Petrographic Microscope Techniques. (S09-lynn135254-Oral)

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Abstract:

Abstract: At the NRCS Soil Survey Lab, mineral grains in coarse silt, very fine sand, and fine sand fractions of soils are identified by petrographic microscopy as part of characterization analyses of soil profiles. Grains are mounted in a thermosetting epoxy with an index of refraction of about 1.545 for analysis and permanent storage. Analysts identify all grains in a grain mount and count a minimum of 300 grains for quantification. Minerals, mineraloids, and aggregates are recorded as percent of the particle-size fraction analyzed. We place minerals in categories of weatherable or resistant according to relative durability in soil weathering environments, and report the percent total resistant minerals in the fraction. Results are used to classify soil pedons in mineralogy families of Soil Taxonomy, to help determine substrate provenance of source materials, and to support or identify lithologic discontinuities. A map of the USA will show the distribution of selected soil mineralogy families.

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