

**7041.3400 ANALYSIS OF SOILS.**

Subpart 1. **Analytical methods.** Acceptable analytical methods for United States Department of Agriculture textural classification, organic matter, extractable phosphorus, exchangeable potassium, pH, and soluble salts are found in one or more of the publications in items A to C which are incorporated by reference. These documents are not subject to frequent change and are available through the Minitex interlibrary loan system or the addresses given.

A. Recommended Chemical Soil Test Procedures for the North Central Region, issued by the North Dakota Agricultural Experiment Station, North Dakota State University as North Central Regional Publication No. 221 (Revised) October 1988.

B. Methods of Soil Analysis, Chemical and Microbiological Properties edited by Alan Page et al., issued by the American Society of Agronomy as Agronomy Monograph No. 9 (Madison, Wisconsin, Part 2, second edition, 1982).

C. Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey, issued by the Natural Resources Conservation Service as Soil Survey Investigations Report 1 (revised) (Washington, D.C., United States Government Printing Office, 1984).

Subp. 2. **Soil permeability.** The documents in items A and B are incorporated by reference for determining soil permeability measurements for different soil types and soil horizons when the information is not available from the Natural Resources Conservation Service. These references are not subject to frequent change and are available through the Minitex interlibrary loan system or addresses given.

A. Determination by direct measurements in the field as outlined in chapter 29, Hydraulic Conductivity of Saturated Soils: Field Methods, in Methods of Soil Analysis, Physical and Mineralogical Methods, edited by Klute, issued by the American Society of Agronomy, 677 South Segoe Road, Madison, Wisconsin 53711, as Agronomy Monograph No. 9, Part 1, (Madison, Wisconsin, second edition 1986).

B. Determination in the laboratory using undisturbed soil samples as outlined in chapter 28, Hydraulic Conductivity and Diffusivity: Laboratory Methods in Methods of Soil Analysis, edited by Klute, issued by the American Society of Agronomy, 677 South Segoe Road, Madison, Wisconsin 53711, as Agronomy Monograph No. 9, Part 1, (Madison, Wisconsin, second edition 1986).

Subp. 3. **Seasonal high water table.** When the necessary information for determining the depth to and type of seasonal water table is not available from the Natural Resources Conservation Service, the information may be obtained from either the document in item A or the procedure identified in item B.

A. Determination of the depth of soil having mottles with a chroma of two or less as discussed in Keys to Soil Taxonomy, (2010 and as subsequently amended), issued

by the United States Department of Agriculture, Natural Resources Conservation Service. The document is incorporated by reference, is subject to frequent change, and is available at [http://soils.usda.gov/technical/classification/tax\\_keys/](http://soils.usda.gov/technical/classification/tax_keys/).

B. Measurement of water levels at monthly intervals over the course of one year in water table monitoring devices. The highest water level measurement obtained is acceptable as the seasonal high water table.

**Statutory Authority:** *MS s 116.07*

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