

Oregon Department of Environmental Quality Directive

Guidelines for Alternative Daily Cover Material Application

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Introduction	This document provides guidelines for landfill operators to use in applying for Department of Environmental Quality (Department) approval to use alternative daily cover material (ADCM) in lieu of earthen cover material at a municipal solid waste landfill (MSWLF).
Regulatory background	Oregon Administrative Rule (OAR) 340-094-0040 requires application of a suitable cover material over any exposed waste at the end of each operating day at all MSWLFs subject to 40 Code of Federal Regulations (CFR), Part 258, as adopted in OAR 340-094-0010. Daily cover must consist of at least six inches of earthen material or an alternative material that provides equivalent performance and has been approved by the Department.
Purpose of daily cover	The purpose of the daily cover is to protect the environment and public health by: <ul style="list-style-type: none">• controlling the spread of disease vectors• preventing fires• controlling odors• preventing blowing litter• preventing scavenging• controlling dust• acting as a moisture barrier by minimizing precipitation infiltrating the waste, and• improving site aesthetics
Examples of approved ADCMs	The Department has approved ADCMs on a case-by-case basis. A majority of MSWLFs in Oregon currently use ADCMs either for demonstration purposes or permanently after completing the demonstration phase. While not an exhaustive list, the approved ADCMs include commercial products such as geosynthetic tarps, and indigenous waste materials such as paper sludge, auto shredder fluff, and spent refractory (alumina brick).
Need and purpose of guidance	The Department receives numerous inquiries seeking guidance on the use of a variety of commercial products and indigenous waste materials as ADCM. The purpose of this guidance is to assist landfill operators in preparing and submitting applications for trial use and demonstration of an ADCM and in obtaining final approval for long-term use of the material.
Use of this guidance	This guidance describes what is expected in an ADCM application and defines the process leading to Department approval or denial. Use of the guidance should enable the applicant to efficiently organize and present the information and facilitate the Department's review and approval process. The guidance should be used in conjunction with the Department's solid waste rules.

ADCM approval

To obtain Department approval of an ADCM, the applicant must demonstrate that the proposed material and application of the material will:

- perform all the functions of a daily cover specified by 40 CFR 258.21 (e.g., control disease vectors, fires, odors, blowing litter, and scavenging),
- be compatible with relevant site-specific location and design and operational conditions as required by OAR 340-094-0040(8) (e.g., hydrogeologic setting, climate, proximity of residences, site screening, availability of equipment and cover material, any past operational problems, and any other relevant factor), and
- not create a potential environmental or human health hazard.

Trial period

All requests for ADCM approval will require a trial period of ADCM use and evaluation to demonstrate the ADCM is as protective as earthen daily cover material.

Fees on Wastes Used as ADCM

Trial period: During the trial period, solid waste used as ADCM is subject to all applicable Department fees as described in OAR Chapter 340, Division 097, including the per-ton solid waste disposal fee in OAR 340-097-0120(5).

Long-term use: Solid waste that the Department has finally approved for use as daily cover is exempt from the per-ton solid waste disposal fee in OAR 340-097-0120(5) when used as daily cover. This fee exemption applies only to the quantity of ADCM that is used in a manner demonstrated to be equivalent to six inches of earthen material per 40 CFR Part 258.21. Quantities of ADCM-qualified waste placed on or in the landfill in excess of the amount needed to provide the equivalent of six inches of daily soil cover are subject to all applicable fees. Quantities of ADCM-qualified waste received but not used during a reporting period are also subject to all applicable fees; fees are waived in the reporting period during which the approved waste is actually used as ADCM.

Objective of trial period

A field evaluation is required to demonstrate the suitability of ADCM since each ADCM request is unique. The field evaluation should account for relevant site specific factors and ADCM properties. The purpose of trial ADCM use is to:

- characterize its physical and chemical properties as they relate to its function as daily cover material
- objectively observe and measure its daily and seasonal performance
- optimize procedures for its application
- identify its advantages and disadvantages
- determine any constraints or limitations on its use

**Application
for trial use**

In the application for a trial use period, the applicant should include the following information and workplan, as appropriate:

- rationale for how the proposed ADCM is expected to achieve equivalent performance to 6 inches of earthen material in controlling disease vectors, fire, odors, blowing litter, and scavenging
- a list of all parameters that are thought to affect the performance (including limitations) of the proposed ADCM, including physical and chemical properties
- any potential site or material limitations related to the proposed ADCM to be evaluated during the trial period

Examples: A site with leachate disposal constraints needs to assess ADCM impact on leachate quality and quantity and determine any limitations imposed by leachate constraints on ADCM use; a site in windy location needs to assess ADCM susceptibility to wind dispersion and determine any limitations on ADCM use imposed by the wind

- testing methods and frequency to be used to measure performance and consistency in the material to be used as ADCM
- the name of the individual responsible for observing and documenting ADCM performance and a description of the role and frequency of observations
- a description, for each performance criteria, of a field demonstration designed to determine the ADCM density, thickness, and method of application needed to meet the criteria and how the ADCM performed compared to 6 inches of earthen material
- the appropriate information for the type of material, according to the following table:

If ADCM consists of...	then provide.....
commercial products	<ul style="list-style-type: none"> • manufacturer name and address • manufacturer/distributor contact name and telephone number • a product description including relevant physical and chemical properties • a reference list of sites where the product has been approved for use as a ADCM (include user contact name and telephone number)
indigenous materials that would otherwise be classified as waste	<ul style="list-style-type: none"> • generator name and address • generator contact name and telephone number • the quantity and availability of the material • an explanation of how the waste is expected to exhibit physical and chemical characteristics consistent with functions and limitations of the material • a characterization of the waste and a description of the source and process generating the waste (e.g., waste composition including hazardous constituents and waste density)
cleanup materials or other materials currently under regulatory oversight	<ul style="list-style-type: none"> • the name(s) and contact person(s) of any regulatory agency(s) involved in cleanup oversight • a list of landfills, if any, where the waste has been approved for use as ADCM, the name and phone number of a contact person at the agency which approved the material, and a summary of the conditions of each approval • the availability of the material for regular use at the landfill • a description of any stockpiling practices (e.g., size and location of stockpile, stormwater management, erosion control)

Trial Period Trial ADCM use must account for all seasons of the year, and therefore should last for at least fifteen months to allow twelve months for testing and three months for preparation and Department review of the ADCM Performance Report.

ADCM Performance Report Based on implementation of the workplan during the trial use period, the ADCM Performance Report should:

- identify parameters that affect the performance of ADCM, including physical and chemical properties
- identify the ADCM thickness and density needed to achieve comparable function to six inches of soil
- provide summary conclusions about how the ADCM achieves equivalent performance to six inches of earthen material
- provide a description of how the ADCM performed relative to each criteria (e.g., disease vectors, fire, odors, blowing litter, scavenging, dust, site aesthetics, and moisture barrier), including equivalence observations
- propose operational criteria for long-term use, including application equipment and procedures, inclement weather provisions, and daily recordkeeping
- detail any other relevant comments, concerns, limitations, advantages, or disadvantages

Approval criteria To be approved for long-term use as an ADCM, the material must be shown to perform all functions of a daily cover specified by federal regulations as adopted in OAR 340-094-0010 and pose no environmental or human health hazard.

The following table summarizes the criteria and performance requirements for long-term ADCM approval:

Criteria	Required ADCM Performance
Controls Disease Vectors	All ADCM must be demonstrated to control disease vectors comparable to a 6-inch thick soil cover.
Controls Fire	All ADCMs must be shown to control fire. At sites with a history of landfill fires, the ADCM must be demonstrated to control fire comparable to a 6-inch thick soil cover.
Controls Odors	All ADCMs must be shown to control odors. At sites with a history of landfill odor problems and/or complaints, the ADCM must be demonstrated to control odors comparable to a 6-inch thick soil cover.
Controls Blowing Litter	All ADCMs must be shown to control blowing litter. At sites with a history of litter problems and/or complaints, the ADCM must be demonstrated to control litter comparable to a 6-inch thick soil cover.
Controls Scavenging	All ADCMs must be shown to control scavenging. At sites with a history of landfill scavenging problems, the ADCM must be demonstrated to control scavenging comparable to a 6-inch thick soil cover.

Reduces Infiltration	At sites with relevant leachate management constraints, ADCMs must be shown to act as a moisture barrier.
Controls Dust	At sites with dust problems on the working face, ADCMs must be shown to control dust.
Enhances Aesthetics	At sites with complaints related to the aesthetics of the working face, the aesthetics of ADCMs must be considered.

ADCM Approval Letter

When the Department approves a material for long-term use as an ADCM, the Department will send the applicant an approval letter that includes the following:

- a definition of the approved ADCM that references the characteristics of the material used during the trial period
- the thickness and density of the material being approved as ADCM (only this amount of material used in daily cover may qualify for fee waiver)
- a summary of how the amount of ADCM usage will be measured and recorded
- any constraints or limitations on the use of the ADCM
- clarification that solid waste reporting forms have been updated to require submittal of detailed daily ADCM usage records whenever, during a reporting period, ADCM usage exceeds 15 percent of all received residential and commercial domestic solid waste and construction and demolition waste tonnage

