

A Manual for Site Specific Soil Investigation in Pennsylvania.



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1. Introduction

Pennsylvania soil scientists working in the private sector are being called upon more frequently to solve complex environmental problems. This is often in response to the emergence of new technologies, such as new approaches to on-site wastewater treatment, the recognition of new problems, such as soil and groundwater contamination related to land waste disposal, the increasing recognition of the sensitivity of certain landscapes, such as wetlands, or the enactment of new laws and regulations. As government funding has decreased, consulting Soil Scientists have also been called upon to fill roles in areas previously addressed by federal employees. The increasing variability in soil science services has resulted in an increasing lack of consistency in the technical approach, the level of investigative detail, and reporting protocols followed when performing these site investigations and environmental assessments.



Figure 1. Examples of common practices consulting soil scientists are undertaking in Pennsylvania: (A) Site investigations; (B) Split spoon sampling analysis; (C) Rain garden installation; (D) Double ring infiltrometer.

The Pennsylvania Association of Professional Soil Scientists (PAPSS) has recognized a need for standardization in reporting as well as a need for a minimum standard of detail and expertise in the practice of soil science (Figure 1 and 2).

In order to protect the environment, the public health and welfare, fill the void that was formerly occupied by federally employed soil scientists and increase the level of professionalism, PAPSS began the compilation of a Manual in 2008 to set minimum standards in reporting the results of site-specific soil investigations in Pennsylvania. Drawing upon Manuals from other states in the northeastern U.S., and the expertise of its membership, PAPSS is presenting Version 2.0 of its Manual for review by all interested soil scientists.



Figure 2. (A) Standardizing Permeability Testing & Reporting and (B) Standardizing Soil Profile Description & Reporting.

2. Overview

Soil investigations are performed in support of the design and construction of on-site wastewater systems; wetland delineations, land application of solid and liquid wastes, site development planning, and many other purposes.

The Manual for Soil Investigation in Pennsylvania provides a standardized approach for soils scientists in Pennsylvania to conduct and report on these various soil investigations. The manual is not intended to be a "how to" guide, but to provide a ready reference and summary of accepted soil investigation practices and methods.

In the compilation of this manual (Table of Contents provided below), an attempt was made to utilize existing protocols wherever possible (Figure 3), adapting them as needed to the needs of soil scientists in Pennsylvania. As such, some of the text may seem familiar to some. A great deal of gratitude is directed toward those sources that we utilized (Figure 3).

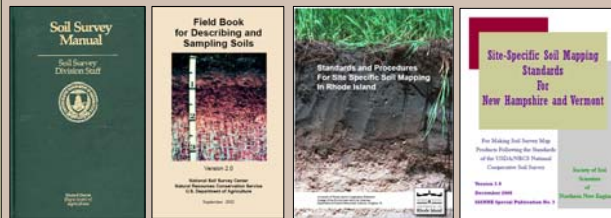


Figure 3. Examples of existing references used to help establish Pennsylvania protocols.

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INTERIM PAPSS GUIDELINES FOR MORPHOLOGICAL SITE EVALUATIONS FOR ON-LOT SEWAGE DISPOSAL SYSTEMS

In the interest of providing continuing guidance to its membership, the PAPSS Board of Directors has developed a set of minimum recommended guidelines to be included in site evaluations. Depending on their locality and current internal procedures, members may already be providing many of these details. It is important to recognize our role in the current site evaluation and permitting process and provide as much pertinent site information as necessary. Though it may take some additional considerations in the current business climate, the inclusion of a site plan and stakeout as part of a soil morphological report would greatly assist in providing all of the information required to properly document both the results and the location of the site investigations.

1. A site drawing to scale (Figure 4) showing the location of the following details:

- All test pits or auger borings.
- The extent of the area deemed suitable.
- All wells within 150 feet of the approved areas.
- Houses and other structures.
- Property lines, rights-of-way, easements or encumbrances.
- Driveways.
- Trees over 6 inches in diameter.
- Surface boulders or rock outcrops.
- Streams, springs or other surface waters.
- Floodplains or floodways.
- Stormwater management structures.
- Buried tanks (oil, propane, septic, etc.).
- Slope percent and direction or topographic lines (2 foot interval or less).
- Steep slopes or escarpments.
- Cuts and fills.
- Existing on-site sewage disposal systems.

2. Soil profile descriptions prepared in accordance with the procedures and techniques of the USDA/NRCS methodology (i.e. *Field Book for Describing and Sampling Soils* or latest version of the PAPSS Soil Investigation Manual). Test pits or borings may be located by global positioning system (GPS).

3. Detailed presentation of technical data collected for the purpose of the investigation such as:

- Owner's name, address and telephone number.
- Address of site.
- Description of property including total area (acreage).
- Summary of soils encountered.
- Discussion of the soils encountered and any special conditions noted.
- Depth to and type of limiting zones and/or restrictive horizons.
- Drainage classification of soils.
- Soil chemical and physical sampling and testing results.
- Septic system design factors.
- Wetland site characteristics and mitigation potential.
- Sources of interpretations for the intended land use..



Figure 4. Examples site investigation map top accompany report.

For More Information:
Visit www.PAPSS.ORG
Or contact the PAPSS Manual Committee at Soildude@comcast.net

This list is only a guide and subject to any additional regulatory requirements. The permitting process involves a greater number of individual service providers and organizations, both private and governmental that is outside the influence of this organization.