

7045.0634 LAND TREATMENT.

Subpart 1. **Scope.** This part applies to owners and operators of hazardous waste land treatment facilities, except as part 7045.0552 provides otherwise.

Subp. 2. **General operating requirements.** Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by biological degradation or chemical reactions occurring in or on the soil.

The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

The owner or operator shall design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25-year storm.

Collection and holding facilities, such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator shall manage the unit to control wind dispersal.

Subp. 3. **Waste analysis.** In addition to the waste analyses required by part 7045.0564 before placing a hazardous waste in or on a land treatment facility, the owner or operator shall:

A. determine the concentrations in the waste of any substances which equal or exceed the maximum concentrations contained in part 7045.0131, subpart 8, that cause a waste to exhibit the toxicity characteristic;

B. for any waste listed in part 7045.0135, determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

C. if food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the owner or operator has written, documented data that show that the constituent is not present.

As required by part 7045.0564, the waste analysis plan must include analyses needed to comply with subparts 7 and 8. As required by part 7045.0584, the owner or operator shall place the results from each waste analysis, or the documented information, in the operating record of the facility.

Subp. 4. **Unsaturated zone or zone of aeration monitoring.** Requirements for unsaturated zone or zone of aeration monitoring are as follows:

A. The owner or operator shall have in writing, and shall implement, an unsaturated zone monitoring plan which is designed to:

(1) detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility; and

(2) provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby. This background monitoring must be conducted before or in conjunction with the monitoring required to detect the vertical migration.

B. The unsaturated zone monitoring plan must include soil monitoring using soil cores, and soil-pore water monitoring using devices such as lysimeters.

C. To comply with item A, subitem (1), the owner or operator shall demonstrate in the unsaturated zone monitoring plan that:

(1) the depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

(2) the number of soil and soil-pore water samples to be taken is based on the variability of the hazardous waste constituents as identified in subpart 3, items A and B in the waste and in the soil and the soil types; and

(3) the frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

D. The owner or operator shall keep the unsaturated zone monitoring plan, and the rationale used in developing this plan at the facility.

E. The owner or operator shall analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under subpart 3, items A and B.

As required by part 7045.0584, all data and information developed by the owner or operator under this part must be placed in the operating record of the facility.

Subp. 5. **Record keeping.** The owner or operator of a land treatment facility shall include hazardous waste application dates and rates in the operating record required in part 7045.0584.

Subp. 6. **Closure and postclosure.** Closure and postclosure requirements are as follows:

A. In the closure plan under part 7045.0594 and the postclosure plan under part 7045.0600, the owner and operator shall address the following objectives and indicate how they will be achieved:

- (1) control of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water;
- (2) control of the release of contaminated run-off from the facility into surface water;
- (3) control of the release of airborne particulate contaminants caused by wind erosion; and
- (4) compliance with part 7045.0636 concerning the growth of food chain crops.

B. The owner or operator shall consider at least the following factors in addressing the closure and postclosure care objectives of item A:

- (1) type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;
- (2) the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;
- (3) site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration including at a minimum the proximity to ground water, surface water, and drinking water sources;
- (4) climate, including amount, frequency, and pH of precipitation;
- (5) geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;
- (6) unsaturated zone monitoring information obtained under; and
- (7) type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

C. The owner or operator shall consider at least the following methods in addressing the closure and postclosure care objectives of item A:

- (1) removal of contaminated soils;
- (2) placement of a final cover, considering the functions of the cover including infiltration control, erosion and run-off control and wind erosion control, and

characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

- (3) monitoring of ground water.

D. In addition to the requirements of parts 7045.0594 to 7045.0606, during the closure period, the owner or operator of a land treatment facility shall:

- (1) continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

- (2) maintain the run-on control system required under subpart 2;

- (3) maintain the run-off management system required under subpart 2; and

- (4) control wind dispersal of particulate matter which may be subject to wind dispersal.

E. For the purpose of complying with part 7045.0596, subpart 4, when closure is completed the owner or operator may submit to the commissioner certification both by the owner or operator and by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

F. In addition to the requirements of part 7045.0602, during the postclosure care period, the owner or operator of a land treatment facility shall:

- (1) continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the postclosure plan;

- (2) restrict access to the facility as appropriate for its postclosure use;

- (3) assure that growth of food chain crops complies with part 7045.0636;

and

- (4) control wind dispersal of hazardous waste.

Subp. 7. **Special requirements for ignitable or reactive waste.** Ignitable or reactive wastes must not be land treated, unless the waste and treatment zone meet all applicable requirements of part 7045.1390, and the waste is immediately incorporated into the soil so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under parts 7045.0131, subpart 2 or 5; and 7045.0562, subpart 2 is complied with.

Subp. 8. **Special requirements for incompatible wastes.** Incompatible wastes, or incompatible wastes and materials, must not be placed in the same land treatment area, unless part 7045.0562, subpart 2, is complied with.

Statutory Authority: *MS s 116.07; 116.37*

History: *9 SR 115; L 1987 c 186 s 15; 15 SR 1878; 16 SR 2239; 33 SR 2042*

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