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DSIWM Guidance 0686

Select Waste Layers

January 7, 2004

APPLICABLE RULES

MSW: OAC 3745-27-19(D)
ISW: OAC 3745-29-19(D)
RSW: NA
Tires: NA

Cross References:

DSIWM guidance #0155 Protection of the Composite Liner - Materials and Thickness

PURPOSE

The municipal solid waste (MSW) and industrial solid waste (ISW) landfill programs make use of a select waste layer to limit the intrusion of objects into the liner and leachate collection systems (LCS) that could otherwise be damaged during construction and operation. The purpose of this document is to provide guidance on the choice of materials, thicknesses, deployment and documentation of select waste layers.

APPLICABILITY

This guidance document is applicable to owners or operators of MSW and ISW landfills, who are placing waste on the leachate collection system.

PROCEDURE

The MSW and ISW landfill programs require a

select waste layer. The rules establish material, thickness, deployment and documentation standards.

CHOICE OF MATERIALS

The layer of select waste is not a landfill component, so it cannot be placed until after the cell construction has been certified and concurred with by Ohio EPA. Disposal fees do apply.

Paragraph (D)(1) specifies that the material shall:

- * *not contain items over two feet in length that are capable of puncturing the liner.* Items longer than two feet in length may be included in the select waste layer, however they cannot be capable of puncturing the liner. Examples of acceptable materials are styrofoam pieces and rubber mats. Unacceptable items include long stiff items such as furniture legs and rebar.
- * *not restrict the flow of liquid to the LCS.* The material needs to be permeable enough in order to not impede leachate flow, for example coarse granular materials.
- * *not contain fines or small particles which can clog the LCS.* The material does not have to be free of fines or small particles, however, it cannot cause the clogging of the LCS. General MSW contains such fines but there has been no

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evidence that it has caused clogging. Examples of unacceptable materials are fine grained industrial sludges, contaminated soils, and ash.

Additional factors the owner or operator may want to consider in selection of waste is:

- * resistance to intrusion
- * workability
- * availability
- * stability on slopes
- * potential to decompose (resulting in a thinner layer, breaking down into finer grained material and decreasing permeability)
- * potential to compress
- * chemical compatibility

THICKNESS

Municipal and industrial solid waste consists of a heterogenous mixture which is likely to include long stiff items. Therefore the thickness of the select waste layer required for MSW and ISW landfills is five feet. However, some industrial waste landfills might accept waste consisting of a more uniform material without long stiff items - the threat of intrusion of objects into the composite liner does not exist. In this case, the owner or operator has the option of either complying with the select waste layer requirements for deployment and documentation, or requesting a variance or exemption from placing a select waste layer. Also, in this case, if the wastes are made of fines or small particles which can clog the LCS, the owner or operator can request a variance or exemption so it is not necessary to search for an alternative select waste material to be placed.

Note that the granular drainage medium used in the LCS (or protective layer approved in some permits) provides some of the required protection thickness needed to create five feet of protection. Thus accounting for the depth of the LCS or protective layer, the thickness of the select waste layer can be reduced accordingly.

DEPLOYMENT

Paragraph (D)(1) requires the owner or operator to “place select waste as the first layer in all areas

within the limits of waste placement adjacent to and/or in contact with the leachate collection system...” Therefore, not only is select waste placed at the bottom of the landfill, but also on the sides.

Paragraph (D)(1)(a) requires the layer to be spread but not compacted, and paragraph (D)(1)(e) requires that it be placed in a single lift. Realizing that any piece of equipment will ‘compact’ the select waste, the owner or operator may choose any piece of equipment to spread the waste, as long as the lift thickness of select waste is the minimum necessary to meet the rule requirement of 5 feet separation between the liner and general waste placement. The equipment, however, is not to make multiple passes over the select waste layer - this is no longer spreading but compacting.

Paragraph (D)(1)(e) also requires placement above the ‘protective layer’ required in accordance with the cited construction rule. If a geosynthetic drainage net is used as the LCS drainage layer, the select waste layer is placed above the twelve inches of permeable material required in such cases. If granular materials are used as the LCS drainage layer, the select waste layer is placed above the granular drainage layer. If the permit specifies a protective layer over the LCS, the select waste layer is placed above the protective layer. For more information about protective layers, see DSIWM guidance #0155 *Protection of the Composite Liner - Materials and Thickness*.

DOCUMENTATION

Paragraph (D)(2) established documentation requirements for the select waste layer. The owner or operator is required to make a record of the following:

- * The date(s) select waste was placed
- * The location where select waste was placed
- * The thickness of the select waste layer
- * The source of the select waste

The owner or operator may develop whatever forms or logs necessary to record this information. For MSW landfills, the documentation is placed in the operating record. For ISW landfills, the documentation is submitted to Ohio EPA within 30

days of placing the select waste material. Submitting the documentation as a summary or in batches is acceptable as long as it is submitted within the 30 day time frame. Note the time frame begins with the first placement of select waste, not when the select waste layer has been completed. Also, do not overlook the requirement to place select waste on the sides of the landfill as discussed above.

POINT OF CONTACT

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DISCLAIMER

This document is intended for guidance purposes only. Completion of the activities and procedures outlined in this document shall not release an owner or operator from any requirement or obligation for complying with Ohio Revised Code (ORC) Chapter 3734, the OAC rules adopted thereunder, or any authorizing documents or orders issued thereunder, nor shall it prevent Ohio EPA from pursuing enforcement actions to require compliance with ORC Chapter 3734, the OAC rules, or any authorizing documents or orders issued thereunder.