



BRP WP 45 Modifications to Residuals Management Facilities Instructions and Supporting Materials

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Introduction

MassDEP *Permit Applications*, as well as *Instructions & Support Materials*, are available for download from the MassDEP Web site at mass.gov/dep in two file formats: Microsoft Word™ and Adobe Acrobat PDF™. Either format allows documents to be printed.

Instructions & Support Materials files in Microsoft Word™ format contain a series of documents that provide guidance on how to prepare a permit application. Although we recommend that you print out the entire package, you may choose to print specific documents by selecting the appropriate page numbers for printing.

Permit Applications in Microsoft Word™ format must be downloaded separately. Users with Microsoft Word™ 97 or later may complete these forms electronically.

Permitting packages in Adobe Acrobat PDF™ format combine *Permit Applications* and *Instructions & Support Materials* in a single document. Adobe Acrobat PDF™ files may only be viewed and printed without alteration. *Permit Applications* in this format may not be completed electronically.



BRP WP 45 Modifications to Residuals Management Facilities Permit Fact Sheet

1. What is the purpose of this permit?

This permit reflects changes to facility operation and maintenance, process control, process equipment or any other modifications proposed to facilities originally approved by MassDEP under BRP WP 35, including any changes in capacity or materials received.

Statutory authority for this permit is stated in Massachusetts General Laws, Chapter 21, s. 27 and 43(2); Chapter 83, s. 6 and 7; and Chapter 14, s. 17; and 314 CMR 12.00.

The approval serves to protect the public health, welfare, and environment through the proper design of composting, pelletizing, and alkaline stabilization facilities. These facilities must be properly designed and operated to ensure continuous treatment of sludge and other residuals and allow for subsequent beneficial use of the final products generated.

2. Who must apply?

Any individual, commercial establishment or business that proposes to modify the design, size, or process or construct additional facilities for the purposes of treating residuals generated from commercial and municipal wastewater treatment facilities. This permit also covers proposed pilot and demonstration programs.

3. What other requirements should be considered when applying for this permit?

3a. What prerequisites should be considered when applying for this permit?

Ownership of the property and any restrictive covenants on the land should be determined. The extent of any property use restrictions should be determined. To site a facility, authority must be obtained from all parties with ownership of, or rights to the property.

Identification should be made of all local abutters and the approximate distance from the proposed facility to those receptors. Caution should be exercised to identify an acceptable buffer area to minimize odor migration and potential impacts on local receptors.

Permits of this type may require MEPA review. Please carefully examine 301 CMR 11.00, the MEPA Regulations, to determine if your project exceeds the MEPA review thresholds, or for more information contact the MEPA Unit of the Executive Office of Environmental Affairs (100 Cambridge Street, Boston, MA 02202; (617-727-5830)). MassDEP cannot complete technical review of the permit application until the MEPA process has been concluded. Copies of MEPA filings (with reference to any applicable Transmittal numbers) should be sent to the appropriate program offices in Boston and the MEPA Coordinator in the appropriate Regional Office.

3b. What concurrent applications are related to this permit?

- A site hearing may be required pursuant to M.G.L. Chapter 21, Section 21 - 43 or Chapter 83, Sections 6 and 7 after submission of design plans and after completion of the MEPA process but prior to final Department approval of plans and specifications.
- Depending on site location and facility design a Wetland Order or Conditions (310 CMR 10.00), or Air Quality permit (310 CMR 7.00) may be required.
- Notification and submittal of process flow schematic is required to the wastewater operator certification board (257 CMR 2.00) for any new facilities and significant operational changes to existing facilities.



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Note: These additional requirements are intended to serve as a guide to the applicant. It does not necessarily include all additional requirements.

4. What is the application fee?

The application fee is \$1,280.

5. What is the Primary Permit Location? What is the Reserve Copy Location?

PRIMARY PERMIT COPY LOCATION
Department of Environmental Protection
_____* Regional Office
Wastewater Permitting

RESERVE COPY LOCATION:
None.

*Find your region: <http://www.mass.gov/eea/agencies/massdep/about/contacts/>

6. Where can I get a copy of the timelines?

The timelines are available on the MassDEP Website:

<http://www.mass.gov/eea/agencies/massdep/service/approvals/timely-action-fees-and-payments.html>

7. What is the annual compliance assurance fee?

Current annual compliance fees can be found on the MassDEP Website at

<http://www.mass.gov/eea/agencies/massdep/service/approvals/timely-action-fees-and-payments.html>

. If you fail to pay the annual compliance fee, your permit could be suspended or revoked.

8. How long is the permit in effect?

This approval shall remain in effect for as long as the residual management facility is operated in compliance with the original approval. A new application form must be submitted for any substantive changes in site, design, or operation of the facility.

9. How can I avoid the most common mistakes made in applying for this permit?

- a. Provide all necessary information that properly describes the proposal requested.
- b. Provide all detailed engineering drawings and specifications for final approvals.
- c. Make sure a Massachusetts Registered Professional Engineer stamps and signs all submittals for design approvals.
- d. Submit the fee and one copy of the MassDEP Transmittal Form to: Department of Environmental Protection, P.O. Box 4062, Boston, MA 02201.

10. What are the regulations and policies that apply to this permit? Where can I get copies?

The regulations and policies include, but are not limited to:

- a. WPC, Wastewater Residuals Guidance Document No. 87-1, "Blending Policy".
- b. WPC, Wastewater Residuals Guidance Document No. 87-2, "Horticultural Use".
- c. WPC, Wastewater Residuals Guidance Document No. 87-3, "Multi-site/Single-ownership".



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- d. WPC, Wastewater Residuals Guidance Document No. 87-4, "Pilot and Demonstration Programs".
- e. WPC, Residuals Guidance Document No. 91-1, "Minimum Technical Information Needs for Submittal of Plans and Specifications for Composting Facilities.
- f. Operation and Maintenance and Pre-Treatment Standards for Wastewater Treatment Works and Indirect Discharges, 314 CMR 12.00.
- g. Timely Action and Fee Provisions, 310 CMR 4.00.
- h. Administrative Penalty Regulations, 310 CMR 5.00.

These may be purchased at:

State House Bookstore
Room 116
Boston, MA 02133
617-727-2834

State House West Bookstore
436 Dwight Street
Springfield, MA 01103
413-784-1376

MassDEP/DWPC, Wastewater Residuals
Guidance Document No. 87-1

Blending Policy

The Department needs to develop a position on the issue of how the existing land application regulations apply to the utilization of blended sludge compost products (compost mixed with sand, peat, or other materials).

The underlying assumption which forms the foundation for this clarification document is that the regulated materials for which a suitability classification is made, are those materials which are actually applied to the land and distributed. For example, if sludge compost is proposed to be mixed with some other materials (sand, peat etc.) after compost operations and then land applied, our land application regulations would apply to the final mixed material and not the original compost.

Simply, this means that the material that should be regulated, and for which the suitability classification is made, is that which is actually applied to the land.

Having made such a determination, there are various procedural and regulatory measures that should be included in a Blending Policy. It is important to stress that to blend for the sake of blending is not to be allowed. The POTW and/or the Distributor proposing the blending program must clearly show that the application of the Blending Policy is necessary for the particular market(s) attempting to be utilized, and further, that there are no reasonably viable alternative markets available which could be expected to be utilized for the non-blended sludge compost product. The underlying basis for these minimum requirements is to ensure that the application of the Blending Policy is not utilized to replace implementation of industrial pretreatment requirements. Application of the Blending Policy is to be limited to those POTW's which can prove, to the satisfaction of the Department, that they have taken "all reasonable measures" to control priority pollutants from entering their wastewater stream, and hence their sludge.

The determination of what the Department considers "all reasonable measures" should be assessed on a case-by-case basis, but that at a minimum the POTW must comply with the following:

If the POTW is required by EPA or MassDEP to implement a pretreatment program, the POTW must provide documentation that the program has been approved by EPA/MassDEP and also that it has been deemed by EPA/MassDEP to be fully implemented, or on an agreed-upon implementation schedule. In addition, the POTW should be required to substantiate that it has adequately attempted to find and eliminate, or mitigate, those pollutant(s) of concern which are responsible for the blending request.

Again the intent is to ensure that the Blending Policy is not being utilized as an alternative to industrial pretreatment.

The Blending Policy will also be restricted to those situations where the ultimate utilization of the blended material is for a beneficial use. The intent is not to allow application of the Blending Policy just to provide the POTW with an easier method of sludge disposal.

The Department can consider, but is not required to approve, blending procedures for all possible upgrading scenarios (i.e., Type III to II, Type III to I or Type II to I).

The term blending, in the context of this policy, only applies after the last point in the treatment process (i.e., sludge has been composted), and does not apply to the normal treatment operations of the POTW. The following sludge treatment processes are not considered blending: the addition of ferric chloride and lime to aid in dewatering, the addition of compost amendment (woodchips, sawdust, etc.) to the sludge prior to composting; and the addition of chemicals utilized in a chemical fixation process for sludge management. It would apply to the addition of materials to the final sludge material after it leaves the last treatment process, an example of this situation would be the adding of additional compost amendment to cured compost solely to reduce the concentrations of pollutants in the final material.

The policy also would not apply to the situation where a number of POTW's have an agreement to jointly process/treat/manage their respective sludges (either prior to, or after dewatering). An example is the situation where three POTW's, two of which produce a Type II sludge while the third produces a Type III sludge, prior to the final residuals management phase mix their sludges together producing a mix which is a Type II sludge. Under this scenario the mixing of the three sludges would not be considered blending. The blending policy would apply only if a proposal were presented to upgrade the sludge type of the final mixed matrix i.e., transforming the Type II combined sludge matrix to Type I.

Any sludge deemed to be a hazardous waste, even if proposed to be incorporated into a larger volume of non-hazardous sludge, is categorically eliminated from eligibility for blending.

There are also non-POTW sludges which emanate from certain food processing or agricultural processing wastewater treatment plants which have been shown to be appropriate for land application, and therefore will also be eligible for consideration by the Department for the Blending Policy. These determinations shall be made on a case-by-case basis, but only with the written concurrence of the Department's Residuals Program Manager.

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MassDEP/DWPC, Wastewater Residuals
Guidance Document No. 87-2

Horticultural Use

Background

It has been determined that utilization of sludge materials for horticultural purposes is significantly different than "typical" land application projects and therefore the regulatory procedures to be followed require clarification. This document attempts to perform that function.

The utilization of wastewater treatment plant sludge (or sludge products) in horticultural products (turf, trees, shrubs, potted plants) is regulated, in general, by 310 CMR 32.00, and is controlled by the chemical classification, and approval of suitability requirements.

After an Approval of Suitability has been granted, Type I material may be used without further approval of the Department. Type II material may be used only with the prior approval of the Department. The Approval of Suitability and Land Application Certificate are needed to regulate the use of the material.

Because of the strict regulatory controls for Type III material, such as requirements for recording the application site in the registry of deeds, and the fact that the horticultural products will get wide distribution, it is the Task Force's opinion that such sludges should not be allowed for these purposes, unless the Department is convinced that for a specific project proposal, it can adequately control all eventual uses.

Therefore, Type I and Type II sludge materials are most suitable for horticultural utilization. In addition, commercial users will prefer the high quality sludge and less burdensome regulations, and buyers will have more confidence in the final product.

Where a POTW provides (either through sale or give-away) sludge to a commercial agent, there will be a jointly regulated party (POTW and commercial agent) with all process and product usage defined in the Land Application Certificate (LAC). The intent is that the product trail, from the POTW, to the commercial agent, to final use, is clearly articulated and agreed to by all parties. For example, the LAC would indicate that the POTW is authorized to transfer (blank) cubic yards of screened compost to Ajax gardening center where the compost will be utilized as an ingredient in a potting soil mix which will be used on-site by the agent for potted flowering plants, and the plants would then be sold on the retail market.

Once the Department approves this process, the regulatory trail ends and does not pass down to the individual purchaser of the potted plant. In other words the Department's regulatory control applies to both producer and commercial user but not the retail consumer.

While it may be difficult to monitor long-term impacts at "application sites" (either where a product is developed, grown or transplanted) due to the wide distribution of the final product, it is very unlikely that there will be any adverse impacts because these are basically one-time applications. Essentially, sludge is beneficially used once for growing a specific product (potted plant, tree root ball, or sod), as opposed to being used to fertilize a plot of land. Once the product is produced and sold, it is unlikely that there will be continued application of sludge to the product.

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MassDEP/DWPC, Wastewater Residuals
Guidance Document, No. 87-3

Multi-site/Single-ownership

This paper is intended to address the concern that the requirements of Regulations 310 CMR 32.00 are too cumbersome when a multi-site/single ownership land application project is contemplated. Therefore, this document is intended to provide an approach which is realistic yet conforms to the requirements of the regulations.

Sections 32.11 through 32.14 inclusive, of the land application regulations deal with the "Approval of Suitability" of sludge or septage generated by a specific treatment facility for beneficial use. Sections 32.20 through 32.26 inclusive, deal with "Approval of Sites for Land Application of Type II or Type III Sludge or Septage" generated by a facility that has obtained an "Approval of Suitability". Section 32.25 specifically requires a "Land Application Certificate" be obtained from the Department for each location prior to land application occurring and also outlines the minimum information to be provided for each site being contemplated for such use.

Therefore, taking the regulations at face value, if for example, a Town DPW wished to apply a type II sludge on 20 different Town-owned locations, 20 separate applications with supporting information for "Land Application Certificates" would be filed with the Department.

In order to avoid filing redundant materials for each application site the Task Force is of the opinion that the following approach is appropriate.

A single consolidated application can be submitted to MassDEP which contains a request for approval of a number of different sites. Certain types of information in the application would be generic to all sites while site specific information, for all sites proposed for use, would still need to be submitted. This information would need to be clearly delineated in the application. The applicant should also be instructed to indicate whether he/she wishes to request that MassDEP review and process the application as one non-segmentable plan or as an overall program proposal which can be considered as being comprised of a number of segmentable application proposals (sites). As long as the applicant is willing to allow a phased-approval, such a review and approval process can be accomplished by MassDEP.

Specifically, an application for such a segmentable process would include the following elements:

1. The multi-site application should be broken into three distinct parts - cover letter, information generic to every location, and site specific information.
2. The cover letter should list each location being sought, prioritize the review and processing order of the locations, and request or otherwise allow the Department to act on a portion of the locations in the event that a site specific problem prevents action on the entire request. (For the purpose of 32.25(5), the Department shall consider that it has received a fully completed application for each of the proposed sites and will proceed with action pursuant to 32.25(5).)
3. The generic information section would apply to each location and negate the need for filing redundant information. This generic section could address Application Management Requirements, Section 32.23 (application rate, public access, grazing animals, crops and seasonal restrictions), Soil Sampling Requirements, Section 32.24 (frequency, parameters, etc.), and any other information applicable to all sites.
4. The site specific section would provide information to address all the requirements of Section 32.25(3) which were not fulfilled by the generic section as well as any other site specific information required by the Department.

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MassDEP/DWPC, Wastewater Residuals
Guidance Document No. 87-4

Pilot and Demonstration Program

Each application must be considered on a case-by-case basis and should be reviewed on its own particular merits. In the project request, the applicant should clearly indicate the elements of the regulations which it believes do not, or should not, apply to the proposal, and the reasons for such a statement or request. It would be up to the Regional Office, in consultation with the Central Office, to determine the acceptability of the proposal.

It appears that such approvals have been granted in the past, are an important method of obtaining system operations data, and that this procedure should continue to be utilized in future activities.

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Minimum Technical Information Needs for Submittal
of Plans and Specifications for Sludge Compost Facilities

1. Plant Configuration (layout)
2. Process Information
 - a. Sludge, Amendment, and mix properties (for range of conditions)
 - Type and Amounts of Sludge, Amendment, & Recycle
 - Volatiles Content-Sludge, Amendment, Mix
 - Initial Solids Content -Sludge, Amendment, Mix
 - Porosity/Bulk Density - Mix, Product
 - Required Mix Ratios & calculations
 - b. Reactor Shape, Dimensions, and Volume
 - c. Detention Time in:
 - each reactor (active & curing phases)
 - aerated curing
 - product storage
 - d. Solids Retention Time in Reactors & Facility
 - e. Aeration (both in and outside reactor)
 - Method and Rate
 - Volume of Air (cf/unit of sludge)
 - Static Head Pressure
 - Range of Straight Line Airflow Distances
 - f. Moisture Content of Mix When Discharged from the Reactor & Facility
 - g. Monitoring & Control
 - Temperature & Moisture
 - Oxygen levels & Stability Testing
 - h. Mass Balance Calculations
 - i. Energy Balance Calculations
3. Product Quality Information
 - a. Ability to Meet Pathogen Reduction Criteria
 - b. Ability to Meet Regulatory Criteria (EPA part 503 & MassDEP 310 CMR 32.00)
4. Odor Control
 - a. Inventory of All Potential Odor Sources
 - b. Control Plan for Each Source, including:
 - Estimated Pollutant Emission Rates & Concentrations
 - Capture and Containment System
 - Treatment Facilities & Method of Dispersion
5. Materials Handling
 - a. System Configuration
 - b. Description of Components
 - Physical Descriptions
 - Material Construction
 - O & M Requirements
 - Past Operating History & Reliability
 - Energy Requirements
 - c. Control Systems & Flexibility
6. Aeration & Exhaust Systems
 - a. Configuration

- b. Description of Components
 - Physical Description
 - Materials of Construction
 - O & M Requirements
 - Past Operating History & Reliability
 - Energy Requirements
- 7. Reactor Systems (inc. discharge device)
 - a. Configuration
 - b. Description of Components
 - Physical Description
 - Materials of Construction
 - O & M Requirements
 - Past Operating History & Reliability
 - Energy Requirements
- 8. Operations
 - a. Labor Needs & Requirements
 - b. Skills Required For:
 - Operating the Equipment
 - Controlling the Process
 - O & M of Equipment
 - c. Proposed Operating Schedule(s)
- 9. Marketing Analysis & Description of Proposed Uses of the Product
- 10. Analysis of Required Storage and Curing Facilities for Off-season Storage
- 11. Demonstration of Compliance with MassDEP Redundancy Policies (if applicable)



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Water Pollution Control
Residuals Management Program

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Application Completeness Checklist

The MassDEP Transmittal Form has been completed:
<http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html>.
If municipality "Fee Exempt" has been selected from among the Special Provisions under Section F of the Transmittal Form.

All detailed engineering drawings and specifications have been provided.

A Massachusetts Registered Professional Engineer has stamped and signed all submittals.

To submit the application package:

All appropriate application materials have been submitted.

Send a copy of the application package along with one copy of the MassDEP Transmittal Form to:

Department of Environmental Protection
_____ * Regional Office
Wastewater Permitting

* Find your region: <http://www.mass.gov/eea/agencies/massdep/about/contacts/>

Send fee of \$1,280 for BRP WP 45 in the form of a check or money order made payable to Commonwealth of Massachusetts, along with one copy of the MassDEP Transmittal Form to:

Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211