STATE OF OHIO

Sewage Sludge

Chapter 3745-40 of the ADMINISTRATIVE CODE

Most Recent Revision:

Adopted January 4, 2011
Effective July 1, 2011

Ohio Environmental Protection Agency
Division of Surface Water
Permits & Compliance Section

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3745-40-01 **Definitions.**

(A) "33 C.F.R." means Title 33 of the Code of Federal Regulations, effective June 1, 2010.

[Comment: The Code of Federal Regulations can generally be found in public libraries, and can be viewed electronically online at: www.gpoaccess.gov/cfr/index.html and purchased by writing to: "Superintendent of Documents. Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954."]

(B) "40 C.F.R." means Title 40 of the Code of Federal Regulations, effective June 1, 2010.

[Comment: The Code of Federal Regulations can generally be found in public libraries, and can be viewed electronically online at: www.gpoaccess.gov/cfr/index.html and purchased by writing to: "Superintendent of Documents. Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954."]

(C) "Aerobic digestion" means the biochemical decomposition of organic matter in sewage sludge material into carbon dioxide and water by microorganisms in the presence of oxygen.

(D) "Agronomic benefit" means agronomic benefit, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined agronomic benefit as follows: "agronomic benefit" means any process that promotes or enhances plant growth and includes, but is not limited to, a process that increases soil fertility and moisture retention.]

(E) "Agronomic rate" means a rate of application of nutrients from any source to the land or an amount of nutrients removed by crop based on:

(1) Nutrient content of the biosolids to be applied;

(2) Nutrient needs of the current or planned crops; and

(3) Nutrient holding capacity of the soil.

(F) "Anaerobic digestion" means the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of oxygen.

(G) "Animal waste" means animal excreta, bedding, wash waters, waste feed, and silage drainage.

(H) "ASTM D 4994-89" means the American society for testing and material (ASTM) standard test methods for standard practice for recovery of viruses from wastewater sludges, as that standard was approved in 2002. ASTM test methods are generally available in public libraries or from ASTM international, 100 Barr Harbor drive, P.O. box C700, West Conshohocken, PA 19428-2959, at 610/832-9555, or on the internet at: www.ASTM.org.

(I) "Authorized beneficial use site" means an area of land that has been authorized by the Ohio environmental protection agency to receive class B biosolids in accordance with rule 3745-40-06 of the Administrative Code.

(J) "Available water capacity" means the capacity of soils to hold water available for use by most plants.

(K) "Bedrock" means any continuous or connected solid rock exposed at the surface of the earth or covered by soil or glacial deposits.

(L) "Beneficial use" means the placement of class B or bulk exceptional quality biosolids onto a beneficial use site through the spraying or spreading of biosolids onto the surface of the beneficial use site, the injection of biosolids below the surface of the beneficial use site, the incorporation of biosolids into the soil, for the purpose of providing an agronomic benefit, or the distribution of exceptional quality biosolids that do not satisfy the definition of bulk exceptional quality biosolids.

(M) "Beneficial use site" means an authorized beneficial use site where class B biosolids are beneficially used or an area of land where bulk exceptional quality biosolids are beneficially used. For the purposes of this definition, an area of land is all contiguous acres at a single authorized beneficial use site or a single beneficial use site where class B or bulk exceptional quality biosolids will be beneficially used, respectively.

(N) "Beneficial use site authorization" means a written authorization in the form of a letter from the director or an authorized representative permitting the beneficial use of class B biosolids on a beneficial use site.

(O) "Beneficial use site operator" means the person who plants, grows, harvests or otherwise manages feed crops, fiber crops, food crops or pasture land on a beneficial use site.

(P) "Beneficial user" means the person who sprays or spreads onto the surface of the beneficial use site, injects below the surface of the beneficial use site, or incorporates into the soil of the beneficial use site, for the purpose of providing an agronomic benefit, class B or bulk exceptional quality biosolids.

(Q) "Biosolids" means sewage sludge or mixtures containing sewage sludge that have been treated for beneficial use.

(R) "Bulk exceptional quality biosolids" means more than three hundred dry tons of exceptional quality biosolids beneficially used during a crop year on a beneficial use site that is utilized for the production of:

(1) Feed crops;

(2) Fiber crops;

(3) Food crops; or

(4) Pasture land.

(S) "Class B biosolids" means class B biosolids, as defined in rule 3745-40-04 of the Administrative Code.

(T) "Commercial septage" means liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives sewage from a commercial establishment.

(U) "Composite sample" means a sample that is comprised of a minimum of six grab samples, collected at such times and locations and in such a fashion, as to be representative of the facility's sewage sludge or biosolids.

(V) "Cover crop" means a small grain crop, such as oats, wheat, or barley, not grown for harvest.

(W) "Crop year" means the period of time for a particular crop to be planted and harvested, or one year's time, whichever is shorter.

(X) "Cumulative pollutant loading rate" means the total amount of an inorganic pollutant that can be applied at a beneficial use site, in accordance with paragraph (D) of rule 3745-40-04 of the Administrative Code.

(Y) "Dioxin" means all of the seven 2, 3, 7, 8-chlorinated dibenzo-p-dioxin congeners, ten 2, 3, 7, 8-chlorinated dibenzofuran congeners, and twelve coplanar polychlorinated biphenyl congeners in table 1 of this rule.

-Table 1-

CAS number	Congener
1746-01-6	2, 3, 7, 8-tetrachlorodibenzo-p-dioxin
40321-76-4	1, 2, 3, 7, 8-pentachlorodibenzo-p-dioxin
39227-28-6	1, 2, 3, 4, 7, 8-hexachlorodibenzo-p-dioxin
57653-85-7	1, 2, 3, 6, 7, 8-hexachlorodibenzo-p-dioxin

19408-74-3	1, 2, 3, 7, 8, 9-hexachlorodibenzo-p-dioxin
35822-46-9	1, 2, 3, 4, 6, 7, 8-heptachlorodibenzo-p-dioxin
3268-87-9	1, 2, 3, 4, 6, 7, 8, 9-octachlorodibenzo-p-dioxin
51207-31-9	2, 3, 7, 8-tetrachlorodibenzofuran
57117-41-6	1, 2, 3, 7, 8-pentachlorodibenzofuran
57117-31-4	2, 3, 4, 7, 8-pentachlorodibenzofuran
70648-26-9	1, 2, 3, 4, 7, 8-hexachlorodibenzofuran
57117-44-9	1, 2, 3, 6, 7, 8-hexachlorodibenzofuran
72918-21-9	1, 2, 3, 7, 8, 9-hexachlorodibenzofuran
60851-34-5	2, 3, 4, 6, 7, 8-hexachlorodibenzofuran
67562-39-4	1, 2, 3, 4, 6, 7, 8-heptachlorodibenzofuran
55673-89-7	1, 2, 3, 4, 7, 8, 9-heptachlorodibenzofuran
39001-02-0	1, 2, 3, 4, 6, 7, 8, 9-octachlorodibenzofuran
32598-13-3	3, 3', 4, 4'-tetrachlorobiphenyl
70362-50-4	3, 4, 4', 5-tetrachlorobiphenyl
57465-28-8	3, 3', 4, 4', 5-pentachlorobiphenyl
32598-14-4	2, 3, 3', 4, 4'-pentachlorobiphenyl
31508-00-6	2', 3, 4, 4', 5-pentachlorobiphenyl
65510-44-3	2, 3', 4, 4', 5'-pentachlorobiphenyl
74472-37-0	2, 3, 4, 4', 5-pentachlorobiphenyl
32774-16-6	3, 3', 4, 4', 5, 5'-hexachlorobiphenyl
38380-08-4	2, 3, 3', 4, 4', 5-hexachlorobiphenyl
69782-90-7	2, 3, 3', 4, 4', 5'-hexachlorobiphenyl
52663-72-6	2, 3', 4, 4', 5, 5'-hexachlorobiphenyl
39635-31-9	2, 3, 3', 4, 4', 5, 5'-heptachlorobiphenyl

(Z) "Director" means director of the Ohio environmental protection agency.

(AA) "Discharge" means discharge of any pollutant or pollutants from any point source.

(BB) "Disposal" means the placement of either sewage sludge or biosolids into a landfill or an incinerator.

(CC) "Distribution" means the selling or giving away of exceptional quality biosolids that do not satisfy the definition of bulk exceptional quality biosolids.

(DD) "Domestic septage" means domestic septage, as defined in division (C) of section 3718.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 3718.01 of the Revised Code defined domestic septage as "means the liquid or solid material removed from a sewage treatment system, portable toilet or type III marine sanitation device as defined in 33 C.F.R. 159.3. "Domestic septage" does not include grease removed from a grease trap."]

(EE) "Drinking water source protection area for a public water system using ground water" means the surface and subsurface area surrounding a public water system's supply wells that will provide water to the wells within five years as delineated or endorsed by the Ohio environmental protection agency under the wellhead protection program and the source water assessment and protection system.

(FF) "Dry weight basis" means calculated on the basis of having been dried at one hundred five degrees Celsius (two hundred twenty-one degrees Fahrenheit) until reaching a constant mass (i.e., essentially one hundred per cent solids content).

(GG) "Emergency management zone" or "EMZ" means the surface and subsurface area in the immediate vicinity of a public water system intake as delineated or endorsed by the Ohio environmental protection agency under the source water assessment and protection program within which the public water supply owner or operator has little or no time to respond to potential contamination from a spill, release, or weather related event. The standard emergency management zone boundary consists of a semi-circle that extends five hundred feet upstream of the intake and one hundred feet downstream of the intake, except as modified due to local conditions.

(HH) "Endangered Species Act" means "Endangered Species Act, 16 U.S.C. section 1533, as amended through June 1, 2010.

(II) "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge" means "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge, USEPA/625/R-92/013, revised July 2003," United States environmental protection agency, national center for environmental publications and information, 11029 Kenwood road, Cincinnati, OH 45242, and is available on the internet at: www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf.

[Comment: The "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge" document is also known as the "Whitehouse Document."]

(JJ) "Exceptional quality biosolids" means exceptional quality biosolids as defined in rule 3745-40-04 of the Administrative Code.

(KK) "Facility storage" means the storage of sewage sludge or biosolids at the permittee's treatment works.

(LL) "Feed crops" means crops produced primarily for consumption by animals.

(MM) "Fiber crops" means crops such as flax and cotton that are produced primarily for the production of products and not consumed by people or animals.

(NN) "Field storage" means the storage of biosolids in a field at a beneficial use site for no more than ninety days.

(OO) "Food crops" means crops consumed by people, including:

(1) Fruits;

(2) Vegetables; and

(3) Tobacco.

(PP) "Food scraps" means:

(1) Source-separated plant materials, including stems, leaves, vines, or roots, from an agricultural process;

(2) Source-separated raw, harvested vegetables, fruits, and grains, and the paper from packaging (the packaging paper identified in this feedstock type is intended to include only those papers in which the raw, harvested vegetables, fruits, and grains are wrapped);

(3) Source-separated vegetables, fruits, and grains processed for human or animal consumption (for the purpose of this rule, processed for human or animal consumption includes, but is not limited to, source-separated vegetables, fruits, and grains processed for human or animal consumption that have been cooked, stewed, canned, or packaged); or

(4) Source-separated dairy products processed for human consumption such as, cheese, butter, milk, yogurt, eggs and cream, and meats processed for human consumption or meats subject to the federal Meat Inspection Act or meats subject to the Poultry Products Inspection Act, excluding meats from non-domestic animals, meats from slaughter houses and retail stores.

(QQ) "Frequently flooded" means an area of a beneficial use site that has flooded on average more than once every two years. Frequently flooded and the months when flooding is expected shall be determined by consulting the appropriate "National Cooperative Soil Survey" publication, which is available at the following website: soils.usda.gov/partnerships/ncss/.

(RR) "Grab sample" means a single representative sample or measurement collected at a specific time.

(SS) "Grit" means materials, such as sand, gravel or cinders that have a high specific gravity and are generally removed from sewage prior to secondary treatment at a treatment works.

[Comment: Grit materials are considered solid waste and should not be part of a beneficial use application. Grit materials should be disposed of within a landfill.]

(TT) "Ground cover" means vegetation canopy or crop residue on agricultural land.

(UU) "High potential public exposure site" means an authorized beneficial use site that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g., a construction site located in a municipality).

(VV) "Immediate incorporation" means incorporation, as defined in paragraph (ZZ) of this rule, of biosolids within six hours after delivery to the authorized beneficial use site.

(WW) "Incineration" means the disposal of sewage sludge or biosolids through the combustion of organic matter and inorganic matter in sewage sludge or biosolids by high temperatures in an enclosed device.

(XX) "Incorporation" means the mixing of biosolids with soil on a authorized beneficial use site to a minimum depth of four inches or greater by such means as discing, plowing, or tilling.

[Comment: Both same day incorporation and immediate incorporation are defined in this rule.]

(YY) "Industrial septage" means liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives sewage from an industrial establishment.

(ZZ) "Industrial wastewater" means wastewater generated in a commercial or industrial process.

(AAA) "Inert" refers to a substance that will not chemically react with anything under normal circumstances.

(BBB) "Injection" means the subsurface placement of liquid biosolids to a depth of four inches or greater into an authorized beneficial use site.

(CCC) "Inner management zone" means the surface and subsurface area within a drinking water source protection area for a public water system using ground water surrounding any public water supply well that will provide water to that well within one year as delineated or endorsed by the director under the wellhead protection program and the source water assessment and protection program.

(DDD) "Isolation distance" means the distance to a specified object from the nearest edge of the biosolids application area.

(EEE) "Land reclamation" means the returning of lands disturbed through mining operations or industrial activity to productive uses.

(FFF) "Landfill" means a sanitary landfill facility, as defined in rules adopted under section 3734.02 of the Revised Code, that is licensed under section 3734.05 of the Revised Code.

(GGG) "Liming material" means all materials, the calcium and magnesium content of which is used to neutralize soil acidity, and includes the oxide, hydrate, carbonate, and silicate forms, as defined by rule, or combinations of those forms. Liming material includes materials such as the following:

(1) Limestone;

(2) Hydrated lime;

(3) Burnt lime; or

(4) Marl and shell.

(HHH) "Liquid biosolids" means biosolids that contain free liquids as determined by the paint filter test in accordance with method 9095B of the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" also known as "SW 846." This document can be found on the United States environmental protection agency web site at the following link: www.epa.gov/epawaste/hazard/testmethods/sw846/index.htm.

(III) "Low lying wet area" means an area of a beneficial use site where the soils are saturated and where water tends to pond.

(JJJ) "Low potential public exposure site" means agricultural land and land reclamation authorized beneficial use sites that restrict the general public's access.

(KKK) "Management plan" means a plan for the treatment, disposal, transfer or storage of sewage sludge or biosolids or the beneficial use of biosolids that has been approved by the director.

(LLL) "Manufactured inerts" means wastes such as plastic, metals, ceramics and other manufactured items that remain relatively unchanged during wastewater or biosolids treatment processes.

(MMM) "Medical care facility" means home as defined in section 3721.01 of the Revised Code, hospital as defined in section 3727.01 of the Revised Code, adult care facility as defined in section 3722.01 of the Revised Code, nursing facility as defined in section 5111.20 of the Revised Code and similar facilities.

(NNN) "Multi-year phosphate agronomic rate" means the beneficial use rate of biosolids that will provide the phosphate needs for a realistic yield goal of multiple crops to be grown at the beneficial use site, but not to exceed five calendar years of planned crops. In multi-year phosphate applications, no additional source of phosphorus is applied to the same beneficial use site in subsequent years until the applied phosphate has been removed from the beneficial use site via harvest and crop removal.

(OOO) "Nitrogen agronomic rate" means the beneficial use rate of biosolids that will provide the nitrogen requirements or nitrogen removal rates for a realistic yield goal of the succeeding crop to be planted at the beneficial use site. In calculating the nitrogen agronomic rate, the permittee shall:

(1) Subtract the nitrogen credit to be given to the next crop, in accordance with values for previous crops; and

(2) Subtract the nitrogen that will be added in other forms.

[Comment: For beneficial use sites where a grass or legume cover crop is established or will be established after beneficial use of biosolids, the biosolids may still be beneficially used at the rates to provide the nitrogen requirements or nitrogen removal rates for the succeeding crop to be planted after the grass or legume cover crop.]

(PPP) "NPDES permit" means national pollutant discharge elimination system permit that has been approved and issued by the Ohio environmental protection agency.

(QQQ) "Nuisance odor" means an emission of any gas, vapor, aerosol or combination thereof from the management of sewage sludge or biosolids, in whatever quantities, that causes, either alone or in reaction with other air contaminants, injurious effects to public health or the environment or unreasonable interference with the comfortable enjoyment of life or property.

(RRR) "Occupied building" means a structure, permanent in nature, occupied or capable of being occupied. "Occupied building" does not include "medical care facility" or any building that is part of a disposal system.

(SSS) "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges" means "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges, USEPA 600/1-87-014, 1988." This document is available on the internet at: www.epa.gov/ncepihom/.

(TTT) "Pasture" means land on which animals feed directly on vegetation such as legumes, grasses, grain stubble or stover.

(UUU) "Pathogen" means a disease causing organism and includes, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

(VVV) "Pathogen equivalency committee" or "PEC" means a committee made up of United States environmental protection agency experts who review pathogen and vector attraction reduction issues and make recommendations to the appropriate permitting authority. The primary role of the PEC is to review proposals for processes to significantly reduce pathogens ("PSRP") and processes to further reduce pathogens ("PFRP") equivalency determinations and to offer guidance on the issues associated with pathogen and vector attraction reduction.

[Comment: The pathogen equivalency committee is referenced on page six of the document "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge." This document can be found on the internet at: www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf.]

(WWW) "Permittee" means the holder of a valid NPDES permit or a management plan approved by the Director.

(XXX) "Person" means person as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 1.59 of the Revised Code defined person as follows: "person" includes an individual, corporation, business trust, estate, trust, partnership, and association. At the time of this rule adoption, section 6111.01 of the Revised Code defined person as follows: "person" means the state, any municipal corporation, any other political subdivision of the state, any person as defined in section 1.59 of the Revised Code, any interstate body created by compact, or the federal government or any department, agency, or instrumentality thereof.]

(YYY) "pH" means the logarithm of the reciprocal of the hydrogen ion concentration measured at twenty-five degrees Celsius (seventy-seven degrees Fahrenheit) or measured at another temperature and then converted to an equivalent value at twenty-five degrees Celsius (seventy-seven degrees Fahrenheit).

(ZZZ) "Phosphorus index" means the Ohio natural resources conservation service (NRCS) assessment technique for determining the relative risk of phosphorus movement from various landforms to waters of the state. Factors assessed include, but are not limited to, proximity to waters of the state, slope, soil and weather conditions, soil type, buffer strips, soil surface condition, surface and sub-surface drainage, phosphate source application rate and application method, and organic phosphorus Source Coefficient (accounting for environmentally relevant phosphorus). The Ohio NRCS phosphorus index can be found on the internet at: www.agri.ohio.gov/Lepp/Regs/Appx/901-10-2-14%20appx%2024.pdf.

(AAAA) "Pollutant" means an organic substance, an inorganic substance, a combination of organic and inorganic substances, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the administrator of the United States environmental protection agency, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

(BBBB) "Public contact site" means land with a high potential for contact by the public. This includes but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms and golf courses.

(CCCC) "Public water system" means public water system as defined in rule 3745-81-01 of the Administrative Code.

(DDDD) "Regional storage facility" means a constructed facility engineered for the storage of biosolids destined for beneficial use or sewage sludge or biosolids destined for disposal or transfer to another facility.

(EEEE) Representative sample" means a sample of a universe or whole which can be expected to exhibit the average properties of the universe or whole.

(FFFF) "Runoff" means rainwater, leachate or other liquid that drains overland on any part of a land surface and runs off the land surface.

(GGGG) "Same day incorporation" means incorporation, as defined in paragraph (ZZ) of this rule, of biosolids within twenty-four hours after surface application.

(HHHH) "Screenings" means relatively large materials such as rags that are generally removed from sewage prior to secondary treatment at a treatment works.

[Comment: Screenings are considered solid waste and should not be part of a beneficial use application. Screenings should be disposed of within a landfill.]

(IIII) "Sewage" means sewage, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined sewage as follows: "sewage" means any liquid waste containing sludge, sludge materials, or animal or vegetable matter in suspension or solution, and may include household wastes as commonly discharged from residences and from commercial, institutional, or similar facilities.]

(JJJJ) "Sewage sludge" means sewage sludge, as defined in division (Y) of section 3745.11 of the Revised Code.

[Comment: At the time of this rule adoption, section 3745.11 of the Revised Code defined sewage sludge as follows: "sewage sludge" means a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works as defined in section 6111.01 of the Revised Code. "Sewage sludge" includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes. "Sewage sludge" does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator, grit and screenings generated during preliminary treatment of domestic sewage in a treatment works, animal manure, residue generated during treatment of animal manure, or domestic septage.]

(KKKK) "Sewage sludge that has been treated" means sewage sludge that has been prepared for beneficial use or disposal, or transferred to another NPDES permitted treatment works and includes, but is not limited to, sludge that has been thickened, stabilized and dewatered.

(LLLL) "Single-year phosphate agronomic rate" means the beneficial use rate of biosolids that will provide the phosphate needs for a realistic yield goal of the succeeding crop to be planted at the beneficial use site.

[Comment: For beneficial use sites where a grass or legume cover crop is established or will be established after beneficial use of biosolids, the biosolids may still be beneficially used at the rates to provide the phosphate needs for the succeeding crop to be planted after the grass or legume cover crop.]

(MMMM) "Sinkhole" means a surface depression produced when underlying material, such as carbonate bedrock, dissolves resulting in a direct conduit to ground water.

(NNNN) "Sludge" means sludge, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined sludge as follows: "sludge" means sewage sludge and a solid, semi-solid, or liquid residue that is generated from an industrial wastewater treatment process and that is applied to a beneficial use site for agronomic benefit. "Sludge" does not include ash generated during the firing of sludge in a sludge incinerator, grit and screening generated during preliminary treatment of sewage in a treatment works, animal manure, residue generated during treatment of animal manure, or domestic septage.]

(OOOO) "Sludge fee weight" means the weight of sewage sludge, in dry U.S. tons, excluding admixtures such as liming materials or bulking agents. Annual sewage sludge fees, as per paragraph (Y) of section 3745.11 of the Revised Code, are based on the reported sludge fee weight for the most recent calendar year.

(PPPP) "Sludge management" means sludge management, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined sludge management as follows, "sludge management" means the use, storage, treatment, or disposal of, and management practices related to, sludge and sludge materials.]

(QQQQ) "Sludge materials" means sludge materials, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined sludge materials as follows: "sludge materials" means solid, semi-solid, or liquid materials derived from sludge and includes products from a treatment works that result from the treatment, blending, or composting of sludge.]

(RRRR) "Soil phosphorus test" means a soil test procedure using the "Bray-Kurtz P1 extraction" or the "Mehlich 3 extraction" that produces an index of plant available phosphorus expressed in parts per million.

(SSSS) "Specific oxygen uptake rate" or "SOUR" means the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge or sewage sludge material.

(TTTT) "Standard Methods for the Examination of Water and Wastewater" means "Standard Methods for the Examination of Water and Wastewater, 21st Edition, American Public Health Association, American Water Works Association and Water Environment Federation, 2005." This document is available on the internet at: www.standardmethods.org/.

(UUUU) "Surface disposal" means the placement of sewage sludge or biosolids on an area of land for disposal including, but not limited to, monofills, surface impoundments, lagoons not utilized for treatment, waste piles, or dedicated disposal sites for two years or more.

[Comment: A treatment lagoon is not considered a means for disposal.]

(VVVV) "Surface waters of the state" means surface waters of the state, as defined in rule 3745-1-02 of the Administrative Code.

(WWWW) "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" means "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA publication SW-846, third edition (September 1994)." This document is available on the internet at: www.epa.gov/sw-846/main.htm.

(XXXX) "Total solids" means the materials in sewage sludge or sewage sludge material that remain as residue when the sewage sludge or sewage sludge material is dried in accordance with part 2540G of the "Standard Methods for the Examination of Water and Wastewater."

(YYYY) "Treatment works" means treatment works, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined treatment works as follows: "treatment works" means any plant, disposal field, lagoon, dam, pumping station, building sewer connected directly to treatment works, incinerator, or other works used for the purpose of treating, stabilizing, blending, composting, or holding sewage, sludge, sludge materials, industrial waste, or other wastes, except as otherwise defined.]

(ZZZZ) "Underground injection control (UIC) class V drainage well" means underground injection control (UIC) class V drainage well as defined in paragraph (E) of rule 3745-34-04 of the Administrative Code.

(AAAAA) "Vector attraction" means the characteristic of biosolids that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

(BBBBB) "Volatile solids" means the amount of the total solids in sewage sludge lost when the sewage sludge is combusted, in accordance with part 2540G of "Standard Methods for the Examination of Water and Wastewater."

(CCCCC) "Water Pollution Control Act" means the "Federal Water Pollution Control Act" (commonly referred to as the "Clean Water Act") 33 U.S.C. 1251 et seq. as amended through July 1, 2010.

(DDDDD) "Waters of the state" means waters of the state, as defined in section 6111.01 of the Revised Code.

[Comment: At the time of this rule adoption, section 6111.01 of the Revised Code defined waters of the state as follows: "waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and other bodies or accumulations of water, surface and underground, natural or artificial, regardless of the depth of the strata in which underground water is located, that are situated wholly or partly within, or border upon, this state, or are within its jurisdiction, except those private waters that do not combine or effect a junction with natural surface or underground waters.]

(EEEEE) "Yard waste" means leaves, grass clippings, brush, garden waste, tree trunks, tree stumps, holiday trees, and prunings from trees or shrubs. Yard waste does not include industrial or agricultural processing waste.

Effective:	7/1/2011
R.C. 119.032 review date:	7/1/2016
Promulgated Under:	R.C. 119.03
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Rule Amplifies:	R.C. 6111.03, 6111.042
Prior Effective Dates:	4/8/2002, 10/1/2007

3745-40-02 **Purpose, applicability, general requirements, exclusions and prohibitions.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-40-01 of the Administrative Code.]

(A) Purpose.

(1) The purpose of this chapter is:

(a) To establish standards applicable to the treatment, storage, transfer or disposal of sewage sludge or biosolids;

(b) To establish standards applicable to the beneficial use of biosolids;

(c) To reasonably protect public health and the environment;

(d) To encourage the beneficial use of biosolids; and

(e) To minimize the creation of nuisance odors.

(2) Said standards under this chapter are consistent with section 405 of the federal "Water Pollution Control Act" and regulations adopted under it.

(B) Applicability.

(1) Except as provided in paragraphs (B)(2) to (B)(2)(c)(v) of this rule and as noted within other rules in this chapter, this chapter is applicable to:

(a) The treatment, storage, transfer, or disposal of sewage sludge or biosolids; and

(b) The beneficial use of biosolids.

(2) The director, or an authorized representative, may waive any requirement of this chapter or impose a less stringent requirement than that imposed by this chapter, provided:

(a) The authorization to waive a requirement will not result in a less stringent requirement than required in 40 C.F.R. 503;

(b) Waiving the requirement will not adversely affect public health or the environment; and

(c) The permittee has requested and received authorization from the director, or an authorized representative, prior to treatment, storage, transfer, or disposal of the sewage sludge or biosolids or the beneficial use of biosolids. The letter requesting authorization shall include:

(i) The specific requirement of these rules for which the waiver is being requested;

(ii) The volume of sewage sludge or biosolids affected by the waiver being requested;

(iii) If applicable, the location, including the county, township and the latitude and longitude, where the waiver is being requested;

(iv) An explanation of why the waiver being requested will not adversely affect the public health or the environment; and

(v) An explanation of why the waiver being requested is necessary.

(C) General requirements.

(1) An NPDES permit, in accordance with Chapter 3745-33 of the Administrative Code, is required prior to the discharge of any pollutant to surface waters of the state.

(2) General requirements for sewage sludge.

[Comment: "Sewage sludge" is defined in rule 3745-40-01 of the Administrative Code.]

(a) The treatment, storage, transfer, or disposal of sewage sludge shall be in compliance with this chapter and the conditions of an NPDES permit or a management plan.

(b) Sewage sludge that is disposed of in a landfill, in accordance with rules adopted under section 3734.03 of the Revised Code and licensed under section 3734.05 of the Revised Code, shall be in compliance with the requirements of this chapter, and shall be in compliance with the rules adopted under Chapter 3734. of the Revised Code.

(c) Sewage sludge may be transferred to another treatment works provided that said treatment works has an NPDES permit or a management plan for the

treatment, storage, transfer, or disposal of sewage sludge or biosolids, or for the beneficial use of biosolids.

(3) General requirements for biosolids.

[Comment: "Biosolids" is defined in rule 3745-40-01 of the Administrative Code.]

(a) By July 1, 2015, prior to the beneficial use of biosolids, influent wastewater and septage, or sewage sludge at a treatment works must be treated by a process such as physical screening or another method to significantly remove manufactured inerts. Meeting this requirement may be accomplished by either of the following:

(i) Screening influent wastewater and influent septage through a bar screen with a maximum aperture of five-eighths inch (1.59 centimeters) designed to screen the average daily design flow;

(ii) Screening all biosolids through a bar screen with a maximum aperture of five-eighths inch (1.59 centimeters) prior to beneficial use; or

(iii) Obtaining approval from the director for an alternative method that achieves a removal rate equal to or greater than that achieved by the screening standards in paragraph (C)(3)(a)(i) or (C)(3)(a)(ii) of this rule.

[Comment: Manufactured inerts are considered solid waste and should not be part of a beneficial use application. Manufactured inerts should be disposed of within a landfill. When a treatment works is cleaning out a digester or other sewage sludge treatment unit that contains sewage sludge from a time period when influent wastewater or septage was not screened, the treatment works should inspect the biosolids to determine if screening to remove manufactured inerts is needed.]

(b) The treatment, storage, transfer, disposal, or beneficial use of biosolids shall be in compliance with this chapter and the conditions of an NPDES permit or a management plan.

(c) Biosolids that are disposed of in a landfill, in accordance with rules adopted under section 3734.03 of the Revised Code and licensed under section 3734.05 of the Revised Code shall be in compliance with the requirements of this chapter, and shall be in compliance with the rules adopted under Chapter 3734. of the Revised Code.

(d) Biosolids may be transferred to another treatment works provided that said treatment works has an NPDES permit or a management plan for the

treatment, storage, transfer, or disposal of sewage sludge or biosolids, or the beneficial use of biosolids.

(e) Biosolids, when beneficially used, shall be done so in a manner as to minimize odors.

(D) Exclusions. This chapter does not establish requirements for:

(1) The ash generated during incineration of sewage sludge or biosolids;

(2) The ash generated during the incineration of sewage sludge or biosolids and other wastes;

(3) Sewage sludge or biosolids co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge or biosolids and other wastes are co-fired;

(4) The use or disposal of grit or screenings;

(5) Sewage sludge or biosolids, where:

(a) There is a concentration of polychlorinated biphenyls equal to or greater than one milligram per kilogram of total solids on a dry weight basis; or

[Comment: Sewage sludge shall be analyzed in accordance with United States environmental protection agency method 8082A "PCBs by Gas Chromatography, revised February 2007," for purposes of this exclusion. This method can be found on the internet at: www.epa.gov/osw/hazard/testmethods/sw846/pdfs/8082a.pdf.]

(b) It is determined to be hazardous waste as defined in section 3734.01 of the Revised Code;

(6) Sludge, where the sludge:

(a) Is generated at an industrial facility during treatment of industrial wastewater with or without sewage present; or

(b) Is generated during the treatment of drinking water; or

(7) The treatment, storage, transfer or disposal of:

(a) Domestic, commercial or industrial septage, unless septage from multiple sources is combined at a single treatment works prior to treatment, storage, transfer, disposal or beneficial use. In this case, the treatment works shall be installed in accordance with Chapter 3745-42 of the Administrative Code

and operated in compliance with this chapter and the conditions of an NPDES permit;

[Comment: For the purpose of this rule, treatment works does not include vehicles used for the transportation of septage.]

(b) Grease trap waste; or

(c) Final effluent.

(E) Prohibitions.

(1) The surface disposal of sewage sludge or biosolids is prohibited. Any site that was authorized for surface disposal prior to the effective date of these rules shall terminate the operation and use of the surface disposal site no later than six months after the effective date of this rule.

(2) Sewage sludge or class B biosolids shall not be placed on any site that is not, as applicable, dedicated as an authorized beneficial use site, as facility storage, as field storage or as a regional facility storage site. Sites that would not be dedicated as an authorized beneficial use site, as facility storage, as field storage or as a regional facility storage site include, but are not limited to, public or private roadways, parking lots and sidewalks.

(3) The distribution of biosolids that are not exceptional quality, as described in rule 3745-40-04 of the Administrative Code, is prohibited.

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3745-40-03 **NPDES permit requirements and management plan requirements.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-40-01 of the Administrative Code.]

(A) NPDES permit requirements.

(1) Except as provided in paragraph (C) of this rule, the treatment, storage, transfer, or disposal of sewage sludge or biosolids shall be in compliance with this chapter and, as applicable, the conditions of an NPDES permit.

(2) Except as provided in paragraph (C) of this rule, the beneficial use of biosolids shall be in compliance with this chapter and, as applicable, the conditions of an NPDES permit. Unless otherwise determined by the director, any person who receives exceptional quality biosolids for beneficial use is not required to obtain an NPDES permit.

(3) To protect public health or the environment, the director may specify in any NPDES permit:

(a) Requirements for the net volume, net weight, quality, or pollutant concentration of the sewage sludge or biosolids;

(b) The manner or frequency of the treatment, storage, transfer, or disposal of sewage sludge or biosolids;

(c) The manner or frequency of the beneficial use of the biosolids;

(d) Schedules of compliance; and

(e) Permit conditions:

(i) To minimize the creation of nuisance odors;

(ii) To implement treatment, storage, transfer, or disposal of the sewage sludge or biosolids;

(iii) To implement the beneficial use of biosolids;

(iv) Requiring the filing of periodic reports on the amounts, composition and quality of the sewage sludge or biosolids; and

(v) That are more stringent than the requirements in this chapter because of site specific concerns or unique factors relevant to the disposal system or the permittee's operation or maintenance of the disposal system.

(B) Special requirements for land reclamation sites. The beneficial use at a land reclamation site shall:

(1) Be in accordance with an approved management plan as described in paragraph (C) of this rule; and

(2) For any land reclamation site that is under the jurisdiction of the Ohio department of natural resources, division of mineral resources management, have a land reclamation plan, approved by the Ohio department of natural resources, division of mineral resources management, where this approval is obtained by the applicant and submitted to the director prior to the delivery of the biosolids to any land reclamation site.

(C) Management plan requirements.

(1) The director may allow the treatment, storage, transfer or disposal of sewage sludge or biosolids to be in accordance with an approved management plan.

(2) The director may allow the beneficial use of biosolids in accordance with an approved management plan.

(3) The director may require that any person who is not a permittee to obtain a management plan prior to the beneficial use of biosolids.

(4) A management plan:

(a) Is effective for up to five years; and

(b) Shall be in narrative form, shall be on forms approved by the director and shall include:

(i) A detailed description of the method or methods used for the treatment, storage, transfer or disposal of sewage sludge or biosolids and, as applicable, the beneficial use of biosolids;

(ii) Information on how any site specific management practices to prevent runoff will be maintained; and

(iii) The intended beneficial use, including the documented rationale for the rate at which the biosolids will be beneficially used.

[Comment: A management plan application includes permit to install form A, permit to install form C2, antidegradation addendum, and any additional written information the director or an authorized representative deems necessary. These forms can be found on the Ohio environmental protection agency web site at the following link: www.epa.ohio.gov/dsw/sludge/biosolid.aspx.]

(5) Any management plan that was approved less than five years prior to the effective date of this rule, shall expire five years after the effective date of the approved management plan. An application for renewal of a management plan must be submitted one hundred eighty days prior to the expiration date of the plan. As long as a renewal application is submitted one hundred eighty days prior to the expiration date of the management plan, the permittee may continue to operate under the current plan until a new management plan is issued.

(6) Any management plan that was approved five years or more prior to the effective date of this rule shall expire one year after the effective date of this rule. An application for renewal of a management plan must be submitted one hundred eighty days prior to the expiration date of the plan. As long as a renewal application is submitted one hundred eighty days prior to the expiration date of the plan, the permittee may continue to operate under the current plan until a new management plan is issued.

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3745-40-04 **Biosolids classifications.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-40-01 of the Administrative Code.]

(A) General requirements.

(1) After the effective date of this rule, a biosolids classification shall be determined in accordance with table A-1 of this rule.

-Table A-1: Biosolids classifications-

Biosolids classification	Requirements for pathogen reduction	Additional requirements for fecal coliform or Salmonella sp. bacteria reduction	Requirements for vector attraction reduction	Requirements for metals concentration limits
B	Choose from pathogen reduction alternatives P-1 to P-16, in accordance with paragraphs (B)(1) to (B)(16) of this rule	Not applicable [2]	Choose from vector attraction reduction options VAR-1 to VAR-10, in accordance with paragraphs (C)(1) to (C)(10) of this rule	Table D-1 of this rule, and as applicable table D-3 of this rule
Exceptional quality[1]	Choose from pathogen reduction alternatives P-8 to P-16, in accordance with paragraphs (B)(8) to (B)(16) of this rule	Applicable in accordance with paragraph (B) of this rule	Choose from vector attraction reduction options VAR-1 to VAR-8, in accordance with paragraphs (C)(1) to (C)(8) of this rule	Table D-1 of this rule and table D-3 of this rule

Note 1: For exceptional quality biosolids, the pathogen reduction alternatives in accordance with table A-1 of this rule shall be met either prior to or at the same time as meeting the vector attraction reduction requirements.

Note 2: No additional requirements for fecal coliform exist beyond the requirements to meet pathogen reduction alternative P-1.

(2) Records shall be kept in accordance with this rule and rule 3745-40-09 of the Administrative Code.

(B) Pathogen reduction alternatives.

Class B biosolids: For class B biosolids, pathogen reduction shall be accomplished in accordance with an alternative found in paragraphs (B)(l) to (B)(16) of this rule.

Exceptional quality biosolids: For exceptional quality biosolids, pathogen reduction shall be accomplished when the density of fecal coliform in the sewage sludge is less than one thousand most probable number (mpn) per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in the sewage sludge is less than three most probable number (mpn) per four grams of total solids (dry weight basis), and a pathogen reduction alternative is accomplished in accordance with an alternative found in paragraphs (B)(8) to (B)(16) of this rule. To meet the fecal coliform or Salmonella sp. bacteria requirement, the sampling results shall be representative of the biosolids leaving the treatment works. At a minimum, seven grab samples of the biosolids shall be taken and analyzed at least once per reporting period and all results shall meet the limits listed in this paragraph for the biosolids to be considered exceptional quality.

[Comment: Pathogen reduction alternatives P-1 through P-16 can be used to achieve class B biosolids. Pathogen reduction alternatives P-8 through P-16 can be used to achieve exceptional quality biosolids.]

(1) Pathogen reduction alternative P-1: geometric mean of seven samples.

(a) Requirements for achieving pathogen reduction alternative P-1.

(i) At a minimum, seven grab samples of the sewage sludge that are proposed for authorized beneficial use shall be collected. The samples of the sewage sludge shall be taken at various locations, so as to be representative. The director may require more than seven samples to be taken to ensure adequate representation.

(ii) The geometric mean of the density of fecal coliform in the sewage sludge samples shall be either:

(a) Less than two million most probable number (mpn) per gram of total solids (dry weight basis); or

(b) Less than two million colony forming units (cfu) per gram of total solids (dry weight basis).

[Comment: The following geometric mean calculation example was taken from "Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge." This document can be found at the following United States environmental protection agency web link: www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf.]

Calculating the Geometric Mean for Class B Alternative 1

- Take seven samples over a 2-week period.
- Analyze samples for fecal coliform using the membrane filter or MPN dilution method.
- Take the log (Base 10) of each result.
- Take the average (arithmetic) of the logs.
- Take the anti-log of the arithmetic average. This is the geometric mean of the results.

Example: The results of analysis of seven samples of sewage sludge are shown below. The second column of the table shows the log of each result.

	Fecal Coliform (MPN/dry gram sewage sludge)	Log
Sample 1	6.4×10^6	6.81
Sample 2	4.8×10^4	4.68
Sample 3	6.0×10^5	5.78
Sample 4	5.7×10^5	5.76
Sample 5	5.8×10^5	5.76
Sample 6	4.4×10^6	6.64
Sample 7	6.2×10^7	7.80
Average (Arithmetic)		6.18
Antilog (geometric mean)		1.5×10^6
Log standard deviation		1.00*

(b) Monitoring frequency requirements for pathogen reduction alternative P-1. The permittee shall complete monitoring in accordance with paragraphs (B)(1)(a) to (B)(1)(a)(ii) of rule 3745-40-04 of the Administrative Code and at the frequencies specified in paragraph (B) of rule 3745-40-09 of the Administrative Code.

(c) Record keeping requirements for pathogen reduction alternative P-1. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Written documentation that the sewage sludge has been stabilized through an actively mixed aerobic or anaerobic process or through lime stabilization. Examples of such documentation include documenting that lime has been added to the sewage sludge, that proper mixing and aeration has occurred or calculating the mean cell residence time in a digester;

(ii) Analytical results for density of fecal coliform for each sample collected from the sewage sludge; and

(iii) The geometric mean calculations for the sewage sludge.

(2) Pathogen reduction alternative P-2: aerobic digestion.

(a) Requirements for achieving pathogen reduction alternative P-2: aerobic digestion. The requirements for achieving alternative P-2 include:

(i) The sewage sludge shall be agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature; and

(ii) The values for the mean cell residence time and temperature shall be between forty days at twenty degrees Celsius (sixty-eight degrees Fahrenheit) and sixty days at fifteen degrees Celsius (fifty-nine degrees Fahrenheit), where a minimum temperature of fifteen degrees Celsius is maintained at all times.

[Comment: The relevant equation for the mean cell residence time and appurtenant information can be found in appendix E of "Environmental Regulations and Technology - Control of Pathogen and Vector Attraction in Sewage Sludge." To calculate the number of days of the mean cell residence time that is required for temperatures between fifteen and twenty degrees Celsius (between fifty-nine and sixty-eight degrees Fahrenheit), the following equation should be used:

Time in days = $40 \times 1.08^{(20-T)}$ (Where T is the temperature between fifteen and twenty degrees Celsius.)]

(b) Recordkeeping requirements for pathogen reduction alternative P-2: aerobic digestion. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) The mean cell residence time of the sewage sludge in each aerobic digester; and

(ii) The records showing the proper temperature was maintained during the mean cell residence time.

(3) Pathogen reduction alternative P-3: air drying.

(a) Requirements for achieving pathogen reduction alternative P-3: air drying. The requirements for achieving alternative P-3 include:

(i) Partially digested sewage sludge is dried on sand beds or on paved or unpaved basins for a minimum of ninety days;

[Comment: Partially digested sewage sludge means sewage sludge that has been partially stabilized through either an aerobic or anaerobic process.]

(ii) The average ambient air temperature is greater than zero degrees Celsius (thirty-two degrees Fahrenheit) for at least sixty consecutive days within the ninety day period;

(iii) The sewage sludge shall be exposed to the atmosphere for at least sixty consecutive days within the ninety day period; and

[Comment: When sewage sludge is covered by snow or being dewatered inside a geotextile bag, it is not considered to be exposed to the atmosphere.]

(iv) All leachate from the drying basins is returned to the treatment process.

(b) Recordkeeping requirements for pathogen reduction alternative P-3: air drying. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Written documentation that the sewage sludge has been partially stabilized through an aerobic or anaerobic process;

(ii) Written documentation that the sewage sludge has been stabilized through an actively mixed aerobic or anaerobic process;

(iii) A description of the drying bed design, including the type of media being used, the number of drying beds available, the number of drying beds in use, and the dimensions of each drying bed;

(iv) The drying time in days for each drying bed in use; and

(v) The daily minimum temperature, for each of the ninety days.

(4) Pathogen reduction alternative P-4: anaerobic digestion.

(a) Requirements to achieve pathogen reduction alternative P-4: anaerobic digestion. The requirements for achieving alternative P-4 include:

(i) Sewage sludge or biosolids shall be treated in the absence of air for a specific mean cell residence time at a specific temperature. The sewage sludge or biosolids may be commingled with bulking agents or additives, as defined in rules 3745-27-01 and 3745-27-40 of the Administrative Code, and the following feedstocks:

(a) Yard wastes;

(b) Animal wastes;

(c) Food scraps; or

(d) An alternative feedstock authorized by the director or an authorized representative; and

(ii) The values for the mean cell residence time and the temperature shall be between fifteen days at thirty-five to fifty-five degrees Celsius (between ninety-five and one hundred thirty-one degrees Fahrenheit) and sixty days at twenty degrees Celsius (sixty-eight degrees Fahrenheit). A minimum temperature of twenty degrees Celsius (sixty-eight degrees Fahrenheit) shall be maintained at all times.

[Comment: The relevant equations for the mean cell residence time and appurtenant information can be found in appendix E of "Environmental Regulations and Technology-Control of Pathogen and Vector Attraction in Sewage Sludge." To calculate the number of days of the mean cell residence time required for temperatures between twenty and thirty degrees Celsius (between sixty-eight and ninety-five degrees Fahrenheit), the following equation should be used:

Time in days = 15 +3 (35-T) (Where T is the temperature between twenty and thirty-five degrees Celsius.)]

(b) Recordkeeping requirements for pathogen reduction alternative P-4: anaerobic digestion. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) The mean cell residence time of sewage sludge in each digester;

(ii) The temperature records of sewage sludge in each digester; and

(iii) The weight or volume and general counties of origin of all feedstocks, bulking agents and additives utilized in the anaerobic digestion process.

(5) Pathogen reduction alternative P-5: class B composting.

(a) Requirements for achieving pathogen reduction alternative P-5: class B composting. The requirements for achieving alternative P-5 include:

(i) Operating in accordance with the requirements of Chapters 3704. and 6111. of the Revised Code, section 3745.11 of the Revised Code and rules adopted there under. Such treatment works shall not be subject to the requirements in rules 3745-27-40 to 3745-27-47 of the Administrative Code and Chapter 3745-37 of the Administrative Code if all the following conditions are met:

(a) The owner or operator of the treatment works is operating the treatment works in accordance with an NPDES permit issued in accordance with Chapter 6111. of the Revised Code;

(b) The owner or operator of the treatment works composts sewage sludge or biosolids exclusively with bulking agents or additives, as defined in rules 3745-27-01 and 3745-27-40 of the Administrative Code; and

(c) The owner or operator of the treatment works utilizes only sewage sludge, biosolids, yard waste, animal waste, food scraps, or an alternative feedstock that has been approved by the director or an authorized representative as feedstocks in the composting process; and

(ii) Composting that is accomplished through:

(a) In vessel composting, where:

(i) The temperature of the compost medium is maintained at forty degrees Celsius (one hundred four degrees Fahrenheit) or higher for five consecutive days throughout the entire composting medium;

(ii) For four consecutive hours during the five day period, the temperature of the composting medium must rise above fifty-

five degrees Celsius (one hundred thirty-one degrees Fahrenheit); and

(iii) The temperature is measured at multiple points and at a range of depths throughout the composting medium and shall be recorded at the beginning of the compost process when the minimum temperature has been reached, at least once daily, at least once per hour during the four hour period when the composting medium is above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) and at the end of the five day period;

(b) Aerated static pile composting, where:

(i) The temperature of the composting medium is maintained at forty degrees Celsius (one hundred four degrees Fahrenheit) or higher for five consecutive days throughout the entire composting medium;

(ii) For four consecutive hours during the five day period, the temperature of the composting medium must rise above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit);

(iii) One foot or greater of an insulation material shall be placed over the surface of the aerated static pile to ensure that the entire composting medium achieves forty degrees Celsius (one hundred four degrees Fahrenheit) or higher. Finished compost used as insulation material to cover the aerated static pile must be exceptional quality biosolids; and

(iv) The temperature is measured at multiple points and at a range of depths throughout the composting medium, including the toes of the pile, and shall be recorded at the beginning of the composting process, at least once daily, at least once per hour during the four hour period that the composting medium is above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) and at the end of the five day period; or

[Comment: It is recommended that a method be used that draws air through the composting medium rather than blowing air through the medium. Drawing air through the composting medium provides greater odor control because the compost air can be easily collected and then filtered or scrubbed.]

(c) Windrow composting, where:

(i) The temperature of the windrow of composting medium shall be maintained at forty degrees Celsius (one hundred four degrees Fahrenheit) or higher for a minimum of five consecutive days, except during active turning or mixing of the windrow;

(ii) For four consecutive hours during the five day period, the temperature of the composting medium must rise above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit);

(iii) The windrow of composting medium shall be turned or mixed during the five day period so that the entire compost medium has maintained a temperature of forty degrees Celsius (one hundred four degrees Fahrenheit) for a minimum of five days. The turning or mixing shall be done by a machine that moves the core of the composting material to the outside of the windrow and moves the outside compost material into the core of the windrow;

(iv) The temperature of the windrow shall be at or above forty degrees Celsius (one hundred four degrees Fahrenheit) within twenty-four hours after the turning or mixing of the windrow is complete; and

(v) The temperature is measured at multiple points and at a range of depths throughout the composting medium, including the toes of the pile, and shall be recorded at the beginning of the composting process, at least once daily, at least once per hour during the four hour period that the composting medium is above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) and at the end of the five day period.

[Comment: It is recommended that treatment works allow sewage sludge or biosolids to compost for a minimum of fourteen days for in-vessel composting, twenty-one days for static aerated pile composting, or thirty days for windrow composting to reduce volatile solids in the sewage sludge or biosolids. Sewage sludge or biosolids that are composted for the minimum amount of time by rule may still be odorous. Composting is generally considered complete when the temperature of the compost returns to ambient temperatures.]

(b) Recordkeeping requirements for pathogen reduction alternative P-5: composting. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) A description of the composting method, including where the temperature shall be measured;

(ii) The weight or volume and general counties of origin of all feedstocks, bulking agents and additives utilized in the composting process; and

(iii) For in-vessel composting:

(a) The daily temperature records for each vessel at each sample location that documents that the sewage sludge was maintained at a temperature of forty degrees Celsius (one hundred four degrees Fahrenheit) for five days; and

(b) The hourly readings for each vessel at each sample location showing that the temperature exceeded fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) for four consecutive hours; or

(iv) For aerated static pile composting:

(a) The daily temperature records for each aerated static pile at each sample location that documents that the sewage sludge was maintained at a temperature of forty degrees Celsius (one hundred four degrees Fahrenheit) for five days; and

(b) The hourly readings for each aerated static pile at each sample location showing that the temperature exceeded fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) for four consecutive hours; or

(v) For windrow composting:

(a) The daily temperature records for each windrow at each sample location that documents that the sewage sludge was maintained at a temperature of forty degrees Celsius (one hundred four degrees Fahrenheit) for five days;

(b) Hourly readings for each windrow at each sample location showing that the temperature exceeded fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) for four consecutive hours; and

(c) Records that indicate the day and the time of day each windrow was turned or mixed.

(6) Pathogen reduction alternative P-6: lime treatment.

(a) Requirements for achieving pathogen reduction alternative P-6: lime treatment. The requirements for achieving alternative P-6 include:

(i) Adding sufficient lime to the sewage sludge to raise the pH to twelve after two hours of contact;

(ii) Sufficient mixing to ensure that the entire mass of sewage sludge comes into contact with the lime and achieves the minimum pH of twelve. The pH shall be measured at several locations to ensure that the pH is raised throughout the sewage sludge; and

(iii) Incorporating measures to minimize odors.

(b) Recordkeeping requirements for pathogen reduction alternative P-6: lime treatment. Records shall be maintained and submitted to the director or an authorized representative with the annual report that include:

(i) A description of how the pH is monitored throughout the sewage sludge and how the lime is mixed into the sewage sludge;

(ii) Records that initially document the pH of the sewage sludge once lime has been added and then documents the pH again two hours after the addition of the lime; and

(iii) Records showing the amount of lime material that was added and when it was added, expressed in dry tons.

[Comment: A variety of lime stabilization processes are currently in use. The effectiveness of any lime stabilization process for controlling pathogens depends on maintaining the pH at levels that reduce microorganisms in the sewage sludge. Field experience has shown that the authorized beneficial use of lime stabilized material after the pH has dropped below 10.5 may, in some cases, create odor problems. Therefore, it is recommended that biosolids beneficial use take place while the pH remains elevated. If this is not possible, and odor problems develop, alternate management practices in the field, including injection or incorporation or top dressing the beneficially used biosolids with additional lime, shall be performed. Alternate management practices, if the biosolids have not yet left the treatment works, may include adding additional lime to maintain the elevated pH or additional treatment through drying or composting.]

(7) Pathogen reduction alternative P-7: equivalent process to significantly reduce pathogens.

(a) Requirements for achieving pathogen reduction alternative P-7: equivalent process to significantly reduce pathogens. To achieve alternative P-7, a permittee shall apply for and obtain an equivalency recommendation from the pathogen equivalency committee of the United States environmental protection agency.

(b) Recordkeeping requirements for pathogen reduction alternative P-7: equivalent process to significantly reduce pathogens. The records of the operating parameters or pathogen levels, as necessary to demonstrate the process equivalent to a process to significantly reduce pathogens, shall be maintained and submitted to the director or an authorized representative with the annual report.

(8) Pathogen reduction alternative P-8: time and temperature regime.

(a) Requirements for achieving pathogen reduction alternative P-8: time and temperature regime. The requirements for achieving alternative P-8 include maintaining a temperature in the sewage sludge at a specific value for a specific time period, in accordance with paragraphs (B)(8)(a)(i) to (B)(8)(a)(iv) of this rule.

(i) When the per cent solids of the sewage sludge is seven per cent or higher, the temperature of the sewage sludge shall be fifty degrees Celsius (one hundred twenty-two degrees Fahrenheit) or higher, the time period shall be twenty minutes or longer and the temperature and time period shall be determined using equation number one, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid. Equation number one is:

$D = 131{,}000{,}000/10^{0.1400T}$ (where D equals time in days and T equals temperature in degrees Celsius).

[Comment: The times and temperatures in table B-1 of this rule provide common durations for common temperatures, relevant to the requirements of paragraph (B)(8)(a)(i) of this rule.]

-Table B-1: Time and temperature table for paragraph (B)(8)(a)(i) of this rule.-

Temperature in degrees Celsius	Temperature in degrees Fahrenheit	Duration in days	Duration in hours	Duration in minutes
50	122	14	--	--
52	125.6	7	--	--
54	129.2	4	--	--
56	132.8	2	--	--
58	136.4	--	24	--
60	140	--	13	--

62	143.6	--	7	--
64	147.2	--	4	--
66	150.8	--	2	--
68	154.4	--	--	57
70	158	--	--	30
72	161.6	--	--	20
74	165.2	--	--	20
76	168.8	--	--	20
78	172.4	--	--	20
80	176	--	--	20
82	179.6	--	--	20
84	183.2	--	--	20
Above 84	Above 183.2	--	--	20

(ii) When the per cent solids of the sewage sludge is seven per cent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be fifty degrees Celsius (one hundred twenty-two degrees Fahrenheit) or higher, the time period shall be fifteen seconds or longer and the temperature and time period shall be determined using equation number one;

[Comment: The times and temperatures in table B-2 of this rule provide common durations for common temperatures, relevant to the requirements of paragraph (B)(8)(a)(ii) of this rule.]

-Table B-2: Time and temperature table for paragraph (B)(8)(a)(ii) of this rule.-

Temperature in degrees Celsius	Temperature in degrees Fahrenheit	Duration in days	Duration in hours	Duration in minutes	Duration in seconds
50	122	14	--	--	--
52	125.6	7	--	--	--
54	129.2	4	--	--	--
56	132.8	2	--	--	--
58	136.4	1	--	--	--
60	140	--	13	--	--
62	143.6	--	7	--	--
64	147.2	--	4	--	--
66	150.8	--	2	--	--
68	154.4	--	--	57	--
70	158	--	--	30	--
72	161.6	--	--	16	--
74	165.2	--	--	9	--
76	168.8	--	--	5	--
78	172.4	--	--	3	--

80	176	--	--	2	--
82	179.6	--	--	--	38
84	183.2	--	--	--	20
Above 84	Above 183.2	--	--	--	15

(iii) When the per cent solids of the sewage sludge is less than seven per cent and the time period is at least fifteen seconds, but less than thirty minutes, the temperature and time period shall be determined using equation number one; or

[Comment: Times and temperatures in table B-3 of this rule provide common durations for common temperatures, relevant to the requirements of paragraph (B)(8)(a)(iii) of this rule.]

-Table B-3: Time and temperature table for paragraph (B)(8)(a)(iii) of this rule.-

Temperature in degrees Celsius	Temperature in degrees Fahrenheit	Duration in days	Duration in hours	Duration in minutes	Duration in seconds
70	158	--	--	30	--
72	161.6	--	--	15	--
74	165.2	--	--	9	--
76	168.8	--	--	5	--
78	172.4	--	--	3	--
80	176	--	--	2	--
82	179.6	--	--	--	38
84	183.2	--	--	--	20
Above 84	Above 183.2	--	--	--	15

(iv) When the per cent solids of the sewage sludge is less than seven per cent, the temperature of the sewage sludge is fifty degrees Celsius (one hundred twenty-two degrees Fahrenheit) or higher, and the time period is thirty minutes or longer, the temperature and time period shall be determined using equation number two. Equation number two is:

$D = 50{,}070{,}000/10^{0.1400T}$ (Where D equals time in days and T equals temperature in degrees Celsius.)

[Comment: The times and temperatures in table B-4 of this rule provide common durations for common temperatures, relevant to the requirements in paragraph (B)(8)(a)(iv) of this rule.]

- Table B-4: Time and temperature table for paragraph (B)(8)(a)(iv) of this rule.-

Temperature in degrees Celsius	Temperature in degrees Fahrenheit	Duration in days	Duration in hours	Duration in minutes

50	122	5	--	--
52	125.6	3	--	--
54	129.2	2	--	--
56	132.8	--	18	--
58	136.4	--	10	--
60	140	--	5	--
62	143.6	--	3	--
64	147.2	--	2	--
66	150.8	--	--	42
68	154.4	--	--	30
70	158	--	--	30
72	161.6	--	--	30
74	165.2	--	--	30
76	168.8	--	--	30
78	172.4	--	--	30
80	176	--	--	30
82	179.6	--	--	30
84	183.2	--	--	30
Above 84	Above 183.2	--	--	30

(b) Recordkeeping requirements for pathogen reduction alternative P-8: time and temperature regime. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) The sewage sludge temperature;

(iii) The duration, in days, hours, minutes and seconds, as applicable, that the temperature was maintained; and

(iv) Analytical results for per cent solids of the sewage sludge or biosolids treated in the process.

(9) Pathogen reduction alternative P-9: high pH and high temperature process.

(a) Requirements for achieving pathogen reduction alternative P-9: high pH and high temperature process. The requirements for achieving alternative P-9 include:

(i) Ensuring that the pH of the sewage sludge is raised to above twelve and remains above twelve for at least seventy-two hours;

(ii) Sufficient mixing to ensure that the entire mass of sewage sludge comes into contact with the lime and achieves the minimum pH of twelve. The pH shall be measured at several locations to ensure that the pH is raised throughout the sewage sludge;

(iii) Ensuring that the temperature of the sewage sludge is above fifty-two degrees Celsius (one hundred twenty five and six tenths degrees Fahrenheit) for at least twelve hours during the period that the pH is above twelve; and

(iv) Ensuring that at the end of the seventy-two hour period during which the pH of the sewage sludge is above twelve, that the sewage sludge is air dried to a per cent solids of greater than fifty per cent.

(b) Recordkeeping requirements for pathogen reduction alternative P-9: high pH and high temperature process. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) Records of the sewage sludge pH at start-up, at twenty-four hours, at forty-eight hours and at seventy-two hours;

(iii) The hourly sewage sludge temperature for the twelve hours that the temperature is required to be maintained;

(iv) The per cent solids of the sewage sludge after air drying;

(v) Records showing the amount of lime material that was added and when it was added, expressed in dry tons; and

(vi) A description of how the pH and temperature are maintained throughout the sewage sludge.

(10) Pathogen reduction alternative P-10: exceptional quality composting.

(a) Requirements for achieving pathogen reduction alternative P-10: exceptional quality composting. The requirements for achieving alternative P-10 include:

(i) Operating in accordance with the requirements of Chapters 3704. and 6111. of the Revised Code, section 3745.11 of the Revised Code and any rules adopted there under. Such treatment works is not subject to the requirements of rules 3745-27-40 to 3745-27-47 of the Administrative Code and Chapter 3745-37 of the Administrative Code if all the following conditions are met:

(a) The owner or operator of the treatment works is operating the treatment works in accordance with an NPDES permit issued in accordance with Chapter 6111. of the Revised Code;

(b) The owner or operator of the treatment works co-composts sewage sludge or biosolids exclusively with bulking agents or additives, as defined in rules 3745-27-01 and 3745-27-40 of the Administrative Code, or alternative bulking agents or additives that have been approved by the director or an authorized representative; and

(c) The owner or operator of the treatment works utilizes only sewage sludge, biosolids, animal waste, food scraps, or an alternative feedstock that has been approved by the director or an authorized representative as feedstocks in the composting process; and

(ii) Composting that is accomplished through:

(a) In-vessel composting, where:

(i) The temperature of the composting medium is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for seventy-two hours throughout the entire composting medium; and

(ii) The temperature is measured at multiple points and at a range of depths throughout the composting medium and shall be recorded, at a minimum, at the beginning of the composting process, at twenty-four hours, at forty-eight hours and at seventy-two hours;

(b) Aerated static pile composting, where:

(i) The temperature of the composting medium is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for seventy-two consecutive hours throughout the entire composting medium;

(ii) One foot or greater of an insulation material is placed over the surface of the aerated static pile to help ensure that the entire composting medium achieves fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher. Finished compost can be used as an insulation material to cover the aerated static pile provided it is exceptional quality biosolids; and

(iii) The temperature is measured at multiple points and at a range of depths throughout the composting medium including the toes of the piles, and is recorded, at a minimum, at the beginning of the composting process and at twenty-four, forty-eight and seventy-two hours at a minimum; or

[Comment: It is recommended that a method be used that draws air through the composting medium rather than blowing air through the medium. Drawing air through the composting medium provides greater odor control because the air can be easily collected and then filtered or scrubbed.]

(c) Windrow composting, where:

(i) The temperature of the composting medium is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for a minimum of fifteen consecutive days, except during active turning or mixing of the windrow;

(ii) The windrow of composting medium is turned or mixed at seventy-two hour intervals during the fifteen day period, where the minimum number of turnings or mixings is five;

(iii) The turning or mixing is done by a machine that moves the core of the compost material to the outside of the windrow and moves the outside compost material into the core of the windrow;

(iv) The core temperature of the windrow is at or above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) within twenty-four hours after each turning or mixing of the windrow is complete; and

(v) The temperature shall be measured in the core of the windrow at various locations along the length of the windrow. Temperatures shall be recorded at the same time daily, at a minimum, throughout the fifteen day period.

[Comment: To reduce volatile solids, it is recommended that in-vessel composting be conducted for a minimum of fourteen days, that static, aerated pile composting be conducted for a minimum of twenty-one days and that windrow composting be conducted for a minimum of thirty days. Sewage sludge or biosolids that are composted for the minimum amount of times may still be odorous.]

(b) Recordkeeping requirements for pathogen reduction alternative P-10: composting. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) A description of the composting method, including where the temperature was measured;

(iii) The weight or volume and general counties of origin of all feedstocks, bulking agents and additives utilized in the composting process;

(iv) Records documenting the temperature maintained at or above fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) for each sampling location:

(a) Three days for either in-vessel or static, aerated pile composting; or

(b) Fifteen days for windrow composting; and

(v) If windrow composting was utilized:

(a) Records documenting the compost pile was turned or mixed at least five times during the fifteen day period; and

(b) Records that indicate the day and the time of day each windrow was turned or mixed.

(11) Pathogen reduction alternative P-11: heat drying.

(a) Requirements for achieving pathogen reduction alternative P-11: heat drying. The requirements for achieving alternative P-11 include drying the sewage sludge by direct or indirect contact with hot gases to increase the sewage sludge to a per cent solids content of at least ninety per cent, where either the temperature of the sewage sludge particles exceeds eighty degrees

Celsius (one hundred seventy-six degrees Fahrenheit) or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds eighty degrees Celsius (one hundred seventy-six degrees Fahrenheit).

(b) Recordkeeping requirements for pathogen reduction alternative P-11: heat drying. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) The per cent solids of the dried sewage sludge; and

(iii) Records documenting that the temperature of the sewage sludge particles or the wet bulb temperature of exit gas exceeds eighty degrees Celsius (one hundred seventy-six degrees Fahrenheit).

(12) Pathogen reduction alternative P-12: thermophilic aerobic digestion.

(a) Requirements for achieving pathogen reduction alternative P-12: thermophilic aerobic digestion. The requirements for achieving alternative P-12 include agitating the liquid sewage sludge with air or oxygen to maintain aerobic conditions, where the mean cell residence time is ten days and the temperature, which is measured at least once per day, is between fifty-five and sixty degrees Celsius (one hundred thirty-one degrees to one hundred forty degrees Fahrenheit).

(b) Recordkeeping requirements for pathogen reduction alternative P-12: thermophilic aerobic digestion. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) Records documenting the temperature was maintained at fifty-five to sixty degrees Celsius (one hundred thirty-one degrees to one hundred forty degrees Fahrenheit) in each digester; and

(iii) Records documenting the mean cell residence time was met in each digester.

(13) Pathogen reduction alternative P-13: beta ray irradiation.

(a) Requirements for achieving pathogen reduction alternative P-13: beta ray irradiation. To achieve alternative P-13, the sewage sludge shall be irradiated with beta rays from an accelerator at dosages of at least one megarad at room temperature (approximately twenty degrees Celsius or sixty-eight degrees Fahrenheit).

(b) Recordkeeping requirements for pathogen reduction alternative P-13: beta ray irradiation. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis;

(ii) The beta ray dosage; and

(iii) The ambient room temperature records.

(14) Pathogen reduction alternative P-14: gamma ray irradiation.

(a) Requirements for achieving pathogen reduction alternative P-14: gamma ray irradiation. To achieve alternative P-14, the sewage sludge shall be irradiated with gamma rays from certain isotopes, such as \60\cobalt and \137\cesium, at dosages of at least one megarad at room temperature (approximately twenty degrees Celsius or sixty-eight degrees Fahrenheit).

(b) Recordkeeping requirements for pathogen reduction alternative P-14: gamma ray irradiation. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Documentation of the gamma ray isotope uses;

(ii) The gamma ray dosage;

(iii) Ambient room temperature records; and

(iv) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis.

(15) Pathogen reduction alternative P-15: pasteurization.

(a) Requirements for achieving pathogen reduction alternative P-15: pasteurization. To achieve alternative P-15, the temperature of the sewage sludge shall be maintained at seventy degrees Celsius (one hundred fifty-eight degrees Fahrenheit) or higher for thirty minutes or longer. A device shall be used to monitor the temperatures to ensure that the temperature of the sewage sludge doe snot fall below seventy degrees Celsius (one hundred fifty-eight degrees Fahrenheit) during the thirty minute period.

(b) Recordkeeping requirements for alternative P-15: pasteurization. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis; and

(ii) Records documenting that the temperature was maintained at or above seventy degrees Celsius (one hundred fifty-eight degrees Fahrenheit) or higher for at least thirty minutes throughout the sewage sludge.

(16) Pathogen reduction alternative P-16: equivalent process to further reduce pathogens.

(a) Requirements for achieving pathogen reduction alternative P-16. To achieve alternative P-16, a permittee shall apply for and obtain an equivalency recommendation from the pathogen equivalency committee of the United States environmental protection agency.

(b) Recordkeeping requirement for pathogen reduction alternative P-16: equivalent process to further reduce pathogens. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Analytical results for density of fecal coliform bacteria expressed as the most probable number (mpn) per gram of total solids in dry weight basis, or the density of Salmonella sp. bacteria expressed as mpn per four grams of total solids in dry weight basis; and

(ii) Operating parameters or pathogen levels, as necessary, to demonstrate that the process equivalent to a process to further reduce pathogens has been achieved.

(C) Vector attraction reduction options.

[Comment: In conjunction with an applicable pathogen reduction alternative, vector attraction reduction alternatives VAR-1 through VAR-8 can be used to achieve exceptional quality biosolids. In conjunction with an applicable pathogen reduction alternative, vector attraction reduction alternatives VAR-1 through VAR-10 can be used to achieve class B biosolids.]

Class B biosolids. In addition to the applicable pathogen reduction requirements and the pollutant concentration limits for metals in this rule, a vector attraction reduction option in accordance with paragraphs (C)(1) to (C)(10) of this rule shall be met in order to achieve class B biosolids.

Exceptional quality biosolids. In addition to the applicable pathogen reduction requirements and the pollutant concentration limits for metals in this rule, a vector attraction reduction option in accordance with paragraphs (C)(1) to (C)(8) of this rule shall be met to achieve exceptional quality biosolids.

(1) Vector attraction reduction option VAR-1: thirty-eight per cent volatile solids reduction.

(a) Requirements for achieving vector attraction reduction option VAR-1: thirty-eight per cent volatile solids reduction. To achieve option VAR-1, the mass of volatile solids in the sewage sludge shall be reduced by a minimum of thirty-eight per cent.

[Comment: Calculations for determining the volatile solids reduction may be found in "Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge." This document can be found on the internet at: http://www.epa.gov/nrmrl/pubs/625r92013/625r92013.htm.]

(b) Recordkeeping requirements for vector attraction reduction option VAR-1: thirty-eight per cent volatile solids reduction. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) The volatile solids concentration of the raw sewage sludge and the final sewage sludge and the location of each sample taken; and

(ii) The calculations showing that thirty-eight per cent volatile solids reduction was achieved.

(2) Vector attraction reduction option VAR-2: bench scale anaerobic digestion.

(a) Requirements for achieving vector attraction reduction option VAR-2: bench scale anaerobic digestion. When the thirty-eight per cent volatile

solids reduction requirement in paragraph (C)(1)(a) of this rule can not be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by:

(i) Digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench scale unit for at least forty additional days at a temperature between thirty and thirty-seven degrees Celsius (eighty-six to ninety-eight degrees Fahrenheit); and

(ii) Showing that at the end of the forty days the volatile solids in the sewage sludge at the beginning of that period is reduced by less than seventeen per cent.

(b) Recordkeeping requirements for vector attraction reduction option VAR-2: bench scale anaerobic digestion. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) A description of the bench scale digester;

(ii) The time in days that the sample was further digested in the bench scale digester;

(iii) Daily temperature records; and

(iv) The volatile solids concentration of the sewage sludge before and after the bench scale digestion.

(3) Vector attraction reduction option VAR-3: bench scale aerobic digestion.

(a) Requirements for achieving vector attraction reduction option VAR-3: bench scale aerobic digestion. When the thirty-eight per cent volatile solids reduction requirement in paragraph (C)(1)(a) of this rule can not be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by:

(i) Digesting a portion of the previously digested sewage sludge that has a per cent solids of two per cent or less aerobically in the laboratory in a bench-scale unit for thirty additional days at twenty degrees Celsius (sixty-eight degrees Fahrenheit); and

(ii) Showing that at the end of the thirty days the volatile solids in the sewage sludge at the beginning of that period is reduced by less than fifteen per cent.

(b) Recordkeeping requirements for vector attraction reduction option VAR-3: bench scale aerobic digestion. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) A description of the bench scale digester;

(ii) The time in days that the sample was further digested in the bench scale digester;

(iii) Daily temperature records; and

(iv) The volatile solids concentration of the sewage sludge before and after the bench scale digestion.

(4) Vector attraction reduction option VAR-4: specific oxygen uptake rate (SOUR) test.

(a) Requirements for achieving vector attraction reduction option VAR-4: specific oxygen uptake rate (SOUR) test. To achieve option VAR-4, the specific oxygen uptake rate for sewage sludge that is treated in an aerobic process at temperatures between ten and thirty degrees Celsius (between fifty and eighty-six degrees Fahrenheit), shall 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 twenty degrees Celsius (sixty-eight degrees Fahrenheit). The temperature of the sewage sludge to be tested shall be maintained at the same temperature as it was in the digester.

(b) Recordkeeping requirements for vector attraction reduction option VAR-4: specific oxygen uptake rate (SOUR) test. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Dissolved oxygen readings for the sewage sludge sample taken every minute over a fifteen minute interval;

(ii) Calculations and temperature records showing that the test was corrected to twenty degrees Celsius (sixty-eight degrees Fahrenheit);

[Comment: To adjust the specific oxygen uptake rate to twenty degrees Celsius, use the following equation:]

$$Sour_{20\text{-degrees Celsius}} = Sour_{\text{T-degrees Celsius}} \times \Theta^{(20-T)}$$

(Where T is the temperature of the sewage sludge when the SOUR test was started; and
Where $\Theta = 1.05$ if $T > 20$ degrees Celsius; or
Where $\Theta = 1.07$ if $T < 20$ degrees Celsius)

(iii) Total solids for the sewage sludge sample; and

(iv) The SOUR calculations.

(5) Vector attraction reduction option VAR-5: aerobic process time and temperature treatment.

(a) Requirements for achieving vector attraction reduction option VAR-5: aerobic process time and temperature regime. Sewage sludge shall be treated in an aerobic process for fourteen days or longer. During that time, the temperature of the sewage sludge shall be higher than forty degrees Celsius (one hundred four degrees Fahrenheit) and the average temperature of the sewage sludge shall be higher than forty-five degrees Celsius (one hundred thirteen degrees Fahrenheit).

(b) Recordkeeping requirements for vector attraction reduction option VAR-5: aerobic process time and temperature regime. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) The sewage sludge detention time in the aerobic digester or composting process; and

(ii) Temperature records showing that the average temperature was above forty-five degrees Celsius (one hundred thirteen degrees Fahrenheit) and the minimum temperature was above forty degrees Celsius (one hundred four degrees Fahrenheit) for fourteen consecutive days.

(6) Vector attraction reduction option VAR-6: lime treatment.

(a) Requirements for achieving vector attraction reduction option VAR-6: lime treatment. The pH of sewage sludge shall be raised to twelve or higher by lime addition and, without the addition of more lime, shall remain at twelve or higher for two hours and then remain at 11.5 or higher for an additional twenty-two hours.

(b) Recordkeeping requirements for vector attraction reduction option VAR-6: lime treatment. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) A narrative description of how the pH was monitored throughout the material for the applicable time period;

(ii) Records indicating that the pH was maintained at or above twelve for two hours and at or above 11.5 for an additional twenty-two hours; and

(iii) The number of dry tons of the lime material that was added.

(7) Vector attraction reduction option VAR-7: greater than or equal to seventy-five per cent solids.

(a) Requirements for achieving vector attraction reduction option VAR-7: greater than or equal to seventy-five per cent solids. The per cent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than seventy-five per cent based on the per cent solids and total solids prior to mixing with other materials.

(b) Recordkeeping requirements for vector attraction reduction option VAR-7: greater than or equal to seventy-five per cent solids. The following records shall be maintained and submitted to the director or an authorized representative with the annual report:

(i) Results of per cent solids tests; and

(ii) Records showing that the sewage sludge has been stabilized.

(8) Vector attraction reduction option VAR-8: greater than or equal to ninety per cent solids.

(a) Requirements for achieving vector attraction reduction option VAR-8: greater than or equal to ninety per cent solids. The per cent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than ninety per cent based on the per cent solids and total solids prior to mixing with other materials until the biosolids are beneficially used. Measures shall be taken to prevent odors and proper storage shall be provided to avoid a decrease in per cent solids.

(b) Recordkeeping requirements for vector attraction reduction option VAR-8: greater than or equal to ninety per cent solids. The results of the per cent

solids tests on a dry weight basis shall be maintained and submitted to the director or an authorized representative with the annual report.

(9) Vector attraction reduction option VAR-9: biosolids are injected below the surface of the authorized beneficial use site.

(a) Requirements for achieving vector attraction option VAR-9: biosolids are injected below the surface of the authorized beneficial use site. Biosolids shall be injected below the surface of the authorized beneficial use site, where no significant amount of biosolids shall be present on the surface of the authorized beneficial use site within one hour after the sewage sludge is injected.

(b) Recordkeeping requirements for vector attraction reduction option VAR-9: biosolids are injected below the surface of the authorized beneficial use site. The certification statement, as required by rule 3745-40-09 of the Administrative Code, from the beneficial user shall be maintained and submitted to the director or an authorized representative with the annual report.

(10) Vector attraction reduction option VAR-10: immediate incorporation of biosolids.

(a) Requirements for vector attraction reduction option VAR-10: immediate incorporation of biosolids. Biosolids shall be incorporated into the soil within six hours of delivery to the authorized beneficial use site, unless otherwise specified by the director.

(b) Recordkeeping requirements for vector attraction reduction option VAR-10: immediate incorporation of biosolids. The certification statement from the beneficial user shall be maintained and submitted to the director or an authorized representative with the annual report.

(D) Metals concentration limits.

(1) No person shall beneficially use biosolids if any monitoring result indicates that a pollutant concentration exceeds the pollutant ceiling concentration listed in table D-1 of this rule.

[Comment: If more than one monitoring event occurs for the pollutants listed in table D-1 of this rule then all monitoring results must show pollutant levels below the pollutant ceiling concentrations listed in table D-1 of this rule. Monitoring results can not be averaged to show that pollutant levels are below the pollutant ceiling concentrations listed in table D-1 of this rule.]

(2) If a monitoring result indicates that a pollutant exceeds the pollutant ceiling concentrations listed in table D-1 of this rule, a permittee shall either dispose of the sewage sludge within a landfill or return the sewage sludge to the initial stage of the sewage sludge treatment train. If the permittee returns the sewage sludge to the sewage sludge treatment train, monitoring shall be repeated and the results must indicate that pollutants do not exceed the pollutant ceiling concentrations listed in table D-1 of this rule before biosolids are removed from the treatment works for beneficial use.

(3) No person shall beneficially use biosolids at an authorized beneficial use site subject to the cumulative pollutant loading rates established in table D-2 of this rule if any of the cumulative pollutant loading rates in table D-2 of this rule have been reached at the authorized beneficial use site.

(4) The pollutant ceiling concentrations, cumulative pollutant loading rates, and pollutant reporting period average concentrations for biosolids shall, as applicable, not exceed the concentrations listed in table D-1, table D-2 and table D-3 of this rule or as required by part 503 of 40 C.F.R.

(5) Before class B biosolids subject to the cumulative pollutant loading rates in this rule are applied at an authorized beneficial use site in Ohio, the person who proposes to beneficially use the class B biosolids shall contact the Ohio environmental protection agency division of surface water to determine whether class B biosolids subject to the cumulative pollutant loading rates in this rule have been beneficially used at the authorized beneficial use site since July 20, 1993.

(a) If beneficial use of class B biosolids subject to the cumulative pollutant loading rates has not occurred since July 20, 1993, the cumulative amount for each pollutant listed in this rule may be applied at the authorized beneficial use site in accordance with this chapter.

(b) If class B biosolids subject to the cumulative pollutant loading rates have been beneficially used at the authorized beneficial use site since July 20, 1993, and the cumulative amount of each pollutant beneficially used at the authorized beneficial use site since that date is known, the cumulative amount of each pollutant applied at the authorized beneficial use site shall be used to determine the additional amount of each pollutant that can be applied at the authorized beneficial use site in accordance with this chapter.

(c) If class B biosolids subject to the cumulative pollutant loading rates have been beneficially used at the authorized beneficial use site since July 20, 1993, and the cumulative amount of each pollutant applied at the authorized beneficial use site since that date is not known, an additional amount of each pollutant shall not be applied at the authorized beneficial use site.

(6) Any person who beneficially uses class B biosolids subject to the cumulative pollutant loading rates in this rule at an authorized beneficial use site in Ohio shall provide written notice to the appropriate Ohio environmental protection agency district office prior to initial beneficial use of class B biosolids at the authorized beneficial use site. The Ohio environmental protection agency shall retain and provide access to the notice. The notice shall include the following:

(a) The location of the authorized beneficial use site by either street address or latitude and longitude of the center of the beneficial use site; and

(b) The name, address, telephone number and NPDES permit number of the generator of the class B biosolids.

-Table D-1: Pollutant ceiling concentration limits.-

Pollutant	Pollutant ceiling concentration limit (milligrams per kilogram dry weight basis)
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

-Table D-2: Pollutant cumulative pollutant load rates.-

Pollutant	Pollutant cumulative pollutant load rates (pounds per acre)
Arsenic	36.6
Cadmium	34.8
Copper	1339.9
Lead	267.9
Mercury	15.2
Nickel	375.1
Selenium	89.3
Zinc	2500.4

-Table D-3: Pollutant reporting period average concentration limits.-

Pollutant	Pollutant reporting period average concentration limit (milligrams per kilogram dry weight basis)
Arsenic	41
Cadmium	39

Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

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3745-40-05 **Notice and necessary information requirements for biosolids and other notification requirements.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) Notice and necessary information requirements. Any person who is a permittee shall provide the initial person who receives biosolids information including, but not limited to:

(1) The name, address, telephone number, and NPDES permit number of the permittee;

(2) The following statement: "The material you are receiving is or contains biosolids that have been treated to meet the requirements in Chapter 3745-40 of the Administrative Code";

(3) The concentration of total Kjeldahl nitrogen, ammonia nitrogen, total phosphorus and total potassium of the biosolids in milligram per kilogram, dry weight basis;

(4) The concentration of pollutants, as identified in paragraph (D) of rule 3745-40-04 of the Administrative Code in milligrams per kilogram, dry weight basis;

(5) The pathogen reduction alternative, as identified in paragraph (B) of rule 3745-40-04 of the Administrative Code, and the vector attraction reduction option, as identified in paragraph (C) of rule 3745-40-04 of the Administrative Code, that has been satisfied; and

(6) A statement that the biosolids shall be further treated, stored, transferred, disposed of or beneficially used in accordance with this chapter.

(B) Other notification requirements. Any person who beneficially uses class B or bulk exceptional quality biosolids shall provide the beneficial use site operator a crop-year report for each beneficial use site. In the event that more than one type of feed crop, fiber crop, food crop, or pasture is grown on a single beneficial use site where multiple beneficial use rates are used, a crop year report shall be submitted for each separate crop area. At a minimum, the crop-year report shall include the following information:

"On [fill in the date(s) biosolids were beneficially used on the beneficial use site], biosolids from [fill in name of treatment works], Ohio environmental protection agency permit [fill in NPDES permit number], were beneficially used on [fill in Ohio environmental protection agency number for the beneficial use site for class B biosolids, or street address or latitude and longitude of the beneficial use site for bulk exceptional quality biosolids] located in [fill in township and county where

beneficial use occurred]. Biosolids are a by-product of wastewater treatment. An analysis of the biosolids showed the following concentrations:

(1) Kjeldahl nitrogen: [provide concentration in per cent or milligram per kilogram, dry-weight basis]

(2) Ammonia nitrogen : [provide concentration in per cent or milligram per kilogram, dry weight basis]

(3) Total phosphorous : [provide concentration in per cent or milligram per kilogram, dry weight basis]

(4) Total potassium : [provide concentration in per cent or milligram per kilogram, dry weight basis]

The beneficial use rates were:

(1) Available nitrogen : [provide concentration in per cent or milligram per kilogram, dry weight basis]

(2) Phosphate : [provide application rate in pounds per acre or kilogram per hectare, dry-weight basis]

(3) Potash : [provide application rate in pounds per acre or kilogram per hectare, dry-weight basis]

The above information is supplied as a requirement of the Ohio environmental protection agency, division of surface water, which can be reached at 1-877-644-2001."

(C) In order to protect public health or the environment, the director may require any person who distributes biosolids or material containing biosolids to provide the initial person receiving the biosolids or material containing biosolids with additional information concerning the contents of the biosolids.

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3745-40-06 **Authorization for a beneficial use site, site transfer requirements and site amendment requirements for class B biosolids.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) Authorization for a beneficial use site. Prior to the beneficial use of class B biosolids, a permittee shall obtain from the director or an authorized representative an authorization to beneficially use biosolids for the site to which the beneficial use of biosolids is to occur. An application for an authorization for a beneficial use site shall:

(1) Be on forms prepared by the director;

(2) Be valid only for those conditions stated in the specific beneficial use site authorization; and

(3) Be valid for only the treatment works that are owned by the same person who signs the beneficial use site authorization application form prepared by the director.

[Comment: For example, a municipality that has two different NPDES permitted treatment works would be authorized to beneficially use biosolids from either treatment works at a single beneficial use site.]

(B) Authorized beneficial use site transfer. Any permittee who wishes to transfer an authorized beneficial use site from one treatment works to another shall make the request in writing on forms approved by the director and obtain authorization from the director or an authorized representative prior to beneficial use at the authorized beneficial use site.

(C) Amending an authorized beneficial use site. Any permittee who wishes to amend the acreage for a currently authorized beneficial use site shall make the request in writing on forms approved by the director and obtain authorization from the director or an authorized representative prior to amending a beneficial use site.

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3745-40-07 **Requirements for the storage of biosolids: isolation distance requirements and requirements for field and regional facility storage.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) Biosolids that are stored shall be protective of human health and the environment and shall not impact waters of the state.

(B) Prohibitions. If utilizing vector attraction reduction options nine (VAR-9) or ten (VAR-10) , the field storage of class B biosolids is prohibited.

(C) Isolation distance requirements.

(1) The isolation distances listed in table C-1 of this rule shall be maintained for the field storage of class B and bulk exceptional quality biosolids.

-Table C-1: Isolation distance requirements that shall be maintained from the location of class B and bulk exceptional quality biosolids. -

Isolation distance requirement:	To be maintained from:	For biosolids classification
Three feet	Bedrock	Class B and bulk exceptional quality
One hundred feet	Surface waters of the state	Class B and bulk exceptional quality
Three hundred feet	A sinkhole or a UIC class V drainage well	Class B and bulk exceptional quality
Three hundred feet	An occupied building	Class B
Three hundred feet	A private, potable water source	Class B
One thousand feet	A medical care facility	Class B

(2) In addition to the isolation distance requirements in table C-1 of this rule, no person shall store class B biosolids:

(a) Within the following areas pertaining to public water systems:

(i) Within the sanitary isolation distance a public water system must maintain for a drinking water supply well as established in rule 3745-9-04 of the Administrative Code;

(ii) Within the following areas defined in table C-2 of this rule; or

-Table C-2: Setback requirements for public water systems.-

Type of public water system	Setback
Community or non-transient, non-community public water system	The inner management zone; if the drinking water source protection area is underlain by karst or fractured bedrock and has been determined to be highly susceptible to contamination, the setback shall be extended to include the entire drinking water source protection area.
Transient, non-community public water system using ground water	Three hundred feet from the water supply well

(iii) Within the emergency management zone for a public water system using surface water. Where no emergency management zone has been delineated or endorsed by the Ohio environmental protection agency, the isolation distance shall consist of a circle with a radius of one thousand five hundred feet from the intake;

(b) Within a low lying wet area or on soils frequently flooded; or

[Comment: "Frequently flooded" and "low lying wet area" are defined in rule 3745-40-01 of the Administrative Code.]

(c) Where the slope is greater than fifteen per cent.

(D) The maximum amount of class B or bulk exceptional quality biosolids to be delivered:

(1) To any beneficial use site in one crop year shall not exceed the agronomic rate of class B or bulk exceptional quality biosolids for the beneficial use site and any contiguous beneficial use site; and

(2) To any land reclamation site shall be in accordance with paragraphs (B) to (B)(2) of rule 3745-40-03 of the Administrative Code.

(E) For class B or bulk exceptional quality biosolids that are stockpiled or stored at the beneficial use site:

(1) The field storage of class B or bulk exceptional quality biosolids at any beneficial use site shall be in accordance with table E-1 of this rule; and

(2) For class B or bulk exceptional quality biosolids stored at a beneficial use site, the date of first delivery of the biosolids to the beneficial use site and the date that beneficial use of the biosolids is completed shall be recorded.

-Table E-1: Field storage requirements.-

Biosolids classification	Number of days of field storage	Is field storage allowed?
Class B and bulk exceptional quality	Less than or equal to ninety days	Yes[1]
Class B and bulk exceptional quality	Greater than ninety days	No. The field storage of biosolids for more than ninety days is prohibited.[2]

Note 1: Field storage is allowed, provided surface water diversions and other best management practices are utilized as appropriate. Surface water diversions include, but are not limited to, straw bales or silt fence installed to catch any solids in runoff, or temporary berms installed to divert runoff away from the biosolids. These measures are not necessary for the temporary transfer of biosolids from a delivery vehicle to a beneficial use vehicle on the same day the biosolids are delivered to the beneficial use site.

Note 2: If biosolids can not be spread within ninety days after delivery to the beneficial use site, the biosolds shall be returned to the treatment works at which the biosolids were generated, taken to a landfill for disposal, taken to another treatment works provided said treatment works has an NPDES permit for the treatment, storage, transfer or disposal of biosolids, or taken to another beneficial use site where the biosolids shall be beneficially used the same day that the biosolids were removed from the previous beneficial use site.

(F) Regional storage facility requirements. A regional storage facility is required when biosolids will be stored for more than ninety days at any place other than the generating treatment facility.

(1) A permit to install, in accordance with Chapter 3745-42 of the Administrative Code, shall be obtained from the director prior to the construction of a regional storage facility.

(2) An NPDES permit shall be obtained prior to any treatment of biosolids at a regional storage facility.

(3) No person shall:

(a) Store biosolids at a regional storage facility for more than two years without proper authorization from the director or an authorized representative;

(b) Unless in accordance with an NPDES permit, mix class B biosolids from two different treatment works at a regional storage facility;

(c) Locate a regional storage facility within a drinking water source protection area for a community public water system using ground water; or

(d) Locate a regional storage facility where there is a potential for an unpermitted discharge to waters of the state.

(G) To protect public health or the environment or to minimize the creation of nuisance odors, the director or an authorized representative may:

(1) Decrease the maximum time biosolids may be stored at a beneficial use site; or

(2) Prohibit the storage of biosolids at a beneficial use site.

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3745-40-08 **Requirements for the beneficial use of biosolids: general requirements, prohibitions, isolation distance requirements, site specific requirements, and additional site restrictions for the beneficial use of class B biosolids.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) General requirements.

(1) Any biosolids beneficially used on a lawn or a home garden shall be exceptional quality biosolids, as defined in rule 3745-40-01 of the Administrative Code and described in rule 3745-40-04 of the Administrative Code.

(2) Except as provided in paragraphs (A)(3) to (A)(4) of this rule, when class B or bulk exceptional quality biosolids are beneficially used they shall be beneficially used at an agronomic rate at any beneficial use site. The agronomic rate utilized for beneficial use on a beneficial use site shall be derived from the following for the purpose of protecting waters of the state:

(a) From the effective date of these rules until June 30, 2013, the agronomic rate shall be calculated in accordance with the following:

(i) For soils with soil phosphorus test results less than or equal to one hundred fifty parts per million Bray-Kurtz P1 extraction or one hundred seventy parts per million Mehlich III extraction, the nitrogen agronomic rate; and

(ii) For soils with soil phosphorus test results greater than one hundred fifty parts per million Bray-Kurtz P1 extraction or one hundred seventy parts per million Mehlich III extraction, beneficial use shall be completed in accordance with the phosphorus index;

(b) After July 1, 2013, the agronomic rate shall be the most limiting factor derived from the following for the purpose of protecting waters of the state:

(i) For soils with soil phosphorus test results less than or equal to forty parts per million Bray-Kurtz P1 extraction or forty-five parts per million Mehlich III extraction;

(a) The nitrogen agronomic rate;

(b) A phosphate beneficial use rate of two hundred fifty pounds per acre or less; or

(c) A phosphate beneficial use rate between two hundred fifty six pounds per acre and five hundred pounds per acre if one of the following criteria are met, upon which no further phosphorus sources may be beneficially used at the beneficial use site for three calendar years:

(i) All biosolids are injected or are incorporated within twenty four hours of beneficial use; or

(ii) There is greater than fifty per cent ground cover at the time of beneficial use

(ii) For soils with soil phosphorus test results greater than forty parts per million Bray-Kurtz P1 extraction or forty-five parts per million Mehlich III extraction and less than or equal to one hundred parts per million Bray-Kurtz P1 extraction or one hundred fifteen parts per million Mehlich III extraction:

(a) The nitrogen agronomic rate; or

(b) A multi-year phosphate agronomic rate.

(iii) For soils with soil phosphorus test results greater than one hundred parts per million Bray-Kurtz P1 extraction or one hundred fifteen parts per million Mehlich III extraction and less than or equal to one hundred fifty parts per million Bray-Kurtz P1 extraction or one hundred seventy parts per million Mehlich III extraction:

(a) The nitrogen agronomic rate; or

(b) The single-year phosphate agronomic rate.

(iv) For soils with soil phosphorus test results greater than one hundred fifty parts per million Bray-Kurtz P1 extraction or one hundred seventy parts per million Mehlich III extraction, beneficial use shall be completed in accordance with the phosphorus index.

(3) For all beneficial use sites, beneficial of class B or bulk exceptional quality biosolids may be completed in accordance with the phosphorus index.

(4) Special requirement regarding land reclamation sites. The agronomic rate may be exceeded during land reclamation projects using biosolids provided the beneficial use is in accordance with paragraphs (B) to (B)(2) of rule 3745-40-03 of the Administrative Code.

(5) Special requirement regarding liquid class B or liquid bulk exceptional quality biosolids. The beneficial use of liquid class B or bulk exceptional quality biosolids shall be at or below the agronomic rate for the reasonably expected yield goal of planned crops or crop rotation, or at or below the available water capacity of the upper eight inches of soil, whichever is less at the time of beneficial use.

(B) Prohibitions and restrictions.

(1) Precipitation prohibitions and restrictions for hydrologic soil groups A, B, and C.

[Comment: Information on Ohio hydrologic soil groups can be found on the United States department of agriculture, natural resources conservation services web site at the following link: www.oh.nrcs.usda.gov/technical/soils/.]

(a) Except as provided in paragraphs (B)(1)(b) to (B)(1)(b)(iii) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids during a precipitation event, or when the forecast indicates that there is at least a fifty per cent chance that 0.5-inch of rain will occur within twenty-four hours after beneficial use. The forecast consulted shall be for the nearest municipality where the beneficial use site is located and shall be printed out or otherwise recorded and kept on file for each beneficial use event.

[Comment: Information on hourly forecasts may be located at the National Oceanic and Atmospheric Administration's website: www.weather.gov by entering a zip code or City, State in the box where indicated, selecting "Go" and selecting the "Hourly Weather Graph" under "Additional Forecasts and Information."]

(b) Class B or bulk exceptional quality biosolids may be beneficially used when the forecast indicates that there is at least a fifty per cent chance that 0.5-inch of rain will occur within twenty-four hours after beneficial use if:

(i) The biosolids are injected;

(ii) The biosolids are immediately incorporated; or

(iii) The beneficial user can provide records of actual rainfall data indicating that less than 0.5-inch of rain occurred within the twenty-four hours following the beneficial use of biosolids.

(2) Precipitation prohibitions and restrictions for hydrologic soil group D soils.

(a) Except as provided in paragraphs (B)(2)(b) to (B)(2)(b)(iii) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids

during a precipitation event or when the forecast indicates that there is at least a fifty per cent chance that 0.25-inch of rain will occur within twenty-four hours after beneficial use. The forecast consulted shall be for the nearest municipality where the beneficial use site is located and shall be printed out or otherwise recorded and kept on file for each beneficial use event.

[Comment: Information on hourly forecasts may be located at the National Oceanic and Atmospheric Administration's website: www.weather.gov by entering a zip code or City, State in the box where indicated, selecting "Go" and selecting the "Hourly Weather Graph" under "Additional Forecasts and Information."]

(b) Class B or bulk exceptional quality biosolids may be beneficially used when the forecast indicates that there is at least a fifty per cent chance that 0.25-inch of rain will occur within twenty-four hours after beneficial use for any hydrologic soil group (HSG) D soils if:

(i) The biosolids are injected;

(ii) The biosolids are immediately incorporated; or

(iii) The beneficial user can provide records of actual rainfall data indicating that less than 0.25-inch of rain occurred within the twenty-four hours following the beneficial use of biosolids.

(3) No person shall beneficially use class B or bulk exceptional quality biosolids if such beneficial use is likely to adversely affect a threatened or endangered species listed under section four of the Endangered Species Act or its designated critical habitat.

(C) Isolation distance requirements.

(1) Except as provided in paragraph (C)(2) of this rule, no person shall beneficially use class B or bulk exceptional quality biosolids within the following isolation distances listed in table C-1 of this rule.

-Table C-1: Isolation distance requirements-

	Surface application isolation distance requirements (feet)	Injected or immediately incorporated isolation distance requirements (feet)	Applicable biosolids classification
Bedrock	3	3	Class B or bulk exceptional quality
Surface waters of the state	33	33	Class B or bulk exceptional quality
Sinkhole or UIC class V drainage	300 without a grass buffer; 100 with a grass buffer	300 without a grass buffer; 100 with a grass buffer	Class B or bulk exceptional quality
Occupied building	300	100	Class B
Private potable water source	300	100	Class B
Medical care facility	1000	300	Class B

(2) The director or an authorized representative may allow a reduction in isolation distance for those occupied buildings that are located adjacent to an authorized beneficial use site, provided such a request is made from both the building owner and, if applicable, the resident of the occupied building. A request for an isolation distance reduction shall be made on forms approved by the director.

(D) Site specific requirements. Any person who beneficially uses class B or bulk exceptional quality biosolids shall meet the following site specific requirements.

(1) Pollutant ceiling concentrations. No person shall beneficially use biosolids if the concentration of any pollutant in the biosolids exceeds the ceiling concentration limits for the pollutants established in rule 3745-40-04 of the Administrative Code.

(2) Frozen or snow covered ground.

[Comment: The Ohio agricultural research and development center at the Ohio state university provides daily site specific data at several sites around Ohio for soil temperatures at the following internet address: www.oardc.ohio-state.edu/newweather.]

(a) Unless otherwise authorized by the director, between December fifteenth and March first of any two consecutive calendar years, the beneficial use of class B or bulk exceptional quality biosolids shall be accomplished by either same day incorporation or through injection.

(b) Between March first and December fifteenth of any calendar year, no person shall beneficially use class B or bulk exceptional quality biosolids on the

surface of a beneficial use site that is frozen or snow-covered, unless beneficial use is completed in accordance with paragraphs (D)(2)(b)(i) to (D)(2)(b)(iv) of this rule.

(i) At the time of beneficial use, the beneficial use site shall have no less than ninety per cent ground cover and the ground cover shall not be covered by ice or snow.

(ii) Liquid class B or liquid bulk exceptional quality biosolids shall not be beneficially used at a rate that exceeds five thousand gallons per acre to frozen or snow covered ground.

(iii) No person shall beneficially use class B or bulk exceptional quality biosolids on more than twenty contiguous acres. Beneficial use shall occur as far from surface waters of the state as possible, but no closer than two hundred feet, and at a location that presents the least potential for runoff.

(iv) No person shall beneficially use class B or bulk exceptional quality biosolids on the surface of a beneficial use site that is frozen or snow covered with a slope greater than six per cent.

(v) Concentrated beneficial use site surface drainage and tile outlets shall be visually monitored at the conclusion of the class B or bulk exceptional quality biosolids beneficial use, and periodically afterwards when weather is likely to produce runoff including when temperatures rise, snow melts, and in conjunction with rainfall, etc., until the class B or bulk exceptional quality biosolids have been assimilated into the beneficial use site and are no longer likely to discharge into surface waters of the state. If the beneficially used class B or bulk exceptional quality biosolids discharge to surface waters of the state, then the beneficial user shall notify Ohio EPA within two hours of detection of the runoff event.

(vi) If the ammonia nitrogen level in a water quality sample is determined to be twenty-six mg/L or greater in the discharge at the point it enters surface waters of the state, then any additional beneficial use of class B or bulk exceptional quality biosolids on the surface of a beneficial use site that is frozen or snow covered is prohibited on the beneficial use site where the runoff event occurred. In the event that runoff from a frozen or snow covered beneficial use site discharges to surface waters of the state with an ammonia nitrogen content of twenty-six mg/L or greater in a total of three beneficial use events, then beneficial use of class B or bulk exceptional quality biosolids on any frozen or snow covered ground is prohibited for that beneficial user from that point on.

(3) Beneficial use sites that are frequently flooded. No person shall beneficially use class B or bulk exceptional quality biosolids at a beneficial use site that is frequently flooded so that the class B or bulk exceptional quality biosolids enter surface waters of the state, except as provided in an NPDES permit issued under Chapter 6111. of the Revised Code. Beneficial use of class B or bulk exceptional quality biosolids at a beneficial use site shall be limited to same day incorporation or injection on areas of beneficial use sites that are frequently flooded during periods when flooding is expected.

(4) Ground slope and ground cover. No person shall beneficially use class B or bulk exceptional quality biosolids at food crop, feed crop, fiber crop, or cover crop land over fifteen per cent slope or at pasture land or vegetation land over twenty per cent slope unless one of the following activities is performed:

(a) Same day incorporation or injection with operations done on the contour; or

(b) The field is established and managed in contour strips with alternate strips in cover crop, pasture, or vegetation.

(5) Soil monitoring requirements. If soil monitoring results for either soil phosphorus or soil pH are more than three years old, the soil shall be retested prior to the class B or bulk exceptional quality biosolids being delivered to a beneficial use site for beneficial use. Soil grab samples shall be taken to plow depth or within the top eight inches of soil and shall be considered representative of the top eight inches of soil for:

(a) Soil phosphorus. Prior to the beneficial use of class B or bulk exceptional quality biosolids, the soil phosphorus level shall be monitored utilizing either the Bray-Kurtz P1 extraction or Mehlich 3 extraction method; and

(b) Soil pH. Minimum soil pH for beneficial use of class B biosolids shall be 5.5. If the soil pH at a beneficial use site is less than 5.5, sufficient liming material shall be added such that the class B biosolids and soil mixture pH is calculated to reach 5.5 or greater.

[Comment: Soil samples can be collected at any time; however, it is recommended to obtain the soil sample prior to spring planting. A soil probe, auger, spade, or garden trowel can be used to sample soil. A plastic bucket should be used to collect soil grab samples. Each composite sample should represent fifteen to twenty acres of uniform area (uniform in soil series, slope, drainage, erosion, and fertilizer application (including sewage sludge)) and less than five acres of rolling land. Generally, any area that is large enough to spread separately should be sampled separately. Grab samples should be taken seventy-five to one hundred feet apart with a minimum of fifteen grab samples in a composite sample. Low spots or other unusual areas (biosolids stockpiling area or liming material and fertilizer spills) should be omitted or sampled separately.

For row crops, samples should be taken between rows. For establishing grass pasture crops, samples should be collected to the rooting zone (three to four inches). All grab samples should be broken up and mixed thoroughly before a composite sample is taken.]

(6) Beneficial use sites with subsurface tile drainage.

(a) For beneficial use sites with subsurface tile drainage, all field outlets shall be visually monitored before, during and after beneficial use of liquid class B or liquid bulk exceptional quality biosolids at the beneficial use site and the results of that monitoring shall be recorded. Methods or devices to stop or capture subsurface drain flow shall be accessible. If liquid class B or liquid bulk exceptional quality biosolids reach the subsurface drain outlet to surface waters of the state, the beneficial use of liquid biosolids shall cease and the flow shall be stopped or captured.

(b) For beneficial use of liquid class B or liquid bulk exceptional quality biosolids at beneficial use sites with subsurface tile drainage, the following criteria must be followed:

(i) Beneficial use rates shall be less than or equal to 0.5-inch or thirteen thousand gallons per acre per beneficial use event;

(ii) A tool shall be used that can disrupt or close the preferential flow paths in the soil using horizontal fracturing, or the surface of the soil shall be tilled three to five inches deep to a seedbed condition to soak up the liquid class B or liquid bulk exceptional quality biosolids and keep it out of preferential flow channels;

(iii) If injection is used, liquid class B or liquid bulk exceptional quality biosolids shall only be injected deep enough to cover the biosolids with soil. The soil shall be tilled at least three inches below the depth of injection prior to or at the time of beneficial use; and

(iv) For beneficial use sites where tillage is not an option, all tile outlets from the beneficial use site are to be plugged and all tile stops are to be closed prior to or at the same time as beneficial use.

(E) Additional site restrictions for the beneficial use of class B biosolids:

(1) No person shall beneficially use class B biosolids:

(a) Within the sanitary isolation distance a public water system must maintain for a drinking water supply well, as established in rule 3745-9-04 of the Administrative Code;

(b) Within an emergency management zone for a public water system using surface water. Where no emergency management zone has been delineated or endorsed by the Ohio environmental protection agency, the isolation distance shall consist of a circle with a radius of one thousand five hundred feet from the intake; or

(c) Within the following areas, as defined in table E-1 of this rule:

-Table E-1: -

Type of public water system	Isolation distance
Community or non-transient, non-community public water system	The inner management zone; if the drinking water source protection area is underlain by karst or fractured bedrock and has been determined to be highly susceptible to contamination, the setback shall be extended to include the entire drinking water source protection area
Transient, non-community public water system	Three hundred feet from a drinking water supply well

(2) Food crops with harvested parts that touch the biosolids or soil mixture and are on the surface of the authorized beneficial use site shall not be harvested for fourteen months after the beneficial use of class B biosolids;

(3) Food crops with harvested parts below the surface of the authorized beneficial use site shall not be harvested for twenty months after the beneficial use of class B biosolids when the biosolids remained on the surface of the authorized beneficial use site for four months or longer prior to incorporation into the soil;

(4) Food crops with harvested parts below the surface of the authorized beneficial use site shall not be harvested for thirty-eight months after the beneficial use of class B biosolids when the class B biosolids remained on the surface of the authorized beneficial use site for less than four months prior to incorporation into the soil;

(5) All other food crops, feed crops, and fiber crops shall not be harvested for thirty days after the beneficial use of class B biosolids;

(6) Animals shall not be allowed to graze on the authorized beneficial use site for thirty days after the beneficial use of class B biosolids;

(7) Turf or other vegetation grown for landscaping purposes that is grown on an authorized beneficial use site where class B biosolids are beneficially used shall not be harvested for one year after the beneficial use of class B biosolids when the harvested turf or other vegetation is placed on either land with a high

potential for public exposure or a lawn, unless otherwise specified by the director;

(8) Public access to a high potential public exposure site shall be restricted for one year after the beneficial use of class B biosolids;

(9) Public access to a low potential public exposure site shall be restricted for thirty days after the beneficial use of class B biosolids; and

(10) The mixing of class B biosolids from different treatment works at an authorized beneficial use site is prohibited, unless in accordance with paragraph (A)(3) of rule 3745-40-06 of the Administrative Code.

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3745-40-09 **Approved sampling methods, monitoring frequency requirements, record retention and annual reporting requirements.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-40-01 of the Administrative Code.]

(A) Approved sampling methods.

(1) Except as provided in paragraph (A)(2) of this rule, a permittee shall collect and analyze, as applicable, representative samples of biosolids in accordance with table A-1 of this rule, or any other method as approved under 40 C.F.R. 503. The following methods or methods listed in 40 C.F.R. Part 136 shall be used to analyze samples of biosolids and are adopted by reference in this chapter.

-Table A-1: approved methods for sampling.-

Sample	Approved method
Enteric viruses	ASTM D 4994-89
Fecal coliform	Part 9221E. or part 9222D., "Standard Methods for the Examination of Water and Wastewater"
Helminth ova	Yanko, W.A. "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges"
Inorganic pollutants	"EPA SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"
Salmonella sp. bacteria	Part 9260D., "Standard Methods for the Examination of Water and Wastewater" or Kenner, B.A. and H.P. Clark, "Detection and Enumeration of Salmonella and Pseudomonas aeruginosa," journal of the water pollution control federation, vol. 46, no. 9, September 1974, pp. 2163-2171. Water environment federation, 601 Wythe street, Alexandria, VA 22314
Specific oxygen uptake rate	Part 2710B., "Standard Methods for the Examination of Water and Wastewater"
Total, fixed, and volatile solids	Part 2540G., "Standard Methods for the Examination of Water and Wastewater"

(2) The director may approve alternative sampling methods to those listed in table A-1 of this rule provided the permittee submits a copy of the alternative sampling method being proposed and any necessary support documentation to the director for consideration prior to any sampling being done.

(B) Monitoring frequency requirements. For any NPDES permit issued by the director, monitoring frequencies shall be in accordance with paragraphs (B) to (B)(4) of this rule. In addition to the monitoring frequencies in paragraphs (B) to (B)(4) of this rule, the director may require additional monitoring to protect public health or the environment.

(1) Total solids.

(a) Each day when sewage sludge or biosolids are removed from the treatment works for disposal, a representative composite sample of the sewage sludge or biosolids, as applicable, shall be collected and analyzed for total solids.

(b) Each day when biosolids are removed from the treatment works for beneficial use, a representative composite sample of the biosolids shall be collected and analyzed for total solids.

(2) Transfer to another treatment works. Each day when sewage sludge or biosolids are transferred to another treatment works, the total volume of sewage sludge or biosolids removed for transfer shall be documented.

(3) Pathogen reduction. To ensure that pathogen reduction requirements are met prior to beneficial use, monitoring shall occur for pathogen reduction prior to beneficial use.

(a) Monitoring for pathogen reduction shall be performed as necessary to show compliance with all processing requirements and, at a minimum, in accordance with table B-1 of this rule.

(b) If beneficial use does not occur in a reporting period, the number of samples collected and reported for pathogen reduction shall be increased during the next beneficial use event to include the missed monitoring periods, unless all previously accumulated sewage sludge has been removed and disposed of via a landfill, though incineration or by transfer to another treatment works.

[Comment - For example, for a treatment works that would be required to monitor their sewage sludge on a quarterly basis, but only has one annual beneficial use event, and that relies on fecal coliform monitoring to meet pathogen reduction, four separate sets of seven fecal coliform samples with the appropriate four separate geometric mean calculations would be required.]

(4) Vector attraction. To ensure that vector attraction requirements are met prior to beneficial use, monitoring shall occur for vector attraction reduction prior to beneficial use.

(a) Monitoring for vector attraction reduction shall be performed as necessary to show compliance with all processing requirements and, at a minimum, in accordance with table B-1 of this rule.

(b) Monitoring for vector attraction reduction is not required when vector attraction reduction options VAR-9 or VAR-10, in accordance with rule 3745-40-04 of the Administrative Code, are utilized.

(5) Metals and nutrients.

(a) The following is a list of parameters that shall be monitored for prior to beneficial use in accordance with the frequencies in table B-1 of this rule:

(i) Metals:

(a) Arsenic;

(b) Cadmium;

(c) Copper;

(d) Lead;

(e) Mercury;

(f) Molybdenum;

(g) Nickel;

(h) Selenium; and

(i) Zinc.

(ii) Nutrients:

(a) Ammonia nitrogen;

(b) Total kjeldahl nitrogen;

(c) Total phosphorus; and

(d) Total potassium.

(b) For any NPDES permit or management plan that was issued by the director prior to the effective date of this rule, the monitoring frequencies for metals and nutrients in the currently effective NPDES permit or management plan

or the monitoring frequencies for metals in accordance with 40 C.F.R. 503 shall be followed until a modification or renewal NPDES permit or management plan is issued.

(c) For any NPDES permit or management plan issued by the director after the effective date of this rule, minimum frequency of monitoring for metals and nutrients shall be in accordance with table B-1 of this rule. This monitoring shall occur even if beneficial use does not occur during a reporting period, or the number of samples collected and reported shall be increased prior to the next beneficial use event to account for the reporting period(s) in which beneficial use did not occur, unless all previously accumulated sewage sludge has been removed and disposed of via a landfill, through incineration or by transfer to another treatment works.

(d) For any NPDES permit or management plan issued by the director that does not include sampling requirements for total phosphorus or total potassium, the minimum frequency of monitoring for total phosphorus or total potassium shall be in accordance with table B-1 of this rule.

-Table B-1: Minimum frequency of monitoring required for the beneficial use of biosolids based on amount of sewage sludge generated per calendar year.-

Amount of sewage sludge generated (dry U.S. tons per calendar year)	Frequency of monitoring
Greater than zero but less than three hundred twenty	Once per year
Greater than or equal to three hundred twenty but less than one thousand six hundred fifty	Once per quarter
Greater than or equal to one thousand six hundred fifty but less than sixteen thousand five hundred	Once every two months
Greater than or equal to sixteen thousand five hundred	Once per month

(6) Dioxin monitoring requirements.

(a) To protect public health or the environment, the director may require monitoring for dioxin for any treatment works:

(i) To determine whether a significant increase is occurring in the dioxin concentration; and

(ii) To assist in identifying the source of any such significant increase.

(b) If monitoring for dioxin is required, the treatment works shall monitor for dioxin in sewage sludge, such that:

(i) All analyses for dioxin in sewage sludge that are required by this rule are performed by a laboratory equipped to provide accurate results;

(ii) All test results for dioxin are submitted to the appropriate Ohio environmental protection agency district office and the Ohio environmental protection agency central office;

(iii) The 2, 3, 7, 8-TCDD total toxicity equivalence of the dioxin in sewage sludge, calculated from the twenty-nine dioxin congeners defined in rule 3745-40-01 of the Administrative Code, shall be reported as part of the permittee's monthly operating report;

(iv) All dioxin in sewage sludge monitoring results shall be retained by the permittee for a minimum of five years and shall be submitted to the Ohio environmental protection agency upon request. The results shall include the following:

(a) Total class concentrations of the dibenzo-p-dioxins and dibenzofurans in parts per trillion;

(b) Concentrations of the twenty-nine individual congeners in parts per trillion; and

(c) Calculation of the 2, 3, 7, 8-TCDD total toxicity equivalence in parts per trillion;

(v) The following analytical methods shall be used for the analysis of dioxin in sewage sludge:

(a) United States environmental protection agency method number 1613B shall be used for the seven 2, 3, 7, 8 chlorinated dibenzo-p-dioxin congeners and ten 2, 3, 7, 8 chlorinated dibenzofuran congeners; and

[Comment: Method number 1613B, October 1994, may be obtained from: "National Technical Information Service No. PB93-236024, (800) 553-NITS, or Educational Resources Information Center Number W-105, (800) 443-ERIC." Method 1613B can also be obtained from the following web link: www.epa.gov/waterscience/methods/method/dioxins/.]

(b) United States environmental protection agency method number 1668A (USEPA number 821/C-97-005821/C-97-005) shall be used for the twelve coplanar polychlorinated biphenyl congeners;

[Comment: Method number 1668A, November 2008, may be obtained from: "Office of Water Methods and Guidance Diskette 2, Office of Water Resource Center, (202) 260-7786." Method

number 1668A may also be obtained from the following web link: www.epa.gov/waterscience/methods/method/files/1668.pdf.]

(vi) Non-detected values shall be reported as one half of the detection limit;

(vii) The toxicity equivalence factors (TEF) listed in table B-2 of this rule shall be used in the calculation of the 2, 3, 7, 8-TCDD total toxicity equivalence; and

-Table B-2: toxicity equivalent factors.-

Congener	Toxicity equivalent factor
2, 3, 7, 8-tetrachlorodibenzo-p-dioxin	1.0
1, 2, 3, 7, 8-pentachlorodibenzo-p-dioxin	0.5
1, 2, 3, 4, 7, 8-hexachlorodibenzo-p-dioxin	0.1
1, 2, 3, 6, 7, 8-hexachlorodibenzo-p-dioxin	0.1
1, 2, 3, 7, 8, 9-hexachlorodibenzo-p-dioxin	0.1
1, 2, 3, 4, 6, 7, 8-heptachlorodibenzo-p-dioxin	0.01
1, 2, 3, 4, 6, 7, 8, 9-octachlorodibenzo-p-dioxin	0.001
2, 3, 7, 8-tetrachlorodibenzofuran	0.1
1, 2, 3, 7, 8-pentachlorodibenzofuran	0.05
2, 3, 4, 7, 8-pentachlorodibenzofuran	0.5
1, 2, 3, 4, 7, 8-hexachlorodibenzofuran	0.1
1, 2, 3, 6, 7, 8-hexachlorodibenzofuran	0.1
1, 2, 3, 7, 8, 9-hexachlorodibenzofuran	0.1
2, 3, 4, 6, 7, 8-hexachlorodibenzofuran	0.1
1, 2, 3, 4, 6, 7, 8-heptachlorodibenzofuran	0.01
1, 2, 3, 4, 7, 8, 9-heptachlorodibenzofuran	0.01
1, 2, 3, 4, 6, 7, 8, 9-octachlorodibenzofuran	0.001
3, 3', 4, 4'-tetrachlorobiphenyl	0.0001
3, 4, 4', 5-tetrachlorobiphenyl	0.0001
3, 3', 4, 4', 5-pentachlorobiphenyl	0.1
2, 3, 3', 4, 4'-pentachlorobiphenyl	0.0001
2, 3', 4, 4', 5-pentachlorobiphenyl	0.0001
2', 3, 4, 4', 5-pentachlorobiphenyl	0.0001
2, 3, 4, 4', 5-pentachlorobiphenyl	0.0005
3, 3', 4, 4', 5, 5'-hexachlorobiphenyl	0.01
2, 3, 3', 4, 4', 5-hexachlorobiphenyl	0.0005
2, 3, 3', 4, 4', 5'-hexachlorobiphenyl	0.0005
2, 3', 4, 4', 5, 5'-hexachlorobiphenyl	0.00001
2, 3, 3', 4, 4', 5, 5'-heptachlorobiphenyl	0.0001

(viii) If the sample shows results above three hundred parts per trillion total toxicity equivalence, all beneficial use or distribution of the biosolids shall cease.

(C) Record retention requirements. Record retention is required by the:

(1) Permittee of exceptional quality biosolids. In addition to the recordkeeping requirements in rule 3745-40-04 of the Administrative Code, the permittee who prepares exceptional quality biosolids for the purpose of beneficial use or distribution shall develop the following information, shall retain the following information for a minimum of five years at the treatment works, and shall make the following information available to the director or an authorized representative upon request:

(a) The results of all analyses as required in paragraph (B) of rule 3745-40-09 of the Administrative Code;

(b) The following certification statement;

"I certify, under penalty of law, that the information that will be used to determine compliance with pathogen reduction alternative [insert one of the pathogen reduction alternatives in paragraphs (B)(8) to (B)(16) of rule 3745-40-04 of the Administrative Code] in rule 3745-40-04 of the Administrative Code and vector attraction reduction alternative [insert one of the vector attraction reduction alternatives in paragraphs (C)(1) to (C)(8) of rule 3745-40-04 of the Administrative Code] in rule 3745-40-04 of the Administrative Code was 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."

(c) A narrative description, in the form of a standard operating procedure, of how the pathogen reduction alternative being utilized meets the applicable requirements of the pathogen reduction alternative, in accordance with paragraphs (B)(8) to (B)(16) of rule 3745-40-04 of the Administrative Code and a narrative description, in the form of a standard operating procedure, of how the vector attraction reduction alternative being utilized meets the applicable requirements of the vector attraction reduction alternative, in accordance with paragraphs (C)(1) to (C)(8) of rule 3745-40-04 of the Administrative Code. The standard operating procedure shall include at a minimum, when applicable:

(i) Sample collection or monitoring locations;

(ii) The frequency at which sample collection or monitoring is to occur;

(iii) Sample collection or monitoring procedures;

(iv) Sample storage and preservation procedures; and

(v) Sample or monitoring analysis procedures, including any calculations required for sample or monitoring analysis;

(d) An example of the notice and necessary information that is provided to each initial recipient of the biosolids;

(e) A copy of the information required to be maintained in accordance with paragraph (C)(2) of this rule; and

(f) If the permittee is distributing exceptional quality biosolids, contact information for each person who receives the exceptional quality biosolids;

(2) Beneficial user of bulk exceptional quality biosolids. The person who beneficially uses bulk exceptional quality biosolids shall develop the following information, shall retain the following information for a minimum of five years, and shall make the following information available to the director or an authorized representative upon request:

(a) Records showing that the bulk exceptional quality biosolids were not stored for more than ninety days at any beneficial use site, in accordance with paragraph (E)(2) of rule 3745-40-07 of the Administrative Code;

(b) Records showing that the beneficial use requirements in rule 3745-40-08 of the Administrative Code have been met at each beneficial use site including, but not limited to:

(i) The soil phosphorous levels for each beneficial use site;

(ii) The agronomic rate calculations for each beneficial use site;

(iii) Forecast or actual precipitation data in accordance with paragraphs (B)(1) and (B)(2) of rule 3745-40-08 of the Administrative Code; and

(iv) If applicable, the monitoring records for all beneficial use sites with subsurface tile drainage in accordance with paragraph (B)(6) of rule 3745-40-08 of the Administrative Code;

(c) A description of how the agronomic rate is met at each beneficial use site including, but not limited to, how the beneficial use application equipment is calibrated; and

(d) The date the bulk exceptional quality biosolids were beneficially used on each beneficial use site and the quantity of bulk exceptional quality biosolids (in dry tons) that were beneficially used on each beneficial use site on that date;

(3) Permittee of class B biosolids. In addition to the recordkeeping requirements in rule 3745-40-04 of the Administrative Code, the permittee who prepares class B biosolids for the purpose of beneficial use shall develop the following information, shall retain the following information for a minimum of five years at the treatment works, and shall make the following information available to the director or an authorized representative upon request:

(a) The results of all analyses as required in paragraph (B) of rule 3745-40-09 of the Administrative Code;

(b) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the class B pathogen reduction requirements in rule 3745-40-04 of the Administrative Code and the vector attraction reduction requirement in [insert one of the vector attraction reduction options in rule 3745-40-04 of the Administrative Code, Option VAR-1 to Option VAR-8 if one of those requirements is met] was 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."

(c) A narrative description, in the form of a standard operating procedure, of how the pathogen reduction alternative being utilized meets the applicable requirements of the pathogen reduction alternative, in accordance with paragraphs (B)(1) to (B)(7) of rule 3745-40-04 of the Administrative Code and, if applicable, a narrative description, in the form of a standard operating procedure, of how the vector attraction reduction alternative being utilized meets the applicable requirements of the vector attraction reduction alternative, in accordance with paragraphs (C)(1) to (C)(8) of rule 3745-40-04 of the Administrative Code. The standard operating procedure shall include at a minimum, when applicable:

(i) Sample collection or monitoring locations;

(ii) The frequency at which sample collection or monitoring is to occur;

(iii) Sample collection or monitoring procedures;

(iv) Sample storage and preservation procedures; and

(v) Sample or monitoring analysis procedures, including any calculations required for sample or monitoring analysis;

(d) An example of the notice and necessary information that is provided to the beneficial user, land owner, and farm operator;

(e) A copy of the application for an authorization for a beneficial use site and the Ohio environmental protection agency beneficial use site authorization letter for each beneficial use site that is utilized for beneficial use; and

(f) A copy of the information required to be maintained in accordance with paragraph (C)(4) of this rule;

(4) Beneficial user of class B biosolids. The person who beneficially uses class B biosolids shall develop the following information, shall retain the following information for a minimum of five years, and shall make the following information available to the director or an authorized representative upon request:

(a) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the storage requirements of rule 3745-40-07 of the Administrative Code, the beneficial use requirements of rule 3745-40-08 of the Administrative Code, and the vector attraction reduction requirement in [insert either vector attraction reduction option 9 or 10 from paragraph (C) of rule 3745-40-04 of the Administrative Code, if applicable] rule 3745-40-04 of the Administrative Code, was 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."

(b) Records showing that the class B biosolids were not stored for more than ninety days at the beneficial use site, in accordance with paragraph (E)(2) of rule 3745-40-07 of the Administrative Code;

(c) Records showing that the beneficial use requirements in rule 3745-40-08 of the Administrative Code have been met at each beneficial use site including, but not limited to:

(i) The soil pH for each beneficial use site;

(ii) The soil phosphorous levels for each beneficial use site;

(iii) The agronomic rate calculations for each beneficial use site;

(iv) Forecast or actual precipitation data in accordance with paragraphs (B)(1) and (B)(2) of rule 3745-40-08 of the Administrative Code;

(v) If applicable, the monitoring records for all beneficial use sites with subsurface tile drainage in accordance with paragraph (B)(6) of rule 3745-40-08 of the Administrative Code; and

(vi) The sign placement records for all authorized beneficial use sites in accordance with paragraph (D) of rule 3745-40-11 of the Administrative Code;

(d) A description of how the agronomic rate is met at each beneficial use site including, but not limited to, how the beneficial use application equipment is calibrated;

(e) If applicable, a narrative description of how the vector attraction reduction requirements in either paragraph (C)(9) or (C)(10) of rule 3745-40-04 of the Administrative Code are met at each beneficial use site. At a minimum, this description shall include the following:

(i) If VAR-9 is being performed in accordance with paragraph (C)(9) of rule 3745-40-04 of the Administrative Code, a description of:

(a) The equipment utilized to inject the biosolids; and

(b) How the beneficial user ensures that there is not a significant amount of the biosolids present on the surface of the authorized beneficial use site; or

(ii) If VAR-10 is being performed in accordance with paragraph (C)(10) of rule 3745-40-04 of the Administrative Code, a description of:

(a) The date and time the sewage sludge was delivered to the authorized beneficial use site;

(b) The date and time class B biosolids were incorporated into the soil of the authorized beneficial use site;

(c) The equipment utilized to incorporate the biosolids; and

(d) How the beneficial user ensures that the biosolids are mixed with soil to a minimum depth of four inches or greater on the authorized beneficial use site;

(f) The date class B biosolids were beneficially used at each authorized beneficial use site and the quantity of class B biosolids (in dry tons) that were beneficially used at each authorized beneficial use site on that date; and

(g) A copy of the information provided to the farm operator in accordance with paragraph (C) of rule 3745-40-05 of the Administrative Code;

(5) Permittee who generates class B biosolids subject to cumulative pollutant loading rates. In addition to the recordkeeping requirements in rule 3745-40-04 of the Administrative Code, the permittee who prepares class B biosolids that are subject to cumulative pollutant loading rates, for the purpose of beneficial use, shall develop the following information, shall retain the following information for a minimum of five years at the treatment works, and shall make the following information available to the director or an authorized representative upon request:

(a) The results of all analyses as required in paragraph (B) of rule 3745-40-09 of the Administrative Code;

(b) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the class B pathogen reduction requirements in rule 3745-40-04 of the Administrative Code and the vector attraction reduction requirement in [insert one of the vector attraction reduction options in rule 3745-40-04 of the Administrative Code, Option VAR-1 to Option VAR-8 if one of those requirements is met] was 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."

(c) A narrative description, in the form of a standard operating procedure, of how the pathogen reduction alternative being utilized meets the applicable requirements of the pathogen reduction alternative, in accordance with paragraphs (B)(1) to (B)(7) of rule 3745-40-04 of the Administrative Code and, if applicable, a narrative description, in the form of a standard operating procedure, of how the vector attraction reduction alternative being utilized meets the applicable requirements of the vector attraction reduction alternative, in accordance with paragraphs (C)(1) to (C)(8) of rule 3745-40-04 of the Administrative Code. The standard operating procedure shall include at a minimum, when applicable:

(i) Sample collection or monitoring locations;

(ii) The frequency at which sample collection or monitoring is to occur;

(iii) Sample collection or monitoring procedures;

(iv) Sample storage and preservation procedures; and

(v) Sample or monitoring analysis procedures, including any calculations required for sample or monitoring analysis;

(d) An example of the notice and necessary information that is provided to the beneficial user, land owner, and farm operator;

(e) A copy of the application for an authorization for a beneficial use site and the Ohio environmental protection agency beneficial use site authorization letter for each beneficial use site that is utilized for beneficial use; and

(f) A copy of the information required to be maintained in accordance with paragraph (C)(6) of this rule;

(6) Beneficial user of class B biosolids subject to cumulative pollutant loading rates. The person who beneficially uses class B biosolids subject to cumulative pollutant loading rates shall develop the following information, shall retain the following information indefinitely, and shall make the following information available to the director or an authorized representative upon request:

(a) The location, by either street address or latitude and longitude, of each beneficial use site on which class B are beneficially used;

(b) The number of acres of each beneficial use site where the class B biosolids are beneficially used;

(c) The date the class B biosolids were beneficially used at the beneficial use site;

(d) The cumulative amount, in pounds per acre, of each metal listed in table D-2 of rule 3745-40-04 of the Administrative Code that is beneficially used at each beneficial use site;

(e) The amount of class B biosolids, measured in dry tons, that are beneficially used at each beneficial use site;

(f) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in paragraph (D)(5) of rule 3745-40-04 of the Administrative Code was prepared for each beneficial use site on which bulk biosolids was applied 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."

(g) A description of how the requirements to obtain information in paragraph (D)(5) of rule 3745-40-04 of the Administrative Code are met;

(h) A copy of the notification given to Ohio environmental protection agency in accordance with paragraph (D)(6) of rule 3745-40-04 of the Administrative Code;

(i) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the storage requirements of rule 3745-40-07 of the Administrative Code, the beneficial use requirements of rule 3745-40-08 of the Administrative Code, and the vector attraction reduction requirement in [insert either vector attraction reduction option VAR-9 or VAR-10 from paragraph (C) of rule 3745-40-04 of the Administrative Code, if applicable] in rule 3745-40-04 of the Administrative Code, was 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."

(j) Records showing that the class B biosolids were not stored for more than ninety days at the beneficial use site, in accordance with paragraph (E)(2) of rule 3745-40-07 of the Administrative Code; and

(k) Records showing that the beneficial use requirements in rule 3745-40-08 of the Administrative Code have been met at each beneficial use site including, but not limited to:

(i) The soil pH for each beneficial use site;

(ii) The soil phosphorous levels for each beneficial use site;

(iii) The agronomic rate calculations for each beneficial use site;

(iv) Forecast or actual precipitation data in accordance with paragraphs (B)(1) and (B)(2) of rule 3745-40-08 of the Administrative Code;

(v) If applicable, the monitoring records for all beneficial use sites with subsurface tile drainage in accordance with paragraph (B)(6) of rule 3745-40-08 of the Administrative Code; and

(vi) The sign placement records for all authorized beneficial use sites in accordance with paragraph (D) of rule 3745-40-11 of the Administrative Code;

(l) A description of how the agronomic rate is met at each beneficial use site including, but not limited to, how the beneficial use application equipment is calibrated;

(m) If applicable, a narrative description of how the vector attraction reduction requirements in either paragraph (C)(9) or (C)(10) of rule 3745-40-04 of the Administrative Code are met at each site. At a minimum, this description shall include the following:

(i) If VAR-9 is being performed in accordance with paragraph (C)(9) of rule 3745-40-04 of the Administrative Code, a description of:

(a) The equipment utilized to inject the biosolids; and

(b) How the beneficial user ensures that there is not a significant amount of the biosolids present on the surface of the authorized beneficial use site; or

(ii) If VAR-10 is being performed in accordance with paragraph (C)(10) of rule 3745-40-04 of the Administrative Code, a description of:

(a) The date and time the sewage sludge was delivered to the authorized beneficial use site;

(b) The date and time class B biosolids were incorporated into the soil of the authorized beneficial use site;

(c) The equipment utilized to incorporate the biosolids; and

(d) How the beneficial user ensures that the biosolids are mixed with soil to a minimum depth of four inches or greater on the authorized beneficial use site; and

(n) A copy of the information provided to the farm operator in accordance with paragraph (C) of rule 3745-40-05 of the Administrative Code; and

(7) Beneficial user of class B or bulk exceptional quality biosolids. The beneficial user of class B or bulk exceptional quality biosolids shall develop and maintain the following information at the beneficial use site during the period class B or bulk exceptional quality biosolids are beneficially used:

(a) The name of the permittee who generates the class B or bulk exceptional quality biosolids being beneficially used at the beneficial use site;

(b) A site map of the beneficial use site that, at a minimum, depicts the area where beneficial use is to occur;

(c) The agronomic rate of class B or bulk exceptional quality biosolids calculated for the beneficial use site; and

(d) The applicable isolation distances for the beneficial use of class B or bulk exceptional quality biosolids that must be satisfied at the beneficial use site.

(D) Annual reporting requirements. A permittee shall submit an annual sewage sludge or biosolids report to the director or an authorized representative. The annual sewage sludge or biosolids report shall include, but not be limited to:

(1) The information requested in the Ohio environmental protection agency annual sewage sludge report, including copies of all certification statements required in paragraph (C) of rule 3745-40-09 of the Administrative Code; and

[Comment: The Ohio environmental protection agency annual sewage sludge report can be found on the agency's web site at the following web link: www.epa.ohio.gov/dsw/sludge/biosolid.aspx.]

(2) Any records, as required in accordance with rule 3745-40-04 of the Administrative Code.

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3745-40-10 **Facility storage requirements.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) Facility storage requirements. Except as provided in paragraphs (B) to (B)(4) of this rule, facility storage of sewage sludge or biosolids shall:

(1) Be provided by the permittee, where no adverse effects result from sewage sludge or biosolids handling at the permittee's treatment works; and

(2) Unless demonstrated to the director that engineered or contracted alternatives to facility storage of sewage sludge or biosolids are in place in accordance with paragraphs (B) to (B)(4) of this rule, consist of one hundred twenty days of biosolids storage for the design capacity of the treatment works, where the storage of sewage sludge or biosolids is provided within:

(a) A digester;

(b) A separate tank;

(c) A treatment lagoon;

(d) A drying bed;

(e) A dewatered storage pad area; or

(f) Any other means to store either liquid or dewatered sewage sludge or biosolids, as approved by the director.

[Comment: A permit to install, in accordance with Chapter 3745-42 of the Administrative Code, must be obtained from the director prior to the construction of any facility storage.]

[Comment: The one hundred twenty days of facility storage should be over and above the treatment capacity of the sewage sludge or biosolids treatment train. Units provided for storage should be dedicated for storage and not sewage sludge or biosolids treatment.]

(B) The director or an authorized representative may approve alternatives to the facility storage of sewage sludge or biosolids through:

(1) An effective contract with a landfill showing that the landfill will accept up to the design volume of the treatment works sewage sludge during the effective dates of the treatment works' NPDES permit;

(2) An effective contract with another permitted facility showing that the permitted facility will accept up to the design volume of the treatment works sewage sludge during the effective time of the treatment works' NPDES permit;

(3) Ownership or leasing of, or effective contract with, an Ohio environmental protection agency permitted regional storage facility showing that the regional storage facility will accept up to the design volume of the treatment works' sewage sludge or biosolids during the effective time of the treatment works NPDES permit; or

(4) Ownership or leasing of, or effective contract with, a sewage sludge or biosolids incinerator that will accept up to the design volume of the treatment works sewage sludge during the effective time of the treatment works' NPDES permit.

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3745-40-11 **Signage requirements for beneficial use sites receiving class B biosolids.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) Unless deemed otherwise by the director, any authorized beneficial use site, where class B biosolids are beneficially used, shall have signs:

(1) That are erected at least one week prior to the delivery of biosolids to the site;

(2) That face each road frontage, within twenty-five feet of the road;

(3) Within twenty-five feet of any entrance or exit on a public road where the site is accessed for beneficial use. The sign shall face the public road;

(4) That include text that is in black capital letters on a white background, where the letters are one inch in height;

(5) That read: "NOTICE: OHIO EPA AUTHORIZED CLASS B BIOSOLIDS BENEFICIAL USE SITE. TRESPASSING IS PROHIBITED.";

(6) That include the name of the permittee and the permittee's telephone number; and

(7) That are unobstructed from view.

(B) In addition to the requirements of paragraphs (A)(1) to (A)(7) of this rule, for any high potential public exposure site receiving class B biosolids, the permittee shall have signage in place for a minimum of one year after the termination of beneficial use activity at the site.

(C) In addition to the requirements of paragraphs (A)(1) to (A)(7) of this rule, for any low potential public exposure site receiving class B biosolids, the permittee shall have signage in place for a minimum of thirty days after the termination of beneficial use activity at the site.

(D) The beneficial user shall maintain records of the date when signs were posted and removed from any authorized beneficial use site.

[Comment: For signs that will remain permanently posted on an authorized beneficial use site, the date of removal shall be the date that visual confirmation is made to verify that the sign is still posted for the time required by rule.]

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3745-40-12 **Compliance and enforcement; and spill notification requirements.**

[Comment: Definitions relevant to this chapter can be found in rule 3745-40-01 of the Administrative Code.]

(A) In accordance with Chapter 3745-40 of the Administrative Code, the director or an authorized representative:

(1) May pursue enforcement action against any person who is in non-compliance with this chapter;

(2) May deny any NPDES permit or management plan application not in compliance with this chapter and require the submittal of a new NPDES permit or management plan application, including all applicable fees to the Ohio environmental protection agency within thirty days;

(3) May specify in an NPDES permit or management plan, any terms and conditions, including schedules of compliance, necessary to achieve compliance with this chapter;

(4) May specify in NPDES permits or management plan, any terms and conditions that are more stringent than the requirements in this chapter when the director has determined that such are necessary to protect public health or the environment;

(5) May revoke any NPDES permit or management plan approved in accordance with this chapter;

(6) May require any person who beneficially uses biosolids that have resulted in a nuisance odor to cease beneficial use and may de-authorize any beneficial use site for repeated nuisance odors or violations of this chapter, as determined by the director or an authorized representative. If the director or an authorized representative determines that the beneficial use of biosolids results in nuisance odors:

(a) The permittee shall cease delivery of biosolids to the authorized beneficial use site; and

(b) No additional biosolids shall be delivered to the site until the creation of such nuisance odors has been minimized, as determined by the director or an authorized representative;

(7) May modify any NPDES permit or management plan;

(8) May deny a beneficial use site authorization request;

(9) May de-authorize any beneficial use site; or

(10) To ensure the protection of human health or the environment, may require sampling and monitoring for additional pollutants beyond the requirements in this chapter.

(B) Spill notification requirements. The permittee shall notify the Ohio environmental protection agency by calling 1-800-282-9378 as soon as possible, but no later than twenty-four hours following the first discovery by the permittee twenty-four hours following the permittee's receipt of notification from a person that sewage sludge or beneficially used biosolids have entered waters of the state. Within fourteen days after the sewage sludge or biosolids are discharged into waters of the state, the permittee shall submit a report to the director or an authorized representative that includes:

(1) The reasons for the discharge;

(2) The location of the discharge to surface waters of the state;

(3) An estimate of the quantity and duration of the discharge to surface waters of the state;

(4) If applicable, records of the quantity and duration of any precipitation leading to the event; and

(5) Measures taken to clean up and eliminate the discharge and prevent another occurrence of the discharge.

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