

## Waste Disposal Interpretations

### **Sanitary Facilities**

The nature of the soil is important in selecting sites for sanitary facilities, and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of slight, moderate, or severe are given for septic tank absorption fields, sewage lagoons, and trench and area type sanitary landfills. Soil suitability ratings of good, fair, and poor are given for daily cover for landfills. Limitations or suitability terms used in this subsection are as follows:

**SLIGHT** (or Good) - relatively free of limitations or limitations are easily overcome.

**MODERATE** (or Fair) - limitations need to be recognized, but usually can be overcome with good management or special design.

**SEVERE** (or Poor or Very Poor) - limitations are difficult or impractical to overcome.

### **Sanitary Facility Type**

**SEPTIC TANK ABSORPTION FIELDS** are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil. The centerline depth of the tile is assumed to be at a depth of 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 absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

**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 sewage is 2 to 5 feet. Relatively impervious soil for the lagoon floor and sides is desirable to minimize seepage and contamination of local ground water.

**SANITARY LANDFILL (TRENCH)** 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 risk of pollution, ease of excavation, trafficability, and revegetation are major considerations.

**SANITARY LANDFILL (AREA)** 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 at least 2 feet thick is placed over the completed landfill. Properties

that influence trafficability, revegetation, and risk of pollution are the main considerations for area type sanitary landfills.

**DAILY COVER FOR LANDFILL** is the sod material that is applied daily to compacted solid waste in an area type sanitary landfill. The cover material is obtained off-site, transported, and spread on the area. Suitability of a soil for use as cover is based on properties that reflect workability and the ease of digging and of moving and spreading the material over the refuse daily during both wet and dry periods.

### ***Waste Management***

The nature of the soil is also important in the application of organic wastes and wastewater to land as fertilizers and irrigation; it is also important when the soil is used as a medium for treatment and disposal of these wastes. Favorable soil properties are required to prevent environmental damage.

The use of organic wastes and wastewater as production resources will result in energy conservation, prevent the waste of these important resources, and prevent problems associated with their disposal. Where disposal is the goal, and a maximum amount is disposed in a minimum area to hold costs to a minimum, risk of environmental damage is the principal constraint. Where the reuse goal is pursued, and a minimum amount is applied to a maximum area to obtain the greatest benefit, environmental damage is unlikely.

*This section includes:*

- **(a) Sanitary Facilities**
- **(a) Waste Management**

Audrain County, Missouri: Detailed Soil Map Legend

Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Land application of manure and food processing waste |       | Land application of municipal sewage sludge     |       | Disposal of wastewater by irrigation            |       | Treatment of wastewater by slow rate process    |       | Treatment of wastewater by rapid infiltration process |       |
|--------------------------|--|-------|---|-------|---|-------|---|-------|---|-------|
|                          | Rating class and limiting features                   | Value | Rating class and limiting features              | Value | Rating class and limiting features              | Value | Rating class and limiting features              | Value | Rating class and limiting features                    | Value |
| 10C2:<br>Armstrong-----  | Limited<br>~percs slowly<br>(limited)                | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Very limited<br>~percs slowly<br>(very limited)       | 1.00  |
|                          | ~wetness<br>(moderately limited)                     | 0.44  | ~wetness<br>(moderately limited)                | 0.44  | ~slope<br>(moderately limited)                  | 0.45  | ~slope<br>(moderately limited)                  | 0.45  | ~wetness<br>(very limited)                            | 1.00  |
|                          | ~slope<br>(slightly limited)                         | 0.15  | ~slope<br>(slightly limited)                    | 0.15  | ~wetness<br>(moderately limited)                | 0.44  | ~wetness<br>(moderately limited)                | 0.44  | ~slope<br>(very limited)                              | 1.00  |
| 10C3:<br>Armstrong-----  | Limited<br>~percs slowly<br>(limited)                | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Limited<br>~percs slowly<br>(limited)           | 0.99  | Very limited<br>~percs slowly<br>(very limited)       | 1.00  |
|                          | ~wetness<br>(moderately limited)                     | 0.44  | ~wetness<br>(moderately limited)                | 0.44  | ~slope<br>(moderately limited)                  | 0.45  | ~slope<br>(moderately limited)                  | 0.45  | ~wetness<br>(very limited)                            | 1.00  |
|                          | ~slope<br>(slightly limited)                         | 0.15  | ~slope<br>(slightly limited)                    | 0.15  | ~wetness<br>(moderately limited)                | 0.44  | ~wetness<br>(moderately limited)                | 0.44  | ~slope<br>(very limited)                              | 1.00  |
| 18F:<br>Goss-----        | Very limited<br>~slope<br>(very limited)             | 1.00  | Very limited<br>~slope<br>(very limited)        | 1.00  | Very limited<br>~slope<br>(very limited)        | 1.00  | Very limited<br>~slope<br>(very limited)        | 1.00  | Very limited<br>~slope<br>(very limited)              | 1.00  |
|                          | ~droughty<br>(moderately limited)                    | 0.33  | ~droughty<br>(moderately limited)               | 0.33  | ~droughty<br>(moderately limited)               | 0.33  |   |       | ~wetness<br>(very limited)                            | 1.00  |
|                          |  |       |   |       |   |       |   |       | ~too cobbly<br>(moderately limited)                   | 0.53  |
| 19B:<br>Marion-----      | Very limited<br>~percs slowly<br>(very limited)      | 1.00  | Very limited<br>~percs slowly<br>(very limited) | 1.00  | Very limited<br>~percs slowly<br>(very limited) | 1.00  | Very limited<br>~percs slowly<br>(very limited) | 1.00  | Very limited<br>~percs slowly<br>(very limited)       | 1.00  |
|                          | ~wetness<br>(moderately limited)                     | 0.60  | ~wetness<br>(moderately limited)                | 0.60  | ~wetness<br>(moderately limited)                | 0.60  | ~wetness<br>(moderately limited)                | 0.60  | ~wetness<br>(very limited)                            | 1.00  |
|                          |  |       |   |       |   |       |   |       | ~too acid<br>(slightly limited)                       | 0.14  |

Audrain County, Missouri: Detailed Soil Map Legend

Waste Management

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|--------------------------|---|------------------------------|---|------------------------------|---|------------------------------|---|------------------------------|---|------------------------------|
|                          | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        |
| 22C2:                    |   |                              |   |                              |   |                              |   |                              |   |                              |
| Keswick-----             | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(moderately limited)<br>~slope<br>(slightly limited) | 0.99<br><br>0.44<br><br>0.15 | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(moderately limited)<br>~slope<br>(slightly limited) | 0.99<br><br>0.44<br><br>0.15 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(moderately limited)<br>~wetness<br>(moderately limited) | 0.99<br><br>0.45<br><br>0.44 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(moderately limited)<br>~wetness<br>(moderately limited) | 0.99<br><br>0.45<br><br>0.44 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~slope<br>(very limited)     | 1.00<br><br>1.00<br><br>1.00 |
| 22D2:                    |   |                              |   |                              |   |                              |   |                              |   |                              |
| Keswick-----             | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(limited)<br>~wetness<br>(moderately limited)          | 0.99<br><br>0.76<br><br>0.44 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(limited)<br>~wetness<br>(moderately limited)          | 0.99<br><br>0.76<br><br>0.44 | Limited<br>~slope<br>(limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(moderately limited)            | 0.99<br><br>0.99<br><br>0.44 | Limited<br>~slope<br>(limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(moderately limited)            | 0.99<br><br>0.99<br><br>0.44 | Very limited<br>~percs slowly<br>(very limited)<br>~slope<br>(very limited)<br>~wetness<br>(very limited)     | 1.00<br><br>1.00<br><br>1.00 |
| 23B2:                    |   |                              |   |                              |   |                              |   |                              |   |                              |
| Leonard-----             | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(limited)  | 0.99<br><br>0.81             | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(limited)  | 0.99<br><br>0.81             | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(limited)  | 0.99<br><br>0.81             | Limited<br>~percs slowly<br>(limited)<br>~wetness<br>(limited)  | 0.99<br><br>0.81             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~slope<br>(slightly limited) | 1.00<br><br>1.00<br><br>0.08 |
| 24F:                     |   |                              |   |                              |   |                              |   |                              |   |                              |
| Winnegan-----            | Very limited<br>~slope<br>(very limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(slightly limited)  | 1.00<br><br>0.99<br><br>0.13 | Very limited<br>~slope<br>(very limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(slightly limited)  | 1.00<br><br>0.99<br><br>0.13 | Very limited<br>~slope<br>(very limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(slightly limited)    | 1.00<br><br>0.99<br><br>0.13 | Very limited<br>~slope<br>(very limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(slightly limited)    | 1.00<br><br>0.99<br><br>0.13 | Very limited<br>~percs slowly<br>(very limited)<br>~slope<br>(very limited)<br>~wetness<br>(very limited)     | 1.00<br><br>1.00<br><br>1.00 |

Audrain County, Missouri: Detailed Soil Map Legend

Waste Management

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| Map symbol and soil name | Land application of manure and food processing waste                                |                  | Land application of municipal sewage sludge   |                  | Disposal of wastewater by irrigation  |                  | Treatment of wastewater by slow rate process  |                  | Treatment of wastewater by rapid infiltration process  |                              |
|--------------------------|---|------------------|---|------------------|---|------------------|---|------------------|--|------------------------------|
|                          | Rating class and limiting features  | Value            | Rating class and limiting features   | Value                        |
| 27B:<br>Mexico-----      | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(moderately limited) | 1.00<br><br>0.53 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)                                      | 1.00<br><br>1.00             |
| 27B2:<br>Mexico-----     | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(moderately limited) | 1.00<br><br>0.53 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)                                      | 1.00<br><br>1.00             |
| 28:<br>Twomile-----      | Limited<br>~flooding<br>(limited)<br>~wetness<br>(moderately limited)               | 0.90<br><br>0.60 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~flooding<br>(moderately limited) | 1.00<br><br>1.00<br><br>0.60 |
| 33:<br>Belknap-----      | Very limited<br>~flooding<br>(very limited)<br>~wetness<br>(moderately limited)     | 1.00<br><br>0.44 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~flooding<br>(very limited)       | 1.00<br><br>1.00<br><br>1.00 |
| 34:<br>Putnam-----       | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)            | 1.00<br><br>0.99 | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~too acid<br>(slightly limited)   | 1.00<br><br>1.00<br><br>0.21 |

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| Map symbol and soil name | Land application of manure and food processing waste  |                              | Land application of municipal sewage sludge   |                              | Disposal of wastewater by irrigation  |                              | Treatment of wastewater by slow rate process   |                              | Treatment of wastewater by rapid infiltration process  |  |
|--------------------------|---|------------------------------|---|------------------------------|---|------------------------------|--|------------------------------|--|--|
|                          | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features   | Value                        | Rating class and limiting features   | Value                                    |
| 45B:<br>Gifford-----     | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)                                | 1.00<br><br>0.81             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)                                | 1.00<br><br>0.81             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)                                  | 1.00<br><br>0.81             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)   | 1.00<br><br>0.81             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~slope<br>(slightly limited)        | 1.00<br><br>1.00<br><br>1.00<br><br>0.08 |
| 47:<br>Chariton-----     | Very limited<br>~wetness<br>(very limited)<br>~percs slowly<br>(limited)                                | 1.00<br><br>0.99             | Very limited<br>~wetness<br>(very limited)<br>~percs slowly<br>(limited)                                | 1.00<br><br>0.99             | Very limited<br>~wetness<br>(very limited)<br>~percs slowly<br>(limited)                                  | 1.00<br><br>0.99             | Very limited<br>~wetness<br>(very limited)<br>~percs slowly<br>(limited)   | 1.00<br><br>0.99             | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)  | 1.00<br><br>1.00                         |
| 56B:<br>Jemerson-----    | Not limited   |                              | Not limited   |                              | Not limited   |                              | Not limited  |                              | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(limited)   | 1.00<br><br>0.89                         |
| 74C2:<br>Winnegan-----   | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(slightly limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.15<br><br>0.13 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(slightly limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.15<br><br>0.13 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(moderately limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.45<br><br>0.13 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(moderately limited)<br>~depth to bedrock<br>(moderately limited) | 0.99<br><br>0.45<br><br>0.35 | Very limited<br>~percs slowly<br>(very limited)<br>~depth to bedrock<br>(very limited)<br>~wetness<br>(very limited) | 1.00<br><br>1.00<br><br>1.00             |

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|--------------------------|--|------------------------------|--|------------------------------|--|------------------------------|---|------------------------------|--|------------------------------|
|                          | Rating class and limiting features   | Value                        | Rating class and limiting features   | Value                        | Rating class and limiting features   | Value                        | Rating class and limiting features  | Value                        | Rating class and limiting features   | Value                        |
| 74D2:<br>Winnegan-----   | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.76<br><br>0.13 | Limited<br>~percs slowly<br>(limited)<br>~slope<br>(limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.76<br><br>0.13 | Limited<br>~slope<br>(limited)<br>~percs slowly<br>(limited)<br>~wetness<br>(slightly limited) | 0.99<br><br>0.99<br><br>0.13 | Limited<br>~slope<br>(limited)<br>~percs slowly<br>(limited)<br>~depth to bedrock<br>(moderately limited) | 0.99<br><br>0.99<br><br>0.45 | Very limited<br>~percs slowly<br>(very limited)<br>~slope<br>(very limited)<br>~depth to bedrock<br>(very limited) | 1.00<br><br>1.00<br><br>1.00 |
| 90B:<br>Lenzburg-----    | Not limited  |                              | Not limited  |                              | Not limited  |                              | Not limited   |                              | Very limited<br>~percs slowly<br>(very limited)<br>~wetness<br>(very limited)<br>~slope<br>(slightly limited)      | 1.00<br><br>1.00<br><br>0.08 |
| 90F:<br>Lenzburg-----    | Very limited<br>~slope<br>(very limited)   | 1.00                         | Very limited<br>~slope<br>(very limited)   | 1.00                         | Very limited<br>~slope<br>(very limited)   | 1.00                         | Very limited<br>~slope<br>(very limited)  | 1.00                         | Very limited<br>~percs slowly<br>(very limited)<br>~slope<br>(very limited)<br>~wetness<br>(very limited)          | 1.00<br><br>1.00<br><br>1.00 |
| 100:<br>Udorthents-----  | Not Rated<br>Not Rated<br><br>Not Rated<br><br>~poor filter<br>(very limited)                  | <br><br><br>1.00             | Not Rated<br>Not Rated<br><br>Not Rated<br><br>~poor filter<br>(very limited)                  | <br><br><br>1.00             | Not Rated<br>Not Rated<br><br>Not Rated<br><br>~poor filter<br>(very limited)                  | <br><br><br>1.00             | Not Rated<br>Not Rated<br><br>~percs slowly<br>(very limited)<br>~poor filter<br>(very limited)           | <br><br><br>1.00<br><br>1.00 | Very limited<br>~slope<br>(very limited)<br>~too stony<br>(very limited)<br>~wetness<br>(very limited)             | 1.00<br><br>1.00<br><br>1.00 |

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|--------------------------|--|-------|---|-------|--------------------------------------|-------|--|-------|---|-------|
|                          | Rating class and limiting features                   | Value | Rating class and limiting features          | Value | Rating class and limiting features   | Value | Rating class and limiting features           | Value | Rating class and limiting features                    | Value |
| M-W:<br>Water-----       | Not rated  |       | Not rated                                   |       | Not rated                            |       | Not rated                                    |       | Not rated   |       |
| W:<br>Water-----         | Not rated  |       | Not rated                                   |       | Not rated                            |       | Not rated                                    |       | Not rated   |       |