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**GEOLOGIC FRAMEWORK, HYDROGEOLOGY, AND GROUND-WATER
QUALITY OF THE POTOMAC GROUP AQUIFER SYSTEM,
NORTHWESTERN CHARLES COUNTY, MARYLAND**

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 91-4059



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TOWN OF INDIAN HEAD, MARYLAND and the
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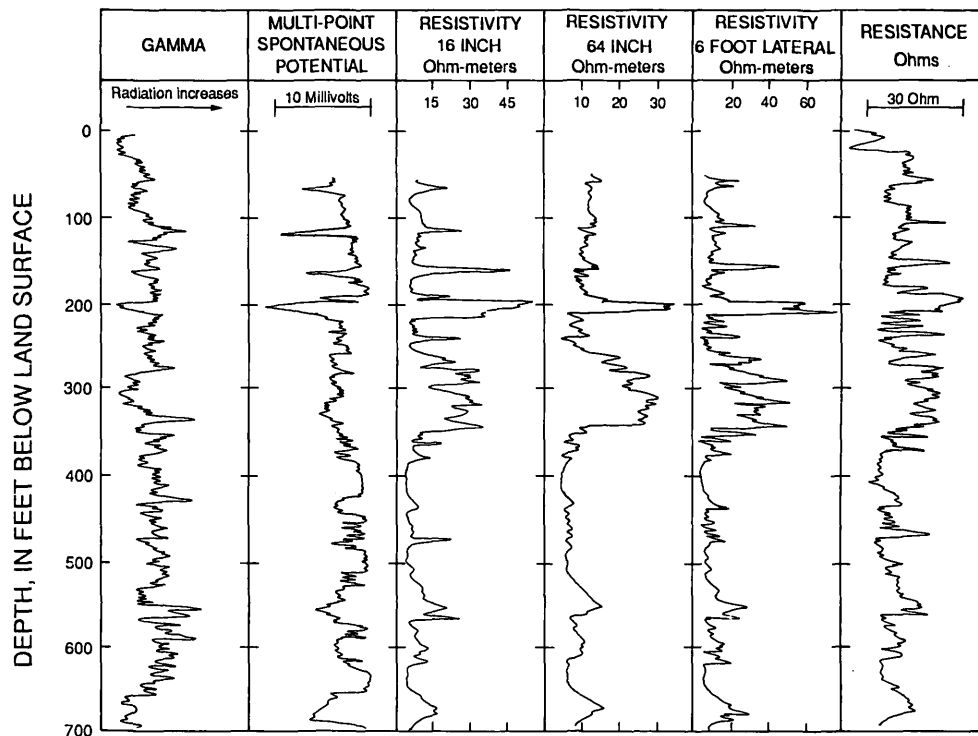


Figure 9. Borehole-geophysical logs of well CH Bb 22.

ground-water supply in rural southern Maryland. Mixon and Seiders (1981) mapped the location of these “upland deposits” in the Quantico and Occoquan quadrangles and proposed an age ranging from late Tertiary to early Quaternary. McCartan (1989) subdivided the Tertiary “upland deposits” in Charles County into the Upland Gravel 4, Upland Gravel 3, and the Park Hall Formation, which range in age from early to late Pliocene.

For this report, the surface outcrop area of the Tertiary and Quaternary units (fig. 7) was modified and generalized from the original maps. Except for the Paleocene Aquia Formation designated “Ta” on figure 7, all of the later Tertiary units have been grouped together and mapped as a single unit designated “T” on figure 7. Where distinguishable, the individual Tertiary units at sites used for geologic control are shown on plates 2 and 3. The single Quaternary unit designated “Q” on figure 7 represents individual Quaternary units grouped as a single map unit. McCartan (1989) subdivided the Quaternary sediments in Charles County into five

map units that range in age from Lower Pleistocene to Holocene. Seiders and Mixon (1981) mapped Holocene terrace deposits (Qa1), Wisconsinan and pre-Sangamon Pleistocene terraces (Qp1 and Qp2), and Miocene to Pleistocene terraces (QTs) in the lowlands along the Virginia side of the Potomac River. Detailed geologic mapping of these geologic units is available in the publications cited in figure 7.

Erosional History of Potomac Group Deposits

Chesapeake Bay is an estuary formed by the post-Wisconsin (Holocene) rise in sea level, which drowned the lower valley of the ancestral Susquehanna River system and its tributaries (Hack, 1957, p. 817). During the multiple glaciations of the Pleistocene, the rivers in the Chesapeake Bay region incised either new or deeper channels into unconsolidated Cretaceous and Tertiary deposits as they established new base levels with the lowered sea level. Colman and others (1990) document the presence of three