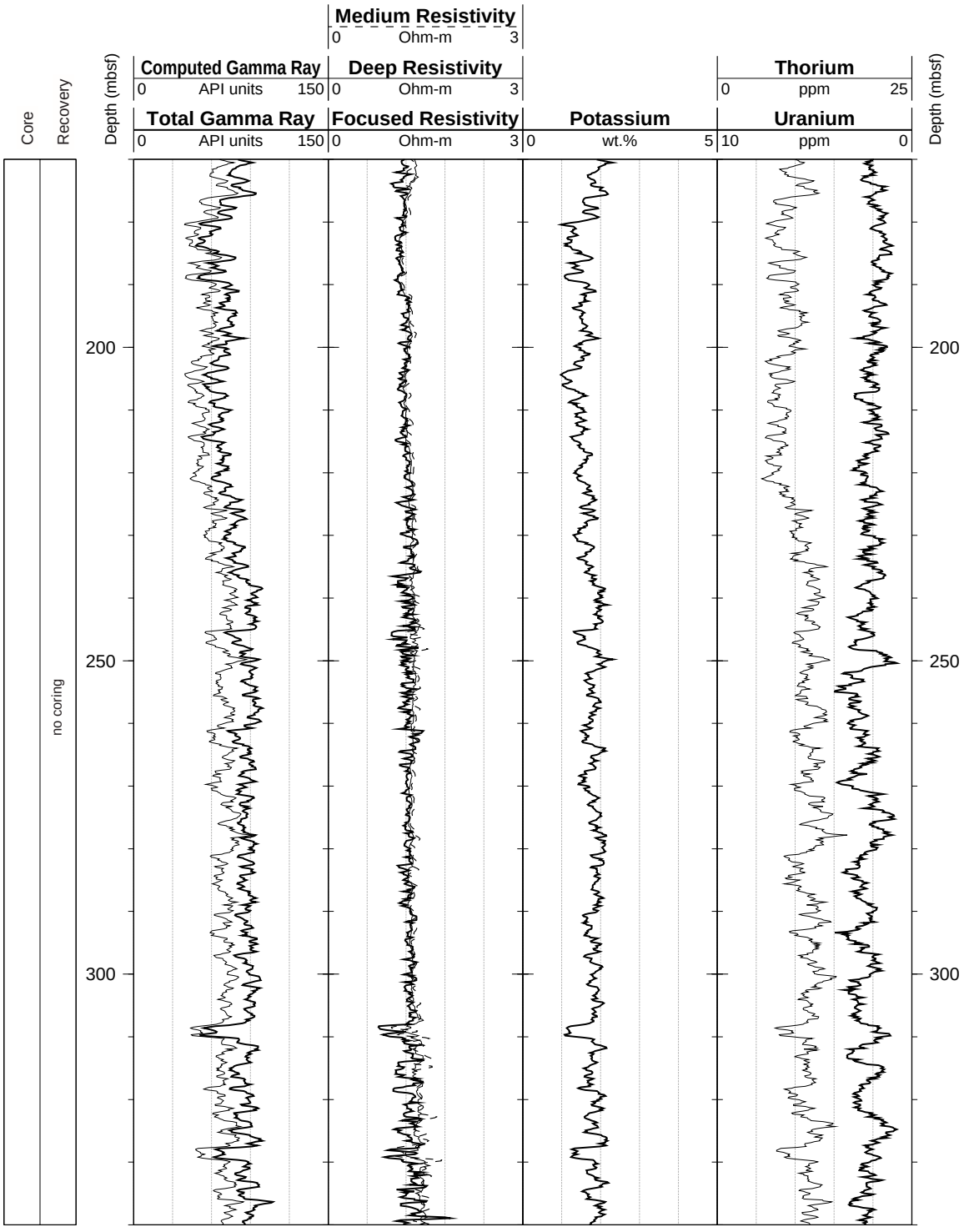
Hole 1068A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



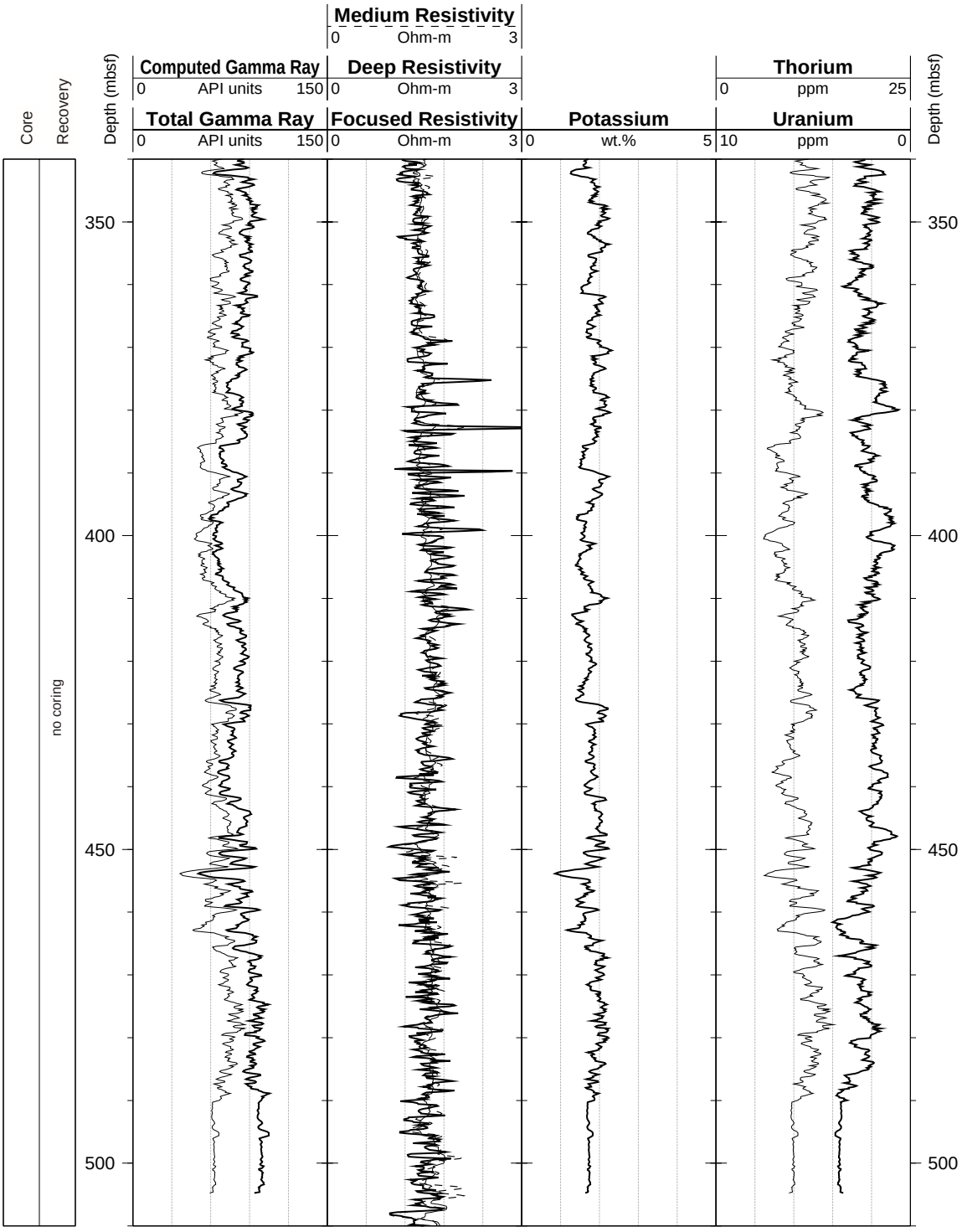
Hole 1068A: Natural Gamma Ray-Resistivity Logging Data



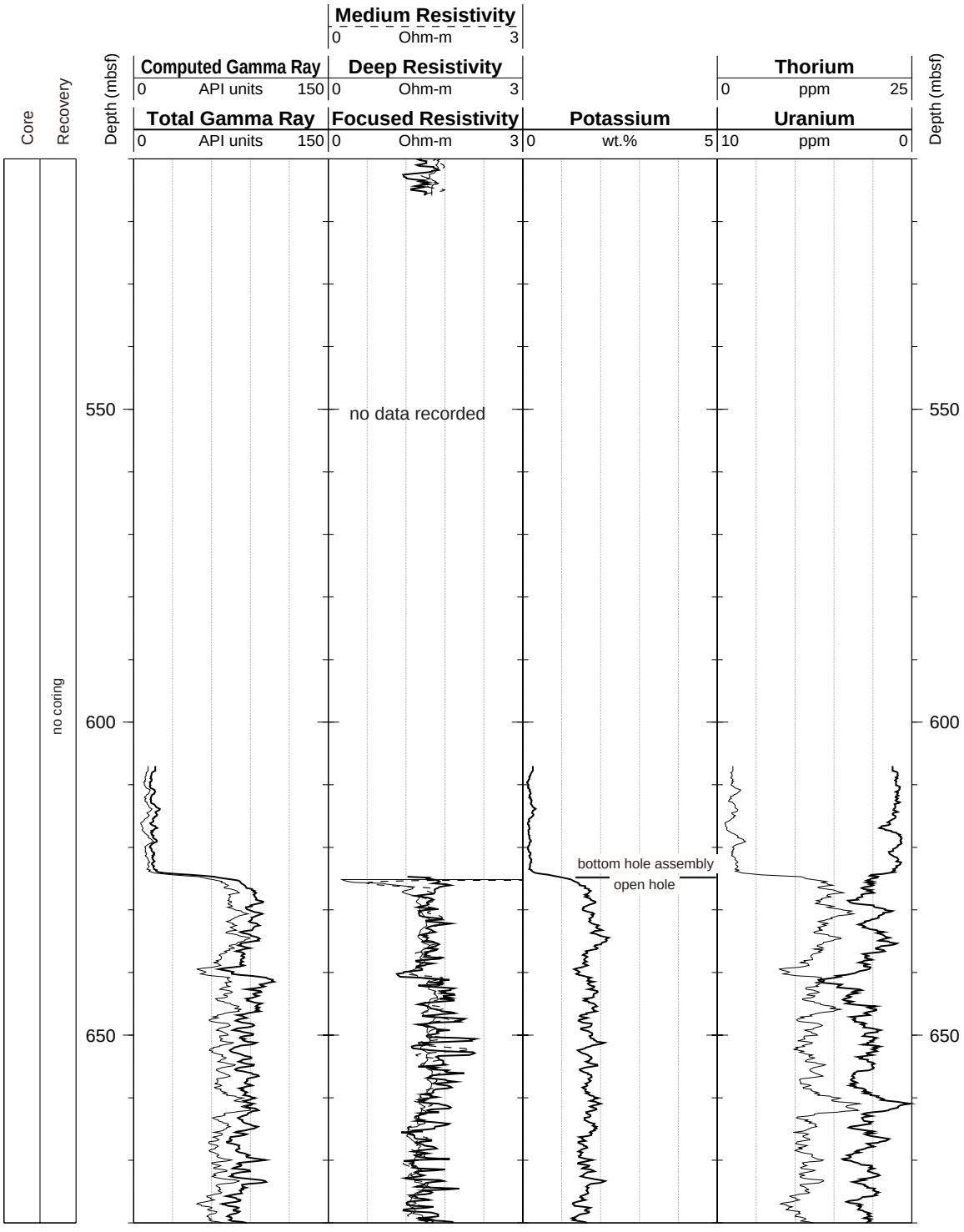
Hole 1068A: Natural Gamma Ray-Resistivity Logging Data (cont.)



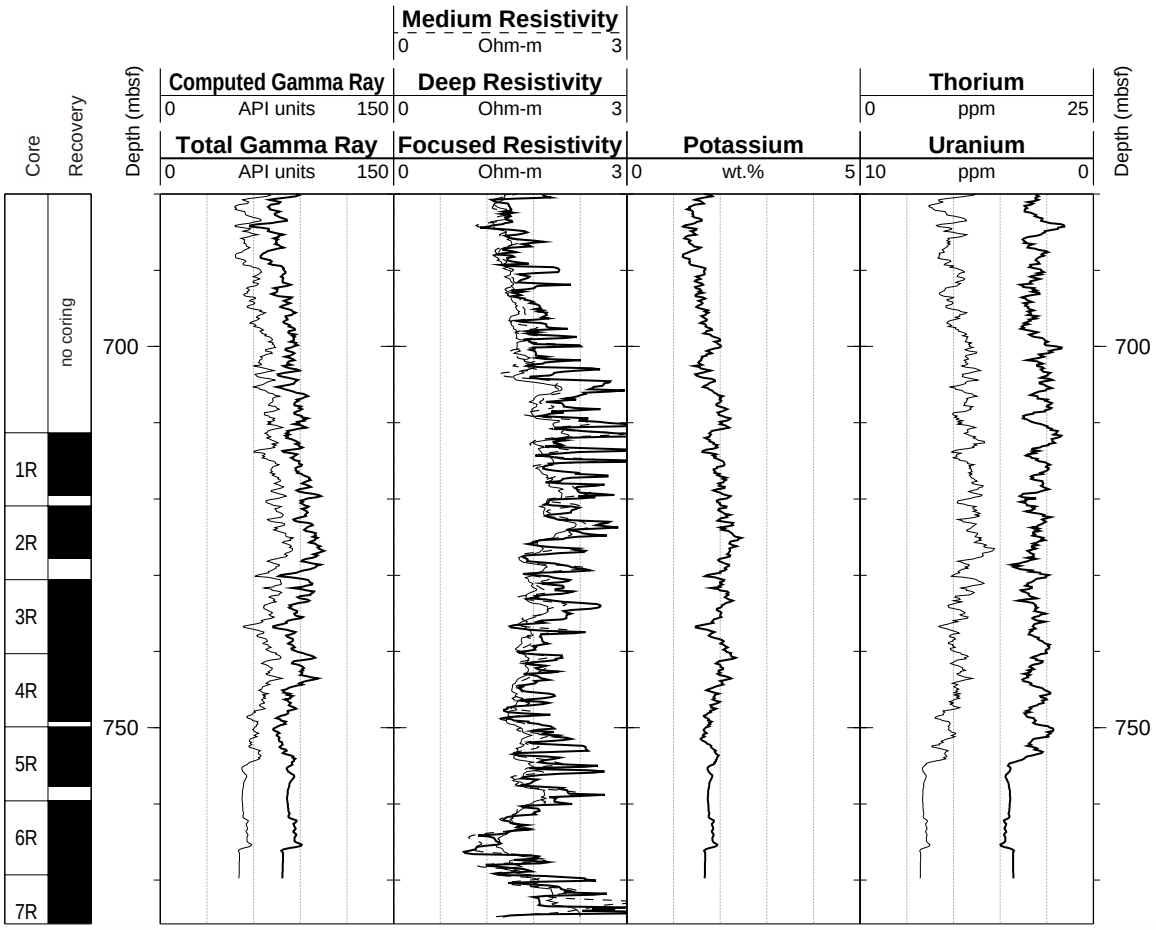
Hole 1068A: Natural Gamma Ray-Resistivity Logging Data (cont.)



Hole 1068A: Natural Gamma Ray-Resistivity Logging Data (cont.)



Hole 1068A: Natural Gamma Ray-Resistivity Logging Data (cont.)



SHORE-BASED LOG PROCESSING
Hole 1069A

Bottom felt: 5086 mbrf
Total penetration: 959.3 mbsf
Total core recovered: 95.9 m (39.9 %)

Logging Runs

Logging String 1: DIT/ASP/HLDS/HNGS
Wireline heave compensator was used to counter ship heave.

Bottom-Hole Assembly

The following bottom-hole assembly depths are as they appear on the logs after differential depth shift (see "Depth shift" section) and depth shift to the sea floor. As such, there might be a discrepancy with the original depths given by the drillers onboard. Possible reasons for depth discrepancies are ship heave, use of wireline heave compensator, and drill string and/or wireline stretch.

DIT/APS/HLDS/HNGS: Bottom-hole assembly at ~101 mbsf.

Processing

Depth shift: Because only one logging pass was recorded, no differential depth shift was necessary. The original logs have been depth shifted to the seafloor (−5087 m). This value differs 1 m from the "bottom felt" depth given by the drillers (see above).

Gamma-ray processing: HNGS data from the DIT/APS/HLDT/HNGS tool string were corrected in real-time during the recording.

High-resolution data: No high-resolution data were recorded in Hole 1069A.

Quality Control

During the processing, quality control of the data is mainly performed by cross-correlation of all logging data. Large (>12 in) and/or irregular borehole affects most recordings, particularly those that require eccentralization (APS/HLDS) and a good contact with the borehole wall. The data of Hole 1069A are generally of good quality.

Data recorded through bottom-hole assembly, such as the HNGS data above 101 mbsf, should be used qualitatively only because of the attenuation on the incoming signal.

Hole diameter was recorded by the hydraulic caliper on the HLDS tool (LCAL).

Note: Additional information about the logs can be found in the "Explanatory Notes" and the "Site 1069" chapter (this volume). For further questions about the logs, please contact:

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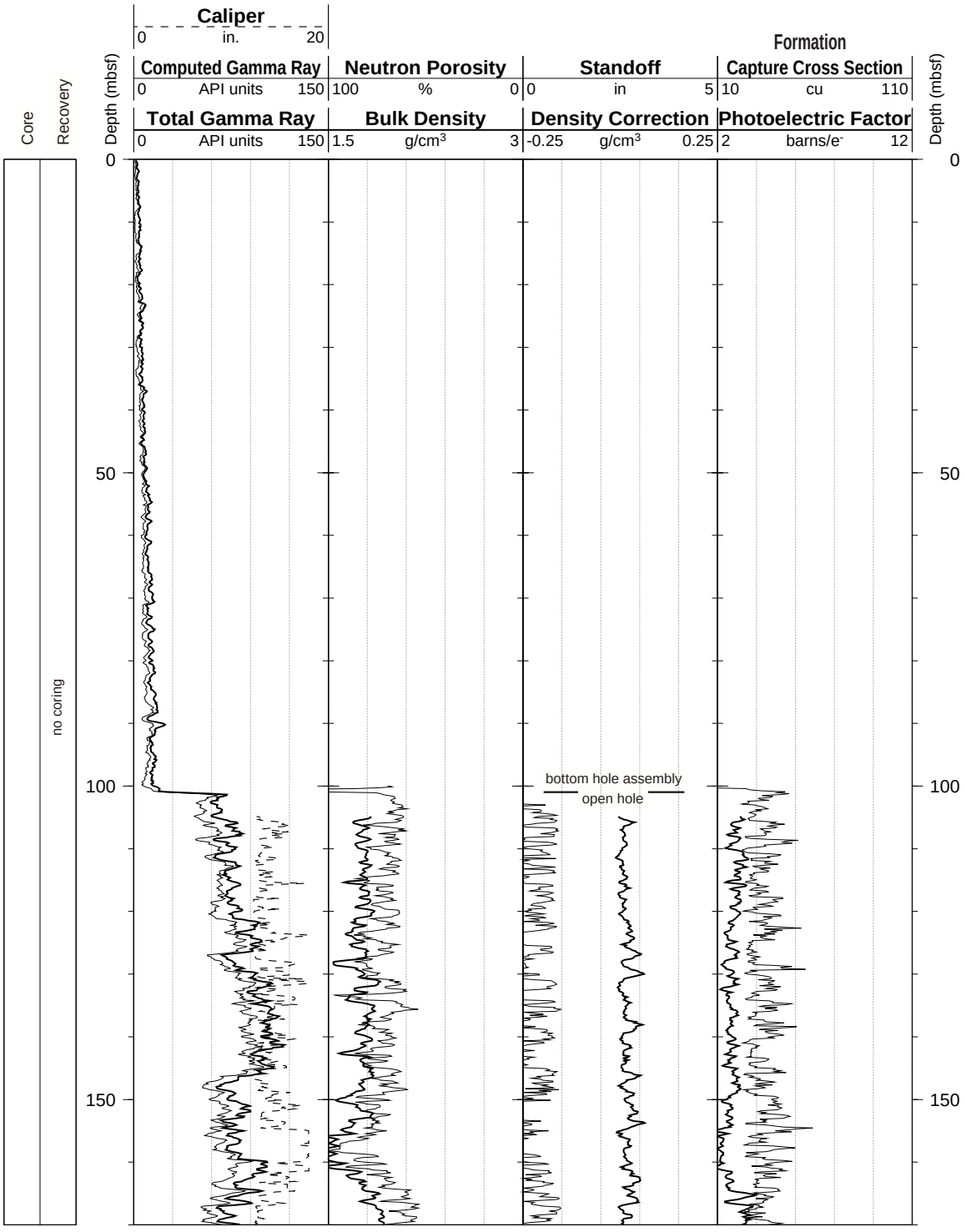
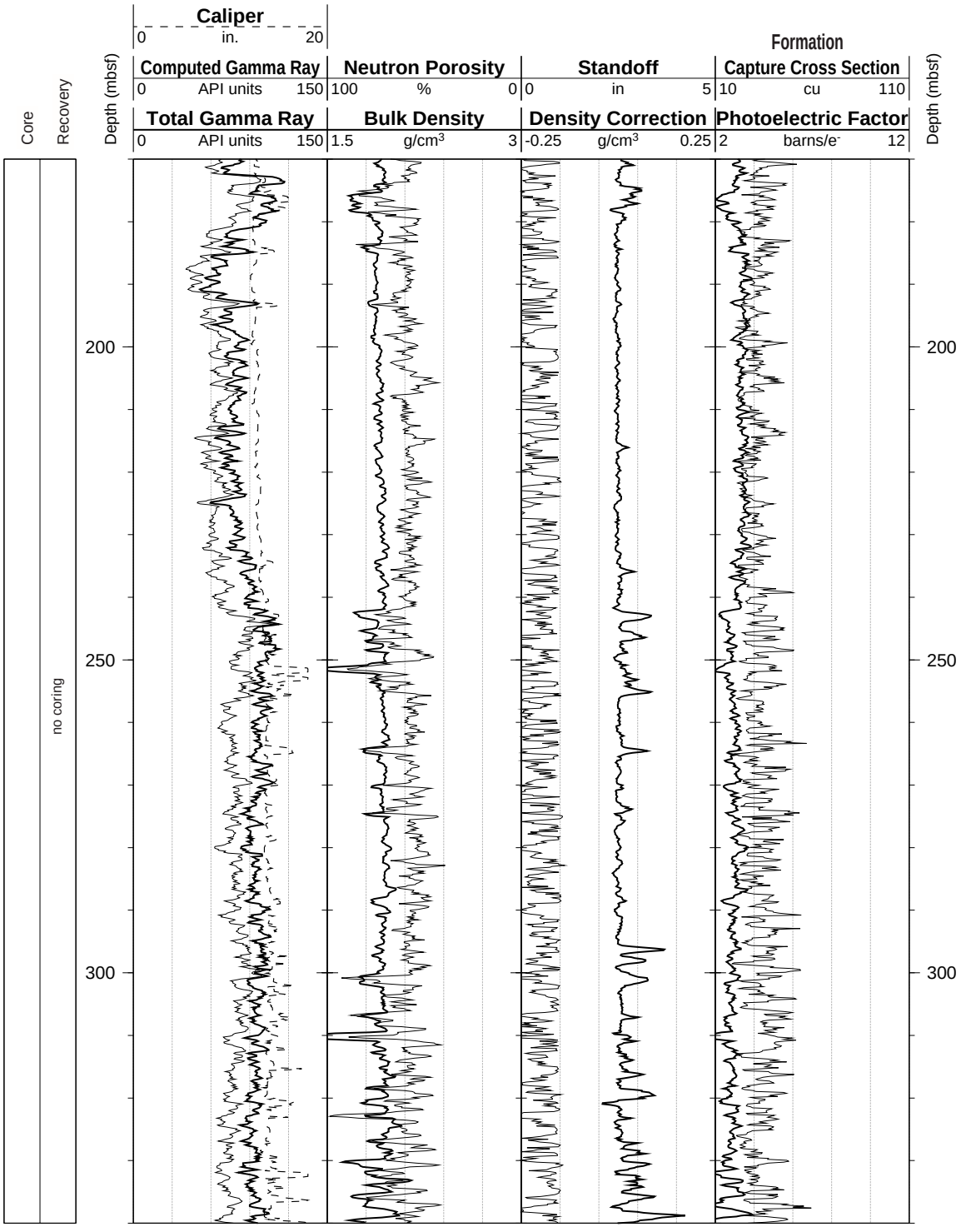
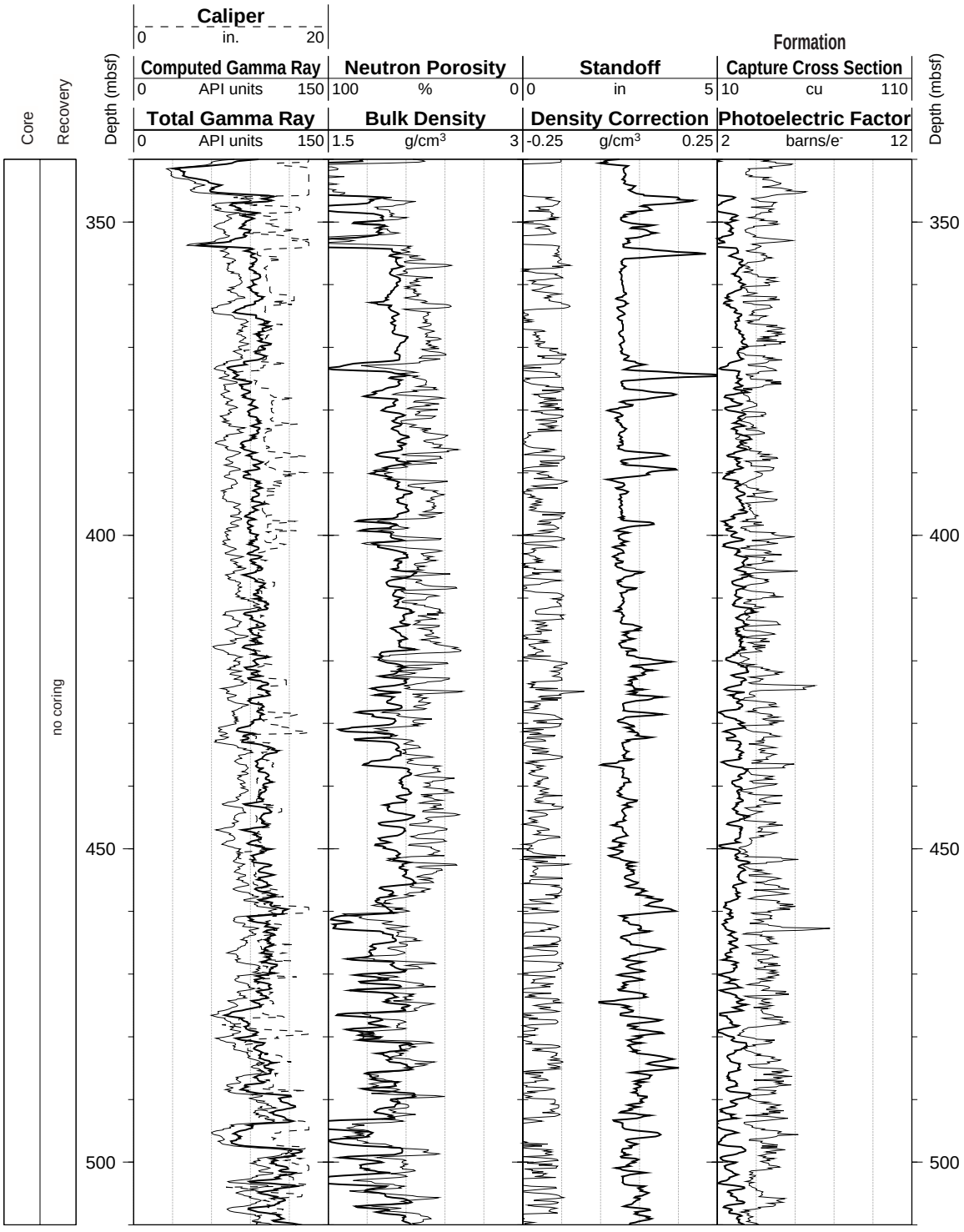
Hole 1069A: Natural Gamma Ray-Density-Porosity Logging Data



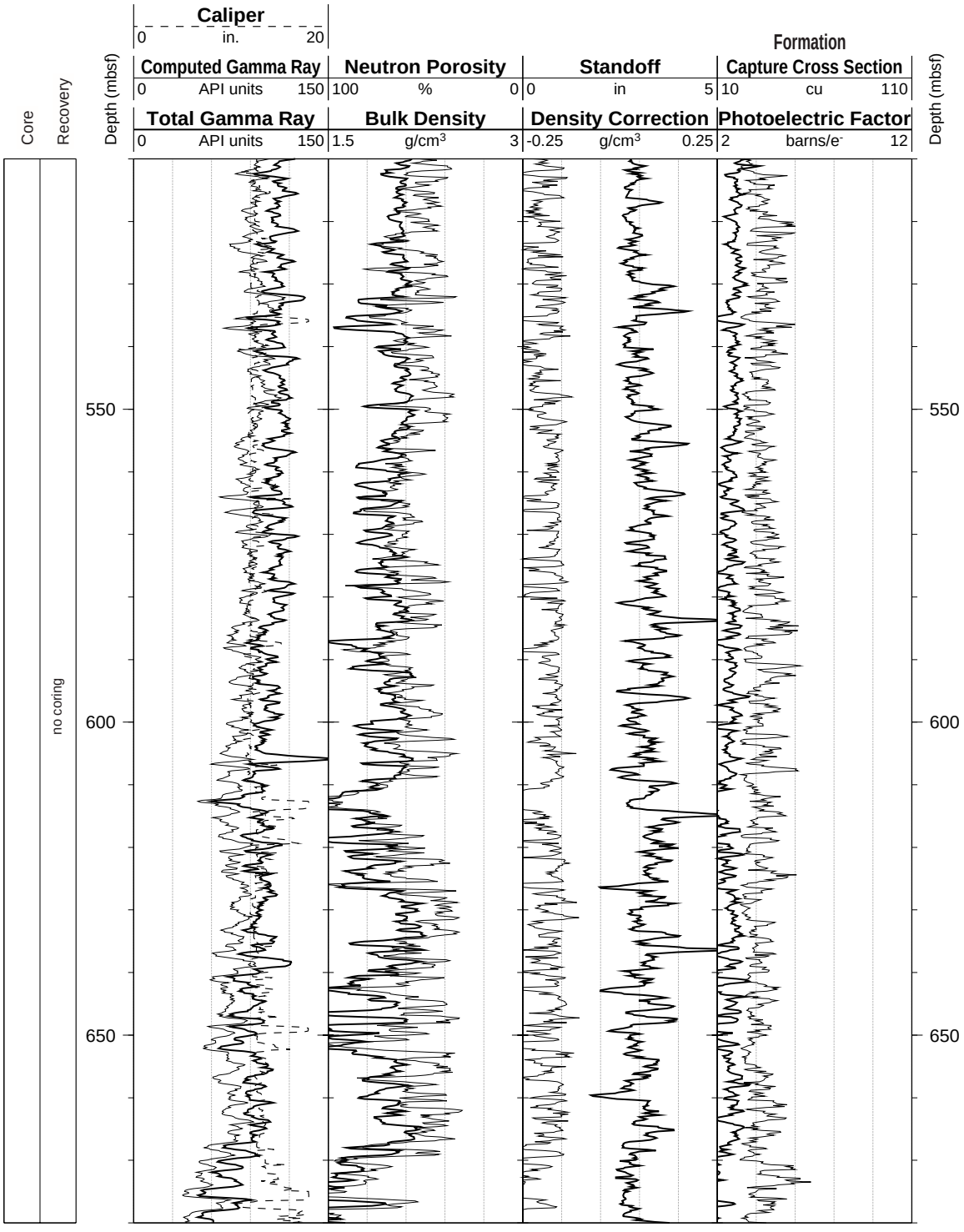
Hole 1069A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



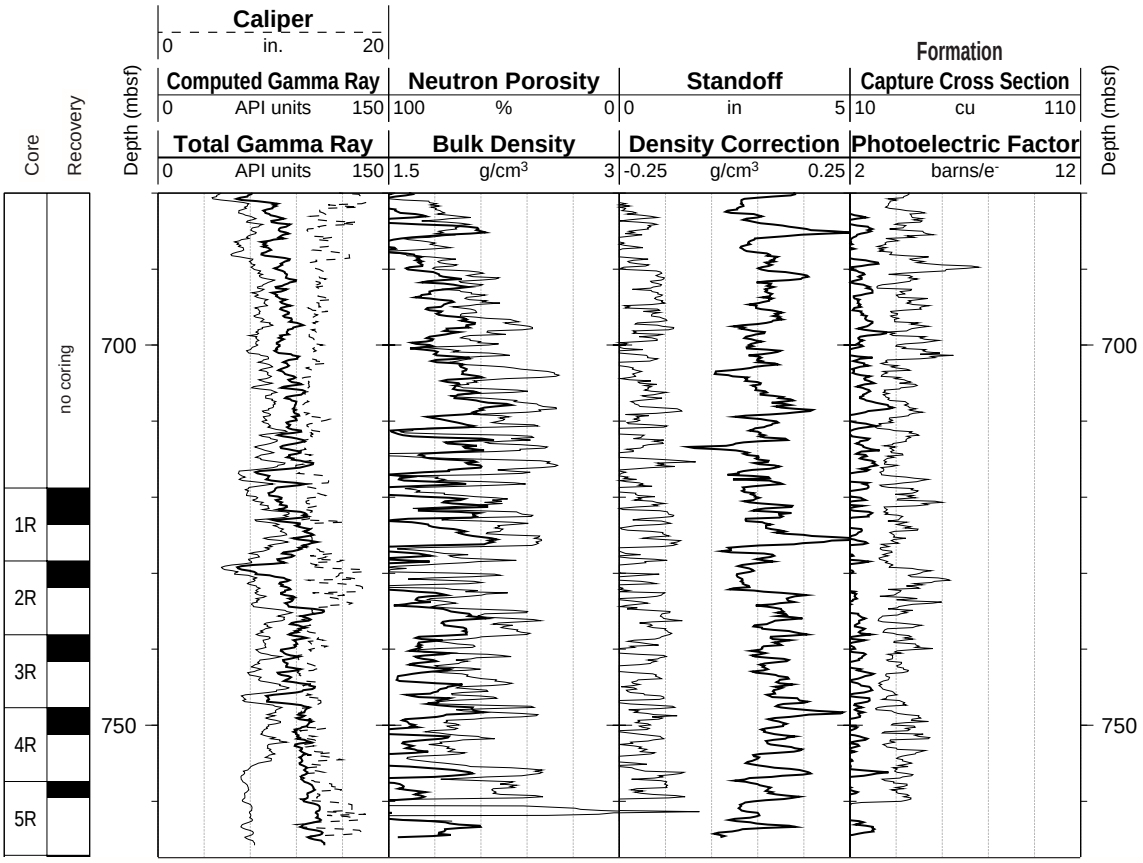
Hole 1069A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



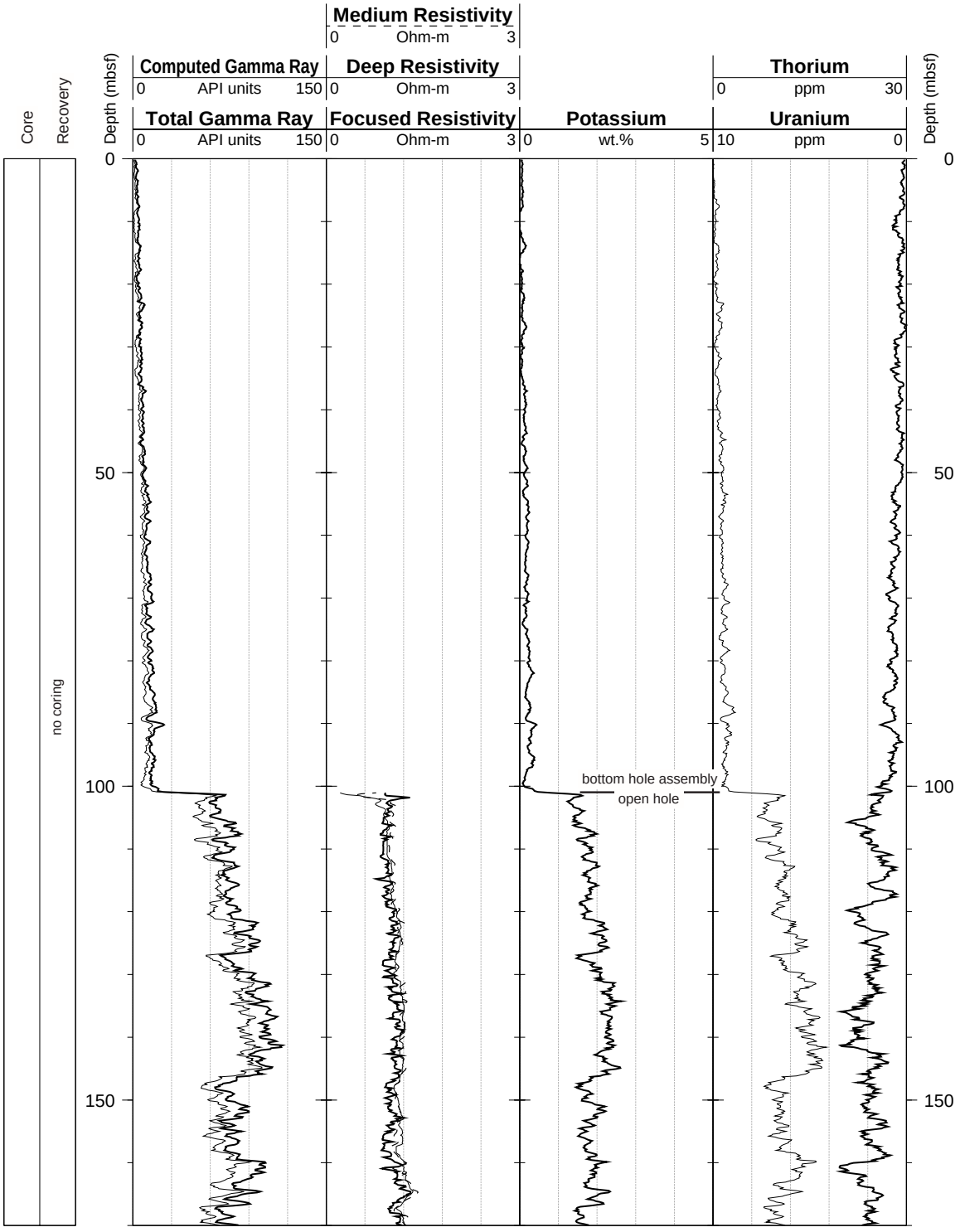
Hole 1069A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



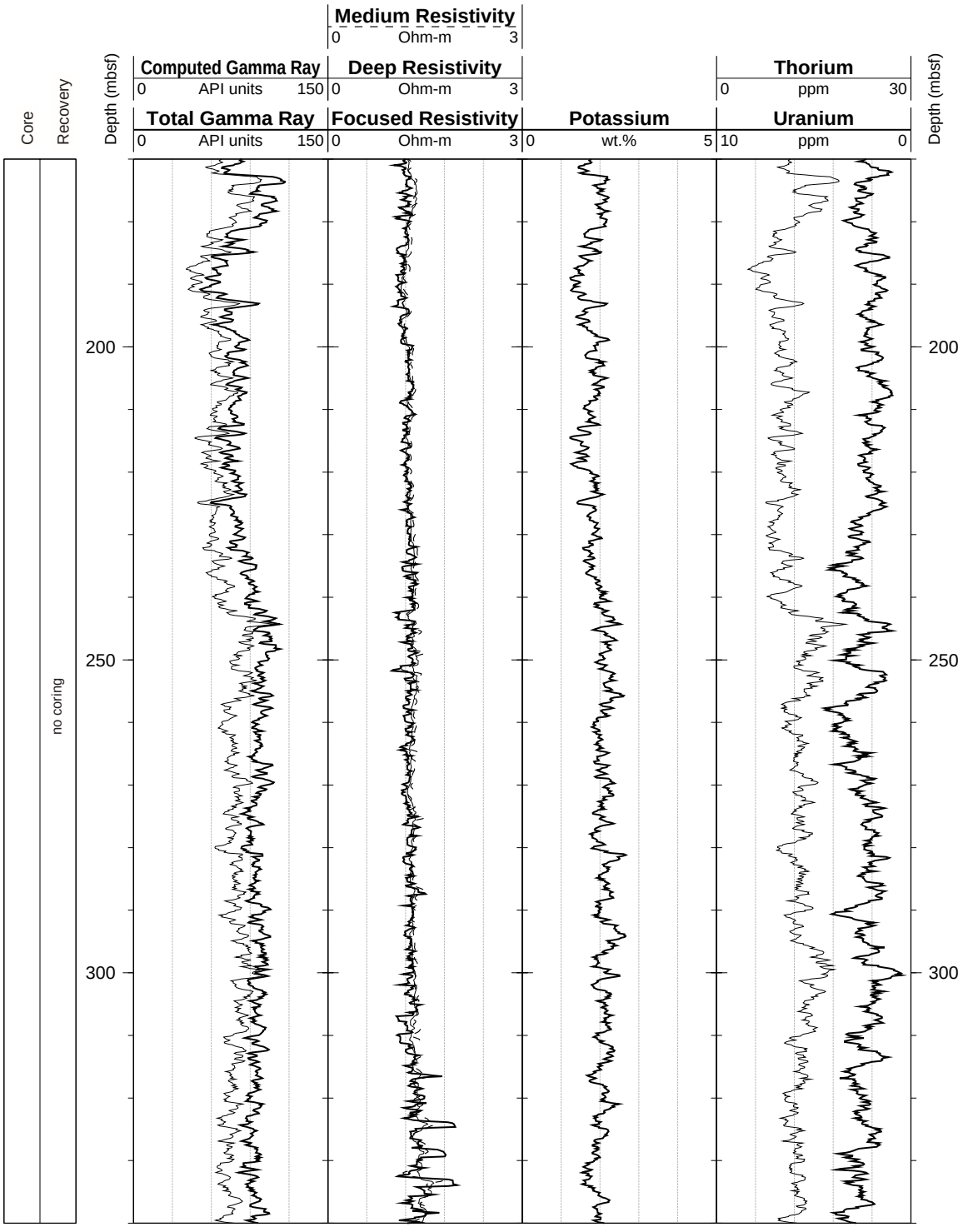
Hole 1069A: Natural Gamma Ray-Density-Porosity Logging Data (cont.)



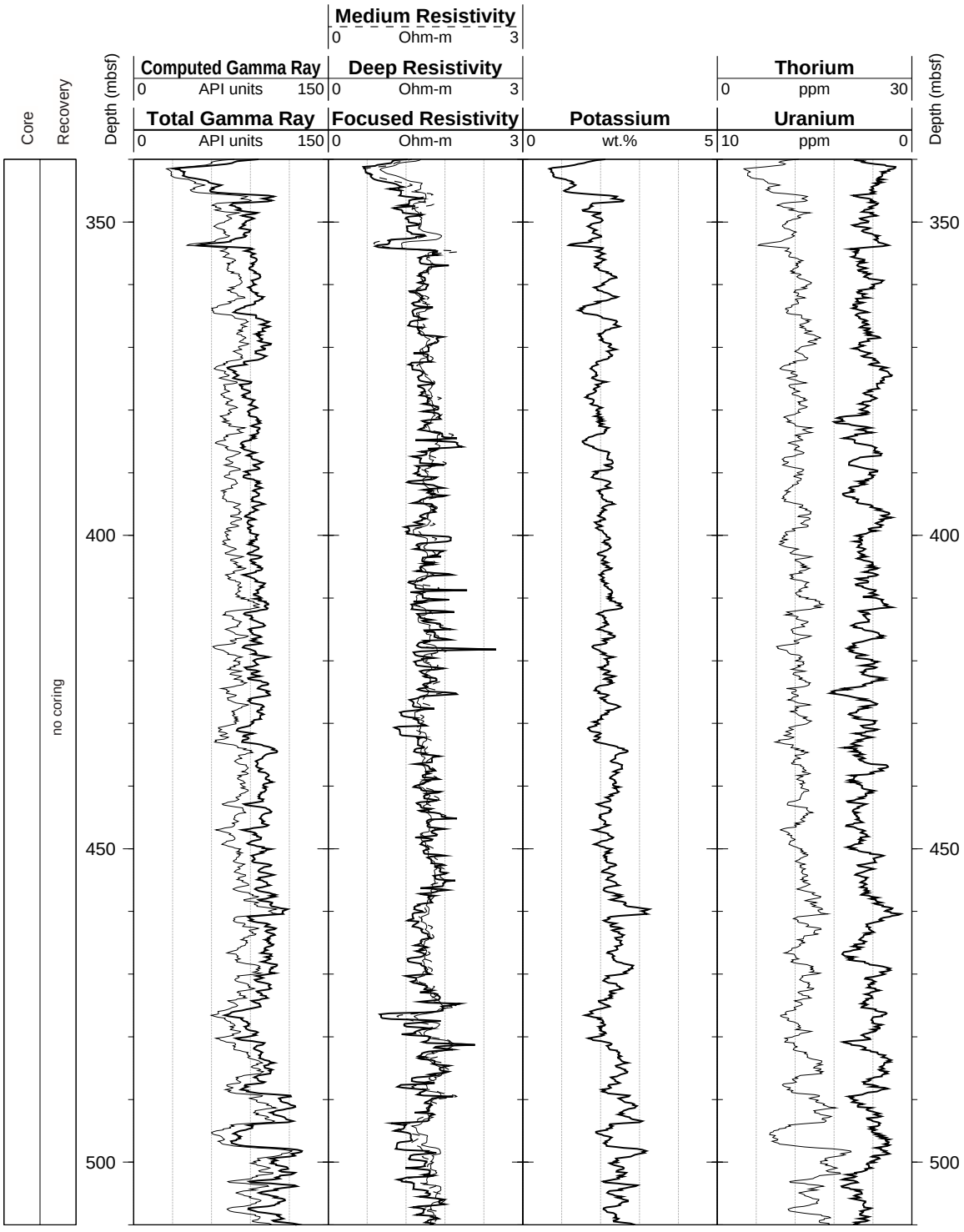
Hole 1069A: Natural Gamma Ray-Resistivity Logging Data



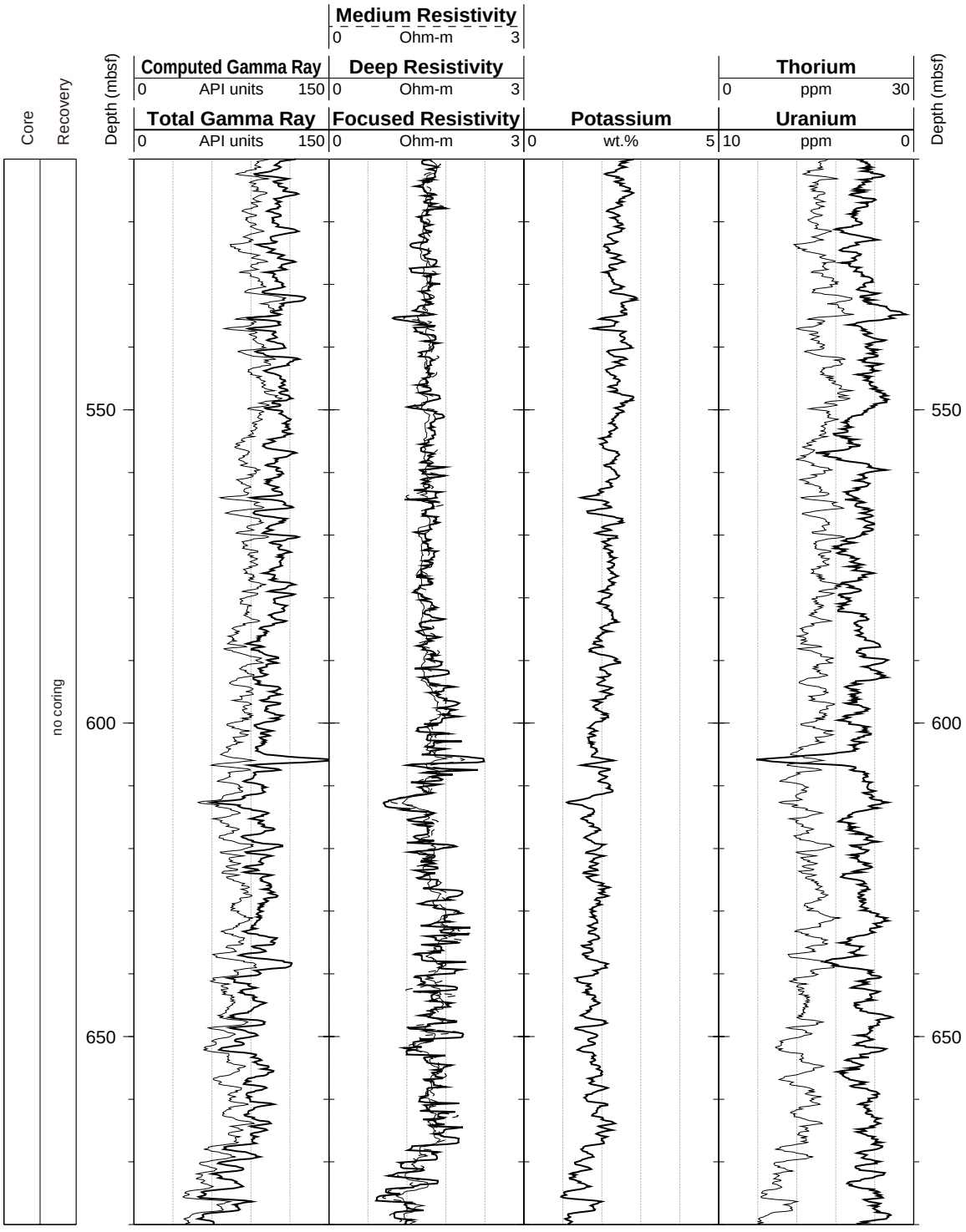
Hole 1069A: Natural Gamma Ray-Resistivity Logging Data (cont.)



Hole 1069A: Natural Gamma Ray-Resistivity Logging Data (cont.)



Hole 1069A: Natural Gamma Ray-Resistivity Logging Data (cont.)



Hole 1069A: Natural Gamma Ray-Resistivity Logging Data (cont.)