STATE OF OHIO

Permits to Install and Plan Approvals for Water Pollution Control

Chapter 3745-42 of the ADMINISTRATIVE CODE

Most Recent Revision:

Adopted October 24, 2025
Effective November 13, 2025

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

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3745-42-01 Definitions.

"40 C.F.R." means Title 40 of the Code of Federal Regulations, effective July 1, 2024.

(A)

(1) "Act" means the federal Water Pollution Control Act (commonly referred to as the "Clean Water Act"), 33 U.S.C. sections 1251 to 1387 as amended through November 27, 2023.

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

(3) "Applicable laws" means any applicable provisions of Chapter 6111. of the Revised Code and rules promulgated thereunder, the federal water pollution control act (33 U.S.C. sections 1251 to 1381, as amended through November 27, 2023) and 40 C.F.R. Chapter I, subchapters D, N, and O.

(4) "Applicant" means the person applying for the permit to install or plan approval.

(5) "Aquifer system" means one or more geologic units or formations that are wholly or partly saturated with water and are able to store, transmit and yield significant amounts of water to wells or springs.

(6) "ASTM" means the American society for testing and materials. ASTM test methods referenced in this chapter are generally available in public libraries or from "ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959," at 1-877-909-2786, or available in electronic format at www.astm.org.

(7) "ASTM C117-23" means the American society of testing and materials (ASTM) standard test method for materials finer than seventy-five-micrometers (No. 200) sieve in mineral aggregates by washing, as that standard was approved by ASTM in 2023.

(8) "ASTM C136 / C136M-19" means the American society of testing and materials (ASTM) standard test method for sieve analysis of fine and coarse aggregates, as that standard was approved by ASTM in 2019.

(9) "ASTM D4318-17" means the American society of testing and materials (ASTM) standard test methods for liquid limit, plastic limit, and plasticity index of soils, as that standard was approved by ASTM in 2017.

(10) "ASTM D698-12(2021)" means the American society for testing and materials (ASTM) standard test methods for laboratory compaction characteristics of soil using standard effort, as that standard was approved in 2021.

(11) "ASTM D2487-17(2025)" means the American society for testing and materials (ASTM) standard practice for classification of soils for engineering purposes, the "Unified Soil Classification System," as that standard was approved in 2025.

(12) "At-grade system" means an onsite disposal system, where treated sewage is conveyed to a dispersal field that is constructed on or above in situ soil and covered by soil.

(B) [Reserved.]

(C)

(1) "$CBOD_5$" or "five-day carbonaceous biochemical oxygen demand" has the same meaning as defined in 40 C.F.R. 136 (effective June 25, 2024) where a nitrification inhibitor is added to eliminate nitrogenous demand.

(2) "Class A treated sewage or liquid industrial waste" means treated sewage or liquid industrial waste with effluent limits and monitoring frequencies in accordance with table K-2 of rule 3745-42-13 of the Administrative Code.

(3) "Class B treated sewage or liquid industrial waste" means treated sewage or liquid industrial waste with effluent limits and monitoring frequencies in accordance with table K-3 of rule 3745-42-13 of the Administrative Code.

(4) "Class C treated sewage or liquid industrial waste" means treated sewage or liquid industrial waste with effluent limits and monitoring frequencies in accordance with table K-4 of rule 3745-42-13 of the Administrative Code.

(5) "Coal waste" means residuals and earthen materials, in dry or slurry form that are removed or otherwise separated from the product coal after physical or chemical processing, cleaning or concentrating of coal. Coal waste does not include post-combustion materials that are fly ash, bottom ash, flue gas desulfurization waste or fluidized bed desulfurization wastes, and also does not include materials that are regulated as "solid waste," "infectious waste" or "hazardous waste" as those terms are defined in section 3734.01 of the Revised Code.

(6) "Coal waste facility" means a disposal facility where fine coal waste is dewatered and disposed of in a slurry impoundment or where fine or coarse coal waste is disposed of in a dry placement area. Coal waste facility does not include any facility that is used for the temporary holding or treatment of liquid wastes.

(7) "Coal mining operations" means any coal mining activity that is defined in division (H) of section 1513.01 of the Revised Code.

(8) "Complete," in reference to an application for a permit, means that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the director from requesting or accepting any additional information.

(9) "Controlled discharge" means an NPDES permitted discharge that can occur when certain stream conditions exist or when land application can not occur.

(D)

(1) "Dense glacial till" means tills that impede the movement of treated water away from the site and cause the formation of perched saturated conditions in the soil profile, especially with the addition of wastewater.

(2) "Design Standards: Wastewater Treatment Plants & Collection Systems </= 100,000 gpd (2013), Ohio EPA." This document is available online at https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/wastewater-permit-to-install-pti-program.

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

(4) "Discharging land application system" means a land application system that land applies or proposes one of the following:

(a) Regardless of whether a land application contract allows isolation distance requirements to be waived, does not meet the isolation distance requirements in this rule.

(b) On sites where drain tiles are, or will be, less than two vertical feet below final grade.

(c) On frozen or snow covered ground.

(d) During precipitation events.

(e) A point source discharge to waters of the state.

(5) "Disposal system" is defined in section 6111.01 of the Revised Code.

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

(7) "Duly authorized representative" means a person who has authorization in accordance following:

(a) The authorization is made in writing by a person described in paragraph (B) of rule 3745-42-03 of the Administrative Code.

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the

company (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

(c) The written authorization is submitted to the director.

(8) "Dwelling" has the same meaning as in rule 3701-29-01 of the Administrative Code.

(E) "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 Ohio EPA under the source water assessment and protection program. Within this area, 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.

(F) [Reserved.]

(G) [Reserved.]

(H)

(1) "Holding tank" means any device that is not part of a larger disposal system and that is used to accumulate or store sewage or industrial waste that: (a) is not hazardous waste as defined by rule 3745-51-03 of the Administrative Code and (b) is to be hauled for recycling, treatment or disposal. Holding tank does not include such a device in a fixed location that is connected by pipe or hose to a disposal system.

[Comment: For the purposes of rule 3745-42-11 of the Administrative Code, a tank used for flow equalization, septage receiving at a treatment works or sludge holding at a treatment works is not considered a holding tank. These tanks are part of a larger disposal system.]

(2) "Hydraulic balance" means an accounting of the hydraulic inputs and outputs of a land application system.

(3) "H 20 loading" is defined by figure 3.7.6A of the 17th edition of "AASHTO Standard Specifications for Highway Bridges," copyright 2002. Hardcopies of this publication are available from "AASHTO Publications Order Department, P.O. Box 933538, Atlanta, GA 31193-3538," fax 1-734-487-1890; international telephone 1-734-203-0456; digital and hardcopy orders available through https://store.transportation.org.

(I)

(1) "Impoundments" means any clay or synthetically lined earthen structure, or fabricated structures (e.g. concrete or metal tanks), for the treatment or storage of sewage, sewage sludge, biosolids, industrial waste, sludge materials, or other wastes. These impoundments are also commonly referred to as storage ponds or lagoons.

(2) "Industrial waste" is defined in section 6111.01 of the Revised Code.

(3) "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 a public water supply well or wells that will provide water to the well or wells within one year as delineated or endorsed by Ohio EPA under the wellhead protection program and the source water assessment and protection program.

(4) "Install" or "installation" means to begin actual construction, erect, locate or affix any disposal system.

(J) [Reserved.]

(K) "Karst" means a terrain with an assemblage of landforms such as sinkholes and caves that are due to weathering of predominantly carbonate bedrock.

(L)

(1) "Lagoon" means any earthen or partially earthen impoundment that is used for the treatment of sewage or liquid industrial waste.

(2) "Land application" means evenly spreading or spraying treated sewage or liquid industrial waste onto the surface of the land for final treatment or agronomic benefit.

(3) "Land application area" means the site or location where treated sewage or liquid industrial waste is applied to the ground surface for treatment or disposal.

(4) "Land application contract" means a deed showing ownership, or a contract or agreement that describes the land where treated sewage or liquid industrial waste will be applied and that allows treated sewage or liquid industrial waste to be land applied.

(5) "Land application management plan" means a management plan governing the operation, maintenance, effluent limits, and monitoring requirements of a land application system.

(6) "Land application system" means a disposal system that uses land application of treated sewage or liquid industrial waste

(7) "Low permeability" means a permeability of less than two tenths of one inch per hour.

(M) "Modify" or "modification" means any physical change to, or change in the method of operation of an existing component of a disposal system to allow it to process water pollutants:

(1) In materially increased quantities.

(2) Of a materially different character.

(3) In materially higher concentrations.

The addition of new connections to a public sewage system is not considered a modification of the sewage system.

(N)

(1) "New source" means any disposal system for which an owner or operator undertakes a continuing program of installation or modification or enters into a binding contractual obligation to undertake and complete, within a reasonable time, a continuing program of installation or modification, after January 1, 1974, and that at the time of installation or modification would have otherwise been subject to the provisions of this chapter.

(2) "Normal ground water table" means the shallowest depth of soil that is saturated with water for an extended or permanent time period.

(3) "NPDES" means national pollutant discharge elimination system.

(O)

(1) "Occupied building" means any building that is regularly occupied by people, is owned by a person other than the owner of the disposal system, and is located on a plat of land separate from the plat of land on which the disposal system is installed or operated.

(2) "Ohio EPA" means the Ohio environmental protection agency or its director.

(3) "Operator" means the person in responsible charge of operating and maintaining the disposal system in compliance with the NPDES permit or land application management plan. The operator may or may not be the owner of the disposal system.

(4) "Other wastes" is defined in section 6111.01 of the Revised Code.

(P)

(1) "Person" is defined in section 6111.01 of the Revised Code.

(2) "Professional soil scientist" means an individual with a baccalaureate degree with a major in agronomy, soils, geology, or a closely allied field, or who is approved by Ohio department of health in accordance with paragraph (A) of rule 3701-29-07 of the Administrative Code. This professional will be able to apply principles of pedology to soil classification, investigation, education, and consultation and evaluate the effect of measured, observed and inferred soil properties for siting of sewage treatment systems, disposal systems, and land application systems.

(3) "Public water system" or "PWS" is defined in rule 3745-81-01 of the Administrative Code.

(4) "Publicly owned sanitary sewers" means any centralized sewerage system other than those that are owned by a private or semi-public entity.

(5) "Publicly owned treatment works" or "POTW" is defined in rule 3745-3-01 of the Administrative Code.

(Q) [Reserved.]

(R)

(1) "Recommended Standards for Wastewater Facilities (2014), Great Lakes-Upper Mississippi River Board (GLUMRB) of State and Provincial Public Health and Environmental Managers." This document can be viewed and downloaded online at https://www.health.state.mn.us/communities/environment/water/tenstates/standards.html.

(2) "Restricted access site" means a site on which treated sewage or liquid industrial waste may be placed with a limited probability that the public will come into contact with the treated sewage or liquid industrial waste. Such sites include, but are not limited to, agricultural crop fields (i.e., nonhuman food crops), and fenced-off meadows, pastures, woodlands, landscaping areas and other private property.

(3) "Reuse of Reclaimed Wastewater Through Irrigation for Ohio Communities, Bulletin 860 (1997), The Ohio State University. This document can be purchased online at http://setll.osu.edu/node/12/wastewater-treatment."

(S)

(1) "Sewage" is defined in section 6111.01 of the Revised Code.

(2) "Sewerage system" is defined in section 6111.01 of the Revised Code.

(3) "Significant zone of saturation" means a zone of saturation that may act as a preferential pathway of migration away from the limits of storage or application of treated sewage or liquid industrial waste.

(4) "Soil absorption system" means the final treatment component of an on site sewage or liquid industrial waste treatment system that utilizes absorption and adsorption to treat and disperse the treated sewage or liquid industrial waste into subsurface soils. For the purposes of this definition, liquid industrial waste possesses characteristics similar to those of sewage.

(5) "Soil and Site Evaluation for Onsite Wastewater Treatment, Bulletin 905 (2015), The Ohio State University. This document can be purchased online at http://setll.osu.edu/node/12/wastewater-treatment."

(6) "Source water assessment and protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1996, and approved by U.S. EPA, December, 2016.

(7) "Storage facility" means the part of a treatment works, such as a tank, an earthen or man-made impoundment, that is used solely for the storage of treated sewage or liquid industrial waste.

(8) "Surface waters of the state" is defined in rule 3745-1-02 of the Administrative Code.

(T)

(1) "Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring (2020), Ohio EPA." This document can be found on the Ohio EPA web site at epa.ohio.gov/divisions-and-offices/environmental-response-revitalization/guides-and-manuals/derr-ground-water-and-geology-support.

(2) "Total inorganic nitrogen" means the sum of nitrite-nitrogen, nitrate-nitrogen and ammonia-nitrogen.

(3) "Treated sewage" means sewage treated by a treatment works.

(4) "Treatment works" is defined in section 6111.01 of the Revised Code.

(U)

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

(2) "Unrestricted access site" means a site on which treated sewage or liquid industrial waste may be placed with a high potential for the public to come into contact with the treated sewage or liquid industrial waste. Such sites include, but are not limited to, golf courses, parks, lawns and playing fields.

(3) "U.S. EPA" means United States environmental protection agency.

(V) [Reserved.]

(W)

(1) "Water pollutant" means any sewage, industrial waste or other waste, as defined elsewhere in this chapter and by section 6111.01 of the Revised Code.

(2) "Waters of the state" is defined in section 6111.01 of the Revised Code.

(3) "Wellhead protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1986, and approved by U. S. EPA, November 1992.

[Comment: The Code of Federal Regulations and federal statutes listed in this rule can generally be found in public libraries, and can be viewed electronically online at https://www.govinfo.gov and purchased by writing to: "Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954."]

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CERTIFIED ELECTRONICALLY

Certification

10/24/2025

Date

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3745-42-02 Applicability, exemptions, and procedures.

[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 3745-42-01 of the Administrative Code.]

(A) Applicability of this chapter.

(1) Permits to install and plan approvals for disposal systems.

(a) Except as provided in paragraphs (B) to (D)(3) of this rule, no person shall cause, permit or allow the installation of a new disposal system or cause, permit or allow the modification of a disposal system without first obtaining an individual permit to install, a general permit to install or plan approval in accordance with this chapter and all other applicable rules and laws.

(b) An application for a permit to install for any disposal system includes detailed plans in accordance with this chapter and all other applicable rules and laws.

(c) The approval of a permit to install constitutes approval of the detailed plans for the disposal of waste and for the disposal system pursuant to sections 6111.44 and 6111.45 of the Revised Code.

(2) The director, at the director's discretion, may issue an order requiring any person planning to install or modify, or in the process of installing or modifying, any disposal system, which is otherwise exempted, to obtain a permit to install or plan approval before proceeding with installation or modification if, in the director's judgment, operation of the disposal system after installation or modification might result in a violation of the criteria established in paragraph (A) of rule 3745-42-04 of the Administrative Code.

(3) The director, at the director's discretion or where required by federal laws or regulations, may issue a single permit to install or plan approval having application to all pollutants of any kind emanating from any disposal system, or may issue a single permit to install or plan approval having applicability to more than one disposal system controlled by a common owner or operator located in the same county.

(4) Notwithstanding any other provision of this rule, compliance with this chapter does not relieve any person from the requirements of Chapter 3734. or 3714. of the Revised Code and rules adopted thereunder, including provisions prohibiting the establishment of a facility.

(B) Permit to install and plan approval exemptions from applicability. Unless deemed otherwise by the director, a permit to install or plan approval, whichever is applicable, is elective or optional for the following:

(1) Site preparation activities in accordance with paragraphs (B)(1)(c)(i) to (B)(1)(c)(xix) of this rule.

(a) Risk to the owner or operator.

(i) This rule does not in any way guarantee that a permit to install or plan approval will be issued.

(ii) The implementation of any of the activities described in paragraphs (B)(1)(c)(i) to (B)(1)(c)(xix) of this rule are at the entire risk of the owner or operator.

(iii) If a permit to install or plan approval is issued, any necessary design changes, and the costs associated with those design changes, including costs due to delayed construction, in order to comply with the terms of the permit to install or plan approval are entirely at the owner or operator's risk. Any costs associated with these design changes are exempt from any cost effectiveness evaluation.

(b) General prohibitions and restrictions.

(i) Site preparation activities performed prior to the issuance of a permit to install or plan approval shall comply with all of the following:

(a) Be in accordance with all other applicable rules and laws, including rule 3745-1-05 of the Administrative Code and this chapter.

[Comment: If applicable, it is recommended that an applicant obtain a national pollutant discharge elimination system (NPDES) permit, prior to beginning site preparation activities.]

(b) As applicable, not begin until any of the following are obtained:

(i) A 401 water quality certification or isolated wetland permit.

(ii) A construction site storm water permit.

(ii) Site activities that are prohibited prior to obtaining a permit to install or plan approval include any of the following:

(a) The construction of buildings or structures that are directly related to the installation of a treatment works or disposal system and will convey sewage to a disposal system, including any of the following:

(i) Residential homes.

(ii) Clubhouses or banquet halls.

(iii) Restaurants.

(b) The construction of buildings or structures that will house or shelter any part of a disposal system, including storage facilities or sewage treatment lagoons.

(c) The construction or installation of tankage and other equipment that will be used to store, process, treat or test wastewater to be discharged from the site to a municipal sewer or in accordance with an NPDES permit.

(d) The construction of any other structure or building determined by the director to convey sewage to the proposed disposal system.

(e) The construction activities directly related to the construction or installation of any onsite sewage treatment system soil dispersal component or land application area. A soil and site evaluation for any soil based treatment system or land application area shall be approved prior to beginning any site preparation activities.

[Comment: Rule 3745-42-13 of the Administrative Code outlines the requirements for a land application system for treated sewage or liquid industrial waste.]

(c) Except as provided in paragraphs (B) to (B)(1)(b)(ii)(f) of this rule, site preparation activities that are not directly related to the installation of any treatment works or disposal system that can be undertaken prior to obtaining a permit to install or plan approval include any of the following:

(i) Constructing buildings or structures that will not convey sewage to the proposed disposal system, such as any of the following:

(a) Warehouses.

(b) Office buildings.

(c) Garages.

(ii) Clearing the site of existing vegetation, old buildings, or old equipment.

(iii) Grading and clearing of land, stripping and stockpiling topsoil, earthwork cut and fill for foundations in preparation for construction.

(iv) Installing temporary site access roadways and parking areas.

(v) Installing temporary construction equipment storage areas.

(vi) Storing of construction equipment including temporary buildings and trailers for equipment storage and for construction offices.

(vii) Except as provided in paragraph (B)(1)(b)(ii)(e) of this rule, exploratory excavation and borings to assess the suitability of a site for the intended building or installation activities.

(viii) Provided no concrete is poured, any of the following:

(a) Excavating building footers, pilings, foundations, pads, and platforms.

(b) Installing concrete forms and reinforcing bar for any concrete footers, pilings, foundations, pads and platforms.

(ix) Installing temporary utilities for site construction trailers, including electricity, gas, and communication, provided the owner or operator of the disposal system has submitted the complete plans for the disposal system to the director and has notified the director that this activity will be taken prior to the issuance of the permit to install or plan approval.

(x) Removing old equipment from existing buildings.

(xi) Installing any temporary construction dust control systems, such as sprinklers.

(xii) Installing any signage or traffic control signs.

(xiii) Installing any utility poles by a utility company.

(xiv) Installing temporary erosion and sedimentation control systems including filter sock, silt fence, rip-rap, sandbags or any sediment settling pond used for mitigating storm water discharges associated with construction activity.

(xv) Installing new landscaping, including trees, bushes and seeding of disturbed earthwork.

(xvi) Installing landscaping fencing.

(xvii) Installing temporary fences and signs around the construction site.

(xviii) Stockpiling of stone, soil, and other materials for future construction.

(xix) Storing onsite portable parts and equipment.

(2) Coal waste facilities provided that all of the following conditions are met:

(a) The coal waste facility is located entirely within the permitted area of a coal mining operation regulated under Chapter 1513. of the Revised Code.

(b) The owner or operator of the coal mining operation has applied for and obtained approval for the design, construction, operation and closure of the coal waste facility from the division of mineral resources management of the Ohio department of natural resources in accordance with Chapter 1513. of the Revised Code and the rules adopted thereunder.

(3) External interceptors for fats, oils or greases (FOG) in accordance with paragraphs (B)(3)(a) to (B)(3)(a)(x) of this rule.

(a) Except as provided in paragraph (B)(3)(b) of this rule, a permit to install or plan approval is optional for an external FOG interceptor, where the external FOG interceptor meets all of the following conditions:

(i) Discharges to a publicly owned or public utilities commission of Ohio regulated disposal system owned or operated by the holder of a valid NPDES permit issued by the director.

(ii) Is designed by a registered or licensed professional, such as a registered professional engineer, and installed in accordance with applicable sections of the Ohio plumbing code set forth in division-level designation 4101:3 of the Administrative Code.

(iii) Is designed to remove at least ninety-five per cent of the incoming FOG or to meet applicable local FOG effluent limits imposed by the owner or operator of the disposal system, whichever is more stringent.

(iv) Incorporates an observation or monitoring well or device at its discharge point, prior to entering the disposal system.

[Comment: A control manhole that is used for observation or monitoring of effluent from a FOG interceptor and is located upstream of the collector sewer meets the intent of an observation or monitoring well or device.]

(v) Serves only establishments that generate peak flows of no more than five hundred gallons per minute (g.p.m.) of FOG laden sewage.

(vi) Is designed to retain intercepted FOG material without permitting discharge of said material to the sanitary sewerage system.

(vii) Is designed in such a way as to not allow material to permanently accumulate within the FOG interceptor.

(viii) Is maintained on a planned and scheduled basis so as to properly provide its intended purpose, FOG interception.

(ix) Is designed to facilitate ease of cleaning and maintenance as well as not contaminating the surrounding area.

(x) Is permitted, inspected and approved by the plumbing authority having jurisdiction.

(b) The director may require a permit to install or plan approval, as applicable, for any FOG interceptor that receives industrial wastewater or wastewater that does not meet the definition of sewage, as defined by Chapter 6111. of the Revised Code.

(4) A disposal system for a not-for-profit car wash, including those used for charity fund raisers by school or church groups, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state.

(5) A disposal system for a mobile carpet cleaner, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state. Waste from a mobile carpet cleaner shall be disposed of at a publicly owned treatment works or a commercial wastewater treatment works with an effective NPDES permit.

(6) A disposal system for mobile power washers, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state.

(7) A disposal system for a boat wash at a marina, boatyard, or boat sales facility, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state. The following conditions shall be met:

(a) Wastewater is disposed at a publicly owned treatment works or a commercial wastewater treatment works with an effective NPDES permit.

(b) The system is located upland to prevent flooding.

(c) Installation of an impervious wash pad that is:

(i) Bermed or pitched to drain all wastewater to a disposal system.

(ii) Equipped with a pit, trough, trench drain, or settling chamber with sump or similar type pump.

(iii) Connected to either a reclaim/recycling system, a holding tank designed in accordance with rule 3745-42-11 of the Administrative Code, or to an existing sanitary sewer.

(iv) Properly sized for the boats being washed.

(8) Recycle systems inside a building, such as those used for any of the following:

(a) Hydrostatic test water.

(b) Water conservation.

(c) Non contact cooling water, where the cooling tower meets both of the following conditions:

(i) Does not discharge to waters of the state.

(ii) Has a water supply rate less than ten thousand gallons per day.

(9) Oil and water separators, provided that all of the following conditions are met:

(a) The oil and water separator has a volume not to exceed one thousand gallons.

(b) The effluent from the oil and water separator is conveyed to a publicly owned treatment works.

(c) The owner obtains a letter, or another form of documentation such as a plan approval, from the publicly owned treatment works, acknowledging that they are aware of the oil and water separator.

(d) Any industrial waste is disposed of in accordance with all applicable rules and laws.

(10) Under the sink grease traps.

(11) Any storm water conveyance or system of conveyances included in any of the following:

[Comment: A conveyance system may include roads, catch basins, curbs, gutters, ditches, storm water manholes, man-made channels or basins, or storm drains.]

(a) A municipal separate storm sewer system (MS4), provided that all of the following conditions are met:

(i) The MS4 is owned or operated by a public entity.

(ii) The MS4 is designed and used for collecting or conveying solely storm water.

(iii) The MS4 is not a combined sewer.

(iv) The MS4 is not part of a publicly owned treatment works.

(b) A construction general storm water permit.

(c) The post construction storm water management requirements of an NPDES general permit for storm water discharges associated with construction activities.

(12) A wastewater treatment works, provided that all of the following conditions are met:

(a) The treatment works is located upstream of the building drain.

(b) The treatment works has a design flow of not more than one thousand gallons per day.

(c) The treatment works will be utilized for industrial or commercial wastewater and will discharge to a publicly owned treatment works with an effective NPDES permit and with approval from the receiving POTW.

(d) The treatment works is in accordance with all applicable rules and laws, including rule 3745-42-05 of the Administrative Code and Chapters 3745-3 and 3745-36 of the Administrative Code and all applicable sections of the Ohio plumbing code. The director may require a permit to install, plan approval or an NPDES permit to protect public health or the environment.

(e) The treatment works is not subject to the national categorical pretreatment standards discharge limits, in accordance with subchapter (N) of Chapter 40 of the Code of Federal Regulations.

(f) The treatment works is limited to any of the following:

(i) Neutralization.

(ii) Silver recovery.

(iii) Photo processing.

(iv) Treating dental or medical office wastewater.

(v) Treating dry cleaning wastewater.

(vi) Activated carbon treatment for treating petroleum contaminated ground water, where the temporary unit is used on site for less than two years and is designed to achieve less than detection for benzene, toluene, ethylbenzene or xylene.

(vii) Mechanical filtration such as a bag filter or cartridge filter.

(13) A manhole, provided the manhole meets all of the following conditions:

(a) Is located on a sewer lateral and upstream of any collector sewer.

(b) Includes not more than one influent pipe.

(c) Does not house any equipment, such as a pump.

(14) A building sewer, as defined in division 4101:3 of the Administrative Code, provided that both of the following conditions are met:

(a) The sewer is a gravity conveyance sewer or a force main that serves a single structure.

(b) The building sewer connects directly into a common or collector sewer and not directly into a treatment works.

(15) Sanitary sewer replacement projects, provided that all of the following conditions are met:

(a) The total length of sewer per project is not more than one thousand feet.

(b) There are no changes in pipe size.

(c) There are no additional manholes.

(d) There are no significant changes in elevation.

(e) There are no lateral shifts exceeding twenty feet or that will not maintain a ten foot separation from water lines.

(f) The sewer is not located in a stream bed and will not shift into a stream bed.

(g) The new pipe material, if changed, is on Ohio EPA's pipe specification list, updated as of July 19, 2023, available on the internet at: epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/pipe-specifications.

(16) In situ sanitary sewer repairs, such as sliplining.

(17) Any repair or replacement of a component, media or equipment within a treatment works, provided the repair or replacement meets both of the following conditions:

(a) Is intended to maintain treatment and serve the same function as the existing component, media or equipment.

(b) Does not result in increased hydraulic capacity of the treatment works or significantly alter the sewage flow through the treatment works.

The repair or replacement of a component is considered an operation and maintenance issue rather than the installation of a treatment system. Examples may include, but are not limited to, replacing pumps or mixers with more efficient pumps or mixers, installation of fine bubble diffusers, replacing piping and replacement of sand in sand filters.

(18) Improvements within the existing treatment works infrastructure that are intended to increase operational flexibility or efficiency of the treatment works. This may include, but is not limited to any of the following:

(a) Installation of piping and valves to provide variable modes of treatment, provided the changes do not result in the possibility to bypass any treatment unit.

(b) Installation of internal structures in treatment works tanks such as floating screens or baffles to improve efficiency.

(c) Changes to the biological environment within existing treatment works tanks to promote efficiency.

(19) A disposal system designed to be a best management practice under the requirements of an NPDES storm water permit in accordance with Chapter 3745-39 of the Administrative Code. If the disposal system is installed to meet a specific numeric effluent limitation in an NPDES permit or is required as a result of director's

findings and orders or alternative judicial or administrative order, a permit to install or plan approval shall be obtained.

(20) A treatment works pilot study, provided that all of the following conditions are met:

(a) Utilizes only a portion of the wastewater stream off line from the existing treatment train, for example less than twenty-five per cent of the design flow.

(b) Treated effluent recombines with the overall treatment works effluent before discharge to the receiving water.

(c) Does not exceed a time frame of twelve months.

(d) Is not intended to be a permanent structure at the treatment works. If at the end of the pilot study, the owner or operator chooses to incorporate pilot study components into the existing treatment works, a permit to install shall be obtained.

(21) Installation of any on line monitoring or process control equipment such as supervisory control and data acquisition (SCADA) or other similar equipment.

(22) Installation of any odor control equipment on a disposal system provided that the equipment does not modify or change the treatment works or characteristics of the sewage.

(23) Remodel or replacement of buildings or laboratories located at a treatment works.

(24) Filtration systems, ion exchange systems, and oil skimmers installed at or in process tanks that directly serve manufacturing equipment, provided the filtration system, ion exchange system, or oil skimmer meets all of the following conditions:

(a) Is intended to extend the life of the process solution or to conserve water.

(b) Operates continuously.

(c) Is not installed at or in a process tank that discharges to a sanitary or storm sewer.

(C) The director may waive the permit to install or plan approval requirement for either of the following:

(1) A site preparation activity not listed in paragraphs (B)(1)(c) to (B)(1)(c)(xix) of this rule, as a site preparation activity that can be undertaken prior to obtaining a permit to install, provided that all of the following conditions are met:

(a) The site preparation activity is in accordance with all applicable rules and laws.

(b) Prior to beginning the site preparation activity, the permittee provides the director with a written request for approval that includes all of the following:

(i) A detailed description of any proposed site preparation activity.

(ii) An explanation of why the site preparation activity is in accordance with all applicable rules and laws.

(iii) An explanation of how all applicable permits will be obtained prior to the site preparation activity.

(iv) A description of the potential adverse consequences that could occur to the permittee if the director did not approve the site preparation activities prior to obtaining a permit to install.

(2) Any wastewater treatment works not listed in paragraphs (B)(11)(f)(i) to (B)(11)(f)(vi) of this rule, provided that all of the following conditions are met:

(a) The treatment works is located upstream of the building drain.

(b) The treatment works has a design flow of not more than one thousand gallons per day.

(c) The treatment works will be utilized for industrial or commercial wastewater and will discharge to a publicly owned treatment works with an effective NPDES permit.

(d) The treatment works is in accordance with all applicable rules and laws, including rules 3745-42-05, 3745-3-04, and 3745-3-09 of the Administrative Code, applicable sections of the Ohio plumbing code, and Chapters 3745-3 and 3745-36 of the Administrative Code.

(e) The applicant receives written agreement from the receiving POTW to request waiving the PTI requirement.

(f) The owner or operator submits a written request for a waiver that includes a description of the treatment works and a demonstration of compliance with the requirements in paragraphs (C)(2)(a) to (C)(2)(e) of this rule.

(D) Permit to install or plan approval modification. A permit to install or plan approval, whichever is applicable, is optional for the modification of a disposal system if any of the following conditions are met:

(1) After modification, the disposal system will be a type that could have been installed without a permit to install or plan approval.

(2) The result of the modification on environmental quality is so slight that the director has, by rule, exempted the modification from the requirements of paragraphs (A) to (A)(3) of this rule.

(3) The director has determined that the proposed work will not significantly change the overall disposal system.

(E) Coal combustion residual units. A permit to install or plan approval under this chapter is not required for the installation or modification of a coal combustion residual (CCR) unit as

defined in the rules adopted under section 3734.48 of the Revised Code, provided that the following conditions are met:

(1) Rules for permitting CCR units are adopted under section 3734.48 of the Revised Code.

(2) The CCR unit has obtained or will obtain a permit under the rules adopted under section 3734.48 of the Revised Code prior to installation or modification.

(F) Administrative changes to a permit to install or plan approval. The director may make administrative changes to a permit to install or plan approval. An administrative change to the permit to install or plan approval is an amendment to the permit to install or plan approval issued by Ohio EPA that does not result in a modification or alteration of the treatment or disposal system. An administrative change to a permit to install or plan approval may be made for any of the following reasons:

(1) To correct technical errors, such as errors in calculations, that result in the improper determination of permit to install or plan approval conditions.

(2) To correct typographical errors.

(3) To change a term or condition of the permit to install or plan approval that does not constitute modification or alteration of the treatment or disposal system.

(4) To update administrative information including, but not limited to, the name of the applicant or telephone number, address or name of the treatment or disposal system.

(G) Termination of a permit to install or plan approval.

(1) A permit to install or plan approval terminates sixty months from the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete, within a reasonable time, a continuing program of installation or modification.

(2) The director may terminate a permit to install or plan approval for a CCR unit at the permittee's request if the director determines that the CCR unit has obtained an effective permit for installation or modification of the CCR unit under section 3734.48 of the Revised Code.

(H) Revocation of a permit to install or plan approval.

(1) The director may revoke a permit to install or plan approval if the director concludes at any time that any applicable laws have been or are likely to be violated.

(2) The director may also revoke a permit to install or plan approval at the permittee's request if the director determines that granting the requested revocation will not result in the violation of any applicable laws. When a permittee requests a revocation, the director, without prior hearing, may issue a final determination on the application.

(I) Transfer of a permit to install or plan approval.

(1) The director may transfer a permit to install or plan approval for a disposal system to a new owner of a disposal system. Transfers may be made for permits to install or plan approvals that meet any of the following conditions:

(a) Contain operating conditions.

(b) Are for systems that are currently in the installation process.

(c) Are for systems that are currently undergoing a continuing program of modification.

(d) Are for systems where construction has not yet commenced.

(2) Written application for a transfer shall be submitted to the director at least sixty days prior to any proposed transfer. The transferee shall be responsible for informing Ohio EPA that the transferee will assume the responsibilities of the original permittee transferor. The director may prevent the permit transfer if the director concludes that the transferee will jeopardize compliance with the terms and conditions of the permit. Both the original permittee transferor or the transferee will be notified of the director's decision in writing.

(J) Applicability of rules of procedure. When a permit to install or plan approval is issued, modified, revoked, or denied , the action of the director may be challenged in accordance with the provisions of the rules of procedure of the Ohio EPA, Chapters 3745-47 and 3745-49 of the Administrative Code.

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3745-42-03 Requirements for applications and engineering plans.

[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 3745-42-01 of the Administrative Code.]

(A) Applications for both permits to install and plan approvals required by rule 3745-42-02 of the Administrative Code shall be made using forms prepared by Ohio EPA and shall contain such information as the director deems necessary to determine whether the criteria of rule 3745-42-04 of the Administrative Code are met.

(1) Any of the following shall be signed and certified by a professional engineer licensed by the Ohio state board of registration for professional engineers and surveyors:

(a) Engineering plans, such as detail plans, blueprints and drawings. or specifications for disposal systems including, but not limited to the following:

(i) Sanitary sewer extensions.

(ii) Pump stations or distribution systems.

(iii) Prefabricated unit installations (e.g., small sewage treatment plants).

(iv) Sewage treatment plants.

(v) Land application systems.

(vi) Holding tanks.

(vii) Mound systems.

(viii) Septic tanks and leach fields.

(ix) Drip distribution systems.

(x) Monofills (disposal sites for fly ash, foundry sand or other similar industrial wastes).

(xi) Industrial or commercial treatment works.

(b) Reports on process evaluations at disposal systems including combined sewer overflow operational or long term control plan approvals, sewer system evaluations and infiltration and inflow analysis plans.

(c) Operation and maintenance manuals for disposal systems.

(d) Publicly owned treatment works (POTW) local limit technical justifications for new or revised local limits submitted for approval in accordance with pretreatment rules in Chapter 3745-3 of the Administrative Code.

(e) General plans or facility plans, including feasibility and cost analysis.

(f) Impoundment closure plans.

(2) Applications for permits to install or plan approvals that are exempt from being signed and certified by a professional engineer licensed by the Ohio state board of registration for professional engineers and surveyors include the following:

(a) Municipal sludge management plans using agronomically sound land application rates.

(b) Beneficial use or recycling projects using agronomically sound land application rates.

(c) Pretreatment program modification requests other than technical justification modification requests for local limits including, but not limited to, changes in sewer use ordinances, local laws and local regulations.

(d) Groundwater monitoring plans.

(3) In addition to the specific types of documents in paragraph (A)(1) of this rule, the director may require other documents submitted under this chapter to be signed and certified by a professional engineer licensed by the Ohio state board of registration for professional engineers and surveyors to protect human health or the environment.

(B) Applications for permits to install and plan approvals shall be signed by the person, firm, agency or entity responsible for constructing the disposal system. If, after construction, the disposal system will be turned over to a public entity or another party to own, operate or maintain, both persons responsible for construction and the future owner or operator or person who maintains the system will sign the permit application and be subject to the terms and conditions of the permit issued thereafter. The application signatures are as follows:

(1) In the case of a corporation, by a responsible corporate officer. For these purposes, a responsible corporate officer means any of the following:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.

(b) The manager of one or more manufacturing, production or operating facilities, provided: the manager is authorized to make management decisions that govern the operation of the regulated facility including having explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions are taken to gather complete and accurate information for permit application requirements; and authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) In the case of a partnership, by a general partner.

(3) In the case of sole proprietorship, by the proprietor.

(4) In the case of a municipal, state, federal or other governmental facility, by the principal executive officer, the ranking elected official or other duly authorized employee as defined in rule 3745-42-01 of the Administrative Code.

(C) In the case of plan approval for the land application of sludge, the application shall be signed by either the president, vice-president or highest ranking corporate officer with offices located in the state, or the owner of the entity planning to apply the sludge, or the highest elected official of the municipality from which the sludge is generated.

(D) The signatures constitute personal affirmation that all statements or assertions of fact made in the application are true and complete and comply fully with applicable state requirements and subject the signatory to liability under section 2921.13 of the Revised Code.

(E) Before the director will review an application package, the application package shall contain at a minimum the following items:

(1) The appropriate application fees in accordance with section 3745.11 of the Revised Code.

(2) The permit to install or plan approval application (e.g., PTI form A) with all blanks filled in and the form signed in accordance with paragraph (B) of this rule.

(3) Any sewage disposal system company, as defined in section 4905.03 of the Revised Code, that is or will be regulated as a public utility will obtain and submit to the director a copy of their certificate of necessity and need from the public utilities commission of Ohio, in accordance with section 4933.25 of the Revised Code.

(4) Except for sanitary sewer extension projects containing sewer pipe less than fifteen inches in diameter and industrial waste treatment works projects covered under paragraph (I)(3) of this rule, an engineering report describing the design features and operation features necessary to enable the disposal system to achieve the appropriate effluent quality. At a minimum, the report shall include the following:

(a) Description of existing system and an evaluation of conditions and problems needing correction, if applicable.

(b) The anticipated average daily flow, peak hourly flow and wastewater load for the existing and planned conditions. The basis of the projections of initial and future flows and wastewater load shall be included and reflect the existing or initial service area, and the anticipated future service area.

(c) Description of the impact of the proposed project on all existing wastewater facilities, including gravity sewers, lift stations, and treatment facilities used in association with the project.

(d) A written description of the project.

(e) Engineering criteria used in the design of the project.

(f) Project site information including topography, soils, geologic conditions, depth to bedrock, ground water level, floodway or floodplain considerations, and other pertinent site information not included in the detailed plans.

(g) The reasons for selection of the proposed project, including cost effectiveness, operational advantages, feasibility, and how the project fits into a long term plan.

(5) An explanation of how best available technology, as required in rule 3745-42-04 of the Administrative Code, is achieved, if applicable.

(6) Unless otherwise specified in a general permit to install issued by the director, the detailed plans and specifications shall be submitted in accordance with the following requirements, as applicable:

(a) If possible, bind all plan sheets together.

(b) The detailed plans contain the following:

(i) The name and type of building or project.

(ii) The owner's name and address including the county and township or municipality.

(iii) The name of the engineer preparing the plans, the original handwritten or an electronic signature (i.e., unique identifier or personal identification number (PIN) for electronically submitted plans) of the engineer and the engineer's stamp on the title sheet of the detailed plans when required by paragraph (A) of this rule in accordance with section 4733.14 of the Revised Code.

(iv) For projects that connect or discharge to the local sewer authority's disposal system, also known as receiving POTW, a cover sheet that has the local sewer authority's signature or a letter from the local sewer authority that expresses support for the project. If the local sewer authority is different from the authority of the receiving POTW, provide signatures from both entities supporting the project.

(v) The date plans were prepared or revised.

(vi) Scale or scales to which plans are drawn.

(vii) Cross sections and plan and profile views of all the unit processes within the treatment system and their capacities, with all views drawn to scale and clearly labeled.

(viii) Identification of the dimensions and relative elevations of structures.

(ix) Unless contained in a separate contract specification book, identification of the equipment or product specifications, and the location, size, and ASTM designation of piping and joints.

(x) A hydraulic profile of the flow of water through the unit processes that indicates points of chemical addition, control instrumentation, alarm levels, sampling locations, and monitoring equipment.

(xi) Where applicable, a description of the ultimate method of sludge disposal.

(xii) Unless contained in a separate contract specification book, identification of stand-by equipment, including the number of each component and each component's capacity, location, size, and intended operation.

(xiii) A site plan showing the following, where applicable:

(a) Adjacent properties, storage areas, contours, existing and final grades and drainage courses, property lines, existing and proposed buildings, parking areas, drives, elevations, the number, location, and elevation of referenced benchmarks, normal stream elevations and flood level, wetlands, existing and proposed utilities, locations and logs of test borings, locations of proposed and existing treatment works, anticipated future service areas, all sewers that will collect and transport sewage, industrial waste or other waste, and outfalls from treatment works.

(b) Sanitary sewers, storm sewers, and water lines or locations of water wells (show the location of all wells up to and including ten thousand gallons per day within one hundred fifty feet and all wells over ten thousand gallons per day within three hundred feet of the disposal system), including manholes and pump stations.

(c) The location of each entry to the public sewer.

(d) The north arrow.

(xiv) Contain a vicinity map showing surrounding roadways, railroad tracks, and major water courses within at least one thousand feet of the project.

The director or the director's authorized representative may request additional information as necessary to determine compliance with any applicable laws as defined in rule 3745-42-01 of the Administrative Code during the review of the permit to install or plan approval application.

(F) The director may waive submittal requirements identified in paragraph (E) of this rule for specific technologies or project types, such as industrial projects where a permit to install is issued prior to funding procurement, as necessary to efficiently review the application package and administer this chapter. The director may require that prior to the initiation of

construction or initiation of operation, that plans required in paragraph (E) of this rule have been submitted.

(G) Except for cities, villages, counties and other public entities, public utilities, or industrial applicants, any applicant proposing to install a disposal system to collect or treat sewage from two or more dwellings or collect or treat sewage with an average design flow of ten thousand gallons per day or greater, shall submit the following information as part of a permit application in addition to the information required in paragraphs (A) to (E) of this rule to demonstrate financial, legal and technical ability to own and operate a disposal system:

[Comment: The following information is necessary for submittal and review in order to ensure that an applicant granted approval to own, operate, and maintain a disposal system has the financial, legal, and technical resources available to properly own, operate and maintain the system in order to comply with permit requirements and applicable laws and regulations.]

(1) A demonstration that a public entity or utility is not available or has submitted a written waiver, provided the waiver does not conflict with either any areawide waste treatment management plan adopted in accordance with section 208 of the act, or approved regional sewage service and treatment plan.

(2) Financial and personnel commitments that are needed to provide effective management and operation of the disposal system.

[Comment: Personnel commitments may include accounting, grounds and maintenance and contract with a certified operator.]

(3) Documentation of ownership accountability through bylaws or deed that includes the legal authority to take the measures necessary for construction, operation and maintenance of the disposal system, and valid easements for all sewers, if applicable.

(4) The organizational structure, credentials of management and operations personnel, and cooperative agreements or service contracts, if appropriate.

(5) For an association of home or property owners served by the disposal system, the document establishing the association shall impose covenants or restrictions on the land of each property owner that assures the proper long-term operation and maintenance of the disposal system including at a minimum the following:

(a) A statement that clearly indicates the association of home or property owners is and will continue to be technically and financially responsible for the operation and maintenance of the disposal system until such time as the disposal system is no longer needed or has been transferred to a public entity or utility.

(b) The legal authority to regulate the use of the disposal system.

(c) The legal authority to enforce clean water ordinances.

(d) The legal authority to levy assessments on its members and enforce these assessments by liens on the properties of each owner.

(e) The legal authority to transfer ownership and operation of the disposal system to a public entity or utility.

(f) The requirement that members connect with the disposal system and be bound by the rules of the association.

(g) That the association shall continue in existence until after the disposal system is properly closed.

(6) Documentation of the creation of a reserve fund, signed by a certified public accountant, responsible corporate officer, or other official as defined in paragraph (B) of this rule, for the sole purpose of maintaining, repairing and replacing the disposal system and how this reserve will be maintained at an appropriate level over the anticipated life of the disposal system.

[Comment: The director may waive submittal requirements identified in paragraph (G) of this rule for specific project types where the director determines that the information is not pertinent for approval.]

(H) In addition to the information contained in paragraphs (A) to (E) of this rule, applications for permits to install for industrial waste treatment works that have a direct discharge to waters of the state or are tributary to a treatment works (i.e., an indirect discharger) shall include, as applicable, all of the following:

(1) For indirect dischargers, written approval from the sewer authority that will be responsible for treating the industrial waste. The application includes a statement by the sewer authority that it is aware of the proposed project and agrees to accept the treated industrial waste from the applicant's facility. The approval and statement may be in the form of a letter from the sewer authority, or the set of plans can be signed by the sewer authority. If the applicant is proposing to connect to, or construct or modify an existing sewerage system tributary to, a sanitary sewer that is not owned or operated by the sewer authority responsible for treating the industrial waste, then the connection, construction or modification shall be through an approved sewer tap to the sewerage system.

(2) For both direct and indirect dischargers, schematic diagrams of the processes that generate, collect, treat, and dispose of the industrial wastes that include the following:

(a) Clearly label each major process unit in sufficient detail to allow the agency to have a clear understanding of the types and quantities of pollutants that may be generated.

(b) Identify the average and maximum flow rates (expressed as gallons per day) for each major process unit that generates industrial waste, and identify the frequency and volume of spent chemical dumps and the concentrations of pollutants in the influents and effluents for the pretreatment facility.

(c) If the plans are for a modification to an existing, approved facility, distinguish between existing facilities and new facilities.

(3) For both direct and indirect dischargers, an engineering report which includes the following:

(a) Provide a project summary that presents the objectives to be achieved by the proposed facility or new discharge, and generally describes the means proposed to accomplish the objectives, and the anticipated results. The project summary will identify the appropriate categorical regulations, the appropriate local effluent limitations, and any applicable court orders or pretreatment standards.

(b) Briefly describe the manufacturing process or unit process generating the industrial waste stream, and, at a minimum the following:

(i) Delineate the process unit operations in the facility producing the waste streams and explain the relationship between these operations and how the waste streams will be treated.

(ii) Describe the operating schedules.

(iii) Characterize each waste stream by its average and maximum flow values (expressed in gallons per minute and gallons per day) and chemical and physical characteristics, including the concentrations of pollutants and maximum allowable loadings of all pollutants that may be present in the waste stream. Particular emphasis directed towards applicable standards, toxic pollutants, and pollutants that the industrial waste pretreatment facilities are designed to remove.

(c) Briefly describe proposed and existing treatment facilities that will be used to treat the industrial waste streams described in paragraph (H)(3)(b) of this rule, as well as standby and auxiliary equipment for each treatment unit shown in the detail plans, and at a minimum the following:

(i) Describe the average and maximum flow rates (expressed in gallons per minute and gallons per day) that each treatment unit will process, excluding stand-by and auxiliary equipment, as well as the frequency and concentrations of pollutants in all dumps of the process line.

(ii) Describe the chemical and physical characteristics of the waste stream that each treatment unit will receive, including the concentrations of all pollutants that the unit is designed to remove or that may affect the operation of the unit.

(iii) Describe the chemical and physical characteristics of the treated waste stream for each treatment unit.

(iv) State the pertinent specifications of each treatment unit and each major equipment item, including stand-by and auxiliary equipment.

(v) State the criteria used to design or size each treatment unit and the associated equipment.

(vi) Describe the ultimate means of disposal of residuals, sludges, and collected industrial wastes.

(I) The director may waive requirements identified in paragraphs (H)(1) to (H)(3) of this rule for specific technologies or project types as necessary to efficiently review the application and administer this chapter.

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3745-42-04 Criteria for decision by the director and political subdivision or investor-owned public utility agreements.

[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 3745-42-01 of the Administrative Code.]

(A) Criteria for decision by the director.

(1) A permit to install or plan approval is issued on the basis of the information appearing in the application or information gathered by or furnished to the Ohio environmental protection agency.

(2) In deciding whether to approve or deny a permit to install or plan approval, the director shall make the determination based off the following factors:

(a) For approval,the installation or modification and operation of the disposal system does the following:

(i) Not prevent or interfere with the attainment or maintenance of applicable water quality standards contained in Chapter 3745-1 of the Administrative Code.

(ii) Not result in a violation of any applicable laws as defined in rule 3745-42-01 of the Administrative Code.

(iii) Employs the best available technology. For connection into sanitary sewers, see rule 3745-42-07 of the Administrative Code.

(iv) Not conflict with either an areawide waste treatment management plan adopted in accordance with section 208 of the act, in accordance with section 6111.03 of the Revised Code, or approved regional sewage service and treatment plan.

(v) Demonstrates an ability to function properly and meet flow design and treatment quality.

(b) To take into consideration the following:

(i) Input obtained through intra-agency coordination in accordance with table 4-1 of this rule.

(ii) Social and economic impacts relevant to the environment, if applicable, that may be a consequence of issuance of the permit to install or plan approval.

(iii) Design flow and effluent characteristics.

(3) Incomplete permit to install or plan approval applications, in regards to application requirements in rule 3745-1-05 of the Administrative Code and this chapter, are not to considered. Failure to provide requested information or revisions may result in denial of the application.

[Comment: See the definition of "complete" in rule 3745-42-01 of the Administrative Code.]

(4) Plans submitted under this chapter shall be in accordance with generally accepted engineering standards or guidance for design and operation to ensure the protection of human health or the environment. The following publications may be used as a guide in technical review of plans submitted under this chapter:

(a) "Recommended Standards for Wastewater Facilities, Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers."

(b) "Design Standards: Wastewater Treatment Plants & Collection Systems </= 100,000 gpd, Ohio EPA."

(c) Other technical manuals of practice, bulletins or literature may be used as a guide as necessary depending on type of disposal system proposed in the permit to install or plan approval application.

(5) The director may impose such special terms and conditions as are appropriate or necessary to ensure compliance with the applicable laws and to ensure adequate protection of human health or the environment.

(6) Within one hundred eighty days after a completed application is filed, the director shall issue or propose to issue or deny a permit to install or plan approval.

(B) Political subdivision or investor-owned public utility agreements.

(1) The director may enter into agreements for the review of sanitary sewer and industrial user permits to install in accordance with the following framework:

(a) The director may periodically audit the review performed under any agreement and may terminate the agreement for poor quality review, failure to follow Ohio EPA criteria, policies, procedures and rules, or the loss of qualified official or employee.

(b) The term of any agreement under this rule may be for a period of up to five years. The director and political subdivision or investor owned public utility may renew such agreement.

(c) Paragraph (B) of this rule in no way supersedes any other rules adopted under Chapter 6111. of the Revised Code.

(2) Sanitary sewer permits to install.

(a) The director may enter into an agreement with a political subdivision or investor-owned public utility that owns or operates a disposal system that authorizes a qualified official, position or employee of the political subdivision or investor-owned public utility, as determined by the director, to review permit to install applications and plans for compliance with paragraph (B)(2)(b) of this rule.

(b) Under such agreement, the qualified official, position or employee of the political subdivision or investor-owned public utility may be authorized to review permit to install applications and plans for sewerage system extensions or replacements of gravity sewer lines less than or equal to eighteen inches in diameter and force mains and pump stations with maximum design flows of less than or equal to 2.0 million gallons per day. At a minimum, said qualified official or employee of the political subdivision or investor-owned public utility is a registered professional engineer licensed to practice engineering in the state of Ohio.

(c) In performing the review of the permit to install application and plans as specified by the agreement, the qualified official or employee of the political subdivision or investor-owned public utility shall, at a minimum, review the permit to install application and plans for conformance with all applicable laws and generally accepted engineering standards referenced in paragraph (A)(4) of this rule.

(d) Under such agreement, the director outlines the various terms of the authorized review. These terms may include geographical boundaries where review may occur, criteria for review, timeframes, identification of qualified officials or employees of the political subdivision or investor-owned public utility responsible for performing review and any other requirements deemed necessary by the director.

(e) Under such agreement, the fees calculated in accordance with division (B) of section 3745.11 of the Revised Code and a copy of the actual permit to install application shall be forwarded to Ohio EPA upon receipt by the political subdivision or investor-owned public utility.

(f) Under such agreement, the director issues the appropriate action after consideration of the recommendation signed by the qualified official or employee of the political subdivision or investor-owned public utility upon submission to the director of the following:

(i) A recommendation to the director to grant or deny the permit to install and approve or disapprove the plans.

(ii) A certification signed by the qualified official or employee that the permit to install application and plans meet or fail to meet requirements of all applicable laws and generally accepted engineering standards.

(iii) For approvals or denials, a prepared permit to install or denial package in standard Ohio EPA format, complete except for issuance and effective dates and the director's signature.

(iv) The reviewed permit to install application and plans.

(g) In the event that a project reviewed under such an agreement is appealed to the environmental review appeals commission or an Ohio EPA hearing examiner, the political subdivision or investor-owned public utility responsible for review shall provide necessary technical support to the director.

(3) Industrial user permits to install.

The director may authorize, in writing, a municipal corporation, county, or special district that owns or operates a disposal system that has an approved pretreatment program to review and take final action on industrial permits to install for indirect discharges by industrial users of its disposal system in accordance with the procedure in rule 3745-3-03 of the Administrative Code.

[Comment: Unless the director has so authorized the municipal corporation, county, or special district in writing to act on the agency's behalf, a permit to install from Ohio EPA is required for industrial user indirect discharges unless the project meets an exemption in rule 3745-42-02 of the Administrative Code.]

Table 4-1. Identification of projects for which the Ohio EPA division of surface water coordinates with the Ohio EPA divisions of materials and waste management (DMWM), air pollution control (DAPC) and drinking and ground waters, ground water section (DDAGW) and their respective successors.

- Project type	Coordinate with (DMWM)?	Coordinate with DAPC?	Coordinate with DDAGW?
Sewage			
- Wastewater treatment plant - new or expanding system	As needed	As needed	As needed
- Lagoon/impoundment	As needed	As needed	Yes
- Onsite sewage treatment system (soil based treatment) greater than one thousand gallons per day	As needed	As needed	Yes
Industrial waste			

- Lagoon/impoundment	As needed	As needed	Yes
- Onsite sewage treatment system (soil based treatment)	As needed	As needed	Yes
- Wastewater treatment plant - new or expanding system	As needed	As needed	As needed
Other project types			
- Biosolids composting facility	Yes	As needed	As needed
- Exempted wastes "landfill" (fly ash, etc.)	As needed	Yes	Yes
- Leachate collection/treatment, sediment ponds, etc. located at solid waste landfill	Yes	As needed	Yes
All other projects will be reviewed on a case-by-case basis and may involve review under various program authorities at the discretion of the director or director's authorized representatives.			

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3745-42-05 Design flow and waste strength requirements for treatment works sized for one hundred thousand gallons per day or less.

(A) Except as provided in paragraphs (A)(1) to (A)(6) of this rule, the minimum design flows and waste strengths in table A-1 of this rule shall be used to design a treatment works sized for one hundred thousand gallons per day or less and the determined design flows and waste strengths submitted with the permit to install application. The permit to install application includes justification of the proposed design flow and waste strength based on existing and proposed services. In addition to table A-1 of this rule, the director may also consider additional relevant engineering design data, including flow monitoring data, computer flow modeling data, flow equalization facilities, potential impacts to upstream sewers and sampling data for waste strength characterization.

[Comment: If the place to be served by a wastewater treatment works is not listed in table A-1 of this rule, the applicant or consultant should discuss the design flow with an Ohio EPA district office representative so that a proper flow value and waste strength can be chosen.]

(1) Flow monitoring. The director may consider flow monitoring data in addition to the minimum design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less, provided that the flow monitoring data is obtainable and documented on a daily basis.

(a) The flow monitoring data shall be submitted with the permit to install application and conform to either of the following:

(i) Be from the facility for which the treatment works is being designed, and be representative of the range of operating conditions that are expected to occur, which includes considering the months, days and hours of operation.

(ii) Be from a place of like kind, like usage, and located in a similar climate, and be representative of the range of operating conditions that are expected to occur, which includes considering the months, days and hours of operation.

(b) Flow monitoring data shall be provided; for facilities that operate year-round, at least twelve months of flow monitoring data; for seasonal facilities, for the entire operational period within a calendar year.

(2) Computer flow modeling. The director may consider computer flow modeling data in addition to the design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less.

(3) Flow storage and equalization facilities. The director may consider flow equalization facilities at the treatment works or upstream of the treatment works in addition to the

design flow requirements in table A-1 of this rule, when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less. For facilities that have significant variations in daily flow for each day of the week, the director may allow the storage facilities to equalize the flow over several days. The values in table A-1 shall be used to determine the storage volume needed and the design flow of the treatment units following the storage facility. If a facility has a significant variation in daily flow through the week, month or season and lagoon treatment is proposed, the director may allow the proposed lagoon design to be based on an average daily flow and average daily organic loading that is lower than the peak flow values and organic strength values in table A-1, provided sufficient flow monitoring data is provided for the director's consideration.

(4) Potential impacts to upstream sewers. The director may consider potential impacts to upstream sewers in addition to the design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less.

(5) Sampling data for waste strength characterization. The director may consider sampling data in addition to the organic loading concentration ranges in table A-1 of this rule when evaluating the design of a treatment works. Sampling data shall be provided that is indicative of normal operations and for seasonal operations, be reflective of the time when the facility is most used. This data shall include the following: daily raw data, seven-day averages, thirty-day averages, and be from either of the following:

(a) Be from the facility for which the treatment works is being designed, and be representative of the range of operating conditions that are expected to occur.

(b) Be from a place of like kind, like usage, and located in a similar climate, and be representative of the range of operating conditions that are expected to occur.

(6) Water efficiency or water saving devices. The director may consider a reduction in the design flows for a wastewater treatment works, as established in table A-1 of this rule, of up to thirty per cent based upon the installation of low flow fixtures or water saving devices installed at the source of wastewater generation. The following scenarios are eligible for the up to thirty per cent reduction in design flows, established in table A-1:

(a) A wastewater treatment works serving an operation or facility where the sources of the sewage are all new construction, occurring after the effective date of this rule. In general, this provision does not apply in situations where an extensive collection system is installed as well (e.g. mobile home parks, recreation parks or campgrounds, etc.).

(b) A wastewater treatment works serving an operation or facility where all of the sources of sewage are being remodeled after the effective date of this rule and low flow fixtures or water saving devices are replacing existing water use features. As a condition of the permit application, the applicant shall submit

data or necessary information verifying that appropriate low flow fixtures or water saving devices are being installed throughout the operation. In general, this provision does not apply in situations where an extensive collection system is installed as well (e.g. mobile home parks, recreation parks or campgrounds, etc.).

Flows may be reduced through the scenarios in this paragraph, and the wastewater treatment works design shall accommodate organic and solids loading established utilizing the original design flows contained in table A-1.

[Comment: To convert milligrams per liter to pounds per day, the following formula can be used:

Pounds per day = [(concentration) x (flow) x (conversion factor)]

Pounds per day = [(mg/L) x (MGD) x (8.34)]

Note: MGD means the flow expressed in million gallons per day.]

Table A-1 for design flow and waste strength requirements[g]

Place	Notes	Design flow (gallons per day)	Waste strength range BOD_5 (milligrams per liter)
Airport	b, i, j, p, r, t	15 per employee plus 4 per parking space	200 to 280[r, s, t]
Apartment	b, l	120 per bedroom	200 to 280[r, s, t]
Assembly hall	a, i, j	15 per employee plus 3 per seat without kitchen facilities or 7 per seat with kitchen facilities	200 to 280[r, s, t]
Banquet hall	b i, j	15 per employee plus 3 per seat without kitchen facilities or 7 per seat with kitchen facilities	400
Barber shop	i, j	80 per basin	200 to 280 [s]

Beauty shop, styling salon	i, j	200 per basin	200 to 280[s]
Bowling alley	a, i, j, p	75 per lane	200 to 280 [r, s, t]
Car wash		Sewer connection required; contact district office	
Campground or recreational vehicle park	a, i, j, m, n, p	30 per tent camp site without showers; 60 per tent camp site with showers; 60 per RV camp site without water hook-up; 90 per RV camp site with water hook-up	200 to 280 [r, s, t]
Church (less than 200 sanctuary seats)	a,h, j, k, o, p	3 per sanctuary seat without kitchen; 5 per sanctuary seat with kitchen	200 to 280 [r, s, t]
Church (greater than 200 sanctuary seats)	b h, j, k, o, p	5 per sanctuary seat without kitchen; 7 per sanctuary seat with kitchen	200 to 280 [r, s, t]
Coffee shop	a i, j	15 per employee plus 5 per seat	200 to 280 [r, s, t]
Convenience store, service station or gas station (add all flows that apply)	a, d, i, j, p, q	250 per pump; 500 per service bay; 250 per shower; 15 per employee	200 to 280 [r, s, t, u]
Country club, sportsman club or gun club	b i, j, m, n, o, p	50 per individual based on occupancy capacity	200 to 280[r, s, t]
Dance hall	a, i, j, p	15 per employee plus 3 per patron without kitchen facilities or 7 per	200 to 280[r, s, t]

		patron with kitchen facilities	
Daycare facility	a, i, j, p	35 per employee plus 10 per student or child	200 to 280 [r, s, t]
Dentist office	i	35 per employee plus 10 per patient that can be scheduled to be seen in a given day plus 75 per dentist	200 to 280 [s]
Doctor office	i	35 per employee plus 10 per patient that can be scheduled to be seen in a given day plus 75 per doctor	200 to 280[s]
Dry cleaner	i	Contact district office [1]	200 to 280 [s]
Factory or manufacturing facility	i, q	25 per employee without showers; 35 per employee with showers	200 to 280 [r, s, t]
Food service operation/restaurant categories (as noted below)			
-Ordinary restaurant (not open 24 hours)	c, i, j, p	35 per seat	400 to 600
- 24-hour restaurant	c, i, j, p	60 per seat	400 to 600
-Restaurant along freeway	c, i, j, p	100 per seat	400 to 600
-Tavern (very little food service) or bar (full food service)	c, i, j, p	35 per seat	400 to 600
-Curb service (drive-in)	c, i, j, p	40 per car space	400 to 600

-Vending machine	c, i, j, p	100 per machine	400 to 600
*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********
Homes in subdivision	b, l	120 per bedroom	200 to 280[r, s]
Horse stable	a, j	120 for outdoor living quarters if present on property plus 120 per wash stall plus 50 per horse stall for boarding	200 to 280
Hospital	b, i, j, p	300 per bed plus 35 per employee	200 to 280[r, s, t]
Hotel or motel	a, i, j, p	100 per room	200 to 280 [r, s, t]
Institution (such as psychiatric hospitals or prisons)	b, i, j, p	100 per bed plus 35 per employee	300
Laundromat	i, q	15 per employee plus 400 per washing machine	200 to 280 [s]
Marina (restrooms and showers only)	a, i	20 per boat mooring or slip	200 to 280[r, s, t]
Labor camp	e, i, j, p	50 per employee	200 to 280 [r, s, t]
Mobile home park	b, i, j, p	300 per mobile home space	200 to 280 [r, s, t]
Nursing and rest homes	b, i, j, p	200 per bed plus 100 per resident employee plus 50 per non-resident employee	300

Office building	a, i, j, k	20 per employee	200 to 280 [r, s, t]
Playground or day park	a, i, k, p	15 per employee plus 12 per parking space	200 to 280 [s]
Stand alone retail store	a, i, j, p	15 per employee plus 12 per parking space	200 to 280[r, s, t]
School	b, i, j, k, p, t	15 per employee plus 15 per student for elementary schools; 20 per student for junior and high schools; 85 per student for boarding schools	200 to 280 [r, s, t]
Service station or convenience store or gas station (add all flows that apply)	a, d,i, j, p, q, u, v	250per pump; 500 per service bay; 250 per shower; 15 per employee	200 to 280 [r, s, t, u]
Shopping center	a, f, l, p, q	15 per employee plus 2 per parking space without food service or 5 per parking space with food service	200 to 280 [r, s, t]
Swimming pool	a, i, j, m, n	5 per swimmer without hot showers or 10 per swimmer with hot showers, based on permitted capacity	200 to 280[r, s, t]
Theater	a, i, j, p	5 per seat for indoor auditorium or 10 per car space for drive-in	200 to 280 [r, s, t]
Vacation cottage	b, i, j, p	50 per person without kitchen or	200 to 280[r, s, t]

		75 per person with kitchen	
Veterinarian office, animal hospital, and small animal boarding	f, i, j	15 per employee plus 100 per doctor plus 20 per run and cage	200 to 280[r, s, t]
Youth and recreation camps	b, i, j, p	15 per employee for day camp plus 15 per camper for day camp with food service or 10 per camper for day camp without food service; 50 per employee for overnight camp plus 50 per camper for overnight camp, based upon occupancy capacity	200 to 280 [r, s, t]

Note a: Food service waste not included.

Note b: Food service waste included, but without garbage grinders.

Note c: Aeration tanks for these systems require forty-eight-hour detention periods. Garbage grinders not permitted.

Note d: Truck parking areas will require consideration for treatment of runoff at large truck stops.

Note e: Twenty gallons per day of a vault latrine is used for toilet wastes.

Note f: Assume manual hosing of dog runs and solids (food droppings, etc.) removal prior to hosing.

Note g: Year round disinfection of all wastewater may be necessary before discharge to waters of the state or to any other surface or subsurface disposal systems.

Note h: Lower per seat estimate assumes a maximum of one church service per day, higher per seat estimate assumes a maximum of three church services per day. Weddings and funerals are counted as services.

Note i: Non-domestic or industrial wastes are prohibited from being discharged to soil based treatment systems.

Note j: Total capacity for number of persons should be confirmed by occupancy license or total occupancy capacity.

Note k: Higher flows are estimated when showers are available.

Note l: Deviating from this estimated design flow will require the director's approval, prior to applicant submitting the permit to install.

Note m: Pools cannot discharge pool filter backwash into soil based treatment systems.

Note n: Pool de-watering is prohibited from discharging to soil based treatment systems.

Note o: Flow estimates do not consider daycare facilities. If a daycare is present, the flow requirements for a daycare facility shall be included.

Note p: An external grease trap is required for facilities with food service for soil based treatment systems.

Note q: Assume one working shift of not more than eight hours. Assume higher flows for two or three shift operations.

Note r: Assume no garbage grinder and normal domestic waste. If garbage grinders are present, the waste strength should be increased from twenty to sixty-five per cent.

Note s: Data for regular strength waste range of 200 to 280 milligrams per liter was obtained from U.S. EPA's manual "Onsite Wastewater Treatment Systems Manual, Revised 2002 (EPA/625/R-00/008)." This manual is available on the internet at www.epa.gov/ncepihom/ and can be ordered by telephone by calling (800) 490-9198.

Note t: Waste strength should be twenty to sixty-five per cent higher for facilities that include food service operations, such as cafeterias, service stations and for facilities that may handle pet wastes.

Note u: Sewer connection is required for a car wash. Please contact your district office.

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3745-42-06 General permit to install.

(A) General permit to install coverage.

Without receiving an application for the general permit to install, the director may prepare and issue a general permit to install that covers the installation of any of the following, within a specific geographic area:

(1) Oil and water separators.

(2) Sewer extensions.

(3) Pump and treat systems for remediation of ground water.

(4) Cooling towers.

(5) Closed loop recycling systems.

(6) External fat, oil and grease interceptors.

(7) Any other type of disposal system, in which the director determines that a general permit to install is an appropriate permitting mechanism.

(B) Criteria for issuing and renewing a general permit to install. The director may issue a general permit to install or renew a general permit to install if, on the basis of all information available to Ohio EPA, the director determines all of the following:

(1) The installation of the disposal system will be protective of public health and the environment.

(2) The installation of the disposal system is more appropriately covered by a general permit to install than an individual permit to install.

(3) Technology or standards exist that make it reasonable to issue a general permit to install.

(4) The criteria specified in rule 3745-42-04 of the Administrative Code are met.

(C) General permit to install coverage.

(1) Prohibition. No person is authorized to install a disposal system under the coverage of a general permit to install until the director issues the written notification that the disposal system has obtained coverage under a general permit to install.

(2) Notice of intent. Each person who wishes to obtain coverage under a general permit to install in order to install a disposal system shall submit to the director, or an authorized representative, a notice of intent to comply with the general permit to install, in accordance with the deadlines specified in the general permit to install. The director may require any person who has submitted a notice of intent to obtain

coverage under an individual or alternative general permit to install. A notice of intent shall meet the following requirements:

(a) Be submitted to the director, or an authorized representative, pursuant to this chapter.

(b) Be submitted with fees identical to those of an application for an individual permit to install.

(c) Be made only on forms deemed acceptable by the director or an authorized representative.

(d) Be signed, as specified in rule 3745-42-03 of the Administrative Code.

(e) Contain all of the following:

(i) The general permit to install number under which authorization to construct is requested.

(ii) The name, address, telephone number, and title of the person requesting coverage under the general permit to install, as well as, if applicable, the name of an additional contact person.

(iii) Except for proposed mobile treatment units, the location of the disposal system, including the latitude and longitude of the disposal system's approximate center, to the nearest five seconds.

[Comment: When considering the components of a disposal system, the latitude and longitude of the approximate center of the treatment works or the point of connection to the sewerage system, to the nearest five seconds, should be used for the location. Latitude and longitude are available from USGS topographic maps, available at the following web link: http://nationalmap.gov/.]

(iv) For mobile treatment units, a brief description of the unit and the unit's intended use.

(v) If applicable, a description of the process generating the discharge, including all of the following:

(a) The four-digit standard industrial classification codes or the North America industry classification system (NAICS) that best represent the principle products or activities provided by the disposal system.

(b) Any existing quantitative data describing the concentration of pollutants in the discharge.

(c) The volume to be discharged, if applicable.

(vi) A map showing the location of the disposal system and, if applicable, any point or points of discharge.

(vii) Detailed plans as specified by the general permit to install.

(viii) Any other information deemed necessary by the director, or an authorized representative, as specified in the general permit to install.

(3) A general permit to install's coverage shall include all of the following:

(a) Be effective for a fixed term not to exceed sixty months.

(b) Be automatically terminated unless construction is initiated within sixty months after the date the director grants coverage under the general permit to install.

(c) May be transferred, pursuant to paragraph (H) of rule 3745-42-02 of the Administrative Code.

(D) Administrative changes or modifications to a general permit to install.

(1) The director may make administrative changes to a general permit to install to correct typographical errors, to address new interpretations or recalculations or for other similar corrections with such changes not subject to the rules of procedures in Chapter 3745-49 of the Administrative Code.

(2) The director may modify a general permit to install.

(a) When a general permit to install is modified, only the conditions subject to modification are reopened.

(b) The director may issue a general permit to install modification in either of the following situations:

(i) When Ohio EPA has received new information about the disposal system or the geographic area covered by the general permit to install that causes the director to conclude that the general permit to install should be modified. A general permit to install may be modified during the term for this cause only if the information was not available to the director at the time of the general permit to install issuance.

(ii) When standards, criteria or technology on which the general permit to install was based have been changed by new or amended statutes or standards or rules or regulations or judicial decisions enacted, adopted, promulgated or issued after the general permit to install was issued.

(E) Applicability of rules of procedure. A general permit to install, when issued, may be modified, revoked or denied, or may be appealed, in accordance with the provisions of the rules of procedure of Ohio EPA, Chapters 3745-47 and 3745-49 of the Administrative Code.

(F) Revocation or denial of general permit to install coverage.

(1) The director may revoke or deny a general permit to install's coverage or individual coverage under a general permit to install during the term for cause including, but not limited to, the criteria have not been met, or a determination that any applicable law, rule, regulation, or permit term or condition has been violated.

(2) For any revocation or denial of permit to install coverage, the permittee may request a hearing before the director, in accordance with the provisions of the rules of procedure within Chapters 3745-47 and 3745-49 of the Administrative Code.

[Comment: Revocations and denials are initially issued as proposed actions, which may be adjudicated, and then as final actions, which may be appealed.]

(G) Individual or alternative general permit to install requirements. The director may require any person who has requested or obtained coverage under a general permit to install to apply for and obtain the following:

(1) An individual permit to install. The circumstances the director may consider include, but are not limited to, the following:

(a) The proposed disposal system may have a potential to impact environmentally sensitive areas, such as highly susceptible ground water containment areas or wetlands.

(b) The proposed disposal system does not meet the eligibility requirements contained in the general permit to install.

(c) The applicant has a documented history of noncompliance with laws, rules, or permit requirements pertaining to surface or ground waters, within five years previous to the receipt of the application. A history of noncompliance includes, but is not limited to, documented unsanitary conditions or issuance of finding and orders.

(d) The director has revoked the general permit or individual coverage under a general permit pursuant to this chapter.

(2) An alternative general permit. The circumstances the director may consider include, but are not limited to, the following:

(a) An alternative general permit has been issued for a specific geographic area of the state.

(b) An alternative general permit has been issued for a specific category of a disposal system or dischargers.

(c) The proposed disposal system does not meet the eligibility requirements contained in the general permit, or other conditions or specifications contained in the general permit.

(d) The director has revoked the general permit or individual coverage under a general permit pursuant to this chapter.

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3745-42-07 Best available technology for collection, disposal, storage, and treatment of sewage, industrial waste and other waste.

[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 3745-42-01 of the Administrative Code.]

(A) Definitions.

(1) "Centralized collection and treatment" means a disposal system that serves more than one source of sewage, industrial waste, or other waste.

(2) "Larger common plan of development or sale" means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

[Comment: This definition was taken from the Ohio national pollutant discharge elimination system (NPDES) general permit for storm water discharges associated with construction activity.]

(B) Purpose and applicability.

(1) The purpose of this rule is to establish, as part of a permit to install and plan approval program under Chapter 6111. of the Revised Code, a definition for best available technology for disposal systems permitted under this chapter.

(2) This rule is applicable to disposal systems designed to treat sewage, industrial waste and other waste. Except as provided in paragraph (C) of this rule, a disposal system shall meet best available technology criteria to be approved.

[Comment: A brief description of how a project achieves best available technology is to be submitted as part of a permit to install application or plan approval in accordance with rule 3745-42-03 of the Administrative Code.]

(C) Exemptions.

(1) The director, by order, may grant or deny an exemption for any person from the sanitary sewer connection criteria in paragraphs (D)(1)(a)(i) to (D)(1)(a)(v) of this rule and permit the installation of an alternative disposal system. It is the burden of the petitioner requesting the exemption to demonstrate to the satisfaction of the director that technical, financial, environmental, legal or physical barriers prevent connection to sanitary sewers. The petitioner has the burden of demonstrating to the satisfaction of the director that the alternative to the sanitary sewer connection will not adversely affect human health or the environment.

(2) A petition for exemption shall be submitted in writing and signed in accordance with rule 3745-42-03 of the Administrative Code, prior to submittal of any NPDES permit, permit to install or plan approval applications for the alternative disposal system, and include, at a minimum, the following:

(a) Description of project.

(b) Identification and justification of technical, financial, environmental, legal or physical barrier.

(c) Description of the alternative disposal system.

(d) Any additional information as the director may require to protect human health or the environment.

(3) An incomplete petition will not be considered. Any petitioner who submits an incomplete petition will be notified within thirty days of receipt of the application of the nature of deficiency and of the director's refusal to consider the petition until the deficiency is corrected. Failure to correct the deficiency within thirty days of notice may result in denial of the petition.

(4) The director shall grant or deny the petition for exemption by order within ninety days of the date on which a complete petition for exemption is received.

(5) The director may revoke an exemption approved in accordance with paragraphs (C)(1) and (C)(2) of this rule if any condition upon which the exemption was issued changes.

(D) Best available technology for connection into sanitary sewers.

(1) Connection into existing publicly owned or regional sanitary sewers is required for the disposal of sewage when said sewers are accessible and available. Accessible and available is determined as follows:

(a) The connection would not conflict with either any areawide waste treatment management plan adopted in accordance with section 208 of the act, in accordance with section 6111.03 of the Revised Code, approved regional sewage service and treatment plan or a connection ban imposed in accordance with Chapter 3745-11 of the Administrative Code.

(b) The disposal system receiving the sewage has or is expected to have capacity to adequately collect and treat the sewage.

(c) For an existing structure, where any part of a structure from which the waste is generated is within three hundred feet of the nearest boundary of the right-of-way within which the existing sanitary sewer is located.

[Comment: For example, if an existing business is located two hundred and forty feet from the corner of the building to the sanitary sewer right-of-way, the business will meet the requirements to connect to the sewer.]

(d) For a proposed structure not included within a larger common plan of development or sale, where any property line of the lot is within three hundred feet of the nearest boundary of the right-of-way within which the existing sanitary sewer is located.

[Comment: For example, if a new business is proposed on a single lot, and the edge of the property line is two hundred and ninety feet from the existing sanitary sewer right-of-way, the business will meet the requirements to connect to the sewer.]

(e) For two or more proposed structures (e.g., commercial business park), where any property line of the larger common plan of development or sale is within a distance of two hundred feet multiplied by the number of proposed structures up to a maximum distance of five thousand feet from the nearest boundary of the right-of-way within which the existing sanitary sewer is located, measured from the closest property line to the sanitary sewer right-of-way.

[Comment: For example, if phase one of a proposed commercial park will contain five structures, and phase two of the project, that will not be constructed for six years, will contain six structures, and the sanitary sewer right-of-way is one thousand four hundred feet away from the nearest property line in phase one of the development, the commercial park will meet the requirements to connect since two hundred feet per structure multiplied by eleven structures equals two thousand two hundred feet, which is greater than one thousand four hundred feet. It should be noted that even if phase two is constructed first, connection to sewers would still meet the requirements to connect since the larger plan of development results in a structure being located within two thousand two hundred feet.]

(f) On a case by case basis for sewage generated at industrial processing operations taking into consideration factors including but not limited to volume of waste to be disposed, ability of permittee to operate an individual disposal system, demonstrated economic hardship and compliance with other applicable rules and laws.

[Comment: Industrial processing operations can include businesses that generate industrial or other waste, such as metal finishing operations and food processing facilities, and have the potential to co-mingle sewage.]

(2) Installation of new centralized collection and treatment is required for the disposal of sewage when the cumulative design flow of sewage for a proposed larger common plan of development or sale is greater than twenty-five thousand gallons per day if sanitary sewers are not accessible or available as per paragraph (D)(1) of this rule. This requirement does not preclude multiple or "cluster" type systems.

[Comment: Multiple and cluster type systems are subject to permit to install rules in this chapter.]

(3) The director may permit the installation of an alternative disposal system for the disposal of industrial waste on a case by case basis taking into consideration factors including, but not limited, to compatibility of waste, treatability of waste, volume of waste to be disposed, ability of the applicant to operate an individual disposal

system, demonstrated economic hardship and compliance with other applicable rules and laws, including rule 3745-1-05 of the Administrative Code.

[Comment: Connection into an existing publicly owned or regional sanitary sewer for the disposal of industrial waste when said sewer is accessible and available as defined in paragraph (D)(1) of this rule is preferred.]

(4) In order to protect human health and the environment, the director may order, as authorized under Chapter 6111. of the Revised Code, the connection into existing sanitary sewers or installation of new centralized collection and treatment in situations beyond the connection distances or flow values stated in this rule.

[Comment: Paragraphs (D)(1)(a) to (D)(1)(f) of this rule contain the requirements that the director is to give consideration to the technical feasibility and economic reasonableness in the issuance of the order.]

(5) Notwithstanding the issuance or non-issuance of a permit to install or plan approval for a non publicly owned or non regional disposal system treating sewage, whenever a publicly owned or regional sanitary sewer system becomes accessible and available, the permittee shall properly abandon the disposal system and connect into the publicly owned or regional sanitary sewer system and properly close the disposal system. Connection into the publicly owned or regional sanitary sewer system is to be made within three years of accessibility and availability, unless an alternative time frame is authorized by the director, considering the age of the disposal system, level of treatment being provided, economic hardship, and compliance with applicable laws.

(6) Notwithstanding the issuance or non-issuance of a permit to install or plan approval for a disposal system treating industrial waste or other waste or industrial waste or other waste and sewage, whenever a publicly owned or regional sanitary sewer system becomes accessible and available, the director may require the disposal system to be properly abandoned and connected into the publicly owned or regional sanitary sewer system and properly modify or close the disposal system and may consider factors including, but not limited, to compatibility of waste, treatability of waste, volume of waste to be disposed, economic hardship and compliance with other applicable laws. The director will specify a time frame for connection.

(E) Best available technology for treatment of sewage, industrial waste and other waste. As applicable, the applicant shall include the following items in the disposal system design or treatment technology selection:

(1) Effluent limitations or design criteria listed in the definition of best available demonstrated control technology in rule 3745-1-05 of the Administrative Code.

[Comment: Rule 3745-1-05 of the Administrative Code contains specific effluent limitations or design criteria for sanitary wastewater treated by conventional treatment technologies, industrial direct discharges, categorical industrial indirect discharges and wastewater discharges resulting from clean-up of response action sites contaminated with volatile organic compounds.

(2) Effluent limitations established under Chapter 3745-33 of the Administrative Code.

(3) Design criteria under this chapter.

(4) Industrial waste pre-treatment standards under Chapters 3745-3 and 3745-36 of the Administrative Code.

(5) Treatment standards for sewage sludge under Chapter 3745-40 of the Administrative Code.

(F) Design requirements for storage facilities.

(1) A storage facility shall conform to the following:

(a) Maintain the isolation distance requirements listed in table F-1 of this rule. The director may reduce the isolation distance requirements if the storage facility contains class A treated sewage or liquid industrial waste.

[Comment: Isolation distances. In the case of any reference to a building, the measurement is to be taken from the outside wall of the building. In the case of any reference to a treatment works or a component of the treatment works or a pump station, the measurement will be taken from the closest point on the perimeter of the treatment works, the component of the treatment works, or the pump station. In the case of any reference to a lagoon or storage facility, the measurement will be taken from the outer bank or the toe of the impoundment.]

Table F-1: Minimum required isolation distances

Siting criteria	Minimum lagoon isolation distance (feet)	Minimum solid storage isolation distance (feet)
Occupied building	Three hundred	Three hundred
Private potable water source not owned by the person land applying treated sewage or liquid industrial waste	Three hundred	Three hundred
Private potable water source owned by the person land applying treated sewage or liquid industrial waste	Fifty	Fifty
UIC class V injection well	Three hundred	Three hundred

Property line	Fifty	Fifty
Dwelling as defined in rule 3701-29-01 of the Administrative Code	One thousand	One thousand

(b) For earthen impoundments, have inner and outer slopes no steeper than one foot vertical to three feet horizontal.

(2) Siting requirements for storage facilities. Storage facilities may not:

(a) Be located within drinking water source water protection area for all public water systems using ground water (community water supply, transient, non-community, and non-transient, non-community) unless:

[Comment: Information on the location of drinking water source protection areas, inner management zones, emergency management zones, public water systems wells, and public water wells and intakes can be obtained from the Ohio EPA division of drinking and ground water source water assessment and protection program at (614) 644-2752, by email at whp@epa.ohio.gov or on the internet at https://epa.ohio.gov/divisions-and-offices/drinking-and-ground-waters/source-water-protection-and-underground-injection-control-(uic)/source-water-assessment-and-protection-program.]

(i) The proposed site is approved by the director.

(ii) Additional engineering controls to minimize the chance of liner failure are included.

(iii) A minimum of fifteen feet of low permeability material exists between the bottom of the liner and the top of the uppermost aquifer system.

(iv) A vertical separation distance of at least three feet is maintained between the bottom of the storage facility liner and bedrock.

(v) The storage facility is located outside the sanitary isolation radius of a public water system well, as determined in accordance with rule 3745-9-04 of the Administrative Code.

(vi) The storage facility is located outside of the inner management zone and have an isolation distance of at least three hundred feet away from a water supply well for a community water supply, transient, non-community (TNC) or non-transient, non-community (NTNC) public water system using ground water. The director may reduce the isolation distance from a water supply well for storage facilities that contain highly treated and disinfected treated sewage or liquid industrial waste.

(b) Be located within the emergency management zone of a public water system using surface water or within one thousand five hundred feet of the drinking water intake, whichever results in a greater distance from the intake.

(3) Storage volume requirements. A storage facility shall be designed with adequate storage capacity to prevent a discharge to surface waters, except as permitted by an NPDES permit. The minimum storage requirements in table F-2 of this rule shall be met. The director may determine a larger storage volume to ensure that sufficient storage is provided to meet in stream water quality standards during exceptionally dry periods, or to ensure sufficient storage is provided to accommodate inspections or offline repairs.

[Comment: A continuous discharge occurs when a discharge by a land application system is permitted to surface waters year-round.]

Table F-2: Minimum storage volume requirements

Type of land application system	Minimum storage volume requirement
Controlled discharge permitted by an NPDES permit and land application	Two weeks of storage volume
Continuous discharge permitted by an NPDES permit and land application	Evaluated on a case by case basis
Any other land application system	Four months of storage volume

(a) The storage volume shall be calculated using the disposal system design flow and consider all hydraulic inputs and outputs, including the following:

(i) The number of storage days necessary.

(ii) Whether or not there will be a controlled discharge in addition to land application.

(iii) The size of the land application area.

(iv) Site specific rainfall and evaporation data.

(v) The potential for solids accumulation.

(b) A smaller storage volume or no storage volume may be approved for a disposal system that includes a continuous discharge permitted under an NPDES permit.

[Comment: The Ohio state university extension bulletin number 860, "Reuse of Reclaimed Wastewater Through Irrigation," demonstrates an acceptable procedure for calculating the amount of storage volume necessary for non-

discharging land application systems. The director may accept alternate design criteria, provided that the permit to install demonstrates to the satisfaction of the director that there will be no adverse impact to surface water or ground water, as a result of the alternate design criteria.]

(4) Freeboard requirements for storage facilities shall meet the freeboard requirements in table F-3 of this rule and be equipped with a depth marker which clearly indicates the minimum freeboard level.

Table F-3: Minimum freeboard requirements for storage facilities	
Design parameter	Minimum freeboard requirement for storage facility
Design flow less than one thousand gallons per day	Two feet
Volume of storage facility less than ten thousand gallons	Two feet
Concrete impoundment	Two feet
Earthen or partially earthen impoundment that holds more than ten thousand gallons	Three feet

(5) Liner requirements for storage facilities. Except as provided in paragraphs (F)(5)(a) and (F)(5)(j) of this rule, the storage facility shall have a recompacted clay liner designed in accordance with the following unless otherwise specified in the detailed engineering plans approved by the director.

(a) No soil material used in the liner shall be placed or recompacted during weather conditions, such as freezing temperatures or rain, that would interfere with adequate compaction or control of moisture content.

(b) Soil material used in the liner shall be placed in six inch to eight inch loose lifts at a moisture content between zero per cent and four per cent above optimum moisture content as determined by standard laboratory proctor.

(c) Soil material used in the liner shall be recompacted by using standard engineering compaction methods and recompacted to a minimum compaction rate of ninety-five per cent of standard dry density as determined by ASTM D698 or greater as required to achieve 1×10^{-7} centimeters per second maximum permeability. The most representative moisture-density curve is to be used to determine compaction rates.

(d) Compacted soil material used in the liner shall be tested for density and moisture content at a rate of one test per lift, with a minimum of one test for any day that soil material is compacted.

(e) When a density or moisture content test is not conducted in compliance with the approved detailed engineering plans or the terms and conditions of the permit to install, each lift shall be scarified and the moisture content adjusted and the soils recompacted for the area that extends from the location of the failed test to one-half the distance to the location of the nearest passed test, in all directions. The recompacted area is then retested for compliance.

(f) The results of density and moisture content testing shall be submitted to Ohio EPA.

(g) Soils used for the liner shall have from fifteen to thirty per cent clay content and be classified as CL or SC by the unified classification system (ASTM designation D2487). The remaining portion of the liner material should have a wide range of soil particles in the silt, fine sand and coarse sand range.

(h) When the classification of the proposed liner material can not be determined in accordance with the unified classification system, hydraulic conductivity tests shall be performed on the proposed lining material to confirm its classification and ensure the proposed liner will be in accordance with paragraph (F)(5) of this rule.

(i) There shall be a minimum of three feet of fine-grained soil over fractured rock outcrops or other highly permeable material, which may include the recompacted liner.

(j) The thickness of the recompacted clay liner shall be in accordance with table F-4 of this rule. Separation distance is:

(i) For any storage facility not located within a drinking water source water protection area, the vertical distance between the top of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

(ii) For any storage facility located within a drinking water source water protection area, the vertical distance between the bottom of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

Table F-4: Thickness of recompacted clay liner	
Available vertical separation distance	Thickness of recompacted clay liner

Three feet or more, but less than five feet	Twenty-four inches
Five feet or more, but less than ten feet	Eighteen inches
Ten feet or more	Twelve inches

(6) If a synthetic liner is used in lieu of a recompacted clay liner, the liner shall conform to the following:

(a) Include, at a minimum, six inches of properly prepared subbase placed underneath the synthetic liner.

(b) Unless otherwise specified in the detailed engineering plans approved by the director, have a maximum permeability of 1×10^{-7} centimeters per second.

(c) Be designed based on considerations for potential freeze and thaw damage and potential exposure to ultraviolet rays.

(7) If the storage facility is constructed of reinforced concrete, the concrete shall be, at a minimum, five inches thick and include non-metallic water stops for all joints.

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CERTIFIED ELECTRONICALLY

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3745-42-08 Isolation distance requirements.

(A) Isolation distances. Except as provided in paragraphs (B) to (E) of this rule, the minimum isolation distances in table A-1 of this rule shall be maintained.

[Comment: In case of reference to any building, the measurement is to be taken from the outside wall of the building. In case of reference to a treatment works or a component of the treatment works or a pump station, the measurement is to be taken from the closest point on the perimeter of the treatment works, the component of the treatment works, or the pump station. In case of reference to an earthen lagoon or storage facility, the measurement is to be taken from the outer bank or the toe of the earthen impoundment.]

Table A-1: Isolation distance requirements.

Component of disposal system	Minimum isolation distance from an occupied building	Minimum isolation distance from surface waters of the state	Minimum isolation distance from dwelling
Earthen impoundment that contains sewage or treated sewage	Three hundred feet	Three hundred feet	One thousand feet
Earthen impoundment that contains industrial waste, other than industrial waste generated from the recovery of any natural resource, such as a quarry mining operation	Three hundred feet	Three hundred feet	Three hundred feet
Sewage sludge drying bed	Three hundred feet	Three hundred feet	Three hundred feet
Covered sand filter	One hundred fifty feet	Three hundred feet	Three hundred feet
Housing or building enclosure for extended aeration treatment works	One hundred fifty feet	One hundred fifty feet	One hundred fifty feet

Pump station	Fifty feet	Thirty-five feet	Fifty feet
Any other component of a treatment works, not including (1) a disposal field, (2) a land application area or (3) a wet weather management facility for treating combined sewer overflows or sanitary sewer overflows	Two hundred feet	Three hundred feet	Two hundred feet

(B) After considering either the potential impacts to neighboring buildings or prevailing wind directions, the director may increase an isolation distance set forth in table A-1 of this rule or require mitigative measures such as additional freeboard, landscape mounds, fencing, trees or other means to reduce the impacts. Increased isolation distances may apply in the following situations:

(1) Within a permit, including but not limited to a general permit to install or a storm water permit. Where a greater isolation distance requirement exists as a condition of a permit, the greater isolation distance requirement prevails.

(2) To protect the following from potential impacts from a wastewater treatment works with a design flow of more than one hundred thousand gallons per day or from any non-aerated treatment lagoon:

(a) A high-density development.

[Comment: A high-density development includes a residential development of homes or condominiums, a commercial development, such as a shopping mall, or a business park development.]

(b) A day care facility.

(c) A hospital.

(d) Waters of the state.

[Comment: Potential impacts to neighboring buildings could include odors or the probability that either an overflow or a breach could inundate neighboring buildings, causing harm to life, health or property. Applicants proposing to construct above ground impoundments should also contact the Ohio department of natural resources division of

dam safety. The web page is: https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/water-resources/ohio-dam-safety.]

(C) For the construction of any new disposal system after September 1, 2009, the director may reduce any minimum isolation distance in table A-1 of this rule under the following situations:

(1) For any request to reduce an isolation distance from an occupied building, the applicant can demonstrate to the director both of the following:

(a) That by taking into account prevailing wind directions, screening, or other means of noise and odor control, any component of a disposal system will not negatively impact a neighboring building, public health or the environment.

(b) That the general public located within the disposal system service area has been notified of the proposed reduced isolation distances and given an opportunity to view the proposal and comment.

(2) For any request to reduce an isolation distance from waters of the state, the applicant can demonstrate to the director all of the following:

(a) That there is a technical or financial hardship in implementing a minimum isolation distance.

(b) That there are no other viable options.

(c) That the general public located within the disposal system service area has been notified of the proposed reduced isolation distances and given an opportunity to view the proposal and comment.

All comments shall be forwarded to the director or an authorized representative for consideration.

(D) For any disposal system constructed prior to September 1, 2009 and proposed to be modified after the September 1, 2009, smaller isolation distances will be allowed, provided the applicant provides documentation that meeting the isolation distances in paragraphs (A) and (B) of this rule would impede the function of the existing disposal system or cause the applicant to incur more cost. To protect public health or the environment from a significant threat, the director may require other mitigative measures, such as additional freeboard, landscape mounds, fencing, trees or other means to reduce the impacts when smaller isolation distances are allowed.

(E) For any disposal system constructed prior to September 1, 2009, to protect public health or the environment, the director may require other mitigative measures when isolation distances smaller than those listed in table A-1 of this rule exist. For example, mitigative measures could be implemented as a result of documented odor complaints or a breach or overflow that caused harm to life, health or property.

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CERTIFIED ELECTRONICALLY

Certification

10/24/2025

Date

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3745-42-11 Holding tanks.

(A) Purpose. The purpose of this rule is to establish the permit to install application requirements, management plan application requirements, design standards, siting restrictions and operation and maintenance requirements for any holding tank.

(B) Exclusions from this rule. The following are exempt from a permit to install or management plan:

(1) Any portable toilet that does not have a connection to a water supply.

(2) A portable unit for the storage of sewage or industrial waste that meets all of the following:

(a) Is dropped off and picked up for off-site recycling, treatment or disposal, including but not limited to "totes" or "roll-offs".

(b) Has a cumulative sewage storage volume of five hundred gallons or less.

[Comment: Some portable units include individual storage tanks for the discharge from sinks and the discharge from toilets. The total additive volume of both tanks shall not exceed five hundred gallons.]

(3) A holding tank that is regulated by rules 3745-55-90 to 3745-55-99 of the Administrative Code or rules 3745-66-90 to 3745-66-101 of the Administrative Code.

[Comment: These rules generally cover hazardous waste tank systems.]

(4) A holding tank that is an underground storage tank and is regulated by rule 1301:7-9-06 of the Administrative Code.

[Comment: These rules generally cover underground petroleum storage tanks.]

(5) A holding tank that is part of a portable trailer unit and meets each of the following:

(a) Has a cumulative storage volume of five hundred gallons or less.

(b) Has no connection to an external water supply.

(C) Permit to install exemptions. Minor modifications of a holding tank are exempt from a permit to install when such modifications are minor repairs, or replacement of parts, as determined by the director or an authorized representative, that do not change the overall capacity, operation, or maintenance of the holding tank.

[Comment: Regardless of a permit to install exemption, the director may require a holding tank management plan, in accordance with paragraph (H)(2) of this rule.]

(D) Sewage holding tank prohibitions and restrictions.

(1) A sewage holding tank for existing onsite sewage disposal system or other unauthorized discharging system prohibition. Except as provided in paragraph (E) of this rule, a sewage holding tank shall not be installed to replace an existing onsite sewage disposal system or other unauthorized discharging system except in the following instances:

(a) When the existing onsite sewage disposal system or other unauthorized discharging system has resulted in a nuisance, a human health risk or a risk to the environment, centralized sewers are not available, and there is no other viable treatment alternative for the site.

(b) When the existing onsite sewage disposal system or other unauthorized discharging system has resulted in an un-permitted discharge to waters of the state, centralized sewers are not available, and there is no other viable treatment alternative for the site.

(2) New sewage holding tank prohibition. Except as provided in paragraphs (D)(2)(a) to (D)(2)(c) of this rule and paragraph (E) of this rule, a new sewage holding tank shall not be installed to serve a building that is currently not served by a disposal system except in the following instances:

(a) Sanitary sewers are currently unavailable and inaccessible, but they are under construction or a contract for construction has been signed at the time the permit to install application is received by the director or an authorized representative.

(b) Sewers will be available within twelve months of the date the permit to install application was received.

(c) The building will be connected to sanitary sewers within twelve months of the date the permit to install application was received.

(E) Director's authorizations.

(1) The director may allow a sewage holding tank,

(a) Provided it is located within a recreational vehicle park, a recreation camp, a combined park-camp.

[Comment: The definitions for "recreational vehicle park", a "recreation camp", a "combined park-camp", and a "temporary park-camp" can be found in Chapter 3701-26 of the Administrative Code.]

(b) When the sewage holding tank is designed in accordance with this rule and any of the following scenarios apply:

(i) Will be utilized as a vault privy and not connected to a water supply.

(ii) Will be a proprietary stand alone, self-contained system, not connected to a water supply other than a water tank that is constructed as part of the

unit and the volume of the water tank is less than the volume of the sewage holding tank, and will not serve a residence or business.

[Comment: A restroom facility at a park is an example of when this type of holding tank system could be approved.]

(iii) Will be used for not more than one occurrence of less than twenty-one consecutive days in any calendar year.

(iv) Will be used to serve a temporary construction trailer, provided the temporary construction trailer meets all of the following conditions:

(a) Will be used solely for business purposes.

(b) Will not be used as a residence.

(c) Will be removed from service and decommissioned in accordance with paragraph (K) of this rule.

(c) When the sewage holding tank is designed in accordance with this rule and extreme site circumstances warrant no other viable option. For the purposes of this rule, extreme site circumstances include, but are not limited to, the following:

(i) Project site restrictions provide no feasible discharge location, and no adequate on-site soils exist for soil absorption.

(ii) Sewage chemical or biological characteristics are not easily treated by standard biological treatment alternatives.

(iii) Sewage flow is so variable that it is not conducive or easily treated by biological treatment alternatives.

A sewage holding tank can only be allowed in these circumstances after all viable discharging or soil absorption systems have been deemed technically ineffective, sanitary sewers are not available as determined by rule 3745-42-07 of the Administrative Code, the property was legally platted prior to the effective date of this rule, and there is no change in use of the property from that which was anticipated when the property was platted.

(F) Record keeping requirements for any holding tank. Any person who owns or operates a holding tank shall keep the following records at the facility for the time specified and make these records available to the director, or an authorized representative, within a reasonable time upon request:

(1) Holding tank construction and installation records, including a copy of the approved permit to install, until the holding tank is decommissioned in accordance with paragraph (K) of this rule.

(2) If applicable, a copy of the effective holding tank management plan.

(3) Operating records for holding tanks for a period of three years. The records shall include, at a minimum, the following:

(a) Each date that the sewage or industrial waste was hauled.

(b) The volume and description of each source of sewage or industrial waste. This may include sampling or monitoring of tank contents, as appropriate.

(c) The name and address of the receiving facility.

(d) The name of the hauler and, for any sewage holding tank, confirmation that the hauler is licensed through a local health department to transport wastes.

(e) As applicable, documentation from the receiving facility that the facility has received the sewage or industrial waste from each hauling event.

(G) Design requirements for a holding tank that will contain sewage or industrial waste.

(1) For any holding tank, an applicant shall, at a minimum, incorporate the following into the applications and into the design and operation of the holding tank and related equipment:

(a) The inner surface or the lining of the holding tank is compatible with the sewage or industrial waste that the tank is holding.

(b) The tank is labeled, or a legible sign is placed immediately adjacent to the holding tank, with the words "Non-Hazardous Sewage" or "Non-Hazardous Industrial Waste," whichever term applies to the tank in question.

(c) Signs that direct persons to notify the Ohio EPA's spill hotline (1-800-282-9378) in an event of a release are placed in clearly visible locations around near the tank.

(d) The application includes an operation and maintenance plan that is on a form approved by the director.

(2) For any in-ground or partially in-ground holding tank, an applicant shall, at a minimum, incorporate the following into the applications and into the design and operation of the holding tank and related equipment:

(a) The holding tank is structurally sound and does not leak from its sides, bottom, seams, or top.

(b) The holding tank meets or exceeds H 20 loading if the tank is completely below ground.

(c) The holding tank foundation is capable of supporting the holding tank when the tank is full of sewage or industrial waste and is capable of preventing uplift of the tank when the tank is empty.

(d) The holding tank is designed and constructed without storm water connections and to prevent inflow and infiltration from entering the holding tank.

(e) For any holding tank connected to a water supply, the tank is equipped with the following features:

(i) A liquid level device that is connected to an autodialer and a light alarm system located in a staffed location where, to the greatest extent practicable, the alarm will be heard by employees present on site, or an audio/visual alarm located in a visible location above ground at the tank's site. The alarm system activates when the level of sewage or industrial waste reaches seventy-five per cent of the holding tank capacity and the alarm signal is transmitted to a staffed location or clearly visible to a staffed location.

(ii) Odor control measures, if necessary, to prevent nuisance conditions.

(3) For any above-ground holding tank, an applicant shall, at a minimum, incorporate the following features into the applications and into the design and operation of the holding tank and related equipment:

(a) For a remotely or automatically filled holding tank, a liquid level device connected to an autodialer and a light alarm system located in a staffed location, or a liquid level device connected to an audio/visual alarm located in a visible location above ground at the tank's location. The alarm system activates when the level of sewage or industrial waste reaches seventy-five per cent of the holding tank capacity and the alarm signal is transmitted to a staffed location or clearly visible to a staffed location.

(b) For a manually filled holding tank, a visual or sight glass type of level measurement.

(c) Odor control measures, if necessary, to prevent nuisance conditions.

(H) Sewage holding tank design and management plan requirements .

(1) Design requirements. For any holding tank that is designed to contain, store, or hold sewage, the holding tank shall meet the following limitations:

(a) Unless otherwise determined by the director, the maximum allowable design flow into the tank is not to exceed six hundred gallons per day.

(b) The design of the tank provides for a minimum storage capacity of ten times the daily design flow.

(c) The tank volume is greater than or equal to one thousand gallons and less than or equal to seven thousand five hundred gallons.

(2) Holding tank management plan requirements for a sewage holding tank.

(a) The director may deny any sewage holding tank management plan application not in compliance with this chapter and require the submittal of a new management plan application, including all applicable fees, to be submitted to the director or an authorized representative, in accordance with the director's notification.

(b) For any sewage holding tank installed after September 1, 2009 and except as provided in paragraphs (B) and (H)(2)(c) of this rule, no person shall install or operate a sewage holding tank without first obtaining a permit to install and holding tank management plan approval from the director. A holding tank management plan includes all of the following:

(i) Approval is effective for up to five years, starting from the date it was approved by the director. A renewal holding tank management plan shall be submitted to Ohio EPA at least six months prior to expiration of any existing holding tank management plan.

(a) If a person submits a renewal holding tank management plan six months prior to expiration of the existing plan and Ohio EPA has not approved the new holding tank management plan prior to the expiration of the existing holding tank management plan, the existing holding tank management plan will remain effective until the new holding tank management plan is acted upon by the director.

(b) If a person does not submit a new holding tank management plan six months prior to expiration of the existing plan, the existing holding tank management plan will expire at the end of the five years.

(ii) Application is on forms approved by the director.

(c) For any sewage holding tank installed prior to September 1, 2009:

(i) The sewage holding tank is protective of public health and the environment.

(ii) The director may require any person that operates or owns a sewage holding tank to submit a holding tank management plan in accordance with the director's notification and paragraph (H)(2)(b) of this rule, where the director or an authorized representative has determined any of the following:

(a) That a risk to human health or the environment exists.

(b) That the holding tank was installed without a permit to install.

(c) That a holding tank is serving a purpose for which it was not originally designed and permitted.

[Comment: Fulfilling the requirement for a management plan does not preclude the director from pursuing enforcement action for situations where a holding tank has been installed without a permit to install.]

(I) Industrial holding tank general requirements for permits to install and operational plans.

(1) Permit to install requirements.

(a) Except as provided in paragraphs (B) and (D) of this rule, a person shall not cause, permit or allow the installation or modification of a holding tank without first obtaining a permit to install from the director.

(b) For any industrial holding tank to be used as a replacement for an existing sewage disposal system, the applicant shall demonstrate to the director's satisfaction that connecting to a sanitary sewer or constructing an onsite sewage disposal system is not feasible. At a minimum, submit the following information to the director or an authorized representative for consideration and determination:

(i) A cost comparison of disposal system alternatives that includes the installation and annual operating costs for each of the following:

(a) A holding tank.

(b) Connecting to sanitary sewers.

(c) At least two other onsite disposal system alternatives.

(ii) Demonstration that the cost of connecting to sewers or installing and operating the onsite alternatives is not affordable.

(iii) A letter from the local sewer authority, locating the nearest sanitary sewer.

(iv) A site plan for the lot where the holding tank is being proposed, showing the size and location of any building and the size and location of any proposed holding tank.

(v) Demonstration that a sewage disposal system is required for the building because the state or local plumbing code has requirements that restrooms or running water be provided for the building.

(vi) Whether the building that the holding tank will serve is proposed or existing.

(vii) A narrative description of the operations, including each of the following:

(a) The number of employees or occupants that will generate sewage.

(b) The average daily flow estimate and the peak daily flow estimate of sewage to be generated at the facility over the course of a week.

(c) The types of wastewater generated.

(d) Whether the operations will be seasonal or year-round.

(viii) A site-specific soil evaluation that includes a site- specific soil map that locates, as necessary, any soil probes, any soil delineations, any soil pits or any soil borings. In addition to the information in the general soil survey, the location of any soil delineations and the location and number of soil probes, pits or borings necessary to describe the soil conditions of the site. The soil delineations, soil probes, soil pits or soil borings shall include the following:

(a) Be performed or evaluated by a professional soil scientist.

(b) Be taken prior to any construction activities.

(c) Be done to a minimum depth of thirty inches below natural grade. To protect public health or the environment, the director or authorized representative may require deeper soil probes, soil pits or soil borings. In areas where glacial till and fractured bedrock substratum soils are in close proximity, the soil investigation shall be done to a depth of at least fifty inches or until bedrock is encountered.

[Comment: The Ohio department of agriculture's division of soil and water conservation web site provides additional information regarding a site's specific soils: https://agri.ohio.gov/divisions/soil-and-water-conservation/resources/Soil_science. To locate a professional soil scientist in your area, you can visit the association of Ohio pedoligists web link at https://www.ohiopedologist.org.]

(2) General requirements for holding tanks that contain industrial waste.

(a) Except as provided in paragraph (I)(2)(b) of this rule, for any holding tank that will contain industrial waste, the proposed holding tank shall be used exclusively to collect, hold or store industrial waste.

(b) The director may allow a holding tank to collect, hold or store both industrial waste and sewage provided the following:

(i) The maximum daily sewage flow into the holding tank does not exceed twenty-five gallons per day.

(ii) The holding tank is designed as if it contains solely industrial waste, in accordance with this rule.

(3) Industrial holding tanks are exempt from an Ohio EPA permitted holding tank management plan. However, the director may require an Ohio EPA permitted holding tank management plan for an industrial holding tank.

(J) Secondary containment.

(1) Except as provided in paragraph (J)(1)(e)(i) of this rule, secondary containment, as described in this rule, shall be provided for above-ground, in-ground, or partially in-ground holding tanks that contain, store, or hold industrial waste. In-ground or partially in-ground tanks that only contain, store, or hold sewage are exempt from secondary containment unless the director or an authorized representative determines that secondary containment for such tanks is needed to protect human health or the environment.

(a) The secondary containment system is to be designed, installed, and operated to prevent any migration of waste from the tank to the soil, ground water, or surface water. The secondary containment system is capable of detecting the release of any waste from the tank, and collecting such released waste until the collected waste is removed.

(b) Secondary containment system for holding tank containing industrial waste is to meet, at a minimum, each of the following criteria:

(i) Be constructed of or lined with materials that are compatible with the wastes to be placed in the holding tank and have sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they may be exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic).

(ii) Be placed on a foundation or base capable of supporting the secondary containment system and resisting pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or for any in-ground or partially in-ground holding tank, preventing failure due to uplift.

(iii) Be equipped with leak detection systems that are designed and operated to detect the failure of either the holding tank or the secondary containment structures or any release of industrial waste or accumulated waste in the secondary containment system within twenty-four hours of the leak, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within twenty-four hours.

(iv) Be sloped or otherwise designed to drain and facilitate removal of waste resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation is removed from the secondary containment system within twenty-four hours of becoming aware of the spill or leak,

or as soon as possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within twenty-four hours.

(c) Secondary containment for holding tanks containing industrial waste may include one or more of the following devices:

(i) A liner (external to the tank).

(ii) A vault.

(iii) A double-walled tank.

(iv) An equivalent device as approved by the director.

(d) Secondary containment for holding tanks as specified in this rule is exempt if the following criteria are met:

(i) The industrial waste does not include any contaminant listed in table 1 of rule 3745-51-24 of the Administrative Code in concentrations greater than fifty per cent of the regulatory level listed for that contaminant.

(ii) The pH of the industrial waste will be greater than five standard units and less than twelve standard units.

(K) Holding tank decommissioning requirements.

(1) For any above-ground holding tank, the owner or operator of the tank shall perform all of the following:

(a) Pump and haul the entire contents of the tank for recycling, treatment or disposal at a facility that has been permitted by the applicable regulatory authority.

(b) Clean the holding tank and appurtenant areas, as necessary.

(2) For any in-ground or partially in-ground holding tank, the owner or operator of the tank shall perform all of the following:

(a) Pump and haul the entire contents of the tank for recycling, treatment or disposal at a facility that has been permitted by the applicable regulatory authority.

(b) Clean the holding tank and related areas as necessary.

(c) Decommission the in-ground or partially in-ground holding tank with one of the following options:

(i) Remove the holding tank from the ground.

(ii) Fill the holding tank with clean sand, soil, or other inert material.

(iii) Permanently change the function of the holding tank pursuant to the permit to install application requirements of this rule.

(3) The owner or operator of the holding tank shall notify the director or an authorized representative of the following within thirty days of the holding tank decommissioning:

(a) The name and address of the facility where the holding tank is located, the name of the owner and the name of the operator.

(b) The date the holding tank was decommissioned.

(c) The most recent date the sewage or industrial waste was pumped and hauled, as specified in paragraph (H)(3)(a) of this rule.

(d) A brief description of how the holding tank was decommissioned.

(L) Compliance, enforcement, and oversight.

(1) A holding tank is to be designed, operated and maintained in accordance with this rule.

(2) The director may deny any holding tank permit to install or management plan application not in compliance with this rule and request submittal of a new permit to install or management plan application, including all applicable fees, to be provided to Ohio EPA within thirty days of the final action.

(3) The director may revoke any holding tank management plan not in compliance with this rule.

Effective: 11/13/2025

Five Year Review (FYR) Dates: 8/19/2025 and 11/13/2030

CERTIFIED ELECTRONICALLY

Certification

10/24/2025

Date

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3745-42-13 **Land application systems.**

[Comment: For the definitions of terms used in this rule, see rule 3745-42-01 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 3745-42-01 of the Administrative Code.]

(A) Land application systems: purpose.

The purpose of this rule is to establish permit application requirements, design standards, siting restrictions, operation and maintenance requirements and water quality and monitoring frequency requirements for land application systems as part of the director's supervision of the installation and operation and maintenance of this type of sewage or liquid industrial waste disposal system. Portions of this rule may apply for liquid industrial wastes land applied for agronomic benefit. For the purposes of this rule, a liquid industrial waste agronomic benefit shall provide for organic or nutrient enrichment of soil for plant growth. The director may waive any requirement in paragraph (H), (L), or (M) of this rule for any land application system where the treatment works is designed for less than one thousand gallons per day.

(B) Land application systems: exclusions. This rule does not apply to the following:

(1) Soil absorption systems. Examples of soil absorption systems are as follows:

(a) Conventional leach fields.

(b) Mound systems.

(c) Below grade low pressure pipe distribution systems, including drip distribution systems.

(d) At-grade gravity leach field dispersal systems.

(2) The land application of domestic, commercial or industrial septage.

(3) The land application of industrial waste, unless the waste is liquid and provides an agronomic benefit.

(4) The land application of grease from an internal grease trap or an external grease interceptor.

(C) Land application systems: prohibitions and restrictions.

(1) The land application of untreated sewage is prohibited.

(2) No person shall land apply treated sewage or liquid industrial wastes as follows:

(a) To natural wetlands or to constructed wetlands, unless approved by Ohio EPA. The director may require an isolation distance from natural or constructed wetlands to protect public health or the environment.

(b) Within the ten-year floodplain. The director may prohibit the land application of treated sewage or liquid industrial waste beyond the ten-year flood plain in order to protect public health or the environment.

(c) 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 land application, unless permitted by a national pollutant discharge elimination system (NPDES) permit.

(d) On snow covered ground, unless permitted by an NPDES permit.

(e) On frozen ground, unless permitted by an NPDES permit.

(f) Using any form of spray distribution when the instantaneous wind speed exceeds twenty miles per hour.

(g) To areas where a UIC class V injection well is present or within an area that could affect a UIC class V injection well.

(h) To areas where karst features, including unimproved sinkholes, are present or within an area that would contribute drainage that could affect the karst features.

(i) To areas where a professional soil scientist determines that any one of the following conditions exists below natural grade:

(i) Bedrock within twelve inches.

(ii) Fractured or karst bedrock within three feet.

(iii) Sand or gravel lenses within twelve inches.

(iv) Dense glacial till within twelve inches.

(v) Normal ground water elevation within twelve inches.

(j) When the ground is saturated at or near the surface, or any other condition that would result in runoff.

(k) To land where the land application contract has expired or is void.

(3) The director may allow the land application of treated sewage or liquid industrial waste to areas where the seasonal or perched ground water elevation exists during part of the year less than twelve inches below natural grade, provided the following:

(a) The land application only occurs when the normal ground water elevation, seasonal high ground water elevation, dense glacial till, sand or gravel lenses, or bedrock is at least twelve inches below natural grade.

(b) The storage volume requirements in table H-2 of this rule are met.

(c) Additional storage volume is provided for all of the treated sewage or liquid industrial waste that is generated, when land application is prohibited due to seasonal variations in the vertical separation distance.

(4) No person shall operate a land application system without an approved land application management plan.

(5) No person shall operate a discharging land application system without an approved NPDES permit and land application management plan.

(D) Land application systems: general requirements.

(1) A land application system shall be designed, operated and maintained in accordance with this chapter and all other applicable rules and laws. The director may deny any land application system permit application that does not contain the required information.

(2) Any land application management plan application shall be on forms specified

by the director and shall include such additional information as the director deems necessary.

(3) No person shall allow the discharge of treated sewage or liquid industrial waste to waters of the state from a land application system without first obtaining an NPDES permit pursuant to Chapter 3745-33 of the Administrative Code.

(4) Any person proposing to use a land application system to treat sewage from two or more homes or to treat ten thousand gallons per day or greater of sewage or liquid industrial waste, and not proposing to contract with a public entity such as a county or municipality to operate the disposal system, shall submit the following information to demonstrate financial, legal and technical capability to own and operate a disposal system:

(a) Financial and personnel commitments that are needed to provide for effective management and operation of the land application system.

(b) Documentation of ownership accountability, which includes the legal authority to take the measures necessary for construction, operation, and maintenance of the land application system.

(c) Assurances that the applicant has committed to proper operation and management of the land application system, including assurance of compliance with certified operator requirements in accordance with Chapter 3745-7 of the Administrative Code.

(d) The organizational structure, credentials of management and operations personnel, and cooperative agreements or service contracts.

(e) Demonstration of the applicant's ability to address both customer and compliance issues, including violations of applicable portions of the Revised Code and the Administrative Code.

(f) A land application management plan in accordance with paragraph (E) of this rule that includes the following:

(i) A listing of external contacts and resources and a description of how they will be effectively utilized.

[Comment: External contracts and resources includes any maintenance or oversight that is outsourced.]

(ii) A financial plan describing the land application system revenues and cash flow for meeting the costs of construction and the costs of operation and maintenance for at least five full years from the date the applicant anticipates initiating operation. At a minimum, the financial plan shall include the following:

(a) Projected financial statements for each of the first five years of operation, including a balance sheet, an income statement and a statement of cash flow.

(b) A demonstration of ability to fund the cost of repairs, capital replacement, and compliance.

(E) Land application systems: land application management plan and NPDES permit requirements.

(1) A land application system shall be protective of public health and the environment.

(2) A land application system shall be operated in accordance with an approved land application management plan.

(3) Land application shall only occur at times identified in the approved land application management plan.

(4) Treated sewage or liquid industrial waste shall be land applied so as to minimize direct human contact, and the potential for creating aerosols and mist.

(5) Signs shall be installed at the entrance to each land application site, to inform the public that the land is used for land application of treated sewage or liquid industrial waste. At least one sign shall be posted at each field or site. Each sign shall include notification of the folllowing:

(a) All above ground sewage or liquid industrial waste distribution pipes contain "Non-potable Water that is Not Suitable for Human Consumption".

(b) If applicable, all nozzles distribute "Non-potable Water that is Not Suitable for Human Consumption."

(6) No treated sewage or liquid industrial waste shall be land applied within the emergency management zone of a public water system using surface water or within one thousand five hundred feet of any drinking water intake, whichever is greater unless the treated sewage or liquid industrial waste meets the water quality standards established for the public water supply use designation under Chapter 3745-1 of the Administrative Code.

(7) No person shall install a land application system after July 1, 2007 without first obtaining the following:

(a) For any land application system, a permit to install that includes a land application management plan. A land application management plan shall conform to the following:

(i) Be effective for five years, starting from the date it was approved by the director. A new land application management plan shall be submitted to Ohio EPA at least six months prior to expiration of any existing land application management plan. If a person submits a new land application management plan six months prior to expiration of the existing plan and Ohio EPA has not approved the new land application management plan prior to the expiration of the existing land application management plan, the existing land application management plan shall be effective until the new land application management plan is approved by the director. If a person does not submit a new land application management plan six months prior to expiration of the existing plan, the existing land application management plan will expire at the end of the five years.

(ii) Be in narrative form and shall include the following:

(a) Information about the operator of the land application system, including the following:

(i) The operator's classification necessary for operating the treatment works.

(ii) The number of hours per week that an operator will be working at the treatment works or land application area.

(iii) A description of the operator's experience in operating

a land application system.

(b) A detailed description of the method or methods used for sewage or liquid industrial waste handling and storage.

(c) Characterization of the treated sewage or liquid industrial waste, including proposed effluent limits and corresponding minimum monitoring frequencies for the land application system.

[Comment: In accordance with paragraph (O)(3)(d) of this rule, effluent limits apply at the point the effluent leaves the treatment works, prior to storage, or prior to land application, if no storage is provided.]

(d) A detailed description of how operation and maintenance records will be maintained in accordance with this rule for the land application system.

(e) An equipment calibration and maintenance schedule.

(f) Written justification supporting the determination of land application rates, such as in inches per day. The land application rates shall ensure that no runoff occurs into surface waters of the state.

(g) Information on how any site specific management practices to prevent runoff will be maintained.

(h) The determination of appropriate weather conditions required for land application.

(i) A map that locates the present and known proposed occupied buildings, non-occupied buildings, developments and areas easily accessible to the public within three hundred feet of the land application area.

(j) A map that identifies the closest public sewerage system and its planning area, such as established pursuant to section 208 of the act, within one thousand feet of the land application area.

(k) A written contingency plan to protect human health and the environment at down gradient receptors shall be prepared. At a minimum, the contingency plan shall include the following response actions:

(i) For unauthorized releases to ground water from a storage facility or lagoon.

(ii) For events, including power outages or plant shutdowns, that result or could result in impacts to the following:

(A) Surface water.

(B) Drainage tiles that could affect surface water.

(C) Public or private water supplies.

(iii) For years with excessive wetness.

(iv) If storage capacity is exceeded.

(v) If the land application contract should become void.

(vi) Any other requirements, as required by the director to mitigate an unauthorized release.

(b) For any discharging land application system, a complete application for an NPDES permit in addition to paragraph (E)(7)(a) of this rule.

[Comment: All treatment works that discharge are subject to water quality standards rules, Chapter 3745-1 of the Administrative Code, and shall be processed according to the procedures in rule 3745-1-05 of the Administrative Code (antidegradation), Chapter 3745-2 of the Administrative Code, Chapter 3745-33 of the Administrative Code, Chapter 3745-42 of the Administrative Code and Chapter 3745-49 of the Administrative Code.]

(8) Requirements for land application systems installed prior to July 1, 2007. A land application system installed prior to July 1, 2007 shall be protective of public health and the environment. Where the director, or the director's authorized representative determines that an existing land application system

is protective of public health and the environment, the director may waive any requirement in paragraph (C), (D), or paragraphs (F) to (N) of this rule in subsequent permits.

(F) Land application systems: permit to install application requirements. The following table summarizes the permit to install application requirements for a land application system and is not intended to be used in lieu of paragraphs (F)(1) to (F)(4) of this rule.

Table 13-1. Summary of permit to install requirements.

Permit to install	Design flow (gallons per day) application requirements			
	Less than 10,000		Greater than or equal to 10,000	
	Land application rate		Land application rate	
	Less than or equal to 12 inches per acre per year	Greater than 12 inches per acre per year	Less than or equal to 12 inches per acre per year	Greater than 12 inches per acre per year
Rule paragraph	(F)(1)	(F)(2)	(F)(3)	(F)(4)
Engineering report	X	X	X	X
Site investigation report	X	X	X	X
Detailed plans and specifications	X	X	X	X
Land application contract	If applicable	If applicable	If applicable	If applicable
Treatment works operation and maintenance plan	If applicable	If applicable	If applicable	If applicable
Land	X	X	X	X

application management plan				
NPDES permit application	If applicable	If applicable	If applicable	If applicable
Hydraulic and nutrient balance for land application area	No	X	No	X
Ground water monitoring plan for land application area	No	Case by case	No	Case by case
Ground water monitoring plan for any storage facility	No	No	X	X
Ground water monitoring plan for any lagoon	X	X	X	X
Hydraulic balance for treatment works	Minimal information required	Minimal information required	X	X
Determine background phosphorus for land application area	No	X	X	X
Hydrogeological site investigation for land application area	No	Minimal information required	Minimal information required	X

(1) The permit to install application for any land application system with a design flow less than ten thousand gallons per day and land application rates less than or equal to twelve inches per acre per year shall conform to the following:

(a) Include a hydraulic balance that does the following:

(i) Describes the assumptions and provides the calculations used to determine the initial and future design flows for the land application system.

(ii) Describes the assumptions and provides the calculations used to size the treatment works, including a storage facility, the land application area, the equipment and all appurtenances.

(b) Include a site investigation report for any lagoon, any storage facility or any land application area that is part of a land application system. The site investigation report shall conform to the following:

(i) Be prepared prior to any construction activities.

[Comment: If the construction activities include the construction of a golf course, Ohio EPA recommends that the site investigation be accomplished prior to the design of the golf course.]

(ii) Contain a soils and site evaluation for any lagoon, any storage facility or any land application area that is part of a land application system, in accordance with paragraph (N) of this rule.

(iii) Contain for any lagoon, any storage facility or any land application area that is part of a land application system, a detailed description of the existing and proposed surface and subsurface drainage ways within twenty feet of any lagoon or storage facility and within twenty feet of any land application area. This description shall include a map that is based on available records and any information obtained from site visits. The map shall locate the following:

(a) All surface drainage ways, including drainage swales, ditches, streams, rivers, natural or constructed wetlands, and ponds and lakes.

(b) All subsurface tiles and subsurface drains within two vertical feet below natural grade.

(iv) Contain for any lagoon, a hydrogeologic site investigation report.

The hydrogeological site investigation report shall be developed in accordance with paragraph (M) of this rule.

(v) Contain for any lagoon, a ground water monitoring plan in accordance with paragraph (L) of this rule, if required by paragraph (L) of this rule.

(vi) Contain for any storage facility, in lieu of a hydrogeologic site investigation report, publicly available published hydrogeologic information including, but not limited to the following:

(a) Ground water resource maps, ground water pollution potential maps, surficial geology maps, and water well logs from the Ohio department of natural resources.

(b) United States department of agriculture soil surveys.

(c) United States geological survey studies.

(d) Other readily available sources that cover an area within two thousand feet from the boundaries of the site.

(e) The results of all onsite geotechnical studies conducted at the site to include all subsurface data gathered. If soil probes, soil pits or soil borings are required to characterize the site, they shall be done in accordance with paragraph (N) of this rule.

(c) In accordance with this chapter, include detailed engineering plans and specifications. In addition to the other requirements of this chapter, the detailed engineering plans shall also include a site plan that shall conform to the following:

(i) Be drawn to scale.

(ii) Show isolation distances in accordance with paragraphs (H) and (J) of this rule.

[Comment: Isolation distances. In the case of any reference to a building, the measurement shall be taken from the outside wall of the building. In the case of any reference to a treatment works or a

component of the treatment works or a pump station, the measurement shall be taken from the closest point on the perimeter of the treatment works, the component of the treatment works, or the pump station. In the case of any reference to a lagoon or storage facility, the measurement shall be taken from the outer bank or the toe of the impoundment.]

(iii) Show any onsite treatment works, buildings, storage facilities, land application areas, and land application or distribution networks, and the application areas for each nozzle, center pivot system or point of distribution.

(iv) Provide the location of buildings and roads within one hundred feet beyond the perimeter of the land application system.

(v) Provide the location of any public drinking water supply intakes within one hundred feet beyond the perimeter of the land application system on the detailed plans.

(vi) Provide the location of any wells, including drinking water wells and UIC class V injection wells, within one hundred feet beyond the perimeter of the land application system.

(vii) Provide the location of drinking water source protection areas and inner management zones for public water systems using ground water and emergency management zones for public water systems using surface water within one hundred feet beyond the perimeter of the land application system.

(viii) Provide the location of the existing and proposed surface and subsurface drainage ways within twenty feet of any lagoon, any storage facility or any land application area.

(d) Include a land application contract for any land application system that does not maintain the isolation distances, in accordance with paragraphs (H) and (J) of this rule. For a land application system that serves more than one residence and where land application is the sole method of disposal, the director may require a land application contract for ninety-nine years.

(e) If applicable, include a treatment works operation and maintenance plan. If the permit to install is for a treatment works as part of the land

application system, the operation and maintenance plan shall address the following:

(i) The operating procedures for each component of the treatment works.

(ii) The required sampling and monitoring procedures.

(iii) The maintenance schedule for each component of the treatment works and appurtenant structures.

(iv) A plan for maintenance of the storage facility liner system that includes, but is not limited to, a description of the steps to be taken to clean the sludge from the storage facility and the inspection and maintenance schedule for the liner to ensure tears, obvious flaws and ruptures are documented and corrected.

[Comment: The ultimate goal of the plan shall be to ensure the integrity of the liner system that will in turn protect the underlying ground water resources.]

(f) Include a land application management plan in accordance with paragraph (E) of this rule.

(2) A permit to install application for any land application system with a design flow less than ten thousand gallons per day and land application rates greater than twelve inches per acre per year, shall conform to the following:

(a) Meet all requirements in paragraph (F)(1) of this rule.

(b) Include a hydraulic and nutrient balance for the land application area, except as otherwise prescribed in this paragraph. A hydraulic and nutrient balance that supports the proposed size of land needed for land application shall be submitted with the permit to install. The hydraulic and nutrient balance shall demonstrate that the phosphorus and nitrogen loading rates will not adversely impact surface or ground waters. The application shall demonstrate the following:

(i) Nitrogen. If the total inorganic nitrogen limit of ten milligrams per liter (i.e., nitrogen option 1) will be met, then a nitrogen balance is not required. The concentration of nitrate-nitrogen in the

ground water below land on which treated sewage or liquid industrial waste has been applied shall at all times be less than ten milligrams per liter. The Ohio State university extension bulletin number 860, "Reuse of Reclaimed Wastewater Through Irrigation", demonstrates an acceptable procedure for calculating the nitrogen nutrient and hydraulic balance. The director may accept alternate design criteria provided that the permit to install demonstrates to the satisfaction of the director that there will be no adverse impact to surface water or ground water as a result of the alternate design criteria.

(ii) Phosphorus. The soils shall be tested for phosphorus levels. Samples shall be representative of a land application site with one composite soil sample representing no more than twenty-five acres or one composite soil sample for each land application site, whichever is less. A sample depth of 8 inches shall be used unless justified otherwise in the plan. The Bray-Kurtz P1 extraction or Mehlich 3 extraction shall be used to determine the background level unless an alternative method is approved by the director.

Unless otherwise deemed acceptable by the director, the restriction of phosphorus application shall be based on the phosphorus index method, as developed by the natural resource conservation service in Ohio. For soils with soil phosphorus test results greater than one hundred fifty parts per million (three hundred pounds per acre) Bray-Kurtz P1 extraction or one hundred seventy parts per million (three hundred forty pounds per acre) Mehlich 3 extraction, the director shall not approve land application of treated sewage or liquid industrial waste unless the permit to install demonstrates to the director, using a phosphorus index, that there is a low relative risk of phosphorus movement to waters of the state at the land application site.

(c) Provide a ground water monitoring plan in accordance with paragraph (L) of this rule for any land application area.

(d) Include in the engineering report a characterization of the land application area that includes the following:

(i) The location of all class V injection wells, public water system wells, drinking water source protection areas and inner management zones for public water systems using ground water public water supply intakes, and private water wells, any part of

which wells, areas or zones are within two thousand feet of any proposed storage facility site.

(ii) For any construction related activities, identification of all soil additions and soil amendments that may be made to the site that will substantially alter the permeability or infiltrative capacity of the soil.

(3) A permit to install application for any land application system with a design flow greater than or equal to ten thousand gallons per day and land application rates less than or equal to twelve inches per acre per year shall conform to the following:

(a) Meet all requirements in paragraph (F)(1) of this rule.

(b) Include, for any land application system where land application is the sole method of disposal, a land application contract for at least ninety-nine years, unless an alternative non-discharging option is available and included in the land application management plan.

(c) Include a ground water monitoring plan in accordance with paragraph (L) of this rule for any storage facility.

(d) Include in the engineering report for any treatment works, a hydraulic balance used to size the treatment works.

(e) Include in the engineering report for any treatment works not proposing to meet class A treated sewage or liquid industrial waste effluent limits in table K-2 of this rule, additional information, as deemed necessary by the director, regarding the sizing of the storage and land application area.

(f) Include as part of the site investigation report a characterization of the land application area that includes the following:

(i) The location of all class V injection wells, public water system wells, drinking water source protection areas and inner management zones for public water systems using ground water public water supply intakes, and private water wells, any part of which wells, areas or zones are within two thousand feet of any proposed storage facility site.

(ii) For any construction related activities, identification of all soil additions and soil amendments that may be made to the site that will substantially alter the permeability or infiltrative capacity of the soil.

(4) A permit to install application for any land application system with a design flow greater than ten thousand gallons per day and land application rates greater than twelve inches per acre per year shall conform to the following:

(a) Meet all requirements in paragraphs (F)(1) to (F)(3) of this rule.

(b) Include a ground water monitoring plan in accordance with paragraph (L) of this rule for any treatment works.

(c) Include a hydrogeologic site investigation in accordance with paragraph (M) of this rule for the land application area.

(d) Include, in the engineering report, a hydraulic balance used to size the storage facility.

(G) Land application systems: design requirements for a treatment works or sewerage system. Except where specific design criteria or methodologies are required by this rule, generally accepted design standards and methodologies shall be used to design the treatment works, including any treatment lagoon, or the sewerage system that is part of any land application system.

[Comment: One example of a set of generally accepted design standards and methodologies is "Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers - Recommended Standards for Wastewater Facilities, also known as Ten States Standards."]

(H) Land application systems: design requirements for storage facilities.

(1) A storage facility shall conform to the following:

(a) Maintain the isolation distance requirements listed in table H-1 of this rule. The director may reduce the isolation distance requirements if the storage facility contains class A treated sewage or liquid industrial waste.

[Comment: Isolation distances. In the case of any reference to a

building, the measurement shall be taken from the outside wall of the building. In the case of any reference to a treatment works or a component of the treatment works or a pump station, the measurement shall be taken from the closest point on the perimeter of the treatment works, the component of the treatment works, or the pump station. In the case of any reference to a lagoon or storage facility, the measurement shall be taken from the outer bank or the toe of the impoundment.]

Table H-1 Minimum required isolation distances

Siting criteria	Minimum required isolation distance (feet)
Occupied building	Three hundred
Private potable water source not owned by the person land applying treated sewage or liquid industrial waste	Three hundred
Private potable water source owned by the person land applying treated sewage or liquid industrial waste	Fifty
UIC class V injection well	Three hundred
Property line	Fifty

(b) For earthen impoundments, have inner and outer slopes no steeper than one foot vertical to three feet horizontal.

(2) Siting requirements for storage facilities.

[Comment: Information on the location of drinking water source protection areas, inner management zones, emergency management zones and public water wells and intakes can be obtained from the Ohio EPA division of drinking and ground water source water assessment and protection program at (614) 644-2752, by email at whp@epa.ohio.gov or on the internet at http://www.epa.ohio.gov/ ddagw/swap.aspx.]

(a) Storage facilities may not be located within drinking water source water protection area for a community, or non-transient non-community public water system using ground water unless:

(i) The proposed site is approved by the director.

(ii) Additional engineering controls to minimize the chance of liner failure are included.

(iii) A minimum of fifteen feet of low permeability material exists between the bottom of the liner and the top of the uppermost aquifer system.

(iv) A vertical separation distance of at least three feet is maintained between the bottom of the storage facility liner and bedrock.

(v) The storage facility is located outside the sanitary isolation radius of a public water system well, as determined in accordance with rule 3745-9-04 of the Administrative Code.

(vi) The storage facility is located outside of the inner management zone for a community water supply or non-transient, non-community public water system using ground water.

(vii) The storage facility is located outside a drinking water source protection area for a non-transient, non-community or transient, non-community public water system using ground water, the storage facility is located at least three hundred feet away from a water supply well for a non-transient, non-community or transient, non-community public water system, or the storage facility is located beyond the farthest distance ground water will travel to such systems in one year, whichever results in a greater distance from the well. The director may reduce this isolation distance requirement for storage facilities that contain highly treated and disinfected treated sewage or liquid industrial waste.

(b) Storage facilities may not be located within three hundred feet of a water supply well for a transient, non-community public water system. The director may reduce this isolation distance requirement for storage facilities that contain highly treated and disinfected treated sewage or liquid industrial waste.

(c) Storage facilities may not be located within the emergency management zone of a public water system using surface water or not within one thousand five hundred feet of the drinking water intake, whichever results in a greater distance from the intake.

(3) Storage volume requirements. A storage facility shall be designed with adequate

storage capacity to prevent a discharge to surface waters, except as permitted by an NPDES permit. The minimum storage requirements in table H-2 of this rule shall be met. The director may require a larger storage volume to ensure that sufficient storage is provided to meet in stream water quality standards during exceptionally dry periods, or to ensure sufficient storage is provided to accommodate inspections or offline repairs.

Table H-2 Minimum storage volume requirements

Type of land application system	Minimum storage volume requirement
Controlled discharge permitted by an NPDES permit and land application	Two weeks of storage volume
Continuous discharge permitted by an NPDES permit and land application	Evaluated on a case by case basis
Any other land application system	Four months of storage volume

[Comment: A continuous discharge occurs when a discharge by a land application system is permitted to surface waters year-round.]

(a) The storage volume shall be calculated using the disposal system design flow and shall consider all hydraulic inputs and outputs, including the following:

(i) The number of storage days required.

(ii) Whether or not there will be a controlled discharge in addition to land application.

(iii) The size of the land application area.

(iv) Site specific rainfall and evaporation data.

(v) The potential for solids accumulation.

(b) A smaller storage volume or no storage volume may be approved for a disposal system that includes a continuous discharge permitted under an NPDES permit.

[Comment: The Ohio State university extension bulletin number 860,

"Reuse of Reclaimed Wastewater Through Irrigation", demonstrates an acceptable procedure for calculating the amount of storage volume necessary for non-discharging land application systems. The director may accept alternate design criteria, provided that the permit to install demonstrates to the satisfaction of the director that there will be no adverse impact to surface water or ground water, as a result of the alternate design criteria.]

(4) Freeboard requirements for storage facilities: the freeboard requirements in table H-3 of this rule shall be met. Storage facilities must be equipped with a depth marker which clearly indicates the minimum freeboard level.

Table H-3 Minimum freeboard requirements for storage facilities

Design parameter	Minimum freeboard requirement for storage facility
Design flow less than one thousand gallons per day	Two feet
Volume of storage facility less than ten thousand gallons	Two feet
Concrete impoundment	Two feet
Earthen or partially earthen impoundment that holds more than ten thousand gallons	Three feet

(5) Liner requirements for storage facilities. Except as provided in paragraphs (H)(16) and (H)(17) of this rule, the storage facility shall have a recompacted clay liner designed in accordance the following unless otherwise specified in the detailed engineering plans approved by the director:

(6) No soil material used in the liner shall be placed or recompacted during weather conditions, such as freezing temperatures or rain, that would interfere with adequate compaction or control of moisture content.

(7) Soil material used in the liner shall be placed in six inch to eight inch loose lifts at a moisture content between zero per cent and four per cent above optimum moisture content as determined by standard laboratory proctor.

(8) Soil material used in the liner shall be recompacted by using standard engineering compaction methods and recompacted to a minimum compaction rate of ninety-five per cent of standard dry density as determined by ASTM

D698 or greater as required to achieve 1 x 10^{-7} centimeters per second maximum permeability. The most representative moisture-density curve shall be used to determine compaction rates.

(9) Compacted soil material used in the liner shall be tested for density and moisture content at a rate of one test per lift, with a minimum of one test for any day that soil material is compacted.

(10) When a density or moisture content test is not conducted in compliance with the approved detailed engineering plans or the terms and conditions of the permit to install, each lift shall be scarified and the moisture content adjusted and the soils recompacted for the area that extends from the location of the failed test to one-half the distance to the location of the nearest passed test, in all directions. The recompacted area shall then be retested for compliance.

(11) The results of density and moisture content testing shall be submitted to Ohio EPA.

(12) Soils used for the liner shall have from fifteen to thirty per cent clay content and shall be classified as CL or SC by the unified classification system (ASTM designation D2487). The remaining portion of the liner material should have a wide range of soil particles in the silt, fine sand and coarse sand range.

(13) When the classification of the proposed liner material can not be determined in accordance with the unified classification system, hydraulic conductivity tests shall be performed on the proposed lining material to confirm its classification and ensure the proposed liner will be in accordance with paragraph (H)(5) of this rule.

(14) There shall be a minimum of three feet of fine-grained soil over fractured rock outcrops or other highly permeable material, which may include the recompacted liner.

(15) The thickness of the recompacted clay liner shall be in accordance with table H-4 of this rule. Separation distance is:

(a) For any storage facility not located within a drinking water source water protection area, the vertical distance between the top of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

(b) For any storage facility located within a drinking water source water protection area, the vertical distance between the bottom of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

Table H-4 Required thickness of recompacted clay liner

Available vertical separation distance	Required thickness of recompacted clay liner
Three feet or more, but less than five feet	Twenty-four inches
Five feet or more, but less than ten feet	Eighteen inches
Ten feet or more	Twelve inches

(16) If a synthetic liner is used in lieu of a recompacted clay liner, the liner shall conform to the following:

(a) Include, at a minimum, six inches of properly prepared subbase placed underneath the synthetic liner.

(b) Unless otherwise specified in the detailed engineering plans approved by the director, have a maximum permeability of 1×10^{-7} centimeters per second.

(c) Be designed based on considerations for potential freeze and thaw damage and potential exposure to ultraviolet rays.

(17) If the storage facility is constructed of reinforced concrete, the concrete shall be, at a minimum, five inches thick and include non-metallic water stops for all joints.

(I) Land application systems: design criteria for land application distribution systems.

(1) Spray distribution system. The design of any land application spray distribution system shall conform to the following:

(a) Provide for uniform distribution of the treated sewage or liquid industrial waste. Where a land application area consists of various soils groups do either of the following:

(i) Utilize different distribution zones, where the application rate varies per zone based on the site specific soils.

(ii) Determine an overall distribution rate by calculating a weighted average based on the site specific soils.

(b) Consider the size of suspended solids retained in the effluent when sizing the sprinkler or other distribution device. The diameter of the sprinkler nozzle used as part of the land application system shall be at least three times the size of any suspended solids in the treated sewage or liquid industrial waste being sprayed.

[Comment: Depending on the type of treatment works, the director may require additional screening or filtration to prevent spray nozzle clogging.]

(c) Consider the existence of surface and subsurface drainage ways and their potential to convey effluent to waters of the state.

(2) If soil probes, soil pits or soil borings are required to characterize the site, the soil probes, soil pits or soil borings shall be done in accordance with paragraph (N) of this rule.

(3) The director may consider a land application distribution system other than a spray distribution system, provided the following:

(a) The permit to install application demonstrates to the satisfaction of the director that there will be no adverse impact to surface water, ground water or human health as a result of the distribution system.

(b) The permit to install application is in accordance with this chapter and all other applicable rules and laws.

(c) The applicant demonstrates to the director that the design of the distribution system is based on sound engineering principles and standards.

(J) Land application systems: isolation distance requirements for land application areas.

(1) Except at times identified in the approved land application management plan provided in paragraphs (J)(5) to (J)(7) of this rule, the location of the land

application area shall maintain the minimum isolation distances in table J-1 of this rule. The director may reduce the isolation distance requirements where class A treated sewage or liquid industrial waste is land applied. The director may increase isolation distance requirements to protect public health or the environment.

Table J-1 Minimum required isolation distances

Siting criteria	Minimum required isolation distance (feet)
Private potable water source not owned by the person land applying treated sewage or liquid industrial waste	Three hundred
Private potable water source owned by the person land applying treated sewage or liquid industrial waste	Fifty
UIC class V injection well	Three hundred
Sinkhole or karst feature	Three hundred
Property line	Fifty
Human crops that may be eaten raw	Fifty

(2) In addition to the requirements of paragraphs (C) and (J)(1) of this rule, no person shall land apply class A treated sewage or liquid industrial waste as follows:

(a) Except at Ohio EPA approved unrestricted or Ohio EPA approved restricted access sites.

(b) Within fifty feet from an occupied building.

(c) Within the sanitary isolation radius for a public water system well, as determined in accordance with rule 3745-9-04 of the Administrative Code.

(d) Within the inner management zone of a source water protection area (one-year time-of-travel area) for a community or non-transient, non-community public water system using ground water or within three hundred feet of any public water system well.

(e) Within drinking water source protection area for a community or non-transient, non-community public water system using ground water determined to be highly susceptible to contamination unless additional engineering controls are installed sufficient to protect the ground water and ground water monitoring is performed in accordance with paragraph (L) of this rule, between the land application system and the public water system well.

(3) In addition to paragraphs (C), (J)(1), and (J)(2)(c) to (J)(2)(e) of this rule, no person shall land apply class B treated sewage or liquid industrial waste as follows:

(a) Except at Ohio EPA approved restricted access sites.

(b) At any site that contains sand and gravel as the predominant natural material within five vertical feet of natural grade.

(c) Within two hundred feet from an occupied building.

(d) Within fifty feet of developed springs, karsts, sinkholes, drainage ways, subsurface tiles with surface openings, surface water bodies, and road right-of-ways.

(e) On sodded fields and forested areas with slopes greater than twelve per cent unless measures able to control runoff approved by the director, such as berms, collection ditches or check dams, are installed.

(f) On fields with slopes greater than eight per cent unless the detailed engineering plans and specifications required by paragraph (F) of this rule include runoff control measures that demonstrate to the director runoff will not impact surface waters of the state.

(4) In addition to paragraphs (C), (J)(1), (J)(2)(c) to (J)(2)(e), and (J)(3)(b) to (J)(3)(f) of this rule, no person shall land apply class C treated sewage or liquid industrial waste except at Ohio EPA approved sites.

(5) The siting criteria and the isolation distance requirements of this paragraph shall not apply to occupied buildings if the person who will land apply treated sewage or liquid industrial waste obtains a land application contract from each owner of a neighboring occupied building located within the siting distances set forth in this rule and includes a copy of the land application

contract with the permit to install application. The land application contract shall state that:

(a) The owner of the occupied building is aware of the proposed land application.

(b) The owner of the occupied building has no objection to the land application at a location not otherwise allowed by the isolation distance requirements and siting criteria in this rule.

(c) The land application occurs between dusk and dawn and the land application system utilizes low head sprinklers or an equivalent low-exposure distribution method.

[Comment: Night time or early morning land application usually reduces the risk of people coming into direct contact with the treated sewage or liquid industrial waste. Strict night time application is sometimes impractical and daytime application helps to reduce spills and over-application that might result from not being able to see the land application take place.]

(6) The director may reduce the isolation distance requirements to a property line if a land application contract from each property owner within the fifty-foot isolation distance is submitted as part of the permit to install application and treated sewage or liquid industrial waste is applied from dusk until dawn with low head sprinklers, or with an equivalent low-exposure distribution method. The land application contract shall state that these property owners are aware of, and have no objection to, the proposed land application of treated sewage or liquid industrial waste within fifty feet of their property lines.

(7) If class A treated sewage or liquid industrial waste requirements for effluent limits and monitoring requirements in table K-2 of this rule are met, the director may reduce the isolation distance restrictions established in this rule provided the applicant can demonstrate to the director that the potential for negative impacts to human health or waters of the state does not exist.

(K) Land application systems: treatment requirements, effluent water quality and monitoring requirements.

(1) A land application system shall be designed in accordance with table K-1 of this rule and shall have a land application management plan that contains effluent limits, which are developed and monitored in accordance with table K-1 of

this rule. The director may require sampling and monitoring of pollutants not listed in tables K-2 to K-5 of this rule, to protect public health or the environment. The director may require treated sewage or liquid industrial waste that will be land applied to a golf course or athletic field to meet class A treated sewage or liquid industrial waste requirements in accordance with table K-2 of this rule.

(2) In addition to paragraph (K)(1) of this rule, any land application system that will discharge to waters of the state shall have an approved NPDES permit that contains, where applicable, internal and final effluent limits as follows:

(a) The internal limits shall be developed and monitored in accordance with table K-1 of this rule and be applied at the point the effluent leaves the treatment works, prior to storage, or prior to land application if no storage is provided.

(b) The final effluent limits shall be developed in accordance with best available demonstrated control technology criteria, as set forth in table 5-1 of rule 3745-1-05 of the Administrative Code or water quality based effluent limits in accordance with Chapter 3745-1 of the Administrative Code, whichever is more stringent.

Table K-1

Design flow for land application system (gallons per day)	Minimum sewage or liquid industrial waste treatment class	Minimum effluent limits and minimum monitoring frequency requirements
Less than ten thousand	Class C	Table K-4
Greater than or equal to ten thousand	Class B	Table K-3 and table K-5

(3) The director may waive any requirement of paragraph (K)(1) of this rule, provided that the person requesting the waiver has demonstrated to the satisfaction of the director that the waiver is unlikely to adversely affect the public health or safety or the environment.

(4) In order to meet the effluent limits set forth in table K-3 or K-4 of this rule, disinfection prior to land application may be required.

Table K-2. Class A treated sewage or liquid industrial waste (minimum water quality and monitoring frequency requirements).

Effluent Parameter	Effluent limits			Monitoring frequency				
	30-day average	Daily maximum	Units[1]	Design flow (Q) (gallons per day)				
				Q ≥ 250,000	250,000 > Q ≥ 100,000	100,000 > Q ≥ 25,000	25,000 > Q ≥ 10,000	Q < 10,000
Flow	Monitor	Monitor	cfs	Daily	Daily	Daily	Daily	Daily
pH	6.0 - 9.0	6.0 – 9.0	s.u.	Daily	Daily	1/week	1/month	1/quarter
Oil and grease	-	10.0	mg/l	1/month	1/month	1/quarter	2/year	1/year
Total suspended solids	12	-	mg/l	2/week	2/week	1/week	1/month	1/quarter
5-day carbonaceous biochemical oxygen demand	10	-	mg/l	2/week	2/week	1/week	1/month	1/quarter
Escherichia coli[2]	Non-detect in 4 of last 7 samples	2	cfu/ 100 ml	2/week	1/week	1/month	1/month	1/quarter
Total residual chlorine[3]	-	1.0 ≥ Chlorine residual ≤ 10	mg/l	Daily	Daily	Daily	1/2weeks	1/quarter
Total phosphorus	-	Monitor	mg/l	1/2weeks	1/month	1/month	1/quarter	-
Application rate		Monitor	Inches per acre per hour	Daily when applying	Daily when applying	Daily when applying	Daily when applying	Daily when applying
Nitrogen option 1. total inorganic nitrogen (TIN)[4]	10.0	-	mg/l	2/week	2/week	1/2weeks	1/month	1/quarter
Nitrogen option 2. Nitrate-nitrogen available for leaching (demonstrative)[5]	Monitor TIN	-	mg/l	2/week	2/week	1/2weeks	1/month	1/quarter
Nitrogen option 3. application rate less than or equal to 12 inches per acre per year[6]	Monitor TIN	-	Mg/l	2/week	2/week	1/2weeks	1/month	1/quarter

[1]cfs = cubic feet per second; s.u. = standard units; mg/l = milligrams per liter; cfu/100 ml = colony forming units per 100 milliliters.

[2]All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

[3]Chlorine residual only necessary for those disposal systems that use chlorine for disinfection.

[4]The 10.0 mg/l effluent limit is measured at the discharge outfall of the wastewater treatment plant.

[5]The 10.0 mg/l effluent limit met at point treated sewage or liquid industrial waste reaches the bottom of the root zone based on approved nutrient balance.

[6]Inches per acre per year represents the application rate over the time period of a single calendar year (i.e., January 1 to December 31).

Table K-3. Class B treated sewage or liquid industrial waste (minimum water quality and monitoring frequency requirements).

Effluent Parameter	Effluent limits			Monitoring frequency				
	30-day average	Daily maximum	Units[1]	Design flow (Q) (gallons per day)				
				Q ≥ 250,000	250,000 > Q ≥ 100,000	100,000 > Q ≥ 25,000	25,000 > Q ≥ 10,000	Q < 10,000
Flow	Monitor	Monitor	cfs	Daily	Daily	Daily	Daily	Daily
pH	6.0 - 9.0	6.0 - 9.0	s.u.	Daily	Daily	1/week	1/month	1/quarter
Oil and grease	-	10.0	mg/l	1/month	1/month	1/quarter	2/year	1/year
Total suspended solids	45	-	mg/l	2/week	2/week	1/week	1/month	1/quarter
5-day carbonaceous biochemical oxygen demand	40	-	mg/l	2/week	2/week	1/week	1/month	1/quarter
Escherichia coli[2]	-	126	cfu/ 100 ml	2/week	1/week	1/month	1/month	1/quarter
Total residual chlorine[3]	-	1.0 ≥ Chlorine residual ≤ 10	mg/l	Daily	Daily	Daily	1/2weeks	1/quarter
Total phosphorus	-	Monitor	mg/l	1/2weeks	1/month	1/month	1/quarter	-
Application rate		Monitor	Inches per acre per hour	Daily when applying	Daily when applying	Daily when applying	Daily when applying	Daily when applying
Nitrogen option 1. total inorganic nitrogen (TIN)[4]	10.0	-	mg/l	2/week	1/2weeks	1/2weeks	1/month	1/quarter
Nitrogen option 2. Nitrate-nitrogen available for leaching (demonstrative)[5]	Monitor TIN	-	mg/l	2/week	1/2week	1/2weeks	1/month	1/quarter
Nitrogen option 3. application rate less than or equal to 12 inches per acre per year[6]	Monitor TIN	-	Mg/l	2/week	1/2week	1/2weeks	1/month	1/quarter

[1]cfs = cubic feet per second; s.u. = standard units; mg/l = milligrams per liter; cfu/100 ml = colony forming units per 100 milliliters.

[2]All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

[3]Chlorine residual only necessary for those disposal systems that use chlorine for disinfection.

[4]The 10.0 mg/l effluent limit is measured at the discharge outfall of the wastewater treatment plant.

[5]The 10.0 mg/l effluent limit met at point treated sewage or liquid industrial waste reaches the bottom of the root zone based on approved nutrient balance.

[6]Inches per acre per year represents the application rate over the time period of a single calendar year (i.e., January 1 to December 31).

Table K-4. Class C treated sewage or liquid industrial waste[1] (minimum water quality

and monitoring frequency requirements)

Effluent parameter	Effluent limits			Monitoring frequency
	30-day average	Daily maximum	Units[2]	Design flow (Q) ‹ 10,000
Flow	Monitor	Monitor	cfs	Daily
pH	6.0 - 9.0	6.0 - 9.0	s.u.	1/quarter
Oil and grease	-	10.0	mg/l	1/year
Total suspended solids	45	-	mg/l	1/quarter
5-day carbonaceous biochemical oxygen demand	40	-	mg/l	1/quarter
Escherichia coli[3,4]	-	298	cfu/100 ml	1/quarter
Total residual chlorine[3]	-	Chlorine residual greater than or equal to 0.1 but less than or equal to 10	mg/l	1/quarter
Application rate	-	Monitor	inches per acre per hour	Daily when applying
Nitrogen option 1. total inorganic nitrogen (TIN)[5]	10.0	-	mg/l	1/quarter
Nitrogen option 2. nitrate-nitrogen available for leaching (demonstrative)[6]	Monitor TIN	-	mg/l	1/quarter
Nitrogen option 3. application	Monitor TIN	-	mg/l	1/quarter

rate less than or equal to 12 inches per acre per year[7]				

[1]Class C treated sewage or liquid industrial waste shall only be land applied at times set forth in an approved land application management plan (i.e., times of the day that will minimize human exposure to the application of the treated sewage or liquid industrial waste, such as early morning between 4:00 a.m. and 9:00 a.m.).

[2]cfs = cubic feet per second; s.u. = standard units; mg/l = milligrams per liter; cfu/100 ml = colony forming units per one hundred milliliters.

[3]Chlorine residual only necessary for those disposal systems that use chlorine for disinfection. Effluent disinfection is not directly required; however, the entity is required to meet all applicable discharge permit limits. If disinfection facilities exist, they need to be maintained in an operable condition. Any design of wastewater treatment works should provide for the capability to install disinfection if required at a future time. Disinfection may be required if bacteriological studies or emergency conditions indicate the need.

[4]All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

[5]The 10.0 mg/l effluent limit is measured at the discharge outfall of the wastewater treatment plant.

[6]The 10.0 mg/l effluent limit met at point treated sewage or liquid industrial waste reaches the bottom of the root zone based on approved nutrient balance.

[7]Calculations for the demonstrative nitrogen balance (i.e., nitrate-nitrogen available for leaching) are not required to be submitted if the application rate is designed to be less than or equal to twelve inches per acre per year.

Table K-5. Additional effluent limits and monitoring requirements for land application systems with a design flow greater than or equal to ten thousand gallons per day[1]

Effluent parameter	Effluent limits		Monitoring frequency based on design flow (Q) in gallons per day	
	Maximum concentration	Units[2]	Q greater than or equal to 100,000	100,000 › Q › 10,000[3]
Aluminum	5.0	mg/l	1/year	1/5 years

Arsenic	0.10	mg/l	1/year	1/5 years
Beryllium	0.10	mg/l	1/year	1/5 years
Boron	0.75	mg/l	1/year	1/5 years
Cadmium	0.01	mg/l	1/year	1/5 years
Chromium	0.1	mg/l	1/year	1/5 years
Cobalt	0.05	mg/l	1/year	1/5 years
Copper	0.2	mg/l	1/year	1/5 years
Fluoride	1.0	mg/l	1/year	1/5 years
Iron	5.0	mg/l	1/year	1/5 years
Lead	1.5	mg/l	1/year	1/5 years
Lithium	2.5	mg/l	1/year	1/5 years
Manganese	0.2	mg/l	1/year	1/5 years
Molybdenum	0.01	mg/l	1/year	1/5 years
Nickel	0.2	mg/l	1/year	1/5 years
Selenium	0.02	mg/l	1/year	1/5 years
Vanadium	0.1	mg/l	1/year	1/5 years
Zinc	2.0	mg/l	1/year	1/5 years

[1]To protect public health and the environment, the director may require monitoring for mercury.

[2]mg/l = milligrams per liter.

[3]Shall be submitted as part of the initial and renewal application.

(L) Land application systems: ground water monitoring program requirements for land application areas, lagoons and storage facilities.

(1) Ground water monitoring program: exemptions for land application areas. A ground water monitoring program is not required for the following:

(a) A land application area where class A treated sewage or liquid industrial waste is land applied, unless the chief of the division of drinking and ground waters of Ohio EPA or the chief's authorized representative determines that ground water could be contaminated by class A treated sewage or liquid industrial waste.

(b) A land application area where less than or equal to twelve inches of class B treated sewage or liquid industrial waste is land applied per acre per year.

(c) A land application area when less than or equal to twelve inches of class C treated sewage or liquid industrial waste is land applied per acre per year.

(2) Ground water monitoring program: exemptions for storage facilities.

(a) A ground water monitoring program is not required for a storage facility when the treatment works that is part of a land application system has a design hydraulic capacity of less than one thousand gallons per day.

(b) A ground water monitoring program is not required for a storage facility when the treatment works that is part of a land application system has a design hydraulic capacity of less than ten thousand gallons per day, and the storage facility conforms to the following:

(i) Includes a liner that is installed for the storage facility that meets the requirements of paragraph (H) of this rule.

(ii) Contains only class A treated sewage or liquid industrial waste.

(c) A ground water monitoring program is not required for a storage facility when there is more than fifteen feet of low permeability material between the bottom of the storage facility liner and the top of the first continuous significant zone of saturation, and the storage facility conforms to either of the following:

(i) Is more than one thousand five hundred feet from the boundaries from public water supply intake.

(ii) Is not over an aquifer that yields or is capable of yielding more than one hundred gallons of water per minute.

(3) Ground water monitoring program: applicability for land application areas. The director may require a ground water monitoring program for any of the following:

(a) Any land application area where more than twelve inches per year of class B treated sewage or liquid industrial waste is land applied and there is less than five feet between the surface area in the application area and the top of the first continuous significant zone of saturation.

(b) Any land application area where more than twelve inches per year of class C treated sewage or liquid industrial waste is land applied and there is less than five feet between the surface area in the application area and the top of the first continuous significant zone of saturation.

(c) Any land application area where the distribution system is not a spray distribution system.

(d) Any land application area where the seasonal or perched ground water elevation can occur less than twelve inches below natural grade.

(4) General requirements for the ground water monitoring program. Except as provided in paragraphs (L)(1) and (L)(2) of this rule, or unless waived by the director, ground water monitoring shall be provided for any lagoon, any storage facility, or any land application area that is a part of a land application system.

(a) No land application system shall be operated without an approved ground water monitoring program.

(b) A copy of the written ground water monitoring program plan and all analytical results, including quality assurance information, shall be kept and shall be made available for inspection by Ohio EPA staff upon request.

(c) A ground water monitoring program that is capable of determining the impact of the land application system on the first continuous significant zone of saturation underlying the land application system shall be conducted. The ground water monitoring program shall conform to the following:

(i) Continue as long as required by the director.

(ii) Include sampling and analysis methods and procedures capable of yielding a sample representative of ground water quality in the zone monitored.

(iii) Provide at least three ground water monitoring wells for any storage facility, lagoon or land application area. The monitoring well layout shall include the following:

(a) One monitoring well up-gradient of the storage facility, lagoon or land application area.

(b) Two monitoring wells down-gradient of the storage facility, lagoon or land application area into the first continuous significant zone of saturation underlying the storage facility, lagoon or land application area.

(d) All monitoring wells shall conform to the following:

(i) Be installed and maintained in such a manner that will allow a ground water sample to be obtained from the well that is representative of ground water quality in the ground water unit into which the well is screened. All monitoring well locations shall be surveyed and all well construction and maintenance documentation shall be kept at the site of the storage facility and be available for inspection by Ohio EPA staff upon request.

(ii) Be sampled semi-annually for the parameters listed in tables L-1 and L-2 of this rule. The parameters listed in tables L-1 and L-2 of this rule may be modified or expanded by the director based on site-specific waste characterization, to protect public health and the environment. The director may require a sampling frequency less frequent than semi-annually, provided the owner or operator has demonstrated to the director, based on at least three consecutive years of sampling results, that human health and the environment will be protected.

Table L-1: Semi-annual sampling parameters analyzed in the field

pH
Specific conductivity
Temperature

Turbidity

Table L-2: Semi-annual sampling parameters sent to a laboratory for analysis

Ammonia
E. coli or total coliform
Nitrate-nitrogen plus nitrite-nitrogen
Chloride

[Comment: Ammonia, E. coli, total coliform, nitrate-nitrogen plus nitrite-nitrogen and chloride are parameters that can indicate ground water contamination.]

(e) All field forms, laboratory data to include quality assurance or quality control information, and other pertinent information related to the semiannual sampling event shall be kept and made available for inspection by Ohio EPA staff upon request.

(f) Within seventy-five days of sampling, a letter that includes a table containing the summarized analytical results for each monitoring well for each semi-annual sampling event shall be forwarded to the director, or to the director's duly authorized representative.

(g) The following results shall be forwarded to the director, or to the director's duly authorized representative, within fifteen days of receipt:

(i) Nitrate-nitrogen plus nitrite-nitrogen or ammonia concentrations that are greater than five parts per million.

(ii) Chloride concentrations that are greater than one hundred twenty-five parts per million.

(iii) Total coliform or E. coli bacteria that is detected

(iv) Additional parameters at concentrations as required by the director based on site-specific waste characterization.

(h) If the director determines, based on the ground water monitoring results, that a potential for significant adverse impact to the environment or

public health is posed or if there is an impact to ground water, all land application operations shall cease until the director provides notification in writing that operations may resume. The director may require the following:

(i) A more detailed ground water impact evaluation.

(ii) Additional monitoring wells at or near the property boundary between the contaminant plume and the down gradient receptors (such as public or private drinking water wells, springs and surface water sites used for drinking water) to be installed to evaluate the rate, extent and concentration of the contaminant plume.

(i) Any monitoring well or boring drilled at the proposed or permitted storage facility, that is no longer needed, shall be abandoned in accordance with the requirements of rule 3745-9-10 of the Administrative Code and any other applicable requirements.

[Comment: For additional information concerning hydrogeologic site investigations and ground water monitoring procedures, consult the Ohio EPA division of drinking and ground waters "Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring".]

(M) Land application systems: hydrogeologic site investigation requirements. When a hydrogeologic site investigation is required by paragraph (F) of this rule, a hydrogeologic site investigation report shall be submitted as part of the permit to install application that, at a minimum conforms to the following:

(1) Is presented in narrative form.

(2) Contains sufficient hydrogeologic information to allow the director to do the following:

(a) Identify and characterize the hydrogeology of the first continuous significant zone of saturation under the land application system and all geologic strata that exist above that zone.

(b) Sufficiently characterize the site geology to allow for the evaluation of the proposed design of the land application system and to ensure that it will comply with the requirements of this chapter and Chapter 6111. of the

Revised Code.

(3) Contains a description, based on publicly available information, of the hydrogeology within two thousand feet of the perimeter of the proposed land application system. This description shall do the following:

(a) Identify all aquifer systems used as water supplies.

(b) Include all well logs of public and private water supply wells.

(c) Identify the average regional yield of the uppermost aquifer system underlying the site.

(d) Describe the direction of ground water flow in the aquifer systems used as water supply sources.

(e) Identify recharge and discharge areas for any of the aquifer systems used as water supply sources.

(f) Identify on a map any of the following:

(i) Public water system wells within two thousand feet of the perimeter of the land application system.

(ii) Drinking water source protection areas and inner management zones for public water systems using ground water.

(iii) Emergency management zones that extend to or past the nearest land application system boundary.

(g) Describe the regional stratigraphy including any regional stratigraphic or structural features, such as the bedrock surface, bedrock dip or joint structures, that may influence the ground water flow system.

(h) Describe the regional geomorphology, including the location of surface water bodies, flood plains, etc.

(i) Describe any topographic features that may influence the ground water flow system and structural geology.

(4) Describe in detail and analyze the geology and hydrogeology under the proposed land application system. This description shall be based on data collected using appropriate subsurface investigatory methods such as borings, monitoring wells, tensiometers, geophysical surveys, soil surveys, cone penetrometers, piezometers and test pits. The description shall, at a minimum do the following:

(a) Describe the consolidated and unconsolidated deposits forming stratigraphic units from natural grade down to the base of the first continuous significant zone of saturation underlying the land application system including the following characteristics:

(i) For unconsolidated stratigraphic units, the textural classification using the unified soil classification system (USCS).

(ii) For consolidated stratigraphic units, if necessary, the rock types, such as limestone, dolomite, coal, shale, siltstone and sandstone.

(iii) Color, moisture content, stratigraphic features such as layering, interbedding or weathering, fracturing, jointing and other types of secondary porosity and any other visible accessory minerals such as pyrite, calcite or gypsum.

(iv) Atterberg limits.

(v) Grain size distribution (sieve and hydrometer curves for representative samples of each group of borings of similar soil composition).

(vi) Hydraulic conductivity.

(vii) Thickness.

(viii) Lateral extent.

(ix) Depth and elevation.

(b) Describe the geomorphology at the proposed land application system, including surface water bodies and topographic features, that may influence the flow of ground water in the first continuous significant

zone of saturation or any overlying significant zones of saturation including the identification and characterization of recharge and discharge areas within the boundaries of the proposed land application system. This description shall include identification of any sources of seeps, springs, streams and other surface water features.

(c) Describe variations in texture, saturation, stratigraphy, structure or mineralogy exhibited by each stratigraphic unit that could influence the ground water flow or quality in the first continuous significant zone of saturation or any overlying significant zones of saturation.

(d) Describe the first continuous signification zone of saturation under the land application system, including the depth to, and lateral and vertical extent of, the first continuous significant zone of saturation under the land application area. This description shall, at a minimum do the following:

(i) Describe in both a narrative and on a map, the ground water flow system, including rate of flow, and direction of flow in the first continuous significant zone of saturation to extend underlying the land application system.

(ii) Identify and characterize recharge and discharge areas within the boundaries of the proposed land application system, including any connections of ground water with seeps, springs, streams and other surface water features.

(e) Describe in detail the following:

(i) The drilling and soil sampling methods used in characterizing the soil and hydrogeologic properties of any unconsolidated and consolidated rock material underlying the proposed land application system.

(ii) The analytical procedures and methodology used to characterize the soil and rock materials obtained from test pits and borings.

(iii) The methodology, equipment and procedures used to define the first continuous significant zone of saturation underlying the land application system, including:

(a) Well and piezometer construction specifications.

(b) Water level measurement procedures.

(iv) The methodology, equipment and procedures used to determine the ground water quality (if determined) in any significant zone of saturation including the requirements specified in paragraph (J)(4) of this rule.

(f) Submit all boring logs, test pit logs, ground water quality data and soil analytical data and any other data generated while preparing this report.

(N) Soil and site evaluation requirements. For every land application system, a soil and site evaluation shall be done in accordance with this paragraph and shall conform to the following:

(1) Be submitted on forms approved by the director to the appropriate Ohio EPA district office.

(2) Be submitted with a permit to install application.

(3) Include a site specific soil map which locates, as necessary, any soil probes, any soil delineations, any soil pits or soil borings. In addition to the information in the general soil survey, the location of any soil delineations and the location and number of soil probes, pits or borings necessary to describe the soil conditions shall be determined by a professional soil scientist for the land application site, the lagoon site or the storage facility site. The soil delineations, soil probes, soil pits or soil borings shall conform to the following:

(a) Be performed or evaluated by a professional soil scientist.

[Comment: For soil borings deeper than fifteen feet, a professional with the appropriate knowledge and experience, such as a geologist or hydrogeologist, should also be consulted.]

(b) Be taken prior to any construction activities.

(c) When the proposed land application area is a golf course, be taken prior to the construction of any tee boxes, fairways and greens.

(d) For any land application area, be done to a minimum depth of thirty inches below natural grade. To protect public health or the environment, the director may require deeper soil probes, soil pits or soil borings. In areas where glacial till and fractured bedrock substratum soils are in close proximity, the soil investigation shall be done to a depth of at least fifty inches or until bedrock is encountered.

(e) For any storage facility or lagoon, be done to a minimum depth of fifteen feet below the proposed bottom of the recompacted clay liner.

[Comment: The county soil maps are at a scale for larger systems and for land use planning purposes. A more detailed map should be developed for land application systems so that all the included soils can be delineated, characterized, and avoided, if necessary. The Ohio state university extension bulletin number 905, "Soil and Site Evaluation for Onsite Wastewater Treatment", demonstrates an acceptable procedure for developing soil maps.]

(4) Based on the information in the general soil survey, published loading rate tables, and the data from any soil borings, identify the permeability and thickness of the following:

(a) The most permeable layer of the soil mantle at each soil probe, soil pit or soil boring location.

(b) The least permeable layer of the soil mantle at each soil probe, soil pit or soil boring location.

(5) Identify the vertical separation distance between the natural grade and all of the following conditions:

(a) Bedrock.

(b) Sand and gravel lenses.

(c) Dense glacial till.

(d) Ground water, including any seasonal high ground water or perched water table.

(6) Discuss the site topography, including the following:

(a) The site slope.

(b) The site vegetative cover.

(c) Any drainage ways and waterways within, below or bordering the land application system.

(d) Any impervious surfaces.

(O) Record keeping, reporting requirements, compliance, enforcement, and oversight.

(1) Record keeping.

(a) Records shall be maintained on forms provided by or approved by the director.

(b) Upon request by the director or the director's authorized representative, any person shall make available, within a reasonable time for inspection and copying, all records pertaining to the land application system, including the following:

(i) Pollutant sampling records.

(ii) Inflow and outflow monitoring records.

(iii) Storage impoundment monitoring records for freeboard and the number of days of remaining storage.

(c) Any person who owns a land application system shall maintain all sampling and monitoring records at the treatment works for at least five years. These records shall be made available to Ohio EPA, upon request.

(2) Reporting requirements.

(a) The director shall be notified in writing within seven days of any person discovering noncompliance with a land application management plan or an NPDES permit.

(b) The director shall be notified at least six months prior to the expiration date of a land application contract.

(3) Compliance, enforcement and oversight.

(a) The director may deny any land application management plan application not in compliance with this chapter and require the submittal of a new land application management plan application, including all applicable fees, to be submitted to Ohio EPA within thirty days.

(b) The director may revoke approval of any land application management plan, where the land application system is de-commissioned or a proposed land application system is never built.

(c) The director may revoke approval of any land application management plan not in compliance with this chapter.

(d) A land application system shall maintain compliance with effluent limits in the land application management plan or NPDES permit at the point the effluent leaves the treatment works, prior to storage, or prior to land application, if no storage is provided.

(e) The director may require sampling and monitoring for pollutants at any drain tile outfall, including but not limited to the following:

(i) $CBOD_5$.

(ii) Total suspended solids.

(iii) E. coli.

(iv) Total inorganic nitrogen.

(v) Total phosphorus.

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