

567—101.206(455B) Soil investigation.**101.206(1) Soil borings.**

a. Number of borings. A sufficient number of soil borings shall be made to accurately identify the hydrogeologic variations of the landfill site. For new landfill sites, the minimum number of borings required is 10 for landfill sites of less than 10 acres, 20 for landfill sites of 10 to 50 acres, and 20 plus an additional boring for every 10 acres above 50 acres for landfill sites larger than 50 acres. Fewer borings may be needed for existing landfill sites, depending on previous work done at the landfill site. Also, no borings will be required in existing fill areas. The department may require additional borings based on the geological complexity of the landfill site.

b. Depth of borings. All borings must extend a minimum of 25 feet deep and at least 10 feet deep below the water table; however, borings in proposed fill areas shall be terminated 10 feet above the uppermost aquifer or be grouted to provide such separation. At least half the borings located outside the existing or proposed fill area shall extend either 10 feet into the uppermost aquifer, 50 feet below the water table, or 10 feet into bedrock. At least one boring shall extend 10 feet into bedrock or 100 feet below the lowest ground surface elevation.

c. Boring method. Borings shall comply with the applicable portions of this chapter. The preferred boring method is hollow stem auger, although it may be necessary to use other methods at greater depths and in bedrock. When wet drilling methods are used for boring in which monitoring wells or piezometers are installed, the drilling fluid and methods and development procedures shall be approved by and documented with the department.

d. Assurance that soil boring samples have been taken at the landfill site. The soil boring samples must be kept by the permit applicant until the permit is issued and must be made available to the department if the department requests them.

101.206(2) Soil samples. Samples shall be collected at five-foot intervals and at every change in stratum. These samples shall be obtained using a split spoon sampler and the procedures of the standard penetration test. A minimum of one undisturbed Shelby tube sample shall be obtained in the uppermost cohesive stratum at or below the lowest depth at which solid waste will be disposed of. Samples shall be clearly marked, preserved, and maintained for future inspection. Samples selected for laboratory analysis shall be properly preserved.

101.206(3) Laboratory test of discrete soil samples. Laboratory tests of discrete soil samples shall be conducted to correlate strata between soil borings, obtain permeability data on each stratum, and design monitoring wells.

a. Hydraulic conductivity tests. Tests using a constant-head or falling-head permeameter shall be run on a minimum of one sample from each Shelby tube sample. Each sample shall be from a different soil boring representing a different area of the landfill site.

b. Grain size distribution. Grain size distribution tests shall be conducted on a minimum of one sample from each distinct stratum.

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