

SANITARY FACILITY INTERPRETATIONS

GENERAL

Soil interpretations for sanitary facilities are used in site selection for the safe disposal of household effluent and solid waste. The ratings are for soils in their present condition and do not consider present land use. Soil limitation ratings and associated restrictive features are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings and restrictive features are given for daily cover for landfill. Descriptions of national and state interpretations for on-site septic systems are included here.

SEPTIC TANK ABSORPTION FIELDS

Septic tank absorption fields are subsurface systems of perforated pipe or chambers that distribute effluent from a septic tank into the natural soil. The centerline depth of the trench is assumed to be 24 inches. Only the soil between depths of 24 and 60 inches is considered in making the ratings. The soil properties and site features considered are those that affect the construction and maintenance of the system, and those that may affect public health.

SEWAGE LAGOONS

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons have a nearly level floor surrounded by cut slopes or embankments of compacted, relatively impervious soil material. Aerobic lagoons

generally are designed so that the depth of the sewage is 2 to 5 feet. Relatively impervious soil for the lagoon floor and sides is desirable to minimize seepage and contamination of local groundwater.

SANITARY LANDFILL (Trench)

The trench sanitary landfill is a method of disposing of solid waste by placing refuse in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Properties that influence the risk of pollution, ease of excavation, trafficability, and re-vegetation are major considerations.

SANITARY LANDFILL (Area)

The area sanitary landfill is a method of disposing of solid waste by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. Properties that influence the risk of pollution, trafficability, and re-vegetation are the main considerations.

DAILY COVER FOR LANDFILL

Daily cover for landfill is the soil material that is applied daily to compacted solid waste in an area type sanitary landfill. The cover

SANITARY FACILITY INTERPRETATIONS

material is obtained offsite, transported, and spread on the area. Suitability of a soil for use as cover, is based on the properties that reflect the workability and ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

STATE SEPTIC SYSTEMS (4)

CONVENTIONAL

In Ground Trench

These are subsurface systems that transmit effluent from the septic tank to the natural soil. The bottom of the trench is at a depth of 18 to 36 inches and must contain at least three feet of undisturbed, well drained soil below it. The slope of the ground must be less than 25 percent. The soil between depths of 18 and 72 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

Shallow In Ground Trench

These are subsurface systems that transmit effluent from the septic tank to the natural soil. The bottom of the trench is at a depth of 18 inches and must contain at least three feet of undisturbed, well drained soil below it. The slope of the ground must be less than 15 percent. The soil between depths of 6 and 54 inches are considered when making the ratings. Soil properties and site features considered are those that may affect

construction and maintenance of the system, and its affect on public health.

Dual Field Trench

These are subsurface systems that transmit effluent from the septic tank to the natural soil. It is composed of two systems totaling the approved size of the entire design but installed independent of one another. Each can be turned on and off to allow each system to rest in alternating periods. The bottom of the trench is at a depth of 18 to 36 inches and must contain at least three feet of undisturbed, well drained soil below it. The slope of the ground must be less than 25 percent. The soil between depths of 18 and 72 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

ALTERNATIVE

At Grade Shallow Field

These are subsurface systems that transmit effluent from the septic tank to the natural soil. The bottom of the trench is at a depth of 12 inches and must contain at least three feet of undisturbed, well drained soil below it. The slope of the ground must be less than 15 percent. The soil between depths of 0 and 48 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of

SANITARY FACILITY INTERPRETATIONS

the system, and its affect on public health.

Drip Irrigation

These are subsurface systems that transmit effluent from the septic tank to the natural soil. The bottom of the trench is at a depth of 6 to 18 inches and must contain at least two feet of undisturbed, well drained soil below it. The slope of the ground must be less than 30 percent. The soil between depths of 0 and 42 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

Low Pressure Pipe

These are subsurface systems that transmit effluent from the septic tank to the natural soil under pressure. The bottom of the trench is at a depth of 12 to 18 inches and must contain at least two feet of undisturbed, well drained soil below it. The slope of the ground must be less than 30 percent. The soil between depths of 6 and 42 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

Elevated Field

These are subsurface systems that transmit effluent from the septic tank to the natural soil. The bottom of the trench is at a depth of 6 inches and must contain at least three feet of

undisturbed, well drained soil below it. The slope of the ground must be less than 15 percent. The soil between depths of 0 and 42 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

Mound

These are above ground systems that transmit effluent from the septic tank into controlled fill material. The trenches are located within the mound. The slope of the ground must be less than 6 percent. The natural soil between depths of 0 and 24 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

Steep Slope Mound

These are above ground systems that transmit effluent from the septic tank into controlled fill material. The trenches are located within the mound. The slope of the ground must be less than 12 percent. The natural soil between depths of 0 and 24 inches are considered when making the ratings. Soil properties and site features considered are those that may affect construction and maintenance of the system, and its affect on public health.

SANITARY FACILITY INTERPRETATIONS

REFERENCES

- (1) National Soil Survey Handbook,
Part 620.
<http://soils.usda.gov/technical/handbook/contents/part620.html#00>
- (2) Soil Data Mart
<http://soildatamart.nrcs.usda.gov/Survey.aspx?State=WV>
- (3) Web Soil Survey
<http://websoilsurvey.nrcs.usda.gov/app/>
- (4) West Virginia Department of
Health and Human Services, Sewage
rules.
<http://www.wvdhhr.org/phs/sewage/index.asp>