pH of Select, Glauconite-rich, Geologic Formations

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Seven samples of glauconite-rich, geologic formations in the New Jersey Coastal Plain province were recently collected. The pH of these samples was measured so as to provide data for the acid soils map (DGS09-2).

The method followed is described in Hendershot and others (1993). An aliquot of each sample was placed in a plastic boat (tray) to air dry. Ten grams of the dried sediment was put in a glass centrifuge tube to which 20 mL of doubly distilled, deionized water was added. Each sediment sample was prepared in duplicate. The samples were intermittently stirred for approximately 30 minutes and left to stand for approximately one hour. The combination electrode is immersed in to the supernatant and the pH is recorded once the reading is constant.

The pH meter (Orion Research Model 601A) was calibrated at 23^{o}C using standard pH buffers of 4.00 and 7.00. The doubly distilled, deionized water had a 6.30 pH. Calibration was checked following pH measurements on the samples. This calibration check yielded pHs of 4.01 and 6.99. Results for the sediments are tabulated below. Duplicate pHs were measured for each sediment as a measure of quality control (QC).

Sample ID	pH	pH	% RD*
Shark River glauconite - Manasquan River	5.47	5.16	5.8
Shark River marl - Manasquan River	4.42	4.38	3.6
Manasquan marl - Manasquan River	6.21	6.36	2.4
Hornerstown - Hockhockson trib.	4.75	4.92	3.5
Hornerstown - Meirs Farm	6.44	6.75	4.7
Hornerstown - Inversand	5.61	5.85	4.2
upper Hornerstown - Inversand	3.45	3.36	2.6
median	5.47	5.16	3.6
arith. mean	5.19	5.25	3.8
standard deviation	1.05	1.18	1.2

* Percent relative difference (% RD)

Hendershot, W.H., Lalande, H., and Duquette, M., 1993, Soil reaction and exchangeable acidity, *in* Carter, M.R. ed., Soil sampling and methods of analysis; Lewis Publishers, Boca Raton, Fl., p. 141-144.