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Subpart 360-5:Composting Facilities

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§360-5.1 Applicability

This Subpart regulates the construction and operation of composting and other organic waste processing (OWP) facilities for mixed solid waste, source separated organic waste, biosolids, septage, yard waste and other solid waste.

§360-5.2 Definitions

(a) Definitions.

The following terms have the following meanings when used in this Subpart:

- (1) *Agronomic rate* means the rate of nitrogen addition designed to provide the amount of nitrogen needed by the crop or vegetation grown on the land, and to minimize the amount of nitrogen that passes below the root zone of the crop or vegetation grown on the land to the ground water.

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(2) *Amendment* means an organic material added to waste prior to composting to reduce bulk weight and increase air voids, and to increase the quantity of degradable organics.

(3) *Biosolids* means sewage sludge that can be beneficially used.

(4) *Bulking agent* means a material added to waste to increase porosity and facilitate aeration during composting.

(5) *Curing area* means an area where organic material that has undergone the rapid initial stage of decomposition is further stabilized into a humus-like material.

(6) *Dry weight basis* means calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass (i.e., essentially 100 percent solids content).

(7) *Feed crops* means crops produced primarily for consumption by animals.

(8) *Fiber crops* means crops such as flax and cotton.

(9) *Food crops* means crops consumed by humans including, but not limited to, fruits, vegetables, and tobacco.

(10) *Gross contaminants* means constituents of the solid waste stream that are not readily decomposed and may be present in a product including, but not limited to, pieces of metal, glass, plastic, rubber, bones, and leather. "Gross contaminants" does not include sand, rocks, wood pieces, and other similar materials.

(11) *Mature* means the characteristics of a soil conditioning material that render it harmless to the plant grown when used as a topsoil or soil supplement and make it sufficiently stable that it will not generate offensive odors during storage, handling, or ultimate use.

(12) *Organic waste processing (OWP) facility* means a facility involved in the processing of readily biodegradable organic components in solid waste to produce a mature product for beneficial use as a source of nutrients, organic matter, liming value, or other essential constituent for a soil or plant. The processes include, but are not limited to, composting, heat drying, and chemical stabilization.

(13) *Pathogenic organisms* means disease-causing organisms including, but not limited to, certain bacteria, viruses, protozoa and viable helminth ova.

(14) *pH* means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25 degrees Celsius or measured at another temperature and then converted to an equivalent value at 25 degrees Celsius.

(15) *Public contact area* means land with a high potential for contact by the public including, but not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, golf courses and school yards.

(16) *Seed material* means a source of microorganisms and/or nutrients added to waste to accelerate or activate the composting process.

(17) *Source-separated organic waste (SSOW)* means readily degradable organic material that has been separated from non-compostable material at the point of

generation including, but not limited to, food waste, soiled or unrecyclable paper, and yard waste in combination with any of the former materials. It does not include biosolids, sludge, or septage.

(18) *Vector attraction* means the characteristic of certain solid wastes that attracts rodents, flies, mosquitos, or other organisms capable of transporting infectious agents.

(19) *Volatile solids* means that portion of the total solids that is lost when the material is combusted at 550 degrees Celsius in the presence of excess air.

(20) *Untreated solids* means the organic materials in waste that have not been treated in either an aerobic or anaerobic treatment process.

(21) *Waste derived soil conditioning product* means a mature material that meets the criteria of this Subpart that can be beneficially used as a source of nutrients, organic matter, liming value, or other essential constituent for a soil or plant.

(b) General definitions.

In addition to the definitions contained in subdivision (a) of this section, the definitions in section 360-1.2 of this Part also apply.

§360-5.3 Exemptions and Registration

(a) Exemptions.

The following facilities are exempt from the this Part provided the facility is operated in a manner that does not produce dust or odors that unreasonably impact on neighbors of the facility, as determined by the department, and no material accepted at the facility remains on-site unprocessed for more than 36 months.

(1) A composting facility that accepts animal manure and associated bedding material.

(2) A composting facility that accepts no more than 3,000 cubic yards of yard waste per year. This quantity limit does not include brush or other wood materials that are not intended for composting.

(3) A composting facility that accepts a combination of wastes that would be exempt if operating individually for each type of waste, such as a composting facility that accepts no more than 3000 cubic yards of yard waste and accepts animal manure.

(b) Registration.

(1) Eligible facilities. The following solid waste management facilities are eligible for the registration provisions of subdivision 360-1.8(h) of this Part, provided the facility complies with subdivision 360-1.8(h) and paragraph (2) of this subdivision. Any eligible or registered facility which is not operated in compliance with these conditions requires a permit pursuant to this Part and will be subject to applicable enforcement provisions in this Part and the ECL Article 70.

(i) A composting facility that accepts more than 3,000 cubic yards but not more than 10,000 cubic yards of yard waste per year. This quantity limit does not include brush and other wood materials that are not intended for composting.

(ii) A composting facility that accepts no more than 1,000 cubic yards of source-separated organic waste per year.

(iii) A composting facility for food processing waste.

(2) Operational criteria. A registered facility must be constructed and operated in compliance with the following conditions:

(i) material accepted does not remain on-site for more than 36 months;

(ii) the process uses acceptable amendments or bulking agents and follows an acceptable method of composting that minimizes odor generation and results in a mature product;

(iii) the facility is constructed to minimize any ponding on the composting area; and

(iv) the facility is at least 200 feet from the nearest surface water body, potable water well, and residence or place of business, excluding the generating business and any residence or place of business built after the facility began operation. This separation distance requirements may be increased to 500 feet in densely populated or otherwise sensitive areas, as determined by the department.

§360-5.4 General Permit Application Requirements for Organic Waste Processing Facilities

In addition to the requirements set forth in section 360-1.9 of this Part pertaining to engineering report contents, the engineering report required to be submitted as part of an initial application to construct and operate an organic waste processing facility must contain the following information:

(a) A regional map that delineates the location of the proposed facility, the location of the closest population centers, and transportation systems including highways located within the service area of the proposed facility and within one mile of the proposed facility.

(b) A vicinity map that delineates zoning and land use, residences, surface waters, access roads, and other existing and proposed features within the proposed facility and within one-half mile of the proposed facility.

(c) A site plan map (minimum scale of 1:2,400 with 20 feet contour intervals) that shows:

(1) the location of the proposed facility;

(2) the facility drainage characteristics, identifying the direction of both site run-on and run-off, ditches, and swales together with any run-off controls that exist or will be implemented with facility construction;

(3) the location of all processing areas and storage areas;

(4) the location of all residences, public contact areas and buildings, including the identification of any buildings which are owned by the applicant or operator, on-site and within 800 feet of the site;

(5) the location of access roads and roads on-site;

- (6) the location of property boundaries;
 - (7) the location of all potable water wells and surface water bodies on-site and within 500 feet of the site;
 - (8) the location of all drainage swales on-site and within 100 feet of the site; and
 - (9) existing and proposed elevation contours and the direction of prevailing winds.
- (d) A map depicting the location and classification of any regulated wetlands and the location of any floodplain within 500 feet of the site.
- (e) A detailed description of the source, quality, and quantity of all solid waste to be processed, including the source, quality, and expected quantity of any bulking agent, amendment, admixture, or seed material. The description must include the annual input and any seasonal variations in the solid waste type and quantity, and the appropriate quality data, as determined by the department.
- (f) Engineering plans and specifications for the facility that include a description of the facility and:
- (1) the type, purpose, size, and associated detention times for the handling, processing, and storage equipment or structures and calculations that demonstrate that all equipment and structures have sufficient capacity for the material that will be accepted;
 - (2) the method of measuring, shredding, mixing, and proportioning input materials;
 - (3) a description and the capacity of the storage facilities used for amendment, bulking agent, admixture, solid waste, and product;
 - (4) a description of all pre-processing and post-processing methods and equipment used to identify and remove all nonprocessable materials and a copy of all agreements or educational activities that will be used to outline acceptable materials for the facility;
 - (5) the separation, processing, storage, and ultimate disposal location for nonprocessable materials;
 - (6) a process flow diagram of the entire process, including all major equipment and flow streams. The flow streams must indicate the quantity of material on a wet weight, dry weight, and volumetric basis;
 - (7) an outline of the processing time duration, including the time period from acceptance of waste to completion of composting and curing (or treatment) to the distribution of the product;
 - (8) if windrows are used, pile dimensions including width, length, and height;
 - (9) the air emission collection and control equipment, if used;
 - (10) the method to control surface water run-off and to manage leachate, including the method for treatment or disposal of leachate generated. For uncovered sites, calculations of the leachate that must be handled at the site, based on a rainfall intensity of one-hour duration and a 10-year return period; and

(11) for facilities that will use a low permeability soil to minimize leachate release: a construction quality assurance/construction quality control plan as outlined in section 360-2.8 of this Part. If a geomembrane will be used, the applicable information required in Subpart 360-2 must be submitted.

(g) A description of the operation of the facility, including:

(1) the schedule of operation including the days and hours that the facility will be open;

(2) the daily traffic flow to and from the facility; and

(3) the procedure that will be used for unloading trucks.

(h) A monitoring, sampling, and analysis plan that outlines:

(1) the location, purpose, frequency and method for all monitoring points in the process;

(2) the location, purpose, frequency and method for waste and product sampling; and

(3) the protocol used to obtain representative samples, the preparation and preservation of samples, and the laboratory that will be used for analyses.

(i) A product maturity and distribution plan that includes:

(1) an outline of the method that will be used to determine product maturity, including proposed standards for maturity and the monitoring methods or other means that will be used to measure maturity;

(2) a description of the ultimate use for the finished product, including the quantity of product each user is expected to take, the frequency of distribution, the expected use of the product, and the source of this information (contract, phone survey, etc.);

(3) the method for removing product from the facility;

(4) a description of the proposed use or disposal of product that cannot be used in the expected manner due to poor quality or change in market conditions; and

(5) a copy of the label or other information source for the product.

(j) The name of the owner of the facility and the property.

(k) A list of the facility personnel and their respective responsibilities.

(l) A contingency plan that describes the corrective actions to be taken in the event of equipment breakdowns, delivery of unacceptable waste to the facility, spills, fires, noise and vectors.

(m) An operation and maintenance manual that contains general design information and detailed operational information and instructions. In addition, the manual must list the procedures used for sampling and analyzing the solid waste and product, process monitoring, and record keeping.

(n) An odor management plan that outlines how the production and migration of odorous compounds will be minimized, including design and operational practices. The

plan must also include specific steps that will be taken during the operation of the facility to address complaints and actions that will be taken if unacceptable odors occur in areas beyond the property line of the facility.

(o) A closure plan for the facility, as outlined in subdivision 360-1.14(w).

§ 360-5.5 Organic Waste Processing Facilities For Biosolids, Mixed Solid Waste, Septage And Other Sludges

(a) Additional permit application requirements.

This section describes the permit application requirements for organic waste processing facilities for mixed solid waste, biosolids, septage, and other sludges such as paper mill sludge. This section also covers OWP facilities for source-separated organic waste other than composting facilities, such as thermophilic anaerobic digestion processes. In addition to the requirements set forth in section 360-5.4 of this Part pertaining to engineering report contents, the engineering report that must be submitted as part of an initial application to construct and operate an OWP facility for biosolids, mixed solid waste, septage and other sludges must contain the following information:

(1) If biosolids, septage, or other sludges are to be processed, the following information must be included:

(i) A description of each proposed source of waste including the name of the generator, the annual quantity of waste produced, the amount of waste to be processed, and any seasonal variations in the quantity or quality during the year. Also, a description of the federal or state pretreatment program, if required.

(ii) Except for mixed solid waste, a description of the quality of the waste, including analytical results, as outlined below.

(a) The parameters for analysis are found in Table 1, found in Section 360-5.10.

(b) The minimum number of analyses for each waste source that must be submitted with the application is dependent upon the amount of waste that will be processed annually, and is outlined in Table 3 in Section 360-5.10.

(c) For each analysis, the sampling date, location, and protocol used to obtain representative samples must be indicated.

(d) A minimum of six months of waste production must be represented by the analytical results submitted. With the exception of pH and total solids, all results must be reported on a dry-weight basis.

(e) Analyses for other pollutants may be required, on a case specific basis, based on the characteristics of the waste and information from the pretreatment program and other sources.

(f) Each analysis must be performed by a laboratory certified by the New York State Department of Health for that type of analysis, using methods acceptable to the Department, as outlined in Table 12 in Section 360-5.10, unless use of an

alternative laboratory is authorized by the department. Copies of the original laboratory results must be included with the permit application.

(g) The analysis requirement may be satisfied in part or in whole by recent samples analyzed for and reported to the department, if approved by the department.

(h) Analyses performed more than one year prior to the date the permit application is submitted are not acceptable.

(i) All samples must be representative of the waste to be processed. Guidance on obtaining representative samples can be found in "POTW Sludge Sampling and Analysis Guidance Document," USEPA, August 1989.

(j) Wastewater and partially treated biosolids or septage that are generated at one facility and treated at another wastewater treatment facility prior to beneficial use are not considered waste sources subject to the criteria in this subparagraph. The resultant biosolids or sludge generated for beneficial use are subject to this subparagraph.

(k) A table summarizing the analytical results must be provided, including the mean, median, and range of results found.

(2) Analyses of the bulking agent, amendment, or admixture for the parameters found in paragraph 360-5.5(a)(1) of this Part if deemed necessary by the department based on the type of material used.

(3) If mixed solid waste is to be processed, a description of the recyclables separation program and household hazardous waste (HHW) collection program for the proposed service area including:

(i) the methods used for removing recyclables prior to treatment, both at the facility and at the site of generation;

(ii) the processing methods used to handle recyclables and HHW;

(iii) the method and length of storage for both recyclables and HHW;

(iv) the markets for recyclables;

(v) the method used to remove HHW from the solid waste stream, both at the facility and at the site of generation; and

(vi) the ultimate disposal location for HHW collected.

(4) For mixed solid waste and solid waste that contains human waste, a detailed description of the proposed processes to reduce pathogenic organism content and to reduce vector attraction including:

(i) The methods that will be used for pathogen reduction and vector attraction reduction. Acceptable methods are listed in subdivision 360-5.5(b) of this Subpart. The use of alternative 4 or 5 must also include a detailed description of how the process will produce a product that is sufficiently stable that it can be used without being a public nuisance.

(ii) The monitoring and data gathering procedures that will be used to demonstrate compliance with the pathogen and vector attraction reduction requirements, including type, location, and frequency.

(iii) For existing systems, recent operating data and analytical data to demonstrate that the system can satisfy the pathogen and vector attraction reduction requirements.

(b) Pathogen and vector attraction reduction.

The following requirements apply to mixed solid waste and solid waste that contains any amount of human waste.

(1) One of the following alternatives (designated as Class A pathogen reduction) must be used to reduce pathogen content before the material leaves the facility. Alternative 2 is not applicable for composting. Alternative 4 or 5 can only be used if the process cannot produce operational data that could be used to meet another PR alternative.

(i) Class A - Alternative 1. Either the density of fecal coliform in the product is less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the product is less than three Most Probable Number per four grams of total solids (dry weight basis) at the time of product use or disposal and the waste must be treated by one of the following processes:

(a) Composting. Using the windrow composting method, the solid waste is maintained under aerobic conditions during the compost process. A minimum of five turnings is required during a period of 15 consecutive days when the temperature of the mixture is not less than 55 degrees Celsius.

Using the aerated static pile composting method or the within-vessel composting method, the temperature of the solid waste is maintained at 55 degrees Celsius or higher for at least three consecutive days.

(b) Heat drying. Waste is dried by direct or indirect contact with hot gases to reduce the moisture content of the waste to 10 percent or lower. One of the following must be achieved:

(1) either the temperature of the waste particles must exceed 80 degrees Celsius or

(2) the wet bulb temperature of the gas in contact with the waste as it leaves the dryer must exceed 80 degrees Celsius. (c) Heat treatment. Liquid waste is heated to a temperature of 180 degrees Celsius or higher for at least 30 minutes.

(d) Thermophilic aerobic digestion. Liquid waste is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the waste is at least 10 days at 55 degrees Celsius or greater.

(e) Beta ray irradiation. Waste is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (approximately 20 degrees Celsius).

(f) Gamma ray irradiation. Waste is irradiated with gamma rays from certain isotopes, such as Cobalt 60 and Cesium 137, at dosages of at least 1.0 megarad at room temperature (approximately 20 degrees Celsius).

(g) Pasteurization. The temperature of the waste is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

(h) Other methods. Other methods or operating conditions may be approved by the department if the department determines that pathogens are reduced to an extent equivalent to the reduction achieved by the above methods.

(ii) Class A - Alternative 2. Treatment by thermophilic aerobic or anaerobic digestion. Either the density of fecal coliform in the product must be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the product must be less than three Most Probable Number per four grams of total solids(dry weight basis)at the time of product use or disposal, and the temperature of the solid waste must be maintained at a specific value for a period of time, as follows:

(a) When the percent solids of the waste is seven percent or higher, the temperature of the waste must be 50 degrees Celsius or higher, the time period must be 20 minutes or longer, and the temperature and time period must be determined using the following equation, except when small particles of waste are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131,700,000}{10^{0.1400 t}}$$

$$10^{0.1400 t}$$

Where,

D = time in days. t = temperature in degrees Celsius.

(b) When the percent solids of the solid waste is seven percent or higher and small particles of waste are heated by either warmed gases or an immiscible liquid, the temperature and time period must be determined using the equation in clause (a) of this subparagraph. The temperature of the waste must be 50 degrees Celsius or greater and the time period must be 15 seconds or longer.

(c) When the percent solids of the waste is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period must be determined using the equation in clause (a) of this subparagraph.

(d) When the percent solids of the waste is less than seven percent, the temperature of the waste is 50 degrees Celsius or higher, and the time period is 30 minutes or longer, the temperature and time period must be determined using the following equation:

$$D = \frac{50,070,000}{10^{0.1400 t}}$$

$$10^{0.1400 t}$$

Where,

D = time in days. t = temperature in degrees Celsius.

(iii) Class A - Alternative 3. Either the density of fecal coliform in the product must be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the product must be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time of product use or disposal and the following conditions must be satisfied:

(a) The pH of the waste must be raised to above 12 and remain above 12 for at least 72 hours.

(b) The temperature of the waste must remain above 52 degrees Celsius for 12 hours or longer during the period that the pH of the waste is above 12.

(c) At the end of the 72-hour period during which the pH of the waste is above 12, the waste must be air dried to achieve a percent solids in the waste greater than 50 percent.

(iv) Class A - Alternative 4. Either the density of fecal coliform in the product must be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the product must be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time of product use or disposal, and the following conditions must be satisfied:

(a) The density of enteric viruses in the product must be less than one Plaque-forming Unit per four grams of total solids (dry weight basis).

(b) The density of viable helminth ova in the product must be less than one per four grams of total solids (dry weight basis).

(v) Class A - Alternative 5. Either the density of fecal coliform in the waste must be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the product must be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time of product use or disposal, and the following conditions must be satisfied:

(a) The waste must be analyzed prior to pathogen treatment to determine whether the waste contains enteric viruses.

(b) When the density of enteric viruses in the waste prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the waste is Class A with respect to enteric viruses until the next monitoring episode for the waste.

(c) If the density of enteric viruses in the waste prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the waste is not considered Class A with respect to enteric viruses until the density of enteric viruses in the waste, after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and the values or ranges of values for the operating parameters of the pathogen treatment process (that produces the waste that meets the enteric virus density requirement) are documented.

- (d) After the enteric virus reduction in clause (c) of this subparagraph is demonstrated for the pathogen treatment process, the waste continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in clause (c) of this subparagraph.
- (e) The waste must be analyzed prior to pathogen treatment to determine whether the waste contains viable helminth ova.
- (f) When the density of viable helminth ova in the waste prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the waste is Class A with respect to viable helminth ova until the next monitoring episode for the waste.
- (g) If the density of viable helminth ova in the waste prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the waste is not considered Class A with respect to viable helminth ova until the density of viable helminth ova in the waste, after pathogen treatment, is less than one per four grams of total solids (dry weight basis), and the values or ranges of values for the operating parameters for the pathogen treatment process (that produces the waste that meets the viable helminth ova density requirement) are documented.
- (h) After the viable helminth ova reduction in clause (g) of this subparagraph is demonstrated for the pathogen treatment process, the waste continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in clause (g) of this subparagraph.
- (2) One of the following vector attraction reduction methods must be achieved before the material leaves the facility. Vector attraction reduction methods, except the methods found in subparagraphs 360-5.5(b)(2)(vi) - (viii), must be met either after meeting or at the same time the pathogen reduction requirements are met.
- (i) The mass of volatile solids in the waste must be reduced by a minimum of 38 percent.
- (ii) If the volatile solids reduction requirement cannot be met for an anaerobically digested waste, vector attraction reduction can be demonstrated by anaerobically digesting a portion of the previously digested waste in a laboratory bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. Vector attraction reduction is achieved if the bench-scale digestion produces less than a 17 percent reduction in volatile solids content.
- (iii) If the volatile solids reduction requirement cannot be met for an aerobically digested waste, vector attraction reduction can be demonstrated by aerobically digesting a portion of the previously digested waste that has a percent solids of two percent or less in a laboratory bench-scale unit for an additional 30 days at 20 degrees Celsius. Vector attraction reduction is achieved if the bench-scale digestion produces less than a 15 percent reduction in volatile solids content.

(iv) The specific oxygen uptake rate (SOUR) for waste treated in an aerobic process must be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

(v) Waste must be treated by an aerobic process for a minimum of 14 days. Throughout that treatment time, the temperature of the waste must remain higher than 40 degrees Celsius and the average temperature of the waste must be higher than 45 degrees Celsius.

(vi) The pH of the waste must be raised to 12 standard units or higher by alkali addition and, without the addition of more alkali, must remain at 12 or higher for two hours, and then must remain at 11.5 or higher for an additional 22 hours.

(vii) For waste that does not contain untreated solids generated in a primary wastewater treatment process, the percent solids of the waste must be equal to or greater than 75 percent, prior to mixing with other materials, until use.

(viii) For waste that contains untreated solids generated in a primary wastewater treatment process, the percent solids of the waste must be equal to or greater than 90 percent, prior to mixing with other materials, until use.

(c) Pollutant limits and product use.

(1) A product that does not meet the criteria in this section must be disposed in accordance with this Part.

(2) For facilities that accept biosolids, septage, or other sludges, each waste source must not exceed the pollutant concentrations found in Table 4 of Section 360-5.10, unless the waste source is a minor (less than 10% of the total dry weight of sludges accepted) component of the input to the facility and a program is developed to identify and reduce the pollutant(s) that exceed the limits found in Table 4 of Section 360-5.10 for that waste source. This requirement does not apply if the product is used outside New York State.

(i) If a waste input, other than a minor source, contains metals at concentrations greater than those set forth in Table 4, the waste can not be accepted at the facility until the generator has implemented a pollutant identification and abatement program and compliance with the requirements of this paragraph has been demonstrated for a period of at least six continuous months. At least six analyses for total solids and the parameter of concern must be provided to demonstrate compliance. This requirement does not apply if the product is used outside New York State.

(ii) Wastewater and partially treated biosolids that are generated at one wastewater treatment facility and are further treated at another wastewater treatment facility prior to beneficial use are not considered waste sources subject to the criteria in this paragraph. The resultant biosolids or sludge generated for beneficial use are subject to this paragraph.

(3) The product must not contain pollutant levels greater than the values found in Table 7 of Section 360-5.10.

- (i) The addition of sawdust, soil, or other materials to the process or product for dilution purposes is not allowed.
- (4) Any material added to the process must not contain pollutants in concentrations that exceed the levels found in Table 4 of Section 5.10. If kiln dust is used, the kiln dust must not emanate from a kiln that accepts hazardous waste.
- (5) The product must not contain more than two percent total gross contaminants by weight (dry weight basis).
- (6) The particle size of the product must not exceed 10 millimeters (0.39 inch) particle size, except for wood particles derived from the use of wood chips as a bulking agent or amendment in composting.
- (7) A compost product must be produced from a composting process with a minimum detention time (including active composting and curing) of 50 days, unless an alternate means for achieving sufficient maturity is approved by the department.
- (8) The product must be mature and must be used in a legitimate manner as a soil amendment. The department may require process operating conditions including, but not limited to, longer aeration time and/or product use restrictions.
- (9) An information label must be affixed to the product bag or, for bulk distribution, an information sheet or brochure must be provided to the user. The label or information sheet must contain, at a minimum, the following information:
- (i) the name and address of the generator of the product;
 - (ii) the type of waste the product was derived from;
 - (iii) the average metal content of the product and the allowable metal levels (or a mailing address, e-mail address, or phone number where this information can be obtained); and
 - (iv) recommended safe uses, restrictions on use, application rates and storage practices intended to minimize the potential for nuisance conditions and negative surface and groundwater impacts emanating from the storage or use of the product.
- (10) The product may be distributed for use on all crops except food crops. This restriction no longer applies 38 months or later after the pathogen reduction criteria have been met. If the product is stored for 38 months or longer, it can be distributed for use on food crops. If the product has been applied to the soil, food crops could be grown on the soil 38 months or more after product application.
- (11) If the product will be marketed as a fertilizer or agricultural liming material in New York State, a license must be obtained from the New York State Department of Agriculture and Markets, if required.
- (d) Design criteria and operational requirements. A permittee may not operate a facility under this Subpart until a certification that construction was completed in accordance with the approved engineering report, plans and specifications has been submitted to and approved in writing by the department. The certification must be signed by an individual licensed to practice engineering in the State of New York. In addition to the

operational requirements identified in section 360-1.14 of this Part, the following requirements apply:

(1) On-site storage of a product is limited to 24 months, unless approved by the Department on a case-specific basis. For heat drying facilities, the maximum storage time may be restricted to a shorter period due to combustion concerns, as determined by the department.

(2) Surface water drainage must be diverted away from the operating area of the facility.

(3) The waste storage area, processing area, leachate storage and product storage area at the facility must be located on surfaces that minimize leachate release into the groundwater under the site and the surrounding land surface, such as asphalt (except for leachate storage), concrete, or drying beds that have under drains for leachate collection. The following criteria apply:

(i) If low permeability soils are used, the liner must be a minimum of two feet of compacted soil having a maximum remolded coefficient of permeability of 1×10^{-7} centimeters per second. The soil material particles must be able to pass through a one inch screen. The applicable criteria in subdivision 360-2.13(j) of this Part must be complied with;

(ii) If a geomembrane is used, the liner system must be designed and built in accordance with the applicable criteria in section 360-2.13 of this Part;

(iii) If a surface impoundment is used for leachate storage, a minimum of two feet of freeboard must be maintained. In addition, the bottom of the liner system must be a minimum of five feet above both seasonal high groundwater elevation; and bedrock.

(iv) For composting facilities, product storage beyond the 50 day detention time requirement does not have to occur on a low permeability surface. For products other than compost, the Department shall determine when the product no longer must be stored on a pad.

(4) All leachate must be collected and disposed in a manner approved by the department. All leachate storage facilities must be completely emptied, cleaned, and inspected every 12 months.

(5) The facility must be operated to control the generation and migration of odors and dust to a level that is to be expected from a well operated facility, as determined by the department.

(6) The facility must not be operated or constructed on flood plains unless provisions have been made to prevent the encroachment of flood waters upon the facility, and such provisions are approved by the department.

(7) For composting facilities, the operation of the facility must follow acceptable methods of composting which result in the aerobic biochemical decomposition of the organic material received.

- (8) The minimum horizontal separation distance as measured from the facility to the nearest residence, place of business or public contact area must be 500 feet, except as provided below:
- (i) this requirement does not apply to biosolids facilities located at existing sewage treatment plants;
 - (ii) the separation distance requirement from a public contact area may be reduced for totally enclosed facilities, if approved by the department; and
 - (iii) the landowner's or operator's residence, plant nurseries and turf farms are excluded from the separation requirement for a residence for the purposes of this paragraph.
- (9) For uncovered processing facilities, the leachate collection and treatment system must be adequate to manage the quantity of leachate generated at the site based on a rainfall intensity of one-hour duration and a 10-year return period.
- (10) Noncompostable or nonprocessable solid waste and unacceptable product must be disposed at least weekly in a manner approved by the department.
- (11) For facilities accepting mixed solid waste:
- (i) a recyclables separation program and a household hazardous waste collection program must be in place and approved by the department before operation of the facility;
 - (ii) recyclables must be removed from the waste stream prior to active composting or treatment; and
 - (iii) all waste storage and processing areas must be enclosed.
- (12) All waste unloading, waste storage, and processing areas must be enclosed for facilities that accept an average of 100 wet tons of waste per day or greater, unless other measures are taken to minimize nuisance conditions and are approved by the department.
- (13) The facility is prohibited from accepting wastes that do not positively contribute to the treatment process or the quality of the product, as determined by the department.
- (e) Monitoring, record keeping, and reporting.
- (1) Each biosolids source or septage must be analyzed annually in accordance with the following.
- (i) The parameters for analysis are found in Table 1 of Section 360-5.10.
 - (ii) The minimum number of analyses required depends on the quantity of waste, as outlined in Table 6 of Section 360-5.10.
 - (iii) With the exception of pH and total solids, all results must be reported on a dry-weight basis. The analyses must comply with the criteria found in clauses 360-5.5 (a)(1)(ii)(c),(e) - (g) and (i) of this Subpart. After the waste has been monitored for two years at the frequency outlined in this paragraph, the department may reduce

the annual number of analyses for Group A, B, and C parameters required if the waste quality consistently meets the quality standards.

(iv) Wastewater and partially treated biosolids or septage that are generated at one facility and treated at another wastewater treatment facility prior to beneficial use are not considered waste sources subject to the criteria in this subparagraph. The resultant biosolids or sludge generated for beneficial use are subject to this subparagraph.

(2) For other sludges and solid wastes, annual analyses of the input waste may be required, as determined by the department, based on the characteristics of the waste. The extent and frequency of sampling will be determined by the department on a case specific basis.

(3) Annual product quality monitoring is required in accordance with the following.

(i) The parameters for analysis are found in Table 8 of Section 360-5.10.

(ii) The minimum number of analyses required annually is found in Table 9 of Section 5.10, based on the annual production divided by 365.

(iii) With the exception of pH and total solids, all results must be reported on a dry weight basis. The analyses must comply with the criteria found in clauses 360-5.5 (a)(1)(ii)(c),(e) - (g) and (i) of this Subpart.

(iv) For mixed solid waste facilities the department may require that the sampling frequency be increased during the first year of operation.

(4) Analysis of the product for any or all of the pollutants identified in the Water Quality Analysis Tables in section 360-2.11 of this Part may be required upon a determination by the department, based on the characteristics and source of the waste.

(5) Sufficient monitoring data must be obtained to demonstrate compliance with the pathogen and vector attraction reduction requirements in subdivision 360-5.5(b) of this Subpart. The frequency and type of monitoring necessary will depend on the methods employed to achieve pathogen and vector attraction reduction, and must be approved by the department. For composting, temperature monitoring must occur, at a minimum, on a daily basis. The number of organism analyses required is equal to the frequency outlined in paragraph (3) of this subdivision unless the scheduling of product distribution warrants a greater or lower frequency, as determined by the department.

(6) The department may require, on a case specific basis if it appears that product maturity is critical for the end use, testing of the product for maturity prior to distribution, including, but not limited to, potential for reheating, organic matter reduction, plant growth impact, or oxygen consumption. The degree of maturity needed will depend on the end use of the product.

(7) Daily operational records must be maintained for the facility. These must include, in addition to the information required under subdivision 360-1.14(i) of this Part, all monitoring data, quantity and character of material processed, quantity of product

removed, and intended product use. (8) The following information must be retained in accordance with 360-1.14(i):

- (i) A copy of the complete and final permit application.
- (ii) Records of pollutant concentration including:
 - (a) date of sample collection, sampling location, sample type, and name of sampler;
 - (b) name of laboratory, analytical methods used, and quality assurance/quality control procedures; and
 - (c) analytical results.
- p(iii) If required, records of pathogen and vector attraction reduction method used, including a description of how compliance was achieved, certification that the requirements were achieved, and applicable monitoring and analytical data.

(9) The permittee must submit an annual report to the department's central office and the appropriate regional office no later than March 1 of each year covering the previous calendar year, on forms prescribed by or acceptable to the department. The report must include:

- (i) all information and analyses required by this section;
- (ii) the type and quantity of the waste, and other materials such as bulking agents, being processed, including the source of the material;
- (iii) process operational information including monitoring data and significant facility operational problems and any actions taken to correct such problems;
- (iv) for facilities that accept biosolids, the following certification statement, which must be signed by an authorized representative of the facility and indicate the name and title of the individual signing.

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirements in Subpart 360-5 of 6 NYCRR Part 360 has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- (v) the quantity, by weight and volume, of product generated at the facility and the quantity of product and other solid waste, including unacceptable product, removed from the facility; and
- (vi) a description of the end-product distribution and disposal methods.

§360-5.6 Source-separated Organic Waste Composting Facilities

(a) Additional permit application requirements.

This section describes the permit application requirements for composting facilities for source-separated organic waste. The following information, in addition to that set forth

in section 360-5.4 of this Part, must be included in the contents of an engineering report submitted as part of an initial permit application to construct and operate:

- (1) A detailed description of the specific source, quality, and quantity of all SSOW, and sources, quality, and expected quantity of any bulking agent or amendment. The description must include the annual solid waste input, and any seasonal variations in the solid waste type and quantity. For residential SSOW, the description must include the service area population. For commercial SSOW, the description must include a list of all types of generating facilities and the type and quantity of wastes that will be collected from each type of generator.
- (2) A detailed description of the source separation program at the point of generation, including how non-compostables are kept out of the SSOW stream.
 - (i) For residential SSOW, this must include a copy of all educational literature or other information provided to residents, and a description of the container that will be used.
 - (ii) For commercial SSOW, this must include a copy of any agreements or information concerning what can be accepted from the generator.
- (3) A detailed description of the proposed processes to reduce pathogenic organism content and to reduce vector attraction including:
 - (i) the methods that will be used for pathogen reduction and vector attraction reduction; and
 - (ii) the monitoring and data gathering that will be used to demonstrate compliance including type, location, and frequency.
- (4) For facilities that will operate on a soil base without a low permeability pad, the permit application must include a description and an identification of the surface soil characteristics at the facility and the depths to seasonal high groundwater and bedrock, including appropriate documentation.
 - (b) Pathogen and vector attraction reduction.

For pathogen reduction, the criteria outlined in paragraphs (1) and (2) must be achieved. For vector attraction reduction, the criteria in paragraph (3) of this subdivision must be achieved.

- (1) One of the following microorganism concentrations must be achieved:
 - (i) the density of fecal coliform in the product is less than 1000 Most Probable Number per gram of total solids (dry weight basis); or
 - (ii) the density of Salmonella sp. bacteria in the product is less than three Most Probable Number per four grams of total solids (dry weight basis).
- (2) The waste must be treated by one of the following processes to further reduce pathogens:
 - (i) Using the windrow composting method, the solid waste must be maintained under aerobic conditions during the compost process. A minimum of five turnings

is required during a period of 15 consecutive days, and the temperature of the mixture must be maintained at 55 degrees Celsius or greater during this period.

(ii) Using the aerated static pile composting method or the within-vessel composting method, the temperature of the solid waste must be maintained at 55 degrees Celsius or higher for at least three consecutive days.

(iii) Other methods or operating conditions, if pathogens are reduced to an extent equivalent to the reduction achieved by the methods in subparagraphs (i) and (ii), if approved by the department.

(3) One of the following vector attraction reduction methods must be achieved:

(i) The mass of volatile solids in the waste must be reduced by a minimum of 38 percent.

(ii) The specific oxygen uptake rate (SOUR) for waste treated in an aerobic process must be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

(iii) Waste must be treated by an aerobic process for a minimum of 14 consecutive days. During that time, the temperature of the waste is maintained above 40 degrees Celsius and the average temperature of the waste is maintained above 45 degrees Celsius.

(c) Pollutant limits and product use.

(1) A product that does not meet the criteria in this section must be disposed or otherwise managed in a manner pursuant to this Part.

(2) The product must not contain pollutant levels greater than those found in Table 7 of Section 360-5.10.

(3) The product must not contain more than two percent total gross contaminants by weight (dry weight basis).

(4) The particle size of the product must not exceed 10 millimeters (0.39 inch) particle size, except for wood particles derived from the use of wood chips as a bulking agent or amendment.

(5) The product must be mature and must be used in a legitimate manner as a soil amendment. The product must be produced from a composting process with a minimum detention time (including active composting and curing) of 50 days, unless an alternate means for achieving sufficient maturity is approved by the department.

(6) An information label must be affixed to the product bag or, for bulk, an information sheet or brochure must be provided to the user. The label or information sheet must contain, at a minimum, the following information:

(i) the name and address of the generator of the product;

(ii) the type of waste the product was derived from; and

(iii) recommended safe uses, application rates and storage practices.

(7) The product may be distributed for use for food crops, feed crops, and fiber crops.

(d) Design criteria and operational requirements. If construction is involved, a permittee may not operate a facility under this Subpart until certification that construction is in accordance with the approved engineering report, plans and specifications has been submitted to, and approved in writing by, the department. The certification must be signed by an individual licensed to practice engineering in the State of New York. In addition to the operational requirements identified in section 360-1.14 of this Part, the following requirements apply:

(1) Storage of product on-site must be limited to 24 months.

(2) Surface water drainage must be diverted away from the operating area.

(3) If the facility accepts, on average, 5 wet tons of SSOW per day or more, the waste storage area, processing area, leachate storage and product storage area at the facility must be located on surfaces, such as asphalt (except leachate storage) or concrete, to minimize leachate release into the groundwater under the site and the surrounding land surface. The following requirements apply to the use of soils or geomembranes in the processing area or the use of surface impoundments for leachate storage.

(i) If soils are used, the liner must be a minimum of two feet of compacted soil having a maximum remolded coefficient of permeability of 1×10^{-7} centimeters per second. The soil material particles must be able to pass through a one inch screen. The applicable criteria in subdivision 360-2.13(j) must be followed.

(ii) If a geomembrane is used, the liner system must be designed and built in accordance with the applicable criteria in Subpart 360-2 of this Part.

(iii) If a surface impoundment is used for leachate storage, a minimum of two feet of freeboard must be maintained. In addition, the bottom of the liner system must be a minimum of five feet above both the seasonal high groundwater elevation and bedrock.

(4) If the facility accepts, on average, less than 5 wet tons of SSOW per day, the following requirements apply:

(i) if the facility is located on soils with a coefficient of permeability greater than six inches per hour the installation of groundwater monitoring wells or other monitoring devices and groundwater monitoring may be required, as determined by the department.

(ii) The facility must be constructed to minimize any ponding;

(iii) Composting must not occur in areas where the seasonal high groundwater elevation is less than 24 inches from the ground surface or where bedrock lies less than 24 inches below the ground surface.

(iv) The bottom of any surface impoundment used for leachate must be a minimum of five feet above both the seasonal high groundwater table and the top of bedrock.

- (5) All leachate must be managed in a manner approved by the department. All leachate storage facilities must be completely emptied, cleaned, and inspected every 12 months.
- (6) The facility must be operated to control vectors and odors to a level that is to be expected from a well operated facility, as determined by the department.
- (7) The facility must not be operated or constructed on flood plains unless provisions have been made to prevent the encroachment of flood waters upon the facility and the department approves such provisions.
- (8) The operation of the facility must follow acceptable methods of composting which result in the aerobic biochemical decomposition of the organic material received.
- (9) The minimum horizontal separation distance as measured from the facility to the nearest residence, place of business or public contact area (except plant nurseries and turf farms) must be 500 feet and the following criteria apply:
- (i) A facility without a pad and leachate collection system must maintain a minimum separation of 200 feet to a potable water well or surface water body and 25 feet to a drainage swale.
 - (ii) The separation distance requirement from a public contact area may be reduced for totally enclosed facilities upon a determination by the department.
 - (iii) The landowner's or operator's residence is excluded from the separation requirement for a residence for the purposes of this paragraph.
- (10) For uncovered processing facilities, the facility must be able to manage the quantity of leachate generated at the site based on a rainfall intensity of one-hour duration and a 10-year return period.
- (11) Noncompostable solid waste must be disposed at least weekly in a manner approved by the department.
- (12) The composting facility can only accept SSOW from a generator that has an active collection program designed to collect organic waste separate from other waste materials and to remove inorganic and non-compostable materials from the SSOW generated. The composting facility must also have provisions for inspection and removal of noncompostables received.
- (13) All SSOW unloading, storage and processing areas must be enclosed for facilities that have an average capacity of 100 wet tons per day or greater, unless other measures are taken to minimize nuisance conditions, as determined by the department.
- (14) The facility is prohibited from accepting wastes that do not positively contribute to the treatment process or the quality of the product, as determined by the department. Prohibited waste includes, but is not limited to, construction and demolition debris (other than land clearing debris) and waste combustion ash (other than wood ash that results from the burning of uncontaminated wood).
- (e) Monitoring, record keeping and reporting.
- (1) Annual product quality monitoring is required in accordance with the following.

- (i) The parameters for analysis are found in Table 8 of Section 5.10.
- (ii) The minimum number of analyses required annually is outlined in Table 10 of Section 360-5.10, based on the annual production divided by 365.
- (iii) Each sample must be a composite of at least 5 grab samples. With the exception of pH and total solids, all results must be reported on a dry weight basis. The analyses must comply with the criteria found in clauses 360-5.5(a)(1)(ii)(c),(e) - (g) and (i) of this Subpart.
- (iv) After the product has been monitored for two years at the frequency outlined in this paragraph, the department may reduce the annual number of analyses required if the product quality consistently meets the product quality standards in paragraph 360-5.6(c)(2) of this Subpart.

(2) Sufficient monitoring data must be obtained to demonstrate compliance with the pathogen and vector attraction reduction requirements. The frequency and type of monitoring necessary, based on the methods employed to achieve pathogen and vector attraction reduction, must be approved by the department. At a minimum, temperature monitoring must occur on a daily basis in the coldest part of the waste mass.

(3) The department may require, on a case specific basis, testing of the product for maturity prior to distribution. This may include, but is not limited to, potential for reheating, organic matter reduction, plant growth impact, or oxygen consumption.

(4) Daily operational records must be maintained for the facility. These must include, in addition to the information required under subdivision 360-1.14(i) of this Part, all monitoring data, quantity and character of material processed, quantity of product removed, and product use.

(5) A copy of the complete and final permit application and all monitoring data obtained to demonstrate compliance with this Subpart must be retained in accordance with subdivision 360-1.14(i).

(6) The permittee must submit an annual report to the department's central office and the appropriate regional office no later than March 1 of each year covering the previous calendar year, on forms prescribed by or acceptable to the department. The report must include:

- (i) all information and analyses required by this Subpart;
- (ii) the type and quantity of the waste and other materials, such as bulking agents being processed, including the source of the material;
- (iii) facility operational information including monitoring data and significant facility operational problems and actions taken to correct the problems;
- (iv) the quantity, by weight and volume, of product generated and the quantity of product and other solid waste including unacceptable product removed from the facility; and
- (v) a description of the end-product distribution and disposal methods.

§360-5.7 Yard Waste Composting Facilities

(a) Additional permit application requirements.

In addition to the requirements set forth in section 360-5.4 of this Part pertaining to engineering report contents, the engineering report submitted as part of an application for an initial permit to construct and operate a composting facility for yard waste must include the following information:

- (1) A description and an identification of the surface soil characteristics for the proposed site area and depths to the seasonal high groundwater and bedrock, including appropriate documentation.
- (2) A description of the source and composition of the yard wastes involved, including the anticipated quantity of each type of material and how each will be handled at the site.
- (3) A description of all composting activities at the site including those facilities that may qualify for exemption or registration under section 360-5.3 of this Part.

(b) Design criteria and operational requirements. If construction is involved, a permittee may not operate a facility under this Subpart until certification that construction in accordance with the approved engineering report, plans and specifications has been submitted to and approved in writing by the department. The certification must be signed by an individual licensed to practice engineering in the State of New York. In addition to the operational requirements identified in section 360-1.14 of this Part, the following requirements apply:

- (1) Only yard waste and wastes that qualify for exemption or registration under section 360-5.3 of this Part may be accepted at this type of composting facility.
- (2) Compost areas located on soils with a coefficient of permeability greater than six inches per hour may require installation of groundwater monitoring wells or other monitoring devices and groundwater monitoring, as determined by the department.
- (3) Drainage must be controlled to prevent leachate run-off from the site. For uncovered facilities, the design of the facility must be adequate to handle the quantity of leachate generated at the site based on a rainfall intensity of one-hour duration and a 10-year return period. In addition, surface water drainage must be diverted away from the compost site.
- (4) The operation of the facility must follow acceptable methods of composting which result in the aerobic biochemical degradation of the organic material received. the product distributed must be mature.
- (5) The facility must be constructed to minimize any ponding.
- (6) The windrow construction and turning frequency must be sufficient to maintain aerobic conditions and to produce a compost product in the time frame outlined in the approved permit application.
- (7) The minimum horizontal separation distance as measured from the facility to the nearest residence, place of business or public contact area (except turf farms and

plant nurseries) must be 200 feet or greater if deemed necessary by the department based on the characteristics of the neighboring areas. The following criteria apply:

(i) A facility without a pad and leachate collection system must maintain a minimum separation of 200 feet to a potable water well or surface water body and 25 feet to a drainage swale.

(ii) The separation distance requirement from a public contact area may be reduced for totally enclosed facilities if approved by the department; and

(iii) The landowner's or operator's residence is excluded from the separation requirement for a residence.

(8) The facility must not be operated or constructed on a floodplain unless provisions have been made to prevent the encroachment of flood waters upon the facility.

(9) Composting must not occur in areas where the seasonal high groundwater elevation is less than 24 inches from the ground surface or where bedrock lies less than 24 inches below the ground surface, unless composting occurs on a low permeability pad.

(10) The bottom of any surface impoundment used for leachate with a capacity of 10,000 gallons or more must be a minimum of five feet above both the seasonal high groundwater table and the top of bedrock. Impoundments with a capacity less than 10,000 gallons must be a minimum of two feet above both seasonal high groundwater and the top of bedrock.

(11) The composting facility must be operated in a manner to control the generation and migration of odors to a level that is to be expected from a well operated facility, as determined by the department.

(12) Yard waste compost may be distributed for use on food crops, feed crops, and fiber crops. The compost must be used in a legitimate manner as a soil amendment. Yard waste compost quality must not exceed the annual average concentration found in paragraph 360-5.5(c)(3).

(13) On-site product storage is limited to 24 months.

(c) Monitoring, record keeping, and reporting.

(1) Daily operational records must be maintained for the facility and must include, in addition to the information required under subdivision 360-1.14(i) of this Part, all monitoring data, the quantity and character of material processed, the quantity of product removed from the facility, and product use.

(2) A copy of the complete and final permit application and all monitoring and operational data obtained to demonstrate compliance with this Subpart must be retained by the applicant in accordance with subdivision 360-1.14(i).

(3) Annual analysis of the compost is required for the parameters outlined in Table 11 of Section 360-5.10.

(i) all samples must be representative of the product that will be distributed. With the exception of pH and total solids, all results must be reported on a dry weight basis; and

(ii) all analyses must be performed by a laboratory certified by the New York State Department of Health, using methods acceptable to the department, unless an alternate laboratory is approved by the department. Acceptable methods are listed in paragraph 360-5.5(a)(1). Copies of the original laboratory results must be included.

(4) Analysis of the leachate may be required, as determined by the department.

(5) The permittee must submit an annual report to the department's central office and appropriate regional office no later than March 1 of each year covering the previous calendar year, on forms prescribed by or acceptable to the department. The report must include, at a minimum:

- (i) the type and quantity, by weight and volume, of waste received at the facility;
- (ii) the turning frequency (if applicable) and the timing and amount of any water addition;
- (iii) the quantity, by weight and volume, of total compost produced;
- (iv) any monitoring that occurred during the operation;
- (v) the quantity, by weight or volume, of compost removed from the facility; and
- (vi) a description of the end-product distribution.

§360-5.8 Products Generated Outside New York State

An organic waste derived product, other than one generated solely from yard waste, food waste, food processing waste, or animal manure, which is generated outside the jurisdiction of New York State, and which is offered for sale or given away within New York State will no longer be considered solid waste as outlined in paragraph 360-1.15 (b)(2), provided the following criteria are satisfied.

(a) Request for Product Distribution.

Prior to distribution of the product in New York State, a written request to distribute an organic waste derived product must be submitted to the department and corresponding written confirmation must be obtained from the department. The request must be submitted to the department's central office and contain, at a minimum, the following:

- (1) a description of the processing facility and all solid waste sources;
- (2) a copy of the permits or other approvals for the processing facility and the appropriate excerpts from applicable rules and regulations from the applicable authority where the product is generated;
- (3) a minimum of three analyses of the product for the parameters listed in Groups A and B of paragraph 360-5.5(a)(1) of this Subpart;
- (4) a description of the methods to reduce pathogens and vector attraction, with appropriate monitoring data, as determined by the department;
- (5) a description of how and where the product will be distributed and used in New York State and the quantity of product that will be distributed or used in New York State;

(6) for products used in bulk on a farm, a description of any storage facilities for product that are located in New York State, including location, quantity stored, storage facility construction and duration of storage; and

(7) a copy of the label or printed literature for the product.

(b) Pathogen and vector attraction reduction.

The requirements outlined in subdivision 360-5.5(b) of this Part apply.

(c) Contaminant limits and product use.

The product quality and product use must comply with the criteria found in subdivision 360-5.5(c) of this Part.

(d) Monitoring, record keeping, and reporting.

(1) A minimum of one analysis of the product is required for each 1000 cubic yards of product distributed in New York State. The parameters and associated requirements are found in paragraph 360-5.5(e)(3).

(2) An annual report must be submitted to the department's central office by March 1 of each year. The report must include:

(i) all information and analytical results required by this section;

(ii) the quantity of product distributed in New York State;

(iii) a description of the product storage and product use; and

(iv) an outline of all problems encountered, complaints received, actions taken to mitigate such problems, and the outcomes.

§360-5.9 Research Projects

The requirements for engineering plans, reports, and specifications found in sections 360-1.9, 360-5.4, 360-5.6 and 360-5.7 of this Part may be modified for facilities used solely for research purposes under the direction of a professional engineer licensed in the State of New York or a research scientist affiliated with an accredited university or research institution located within the State of New York.

(a) Permit application.

In addition to the permit application requirements set forth in subdivision 360-1.13(b), the permit application for a research project for an organic waste processing facility must contain a copy of the research proposal. The research proposal must:

(1) describe the proposed activity in detail;

(2) contain a detailed discussion that includes the project objectives, schedule, site location and characteristics, equipment used, waste involved, monitoring proposals, and methods for evaluating project performance;

(3) contain any of the information required in this Subpart, as determined by the department;

(4) contain an outline of all personnel involved and their responsibilities; and

(5) contain written permission of all landowners, if not the applicant, to use the land for the research project.

(b) Design and operational requirements.

(1) The quantity of waste handled is limited to the amount necessary to address the research objectives.

(2) Project summary report. Unless otherwise approved by the department, within 90 days of the expiration date of the research, development and demonstration permit, a project summary report must be submitted to the department that includes the following information:

- (i) a summary of the project objectives, information gathered, analyses conducted, and project results; and
- (ii) any operating problems, any other limitations encountered and areas of further study.

(c) Permit restrictions.

A research, development and demonstration permit issued under this section is subject to the restriction and renewal criteria found in subdivisions 360-1.13(a),(c) and (d) of this Part.

§360-5.10 Tables

Table 1 Parameters for Analysis - Biosolids/Sludge

| <u>Group A</u> | <u>Group B</u> | <u>Group C</u> |
|-------------------------|------------------|----------------|
| Total Kjeldahl Nitrogen | Arsenic | Extended |
| Ammonia | Cadmium | Parameters |
| Nitrate | Chromium (total) | (see Table 2) |
| Total Phosphorous | Copper | |
| Total Potassium | Lead | |
| pH | Mercury | |
| Total Solids | Molybdenum | |
| Total Volatile Solids | Nickel | |
| | Selenium | |
| | Zinc | |

Table 2 Extended Parameters List

| VOLATILE ORGANIC COMPOUNDS | | |
|----------------------------|---------------|----------|
| | POLLUTANT | CAS |
| 1 | Acrolein | 107-02-8 |
| 2 | Acrylonitrile | 107-13-1 |
| 3 | Benzene | 71-43-2 |
| 4 | Bromoform | 75-25-2 |

| | | |
|------------------------------------|-------------------------------------|------------|
| 5 | Carbon tetrachloride | 56-23-5 |
| 6 | Chlorobenzene | 108-90-7 |
| 7 | Chlorodibromomethane | 124-48-1 |
| 8 | Chloroethane | 75-00-3 |
| 9 | 2-chloroethylvinyl ether | 110-75-8 |
| 10 | Chloroform | 67-66-3 |
| 11 | Dichlorobromomethane | 75-27-4 |
| 12 | 1,1-dichloroethane | 75-34-3 |
| 13 | 1,2-dichloroethane | 107-06-2 |
| 14 | Trans-1,2-dichloroethylene | 156-60-5 |
| 15 | 1,1-dichloroethylene | 75-35-4 |
| 16 | 1,2-dichloropropane | 78-87-5 |
| 17 | 1,3-dichloropropene | 542-75-6 |
| 18 | Ethylbenzene | 100-41-4 |
| 19 | Methyl bromide | 74-83-9 |
| 20 | Methyl chloride | 74-87-3 |
| 21 | Methylene chloride | 75-09-2 |
| 22 | 1,1,1,2-tetrachloroethane | 79-34-5 |
| 23 | Tetrachloroethylene | 127-18-4 |
| 24 | Toluene | 108-88-3 |
| 25 | 1,1,1-trichloroethane | 71-55-6 |
| 26 | 1,1,2-trichloroethane | 79-00-5 |
| 27 | Trichloroethylene | 79-01-6 |
| 28 | Vinyl chloride | 75-01-4 |
| | | |
| ACID-BASE-NEUTRAL COMPOUNDS | | |
| | POLLUTANT | CAS |
| | * Acid-extractable compounds | |
| 1 | 4-chloro-3-methylphenol | 59-50-7 |
| 2 | 2-chlorophenol | 95-57-8 |
| 3 | 2,4-dichlorophenol | 120-83-2 |
| 4 | 2,4-dimethylphenol | 105-67-9 |
| 5 | 4,6-dinitro-2-methylphenol | 534-52-1 |
| 6 | 2,4-dinitrophenol | 51-28-5 |
| 7 | 2-nitrophenol | 88-75-5 |
| 8 | 4-nitrophenol | 100-02-7 |
| 9 | Pentachlorophenol | 87-86-5 |
| 10 | Phenol | 108-95-2 |
| 11 | 2,4,6-trichlorophenol | 88-06-2 |
| | | |

| | *Base-Neutral compounds | |
|----|------------------------------|-----------|
| 12 | Acenaphthene | 83-32-9 |
| 13 | Acenaphthylene | 208-96-8 |
| 14 | Anthracene | 120-12-7 |
| 15 | Benzidine | 92-87-5 |
| 16 | Benzo(a)anthracene | 56-55-3 |
| 17 | Benzo(a)pyrene | 50-32-8 |
| 18 | Benzo(b)fluoranthene | 205-99-2 |
| 19 | Benzo(g,h,i)perylene | 191-24-2 |
| 20 | Benzo(k)fluoranthene | 207-08-9 |
| 21 | Bis(2-chlorethoxy)methane | 111-91-1 |
| 22 | Bis(2-chloroethyl) ether | 111-44-4 |
| 23 | Bis(2-chloroisopropyl) ether | 108-60-1 |
| 24 | Bis(2-ethylhexyl) phthalate | 117-81-7 |
| 25 | 4-bromophenyl phenyl ether | 101-55-3 |
| 26 | Butyl benzyl phthalate | 85-68-7 |
| 27 | 2-chloronaphthalene | 91-58-7 |
| 28 | 4-chlorophenyl phenyl ether | 7005-72-3 |
| 29 | Chrysene | 218-01-9 |
| 30 | Di-n-butyl phthalate | 84-74-2 |
| 31 | Di-n-Octyl phthalate | 117-84-0 |
| 32 | Dibenzo(a,h)anthracene | 95-50-1 |
| 33 | 1,2-dichlorobenzene | 53-70-3 |
| 34 | 1,3-dichlorobenzene | 541-73-1 |
| 37 | Diethyl phthalate | 84-66-2 |
| 38 | Dimethyl phthalate | 131-11-3 |
| 39 | 2,4-dinitrotoluene | 121-14-2 |
| 40 | 2,6-dinitrotoluene | 606-20-2 |
| 41 | 1,2-diphenylhydrazine | 122-66-7 |
| 42 | Fluoranthene | 206-44-0 |
| 43 | Fluorene | 86-73-7 |
| 44 | Hexachlorobenzene | 118-74-1 |
| 45 | Hexachlorobutadiene | 87-68-3 |
| 46 | Hexachlorocyclopentadiene | 77-47-4 |
| 47 | Hexachloroethane | 67-72-1 |
| 48 | Indeno(1,2,3-cd)pyrene | 193-39-5 |
| 49 | Isophorone | 78-59-1 |
| 50 | Naphthalene | 91-20-3 |
| 51 | Nitrobenzene | 98-95-3 |

| | | |
|------------------------|--------------------------|------------|
| 52 | N-nitrosodipropylamine | 621-64-7 |
| 53 | N-nitrosodimethylamine | 62-75-9 |
| 54 | N-nitrosodiphenylamine | 86-30-6 |
| 55 | Phenanthrene | 85-01-8 |
| 56 | Pyrene | 129-00-0 |
| 57 | 1,2,4-trichlorobenzene | 120-82-1 |
| PESTICIDES/PCBs | | |
| | POLLUTANT | CAS |
| 1 | Aldrin | 309-00-2 |
| 2 | Alpha-BHC | 319-84-6 |
| 3 | Beta-BHC | 319-85-7 |
| 4 | Delta-BHC | 319-86-8 |
| 5 | Gamma-BHC [Lindane] | 58-89-9 |
| 6 | Alpha-chlordane | 5103-71-9 |
| 7 | Gamma-chlordane | 5103-74-2 |
| 8 | 4,4'-DDD [p,p'-TDE] | 72-54-8 |
| 9 | 4,4'-DDE [p,p'-DDX] | 72-55-9 |
| 10 | 4,4'-DDT | 50-29-3 |
| 11 | Dieldrin | 60-57-1 |
| 12 | Alpha-endosulfan | 959-98-8 |
| 13 | Beta-endosulfan | 33213-65-9 |
| 14 | Endosulfan sulfate | 1031-07-8 |
| 15 | Endrin | 72-20-8 |
| 16 | Endrin aldehyde | 7421-93-4 |
| 17 | Heptachlor | 76-44-8 |
| 18 | Heptachlor epoxide | 1024-57-3 |
| 19 | PCB-1016 (Arochlor 1016) | 12674-11-2 |
| 20 | PCB-1221 (Arochlor 1221) | 11104-28-2 |
| 21 | PCB-1232 (Arochlor 1232) | 11141-16-5 |
| 22 | PCB-1242 (Arochlor 1242) | 53469-21-9 |
| 23 | PCB-1248 (Arochlor 1248) | 12672-29-6 |
| 24 | PCB-1254 (Arochlor 1254) | 11097-69-1 |
| 25 | PCB-1260 (Arochlor 1260) | 11096-82-5 |
| 26 | Toxaphene | 8001-35-2 |
| | POLLUTANT | CAS |
| 1 | Antimony | 7440-36-0 |
| 2 | Beryllium | 7440-41-7 |
| 3 | Silver | 7440-22-4 |

| | | |
|---|----------|-----------|
| 4 | Thallium | 7440-28-0 |
| 5 | Cyanide | 57-12-5 |

Table 3 Analyses Required with Permit Application

| Biosolids/Sludge Used (dry tons/year) | Minimum Number of Analyses | |
|--|----------------------------|---------|
| | Groups A & B | Group C |
| >1000 | 6 | 1 |
| 200 to 1000 | 3 | 1 |
| 25 to 199 | 2 | 1 |
| <25 | 1 | 0 |

Table 4 Pollutant Limits - Class B Materials & Input To Class A Facilities

| Parameter | Monthly Average Concentration mg/kg, dry weight | Maximum Concentration mg/kg, dry weight |
|---------------------|---|--|
| Arsenic (As) | 41 | 75 |
| Cadmium (Cd) * | 21 | 85 |
| Chromium (Cr-total) | 1000 | 1000 |
| Copper (Cu) | 1500 | 4300 |
| Lead (Pb) | 300 | 840 |
| Mercury (Hg) | 10 | 57 |
| Molybdenum (Mo) | 40 | 75 |
| Nickel (Ni) | 200 | 420 |
| Selenium (Se) | 100 | 100 |
| Zinc (Zn) | 2500 | 7500 |

*if the monthly average cadmium concentration exceeds 5 ppm, dry weight basis, the cadmium/zinc ratio must not exceed 0.015

Table 5 Cumulative Metal Loading Limits

| Metal | Cumulative Loading Limit (lbs./acre) | |
|----------|--------------------------------------|----------------------|
| | Ag. Soil Groups 1-3 | Ag. Soil Groups 4-10 |
| Cadmium | 3 | 4 |
| Chromium | 300 | 446 |
| Copper | 75 | 112 |
| Lead | 267 | 267 |
| Nickel | 30 | 45 |
| Zinc | 150 | 223 |

Table 6 Analyses Required During Operation - Biosolids

| |
|----------------------------|
| Minimum Number of Analyses |
|----------------------------|

| Biosolids Used (Dry tons/year) | Groups A & B | Group C |
|-----------------------------------|--------------|---------|
| >1000 | 12 | 1 |
| 200 to 1000 | 6 | 1 |
| 25 to 199 | 4 | 1 |
| <25 | 2 | 0 |

Table 7 Pollutant Limits - Products

| Parameter | Monthly Average Concentration mg/kg, dry weight | Maximum Concentration mg/kg, dry weight |
|---------------------|---|--|
| Arsenic (As) | 41 | 75 |
| Cadmium (Cd) * | 10 | 85 |
| Chromium (Cr-total) | 1000 | 1000 |
| Copper (Cu) | 1500 | 4300 |
| Lead (Pb) | 300 | 840 |
| Mercury (Hg) | 10 | 57 |
| Molybdenum (Mo) | 40 | 75 |
| Nickel (Ni) | 200 | 420 |
| Selenium (Se) | 100 | 100 |
| Zinc (Zn) | 2500 | 7500 |

* if the monthly average cadmium concentration exceeds 5 ppm, dry weight basis, the cadmium/zinc ratio must not exceed 0.015

Table 8 Parameters for Analysis - Biosolids/MSW/Sludge Products

| | | |
|-------------------------|------------|--|
| Total Kjeldahl Nitrogen | Arsenic | Fecal coliform or <i>Salmonella</i> sp. bacteria |
| Ammonia | Cadmium | |
| Nitrate | Chromium | |
| Total Phosphorus | Copper | |
| Total Potassium | Lead | |
| pH | Mercury | |
| Total Solids | Molybdenum | |
| Total Volatile Solids | Nickel | |
| | Selenium | |
| | Zinc | |

Table 9 Annual Product Testing Frequency - Biosolids/Sludge/MSW

| Average Product Generated (Cubic yards per day) | Number of Analyses |
|--|--------------------|
| >50 | 52 |
| 5-50 | 12 |

| | |
|----|---|
| <5 | 6 |
|----|---|

Table 10 Annual Product Testing Frequency - SSOW

| Average Product Generated (Cubic yards per day) | Number of Analyses |
|--|--------------------|
| >50 | 12 |
| 5-50 | 4 |
| <5 | 2 |

Table 11 Annual Product Analyses - Yard Waste Compost

| |
|-------------------------|
| Total Kjeldahl Nitrogen |
| Ammonia |
| Nitrate |
| Total Phosphorus |
| Total Potassium |
| pH |
| Total Solids |
| Total Volatile Solids |

Table 12 Analytical Methods and Sample Management - Parameter Analytical Methods
Maximum Holding Temperature/Time

Table 12
Analytical Methods and Sample Management

| Parameter | Analytical Methods | Maximum Holding Temperature/Time |
|-----------------------|-------------------------|----------------------------------|
| FECAL COLIFORM | SM-9221 C or SM-9222 D | 4°C (39.2°F)/24 hours |
| SALMONELLA SP. | SM-9260 D.1 or Kenner | 4°C (39.2°F)/24 hours |
| VIABLE HELMINTH OVA | Yanko | 4°C (39.2°F)/1 month |
| ENTEROVIRUSES | ASTM-D4994-89 | -18°C (0°F)/2 weeks |
| TOTAL/VOLATILE SOLIDS | SM-2540 G | 4°C (39.2°F)/7 days |
| pH | SW-9045 | |
| TKN | SM-4500-Norg | 4°C(39.2°F)/28 days |
| NO3-N (Nitrate) | SM-4500-NO3 | 4°C(39.2°F)/28 days |
| TOTAL PHOSPHOROUS | SM-4500-P | 4°C(39.2°F)/28 days |
| POTASSIUM | SW-6010 or 7610 | 4°C(39.2°F)/6 months |
| AMMONIA | SM-4500-NH3 | 4°C(39.2°F)/28 days |
| ARSENIC | SW-6010 or 7060 or 7061 | 4°C(39.2°F)/6 months |
| CADMIUM | SW-6010 or 7130 or 7131 | 4°C(39.2°F)/6 months |
| CHROMIUM | SW-6010 or 7190 or 7191 | 4°C(39.2°F)/6 months |
| COPPER | SW-6061 or 7210 | 4°C(39.2°F)/6 months |

| | | |
|-----------------------|-------------------------|----------------------|
| LEAD | SW-6010 OR 7420 or 7421 | 4°C(39.2°F)/6 months |
| MERCURY | SW-7470 or 7471 | 4°C(39.2°F)/28 days |
| MOLYBDENUM | SW-6010 or 7480 or 7481 | 4°C(39.2°F)/6 months |
| NICKEL | SW-6010 or 7520 | 4°C(39.2°F)/6 months |
| SELENIUM | SW-6010 or 7740 or 7741 | 4°C(39.2°F)/6 months |
| ZINC | SW-6010 or 7950 | 4°C(39.2°F)/6 months |
| VOLATILE ORGANICS | SW-8260B | 4°C(39.2°F)/14 days |
| SEMIVOLATILE ORGANICS | SW-8270C | 4°C(39.2°F)/14 days |
| PESTICIDES/PCBs | SW-8081/8082 | 4°C(39.2°F)/14 days |

All samples can be placed in a plastic or glass container except:

Pesticides/PCBs: amber glass jar Semivolatle Organics: amber glass jar with Teflon liner Volatile Organics: glass jar with Teflon liner

Analytical Methods:

SM- Standard Methods for the Examination of Water and Wastewater, 18th Ed., American Public Health Association, Washington, D.C., 1992. SW- Test Methods for Evaluating Solid Waste, SW-846, EPA, November 1986, as revised December 1987. ASTM- Standard Practice for Recovery of Viruses from Wastewater Sludge, Annual Book of ASTM Standards: Section 11, Water and Environmental Technology, 1992. Kenner- Kenner, B.A. and H.P.Clark, Detection and Enumeration of Salmonella and Pseudomonas aeruginosa. J. Water Pollution Control Federation, 46(9):2163-2171, 1974. Yanko- Yanko, W.A., Occurrence of Pathogens in Distribution and Marketing of Municipal Sludges,

EPA 600/1-87-014, 1987, NTIS PB 88-154273/AS. (Published revisions to the referenced methods are acceptable and preferable.)