

Guidance for Landspreading of PCB-Contaminated Solid Wastes



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**Waste & Materials Management
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Description: Landspreading of solid wastes is regulated under Ch. NR 518, Wis. Adm. Code. Some solid wastes, including but not limited to dredged material, may be contaminated with PCBs but may otherwise exhibit properties that make them suitable for land application for disposal and beneficial reuse. Unequivocal limits on PCB concentrations in solid wastes or soils have yet to be defined. The lack of numerical limits has left Waste program staff and the regulated community without guidance for making decisions about the suitability of land application of PCB-contaminated solid wastes.

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Guidance Text (follows):

Applicability: The following guidance is applicable to DNR approved facilities for landspreading of solid wastes that may contain PCBs including, in the Waste and Materials Management Program, the landspreading of dredged sediment material or any other solid waste material not regulated by a wastewater permit granted by the Watershed Management program. This guidance supplements the provisions of administrative rules including Chapter NR 518, Wis. Adm. Code.

The Watershed Management Program has developed similar guidance that will apply to the landspreading of biosolids and sludge from municipal and industrial wastewater treatment facilities.

This guidance is not applicable to remediation or site clean-up. However, if waste materials containing PCBs are generated during a remediation and are land spread on a different site than where generated, then they are subject to the applicable solid waste or wastewater requirements and guidance.

This guidance is not applicable to mass fill or other disposal or beneficial reuse applications where surface exposure and erosion are prevented by use of cover of clean soil or other materials. These activities are not defined as landspreading and are not regulated under ch. NR 518, Wis. Adm. Code.

Implementation and Duration: The Department's Waste and Materials Management and Watershed Management programs have each developed these provisions as internal program guidance to be considered on a case-by-case basis. Internal program guidance can be considered in making case-by-case decisions, but it cannot be used to impose mandatory requirements on external parties.

It is the desire of the department that this guidance be implemented on a voluntary basis as soon as possible.

The department is proceeding to propose and adopt administrative rules to enact these provisions as requirements. The intent is that this guidance will remain in effect until replaced by revised guidance and/or administrative rules.

These provisions are intended as an interim risk management approach pending the federal government's further action on dioxin and dioxin-like substances in municipal sewage sludge. It is intended that the rules would be re-opened within 12 months following the publication in the Federal Register of revisions to EPA's Part 503 regulations for dioxin and dioxin-like compounds and will be amended or replaced as appropriate.

Guidance:

1. Maximum average annual application rate guidelines: The maximum amount of PCBs that may be applied to land through an approved landspreading activity regulated under the Waste and Materials Management Program (NR 518) is:

A. 1200 mg total PCBs/acre/year for crop lands currently used for direct grazing or for food crops used for human food production; and

B. 2500 mg total PCBs/acre/year for all other lands (including those which are not directly grazed or not used to grow food crops used for human food in the same year or the year following the application.)

2. Two-year average application rate: Calculation of the application rate under (1) for any particular parcel of land should be determined based upon the annual average of the amount of PCBs applied during the current year and the previous year. That is, the total amount of PCBs applied per acre during the current year and the previous year divided by two is the number that should be compared to the mass loading guidelines in (1). For example, if 3000 mg PCB were applied per acre to a field corn site in year #1, then in the next year an additional 2000 mg/acre could be applied to the same site. $(3000+2000) \div 2 = 2500$ mg/acre/year. For the first year during which PCB monitoring has been conducted, the application rates specified in (1) above apply without regard to averaging since there is no previous data.

3. Monitoring and Calculating PCB Concentrations: The PCB concentration of the waste material for purposes of comparison to the values in this guidance should be determined as follows. In all cases, the intent is to utilize the PCB analytical results from the waste material that are the most representative of what is being applied to a particular site.

A. Analytical methods: Either congener-specific analysis or Aroclor analysis may be used to determine the total PCB concentration.

- EPA Method 1668 may be used to test for all PCB congeners. This method of analysis is acceptable at the discretion of the permittee or licensee. If this method is employed, all PCB congeners should be delineated. It is recognized that a number of the congeners will co-elute with others, so there will not be 209 results to sum. However, all results should be added together to enable the reporting of a total PCB dry weight result. Non-detects should be treated as zero. Values between the LOD and the LOQ should be summed using the result.
- EPA Method 8082 should be used for PCB-Aroclor analysis and may be used for congener specific analysis as well. It is up to the discretion of the permittee to have Aroclor or congener specific analysis performed. If congener specific analysis is performed using Method 8082, the list of congeners tested should include, but should not necessarily be limited to # s 5, 18, 31, 44, 52, 66, 87, 101, 110, 138, 141, 151, 153, 170, 180, 183, 187, and 206. For either method the sample should be extracted using the Soxhlet extraction Method 3540C. In order to remove interference, clean up steps of the extract are required as necessary to achieve the lowest detection limit possible. Experience with these methods shows that an LOD of 0.11 mg/kg should be anticipated for Aroclor analysis in most cases. If congener specific analysis is done using method 8082, an LOD of 0.003 mg/kg for each congener should be for most cases. If the anticipated LOD cannot be achieved after using the following clean up techniques, a reporting limit that is achievable for the sample should be determined. This reporting limit should be reported and qualified indicating the presence of an interference. One or more of the following clean-up steps may be necessary.
 - 3620B – Florisil
 - 3640A – Gelpermeation
 - 3630C – Silica gel
 - 3611B - Alumina

- 3660B - Sulfur Clean
- 3660A - Sulfuric Acid Clean Up

B. Monitoring frequency: All solid wastes that may contain PCBs and are proposed for landspreading should be characterized by determining the concentration of PCBs. A monitoring frequency should be established dependent on the amount of material that is landspread on an annual basis. The following table should be used.

Dry tons of solid waste that is land applied per 365 day period	Monitoring frequency
Less than 320	Once per year
$320 \leq X < 1654$	Once per quarter
$1654 \leq X < 16540$	Once per 60 days
16540 or greater	Once per month

The monitoring frequency may be modified based upon:

- The input stream for the solid waste; and
- The concentrations in and variability of past analytical results

If the reported value for a regularly scheduled sample exceeds 1.0 mg/kg, a repeat sample should be taken as soon as is reasonably possible within 30 days from the date of receipt of the initial sample results.

C. Calculating the PCB concentration: The PCB concentration used for comparison with the values in (1) should be the sample or samples that are most representative of the material being landspread at a particular time. Usually the concentration will be based upon the most recent sample. However, if more than one sample is collected in a year and if the results of multiple samples are most representative, then the multiple results should be used to calculate the PCB concentration. This same method should be used to determine whether or not materials contain more than 1.0 mg/kg total PCBs under (4) and (5).

4. Pollution prevention and source reduction: Landspreading facilities which landspread solid waste materials containing 1.0 mg/kg of PCBs by dry weight or more are expected to develop a pollution prevention and source reduction strategy.

A. A landspreading facility with two or more samples in any two year period having a PCB concentration greater than 1.0 mg/kg by dry weight should identify potential significant PCB sources to their waste based on raw materials, recycled or reused solid waste feedstocks, industrial processes, leaks and spills.

B. If the feedstocks, industrial processes, etc., can be identified which contain PCBs, sources or processes should be revised to minimize or reduce PCB contributions to the waste stream.

C. If sources of PCBs cannot be identified based on the investigations in (A) and (B), the landspreading facility should develop a monitoring plan to attempt to identify PCB sources. If sources or waste streams are identified that contain significant quantities of PCBs, the waste generator should be asked revise sources or processes to minimize or eliminate PCB contributions to the waste stream.

5. Public Distribution: If a solid waste material contains 1.0 mg/kg by dry weight of total PCBs or more, then the material should not be distributed to the public. For this purpose, public distribution means providing the solid waste material to a landowner or a member of the public where the licensee does not control the rate of application.

Contact 608/266-2111 or DNRWasteMaterials@Wisconsin.gov for further information.

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