

**REGULATIONS OF THE BOARD OF
HEALTH OF WYANDOT COUNTY
HEALTH DISTRICT
PART (CHAPTER) 29**

***SEWAGE TREATMENT SYSTEM
RULES***

Revised March 14, 2008

Part (Chapter) 29

TABLE OF CONTENTS

Rule Number	Rule Title
29-01	Definitions.
29-03	Authority, applicability, and related provisions.
29-04	Responsibility for compliance, demonstration competency, and registration requirements.
29-04.1	Installers.
29-04.2	Septage haulers.
29-04.3	Service providers.
29-06	Fees, fee categories, fee transmittal and reporting.
29-06.1	Cost methodology.
29-07	General provisions and prohibitions.
29-08	Site and soil evaluation.
29-09	Permits for installation, alteration, and operation.
29-09.1	Layout plans, design plans and as-built records.
29-10	Sewage source, building sewer, and related fixtures
29-11	Tanks, pumps, and controls.
29-13	Soil absorption provisions.
	Appendix to Rule 29-13
29-13.1	Leaching trench requirements.
29-15	Privies and holding tanks.
29-16.2	Residuals management.

29-01 **Definitions.**

As used in this chapter:

- (A) "AASHTO" mean the American association of state highway and transportation officials.
- (B) "Alter" means to change by making substantive replacements of, additions to, or deletions in the design or materials or to change the location of an existing sewage treatment system. For the purposes of this chapter, the terms "alter" or "alteration" shall not include the replacement of an existing sewage treatment system or the repair of a sewage treatment system by making minor corrections to existing components or substituting parts of a component with like parts as would occur during the servicing and maintenance of a sewage treatment system.
- (C) "ANSI" means the American national standards institute.
- (D) "ARCPACS" means the federation of certifying boards in agriculture, biology, earth and environmental sciences.
- (E) "ASTM" means the American society for testing and materials or ASTM international.
- (F) "Bedrock, rock and other fragments" means bedrock underlying the soil or exposed at the surface of the ground and rock and other fragments that are discrete particles greater than two millimeters including, but not limited to, gravel, cobbles, flagstones, stones and boulders. For the purposes of this chapter, a limiting condition shall include soils having bedrock, rock or other fragments greater than fifty per cent by volume.
- (G) "Bedroom" means any room within a dwelling that might reasonably be used as a sleeping room including but not limited to rooms designated as a den, office, or study.
- (H) "Board of health" means the board of health of the Wyandot County General Health District or its authorized representative. -
- (I) "CSA or CAN/CSA" means the Canadian standards association or CSA international.
- (J) "Department of health" means the department of health of the state of Ohio.
- (K) "Director of health" means the director of the department of health of the state of Ohio and includes any authorized representative of the director.
- (L) "Domestic septage" means the liquid or solid material removed from a sewage treatment system, septic tank, portable toilet, or type III marine sanitation device as defined in 33 C.F.R. 159.3. (as published in the July 1, 2005 Code of Federal Regulations) "Domestic septage" does not include grease removed from a grease trap.

- (M) "Drainage system" means a drain or drains designed to effectively lower seasonally ponded or shallow subsurface water to establish or increase an unsaturated vertical separation distance uniformly beneath a soil absorption component.
- (N) "ETV water quality protection center" means the program established by the United States environmental protection agency and the national sanitation foundation to verify commercial-ready technologies that protect ground and surface waters from contamination. Under the program, technologies are evaluated by a third party organization following technically sound test procedures with appropriate quality assurance and quality control to provide purchasers, specifiers, and permittees with credible and relevant data.
- (O) "Gradient drain" means a drain designed to create a hydraulic gradient to facilitate the flow of subsurface water away from the area of a soil absorption component to allow effluent from a sewage treatment system to infiltrate the soil.
- (P) "Graywater" means sewage that does not include flows from toilets and urinals, and in some cases also does not include flows from kitchen sinks carrying food wastes.
- (Q) "Ground water" means all water occurring in an aquifer. For the purposes of this chapter, ground water includes an apparent water table.
- (R) "Hardscape" means any constructed surface area on the landscape of a site such as a driveway, parking area, patio, building slab, or other similar surface area.
- (S) "Household sewage treatment system (HSTS)" means any sewage treatment system, or part of such a system, that receives sewage from a single-family, two-family, or three-family dwelling and residential dwellings or appurtenances including but not limited to:
- (1) A bed and breakfast, residential facility, or other residence as described in divisions (B)(2), (B)(4), and (B)(13) of section 3717.42 of the Revised Code.
 - (2) An ancillary restroom associated with a dwelling in a location such as a barn or personal garage that is not used as an additional dwelling, sleeping area, or business and the users of the ancillary restroom are the same users as the dwelling. An ancillary restroom shall not be available for public use.
 - (3) Vacation rental cabins provided there is a separate HSTS for each cabin.
 - (4) A dwelling with a home business having no access for the general public and does not generate additional sewage as part of its operation.
- (T) "IAPMO" means the international association of plumbing and mechanical officials.
- (U) "Infiltrative surface" means the contact area where sewage is applied to the soil or sand fill for the purpose of treatment and/or dispersal.

- (V) "In situ soil" means soil that has been naturally deposited or formed in its present location with adequate texture, structure and consistence necessary for treatment and/or dispersal, or in the case of reclaimed or filled areas, has had sufficient time to form the texture, structure and consistence necessary for treatment and/or dispersal.
- (Y) "Interceptor drain" means a drain designed to intercept the horizontal flow of subsurface water to reduce its impact on a down gradient soil absorption component.
- (Z) "Limiting condition" means a restrictive soil layer, bedrock, ground water, a perched seasonal high water table or other condition or combination of conditions that severely limit the treatment and/or dispersal of sewage or effluent.
- (AA)"Linear loading rate (LLR)" means the volume of effluent applied daily along the landscape contour expressed in gallons per day per linear foot. The LLR may also be referred to as the hydraulic linear loading rate. The LLR is used to determine the required length of the distribution system parallel to surface contours.
- (BB)"Lot" means a legally recorded parcel of land.
- (CC)"Manufacturer" means any person that manufactures a sewage treatment system or components of a sewage treatment system.
- (DD)"Monitoring" means the activity of verifying performance requirements and may include, but is not limited to, sampling of effluent from a sewage treatment system component. For the purpose of this chapter, monitoring activities shall be conducted by either the board of health or a registered service provider.
- (EE)"NPDES" means national pollutant discharge elimination system.
- (FF)"NRCS" means the natural resources conservation service.
- (GG)"NSF" means the national sanitation foundation or NSF international.
- (HH)"ODNR" means the Ohio department of natural resources.
- (II)"OEPA" means the Ohio environmental protection agency.
- (JJ)"O&M" means operation and maintenance.
- (KK)"Order one soil survey" means a soil inventory produced for very intensive land use that requires detailed information about soils. Standards are described in section 655.04 of the national soil survey handbook. Order two soil survey information is available in county soil surveys.
- (LL)"Perched seasonal high water table" means the shallowest depth of soil which is saturated with water above an unsaturated zone for at least three weeks or longer periods of time, often with repeated occurrences during the winter and/or spring seasons of the year.

(MM) "Perennial stream" means natural waters of the state with a defined stream bed and bank and constant source of flowing water.

(OO) "Pressure distribution" means dispersal of effluent in a manner that assures no more than a ten per cent difference in flow rate between the proximal and distal orifices on each distribution lateral and within the total distribution network.

(PP) "Public health nuisance" means any condition of sewage or effluent that is potentially injurious to the health and safety of a person. For purposes of this rule, a public health nuisance shall be deemed to exist when an inspection conducted by a board of health documents odor, color, or other visual manifestations of raw or poorly treated sewage and either of the following applies:

(a) Water samples exceed five thousand fecal coliform counts per one hundred milliliters (either MPN or MF) in two or more samples when five or fewer samples are collected or in more than twenty per cent of the samples when more than five samples are taken.

(b) Water samples exceed five hundred seventy-six E. Coli counts per one hundred milliliters in two or more samples when five or fewer samples are collected or in more than twenty per cent of the samples when more than five samples are taken.

(QQ) "Replacement" means the installation of a new sewage treatment system to replace an existing system.

(RR) "Restrictive soil layer" means a compacted or dense soil layer such as a fragipan, a soil layer with a brittle and firm or very firm consistence, a soil layer having a massive structure or having a platy structure inherited from bedrock or other soil layer similarly restricting vertical flow.

(UU) "Service provider" means any person who services, but does not install or alter, a sewage treatment system.

(VV) "Sewage" means liquid waste containing animal or vegetable matter in suspension or solution that originates from humans and human activities. "Sewage" includes liquids containing household chemicals in solution commonly discharged from a residence or from commercial, institutional, or other similar facilities.

(WW) "Sewage treatment system (STS)" means an HSTS, a small flow on-site sewage treatment system, or both, as applicable.

(XX) "Small flow on-site sewage treatment system (SFOSTS)" means a system, other than an HSTS, that treats not more than one thousand gallons of sewage per day and that does not require a national pollutant discharge elimination system permit issued under section 6111.03 of the Revised Code or an injection well drilling or operating permit issued under section 6111.043 of the Revised Code. A structure or structures served by a SFOSTS shall include but is not limited to:

(1) Vacation rental cabins with multiple cabins served by an SFOSTS.

- (2) A dwelling and an ancillary building both served by an SFOSTS where the ancillary building may be open to the public and is used by more than the residents of the dwelling.
- (3) Two dwellings, including arrangements such as a dwelling and a detached garage with living space.
- (4) A dwelling with a home business that may be open to the public, generates sewage in excess of the daily design flow or waste strength for an HSTS, and has no wastewater going to the SFOSTS other than sewage as defined in this rule.

(YY)"Soil depth credit" means the use of the design mechanisms of elevation, pretreatment, and/or distribution as substitutes for in situ soil treatment to compensate for inadequate vertical separation distance between the infiltrative surface and the limiting condition.

(ZZ)"Soil loading rate" means the daily volume of effluent applied per unit area of in situ soil expressed in gallons per day per square foot. The "soil loading rate" may also be referred to as the basal loading rate or the infiltration loading rate. The "soil loading rate" determines the size of the soil absorption area. The "soil loading rate" and the LLR determine the dimensions of the soil absorption area.

(AAA)"Subdivision" means that which is defined by section 711.001 of the Revised Code.

(BBB)"Timed dosing" means a mechanism that attenuates flows resulting from high water use periods and allows for controlled dosing intervals through use of a timing device.

(CCC)"UIC" means underground injection control and relates to the OEPA underground injection control program authorized by sections 6111.043 and 6111.44 of the Revised Code.

(DDD)"UL" means underwriters laboratories incorporated.

(EEE)"USDA" means the United States department of agriculture.

(FFF)"USEPA" means the United States environmental protection agency.

(GGG)"Vertical separation distance" means the depth from the infiltrative surface of the distribution system of the soil absorption component to a limiting condition.

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

29-03 **Authority, applicability, and related provisions.**

- (B) This Chapter shall apply to all STS permitted to be installed or altered pursuant to this chapter after the effective date of this chapter and are in addition to those requirements specified in the Ohio Administrative Code Chapter 3701-29. In cases where the board of health has provided written approval for a household sewage disposal system prior to the effective date of this chapter, the board of health shall permit the installation of the household sewage disposal system under the following conditions:
- (1) There is written documentation of the household sewage disposal system approval by the board of health and the written approval has not expired.
 - (2) The household sewage disposal system shall not conflict with provisions of the NPDES program established in section 6111.03 of the Revised Code or rules adopted or permits issued pursuant to section 6111.03 of the Revised Code.
 - (3) The owner obtaining an installation permit requests to install the previously approved household sewage disposal system.
 - (4) The installation permit for the household sewage disposal system is issued by the board of health prior to the first day of January 2010, unless prohibited by subsequent laws or rules.
 - (5) Other than the siting and household sewage disposal system specifications previously approved by the board of health, the provisions of this chapter shall apply.
- (C) All STS installed or altered, or permitted to be installed or altered, prior to the effective date of these rules shall comply with the rules in effect at the time of installation, alteration, or permit issuance, unless otherwise required by this chapter. An HSTS that has been installed or altered prior to the effective date of these rules and that is operating or has the capacity to be operable on the effective date of these rules is deemed approved for the purposes of this chapter unless declared to be a public health nuisance by the board of health.
- (D) Unless otherwise specified in this chapter, the persons responsible for compliance with the rules, including but not limited to the siting, design, installation, alteration, operation, monitoring, maintenance, and abandonment of an STS, shall be the property owner and any person performing a related service or activity. Enforcement action may be taken against the property owner and/or any person who performs a related service or activity.

- (E) The board of health is responsible for implementation of this chapter. Implementation shall be accomplished through the coordination of regulatory responsibilities with other appropriate parties, adequate communication and notification to regulated persons, and legal and equitable enforcement.

29-04 Responsibility for compliance, demonstration of competency, and registration requirements.

This rule identifies the responsibilities of persons engaging in activities related to the siting, design, installation, alteration, operation, monitoring maintenance, and abandonment of STS. Emphasis is placed on the owner as the primary responsible party in managing the tasks associated with private sector parties acting as agents on behalf of an owner. Regardless of whether the owner, an agent of the owner, or the regulatory authority conducts an identified task or activity, all parties are expected to demonstrate competency in meeting performance requirements. Other rules expand on the tasks and measures of competency associated with these responsibilities. General registration requirements for installers, septage haulers, and service providers are provided in this rule with specific requirements identified in three supplemental rules.

- (A) The property owner is responsible for the proper siting, design, installation, alteration, operation, monitoring, maintenance, and abandonment of an STS. The owner shall comply with all applicable provisions of the law and rules and shall operate the STS in compliance with O&M instructions and any conditions of an operation permit issued by the board of health.
- (B) A site and soil evaluator shall comply with the requirements of rule 29-08 of this Chapter. A site and soil evaluator shall be capable of properly conducting site and soil investigations and accurately recording required information. Demonstration of competency may include, but is not limited to, certification as a professional soil scientist by the association of Ohio pedologists or ARCPACS.
- (C) A designer shall comply with the requirements of this chapter and all other applicable laws and rules when submitting design plans for an STS, including details on system components, construction, and O&M sufficient for regulatory review and determination of compliance. Design plans shall be completed in accordance with rule 29-09.1 of this Chapter. Designers shall be able to perform the following to demonstrate competency:
 - (1) Estimate and report any expected variations in STS daily design flows and SFOSTS pollutant concentrations and mass loads exceeding residential waste strength.
 - (2) Select appropriate system components capable of meeting performance requirements based on site and soil evaluation information.
 - (3) Prepare scaled design plan, profile, and detail drawings depicting STS layout, dimensions, and materials and equipment specifications including construction, and O&M information.

- (4) Conduct installation oversight as necessary to assure provision of an adequate installer as-built record documenting installation in accordance with approved design plans.
- (D) An installer, septage hauler, or service provider shall comply with the general conditions for registration required in this paragraph and the specific provisions and competency requirements respectively applicable in rule 29-04.1, rule 29-04.2, and rule 29-04.3 of this Chapter.
- (1) An application for registration shall be submitted to the board of health and shall include all information required by the board of health, the registration fee and proof of a surety bond as required under paragraph (D)(2) of this rule.
 - (a) A registrant that is a partnership, corporation, or other business association, shall designate one partner, officer, or other responsible full-time employee who shall be the company's representative registrant.
 - (b) Registration is not required of any person who performs labor or services under the direct supervision of a registrant. For the purposes of this rule "direct supervision" means that a registrant instructs and controls the person claimed to be supervised and that the registrant is responsible for the actions of that person and is reasonably available if and when needed, even though such registrant may not be physically present at the site.
 - (2) An installer, septage hauler or service provider shall obtain a surety bond which provides coverage for all work performed on an STS on a bond agreement form. As of January 1, 2009, a surety bond is not required for registration to be an installer, septage hauler, or service provider unless required by subsequent Ohio Revised Code or Ohio Administrative Code requirements.
 - (a) The surety bond required for registration shall establish a contractual relationship between the principal, and the surety, and shall be executed by the applicant as principal and a surety company authorized to do business in the state as surety.
 - (b) The surety bond shall be for the benefit of any aggrieved party for damages incurred as a result of a violation of this chapter. For purposes of this rule aggrieved party means the local board of health where work was performed, property owner or the agent of the property owner who contracts with an installer, service provider or septage hauler and whose STS is not installed, altered, serviced, maintained or abandoned in compliance with the provisions of this chapter.
 - (c) The surety bond shall be issued to provide insurance coverage for the calendar year of the registration application for any work performed. The surety bond shall provide that the aggregate liability of the surety for any and all breaches of the conditions of the bond shall in no event exceed the penal sum of the bond for each calendar year for which the bond is issued.

- (d) If the surety bond for the registration is canceled, the registrant shall immediately submit to the board of health proof of a new registration bond in accordance with the requirements of this rule.
 - (e) An installer, service provider, and septage hauler shall maintain a surety bond of not less than twenty-five thousand dollars for each category of registration.
 - (f) Any person who alleges to be an aggrieved party shall give written notification to the surety, the board of health, and the installer, service provider, or septage hauler as applicable within two years of the date of completion of the work on the STS. The board of health may conduct an investigation as necessary to determine if a violation of this chapter has occurred.
- (3) A registration shall not be transferable and shall expire annually on the thirty-first of December.
 - (4) A registrant shall maintain and submit to the board of health such complete and accurate records and information that may be required for determining compliance with the rules.
 - (5) When the board of health finds that a registrant is or has engaged in practices in violation of this chapter, the board of health shall provide the registrant with written notification of the alleged violation, indicate if the registration may be revoked or suspended, and afford an opportunity for a hearing if the registrant does not agree to voluntary compliance. The board of health may revoke or suspend a registration when a registrant fails to timely correct violations in compliance with this chapter.

29-04.1 **Installers.**

- (A) In addition to compliance with the general registration requirements in paragraph (D) of rule 29-04 of this Chapter, and as a specific condition of registration, A registered installer shall comply with any installation instructions in accordance with an installation permit issued by the board of health.
- (B) As a condition of an installation permit, a registered installer shall warrant that the STS has been installed in accordance with all applicable rules and design specifications. A registered installer shall prepare an as-built record for each completed installation in accordance with paragraph (C) of rule 29-09.1 of this Chapter.
- (C) In lieu of a design plan, a registered installer may submit a layout plan for an HSTS in accordance with paragraph (A) of rule 29-09.1 of this Chapter.

29-04.2 **Septage haulers.**

- (A) In addition to compliance with the general registration requirements in paragraph (D) of rule 29-04 of this Chapter, a septage hauler shall demonstrate competency through compliance with the following specific conditions of registration:
- (1) Obtain a permit from the board of health to haul septage, report tank capacity for each vehicle, allow each vehicle and its equipment to be inspected if required by the board of health, and maintain vehicles in compliance with paragraph (B) of this rule.
 - (2) Manage the pumping, hauling, disposal and land application of septage in compliance with all applicable rules and regulations, and provide information to the board of health on the locations and methods of septage disposal and, as applicable.
 - (3) Provide to the owner a report of the services conducted including the date of service and comply with any additional reporting requirements established by the board of health.
- (B) Any vehicle and equipment used for septage hauling shall comply with the following:
- (1) The company name and phone number is legibly written on the vehicle in words and numbers no less than four inches in height.
 - (2) All septage hauling equipment is maintained in proper operating condition and managed in a manner that prevents leakage or spills while in operation, transit, or storage.

Violation of these provisions as determined by the board of health may be cause for immediate suspension of a vehicle permit.

29-04.3 **Service providers.**

- (A) In addition to compliance with the general registration requirements in paragraph (D) of rule 29-04 of this Chapter, and as a specific condition of registration, A registered service provider shall provide proof of compliance with any training, qualification or certification conditions required by the manufacturer or distributor of a component or system for which service is offered, and shall comply with O&M requirements in accordance with an installation permit or operation permit issued by the board of health. In addition to any such conditions or requirements, a service provider shall:
- (1) Provide manufacturer and/or general O&M information to the owner of the STS as applicable, and to the board of health if required, either in writing or through reference to available resources.
 - (2) Understand the treatment processes, all O&M requirements, and servicing schedule for any STS for which the service provider offers and conducts O&M services.

- (3) Conduct routine O&M services on schedule and according to requirements.
 - (4) Provide to the owner a report of the services conducted including the date of service and notation of any evidence of clear water infiltration, STS component deterioration, or other problem conditions.
- (C) A registered service provider shall comply with any reporting or records retention requirements established by the board of health as authorized by this chapter.

29-06 Fees, fee categories, fee transmittal and reporting.

- (A) Fees shall be established using the categories prescribed in this rule. The department of health shall receive the portion of each permit fee for STS installation or replacement as required under paragraph (C) of this rule.
- (B) The board of health shall collect a fee outlined in HB 119 (127th General Assembly) on behalf of the Department of Health and forward the fee to the Department
- (C) Fees established by a board of health shall be specified in accordance with the following categories:
 - (1) An application for a site review of an HSTS.
 - (2) Permit for the installation or replacement of an HSTS.
 - (4) Permit for the alteration of an existing HSTS.
 - (6) Operation permits for HSTS.
 - (7) Registration of installers, service providers and septage haulers as required in paragraph (D) of rule 29-04 of this Chapter.
 - (9) An application for a variance under rule 29-18 of this Chapter.
 - (10) Additional fees may be established by the board of health for the purposes of managing the STS program, including fees for the collection and examination of any necessary samples taken to determine compliance with this chapter.

29-06.1 Cost methodology.

- (A) Commencing one year after the effective date of this rule, the board of health shall use data from its previous fiscal year to calculate the actual cost of administering and enforcing Chapter 3718. of the Revised Code and Chapter 29 of the Administrative Code. The board of health shall calculate the actual cost of the program including the following functions:

- (1) The administration and enforcement of the site and plan review, permitting and installation, and inspections of HSTS. Inspections shall include any site inspections, installation inspections, and operation inspections required in this chapter.
- (3) Operational oversight of HSTS.
- (4) Registration of installers, service providers and septage haulers.
- (6) Review of land application sites for septage as required under rule 29-16.2 of this Chapter.
- (7) Conducting sampling as necessary to determine compliance with this chapter.
- (8) Provision of education and consultation services.

29-07 **General provisions and prohibitions.**

These provisions and prohibitions provide an overview of the conditions that impact the use of an STS, establish general criteria for STS performance, limit the use of discharging HSTS, and identify other regulations related to the use of an STS. The purpose of this rule is to encourage preliminary consideration of STS suitability and general regulatory requirements prior to investing in required activities for compliance with other provisions of this chapter.

- (A) The siting, design, installation, alteration, operation, monitoring, maintenance, and abandonment of an STS shall comply with this chapter. An STS subject to this chapter shall not be installed or operated without an approved permit from the board of health. Unless connected to a sanitary sewerage system or utilizing an existing STS, a dwelling or structure shall not be occupied or utilized without an approved STS.
- (B) An HSTS shall serve only one dwelling
- (C) A STS shall comply with the following performance requirements and prohibitions:
 - (1) An STS shall be maintained in proper working condition.
 - (2) An STS shall comply with the conditions specified in an installation and/or operation permit issued by the board of health.
 - (3) No STS or part thereof shall create a public health nuisance or safety hazard nor pollute surface water or ground water.
 - (4) No new STS shall discharge to any ditch, stream, pond, lake, natural or artificial waterway, drain tile, other surface water conveyance or to the surface of the ground unless authorized by an NPDES discharge permit pursuant to Chapter 6111. of the Revised Code or otherwise specified in this chapter.

- (5) No STS shall discharge to an abandoned well, drainage well, a dry well or cesspool, a sink hole or other connection to ground water. If classified as a class V injection well, an HSTS serving a two or three family dwelling or an SFOSTS shall comply with 40 C.F.R. 144 (as published in the July 1, 2005 Code of Federal Regulations) and the registration requirements pursuant to rule 3745-34-13 of the Administrative Code.
 - (6) No STS shall receive water from roof drains, foundation drains, clear water sumps, swimming pools, or other sources that do not convey or generate sewage from the structures served by the STS.
 - (7) No STS shall be permitted for the holding, treatment, or dispersal of industrial waste or storm water for industrial activities. For the purpose of this rule, the normal use of housekeeping products does not constitute industrial waste.
- (D) An STS shall utilize soil absorption as the means for final treatment and/or dispersal, except for the HSTS conditions and limitations described in paragraph (D)(2) of this rule when soil absorption is not feasible as demonstrated through the site and soil evaluation conducted in accordance with rule 29-08 of this Chapter.
- (1) An STS shall not be permitted for use in any new lot or new subdivision when soil absorption is not feasible.
 - (2) When soil absorption is determined to be infeasible by the board of health for a replacement HSTS for an existing dwelling or a new HSTS for an existing lot, a discharging HSTS shall only be permitted by the board of health in compliance with NPDES requirements.

The board of health shall not permit or otherwise authorize the use of an STS that would violate the conditions of this paragraph.

- (E) STS shall be sited in compliance with this chapter including the following:
- (1) Sufficient suitable area shall be available to accommodate an STS including a designated area for complete relocation and replacement of an STS, the minimum horizontal isolation distances as required in paragraph (E)(3) of this rule, and any additional horizontal isolation distance determined by the board of health as necessary to accommodate lateral flow due to shallow limiting conditions identified in the soil and site evaluation conducted in accordance with rule 29-08 of this Chapter.
 - (2) Sites on which private water systems are to be installed shall be of sufficient area to provide horizontal isolation of the private water system from both the proposed STS and the area intended for any STS relocation or replacement on this or adjacent sites as required in paragraph (E)(3) of this rule and Chapter 3701-28 of the Administrative Code.
 - (3) An STS shall maintain minimum horizontal isolation distances of

- (a) Ten feet from any utility service line, driveway or other hardscape, property line or right-of-way boundary, and any building or other structure, and
 - (b) Fifty feet from any water supply source, surface water impoundment, lake, river, or perennial stream.
 - (4) A permanent legal easement shall be required for any portion of an STS not sited on the same parcel as the structures or dwelling served by the STS. When an easement is required under this paragraph, an STS installation permit shall not be issued by the board of health until a certified copy of the legally recorded easement is provided.
- (F) STS shall not be sited under the following conditions:
- (1) An HSTS shall not be sited in an area identified as a flood way, nor within any part of the one-hundred year flood plain where prohibited by federal, state, or local regulations or ordinances.
 - (2) An STS shall not impact or be sited within a jurisdictional wetland subject to a U.S. army corp of engineers 404 permit and/or OEPA 401 certification or within an isolated wetlands subject to sections 6111.02 to 6111.029 of the Revised Code.
 - (3) An STS shall not be sited within the sanitary isolation radius of a public water system well as determined in accordance with rule 3745-09-04 of the Administrative Code.
 - (4) An STS shall not be sited under soil and site conditions that prohibit compliance with this chapter. The following are examples of conditions that may be prohibitive or may require additional siting, design or management conditions:
 - (a) Exposed bedrock, boulders, stones, gravel, and coarse sand at or above the surface of the ground or underlain within a foot of the ground surface.
 - (b) Slopes in excess of the limits of the design, installation, maintenance or operation of the proposed STS or when there is risk of slippage, slump, or land slide.
 - (c) Filled, reclaimed, or disturbed areas where soil and site conditions may not be adequate to provide treatment and/or dispersal.
- (G) The board of health shall consult with appropriate sewer entity personnel as necessary to determine sanitary sewer accessibility:
- (1) An STS shall not be sited, permitted, or installed where a sanitary sewage system is accessible and has capacity to accept additional flows.
 - (2) An STS shall not be altered, replaced, maintained, operated, or used where a dwelling or structure is accessible to a sanitary sewerage system.

- (3) Whenever a sanitary sewerage system becomes accessible to a dwelling or structure served by an STS, the dwelling and/or structures shall be connected to the sanitary sewerage system and the STS abandoned.

- (H) In the absence of other legal authority governing the access to a sanitary sewerage system, the board of health shall determine accessibility and the conditions and schedule for sanitary sewer connection and abandonment of an STS. The board of health may utilize the criteria established in division (C) of section 6117.51 of the Revised Code for an existing HSTS.

- (I) No HSTS may be installed between the dates of December 1 and March 31 without prior Health Department approval. Upon request from an installer to permit the installation of a new HSTS during this time period, the Wyandot County Health District may require the installer to demonstrate that conditions at the site are adequate to insure proper installation, operation, and inspection of a system.

29-08 **Site and soil evaluation.**

This rule provides criteria and procedures for site and soil evaluation. Site and soil characteristics must be observed, described, and evaluated and area risk factors considered and identified. This information provides the basis for determining the feasibility of siting an STS and, if feasible, the conditions and limitations for sewage treatment and dispersal to be addressed in a layout plan or design plan.

- (A) The board of health shall conduct a site review for any proposed STS installation to complete, or review the completeness of, the site and soil evaluation information required in this rule. Any person conducting a site and soil evaluation shall assess and record information in accordance with this rule. The board of health shall utilize the site and soil evaluation information to determine the feasibility of siting an STS in compliance with this chapter.

- (B) The site and soil evaluation shall include the assessment and documentation of the following:
 - (1) Designation of the described soil boring and/or excavation locations and the information required in paragraphs (B)(3) and (B)(4) of this rule on the site plan required in rule 29-09.1 of this Chapter or on a preliminary site drawing adequate to provide the required site and soil evaluation documentation. A scaled site drawing shall at least include:
 - (a) The dimensions of the lot or the proposed lot and any existing or proposed property lines and/or easements with the proposed system and it's replacement area;

 - (b) Any existing dwellings and/or structures and any proposed dwellings and/or structures if known;

- (c) Any site disturbances, existing driveways and other hardscapes, and proposed hardscapes or related site disturbances if known;
 - (d) Location of all private water systems and surface water features on the lot and within fifty feet of the lot boundary, or within fifty feet of the locations specified in paragraph (B)(3) of this rule; and
 - (e) North orientation arrow.
 - (2) Record of site and soil characteristics for each soil boring and/or excavation location designated in paragraph (B)(1) of this rule using USDA NRCS nomenclature on a form prescribed by the director of health, including but not limited to:
 - (a) Site descriptions: landscape position, slope, vegetation, drainage features, rock outcrops, erosion and other natural features;
 - (b) Detailed soil profile descriptions: color, texture, structure, consistence, and the depth of each soil horizon or layer and characterization of all limiting conditions; and
 - (c) Documentation of any relevant surface hydrology, geologic and hydrogeologic risk factors for the specific site or in the surrounding area that may indicate vulnerability for surface water and ground water contamination.
 - (3) Drawings and dimensions on the site plan or site drawing of at least two locations on the site that have been evaluated and determined to have the capacity for the treatment and/or dispersal of sewage from the proposed dwelling or structures including adequate length parallel to the land contour to accommodate the soil and linear loading rates for the conditions recorded.
 - (4) Identification on the site plan or site drawing of the area for which each soil profile description is representative and designation of any areas with conditions that would prohibit or impact the siting of an STS in accordance with this chapter.
- (C) An installation permit for an STS shall not be approved by the board of health in the absence of an evaluation conducted in accordance with this rule:
- (1) The board of health shall assure that a site and soil evaluation is conducted in accordance with this rule and shall:
 - (a) Determine compliance with soil absorption requirements.
 - (b) Consider area risk factors related to the subdivision and lot review requirements including risks of pathogen or nutrient contamination to surface or ground water.
 - (2) The board of health may waive the requirements of paragraphs (B)(2) and (B)(3) of this rule when soil treatment and/or dispersal is not feasible for an HSTS replacement for an existing dwelling due to the absence of adequate

area for sizing the HSTS, or the installation of a privy is proposed in accordance with section 29-15(B) of this rule.

29-09 Permits for installation, alteration, and operation.

This rule includes the provisions for site review, issuing a permit, and determining compliance with the conditions of a permit. Given the limitations on the permitting of a discharging STS for a new home, owners and builders are strongly encouraged to obtain an approved site review application prior to the start of construction to assure that a soil absorption STS can be sited. Permits for installation and operation provide a mechanism for regulatory oversight of the siting, design, installation, alteration, operation, monitoring, maintenance, and abandonment of an STS.

- (A) The board of health shall require a site review application for any proposed installation of a new STS. No person intending to install a new STS shall be issued an installation permit without the board of health first approving a site review application.
 - (1) A site review application shall include the application fee and all information required by the board of health, including the following as applicable:
 - (a) The completed site and soil evaluation as required in rule 29-08 of this Chapter and the design plan or layout plan required in rule 29-09.1 of this Chapter, or
 - (2) A site review application for an STS alteration may be required by the board of health, and when required, shall contain all pertinent information and the application fee required by the board of health. In the case where an alteration involves the expansion of a soil absorption component, the board of health shall determine when a site and soil evaluation shall be conducted or required in compliance with rule 29-08 of this Chapter.
 - (3) The board of health shall review the application information to determine whether the proposed design plan or layout plan, or proposed STS alteration as applicable, is in compliance with this chapter. When the board of health determines that a proposed STS is subject to the NPDES requirements of paragraphs (C)(4) and (C)(5) of rule 29-07 of this Chapter, the board of health shall assure compliance with NPDES requirements prior to issuing a permit in accordance with paragraph (B) of this rule.
 - (4) The board of health shall deny a site review application if the application information is incomplete or inaccurate or if the application information, site review by the board of health, or site and soil evaluation indicates that the provisions of this chapter cannot be met.
 - (5) The board of health shall approve a site review application when the information in the site and soil evaluation and system design demonstrate that the provisions of this chapter can be met. An approved site review application shall be valid for one year from the date of approval.

- (C) No person shall operate an STS without an approved and valid operation permit from the board of health.
- (1) An operation permit shall be in effect upon board of health approval of an installation, a replacement, or an alteration of an STS. The responsible party, whether it is the STS owner, a responsible management entity recognized by the board of health, or both, shall be subject to the terms and condition of an operation permit.
 - (2) The board of health shall specify any operation permit fees and the terms and conditions of the operation permit consistent with this chapter governing the operation, monitoring, maintenance, and abandonment of the STS. The board of health shall require an STS service contract as a condition of an operation permit in accordance with this chapter and the requirements of paragraph (C)(5) of this rule.
 - (3) A board of health shall inspect an STS not later than twelve months after its installation to ensure that the system is not creating a public health nuisance and is operating properly.
 - (4) An operation permit may be renewed, suspended, or revoked by the board of health subject to the requirements of this chapter, the terms and conditions of the permit, and the O&M management provisions. An operation permit shall be valid until it expires or is suspended or revoked by the board of health. An operation permit is subject to suspension or revocation conditional upon the responsible party's or parties' compliance with this chapter and the terms and conditions of the permit.
 - (5) An operation permit shall require a service contract for an STS under the following conditions and as otherwise required by the board of health:
 - (a) Any HSTS subject to an NPDES permit.
 - (b) Any STS with a pretreatment component.
 - (c) Any STS with a soil absorption component subject to paragraph (C) of rule 29-13 of this Chapter.

29-09.1 Layout plans, design plans and as-built records.

This supplemental rule provides detail on layout plan and design plan options for new and replacement installations. To prevent avoidable problems during installation, a layout plan or a design plan is included with the site review application to assure proper STS siting in advance of a permit being issued. This rule also provides the requirements for the as-built record to be completed by a registered installer to document that an STS has been installed in accordance with all applicable rules and plan requirements. The intent of this rule is to assure adequate information and documentation for site review application and permit approval and to assure installation in accordance with applicable rules and approved plans to promote long term STS operation.

- (A) A registered installer may submit a layout plan in compliance with rule 29-13.1 of this Chapter. A layout plan may substitute for the design plan required in paragraph (B) of this rule when the proposed HSTS does not utilize a soil depth credit for pathogen reduction. A layout plan shall include:
- (1) A site plan drawn to scale on eight and a half inch by eleven inch or larger paper showing HSTS layout elevations corresponding to flagged or staked locations at the site. The designated HSTS area shall be protected from disturbance. The site plan shall also verify horizontal isolation distances and include the designated area for complete relocation and replacement of the HSTS as required in paragraph (E) of rule 29-07 of this Chapter.
 - (2) Written details on the daily design flow, selected loading rates based on the site and soil evaluation, system configuration with absorption area dimensions, and, if applicable, pump selection information and pressure distribution network description and calculations.
 - (3) Product information and written description of materials and system components including size of all tanks and distribution component materials including mechanical distribution and diversion mechanisms.
 - (4) Manufacturer O&M requirements or instructions for components not addressed in general O&M information available through the board of health or the department of health.
 - (5) Any additional information requested by the board of health related to components, materials, and installation or O&M specifications.
- (B) A design plan in compliance with this paragraph shall be required unless a layout plan is provided by a registered installer in compliance with paragraph (A) of this rule. A design plan shall be legible, readable, and of sufficient detail to demonstrate compliance with the provisions of this chapter. A design plan shall include:
- (1) Documentation of the rationale for design decisions used to address site and soil limitations including justification for selected loading rates and the use of any soil depth credits. The site and soil evaluation shall be available with the design plan.
 - (2) Description of the dwelling and/or structures to be served by the STS with a designated daily design flow including any anticipated variations. The STS shall be designed to handle peak daily design flows or the design shall include flow equalization with designated reserve and surge capacity and timed dosing in compliance with rule 29-11 of this Chapter.
 - (3) Description of the treatment processes used to meet performance requirements including information necessary to confirm compliance with any applicable NPDES effluent quality standards or applicable standards established in rule 29-12 of this Chapter. In addition, if applicable, documentation of pollutant concentrations and mass loading in excess of residential waste strength, including the design for treatment to reduce higher strength wastewater to typical residential waste strength prior to distribution to a soil absorption component.

- (4) Plan notes designating that the STS area shall be protected from disturbance, and additional plans notes as needed to explain any siting, installation, or O&M requirements or restrictions, including any preconstruction meetings at the site, conditions on the selection of an installer, STS start-up procedures or other designer-designated conditions.
- (5) A site plan, drawn to a scale of one inch equals fifty feet or less, sufficient to demonstrate compliance with this chapter including but not limited to:
 - (a) North directional arrow.
 - (b) Identified vertical and horizontal reference point or benchmark with its location clearly marked at the site.
 - (c) Designation of the described soil boring and/or excavation locations from the soil and site evaluation.
 - (d) Outline of existing and proposed structures, driveways and other hardscapes, and other related items on the property.
 - (e) Location of STS components and a replacement area.
 - (f) The dimensions of the property with horizontal isolation distances to the STS and replacement area from the items designated in paragraph (E) of rule 29-07 of this Chapter, including but not limited to private water systems and surface water features.
 - (g) Topography for the areas of the dwelling and/or structures to be served and the proposed STS and designated replacement areas including an indication of drainage features in these and surrounding areas.
 - (h) Designation of any easements, disturbed areas, or wooded areas within fifty feet of the proposed STS and replacement area, or other site characteristics or obstructions that may affect the installation or operation of the STS.
 - (i) Means of access for O&M equipment to service the STS.
- (6) Enlarged plan view drawings of the STS components if the site plan scale does not allow for sufficient detail.
- (7) Profile drawing showing elevations relative to surface grade sufficient to demonstrate compliance with this chapter including the invert elevations necessary to assess the hydraulic profile of STS components and any gravity or pumped discharge outlet elevations.
- (8) Plan and section views for the STS components and/or attachments of component and material specification information.
- (9) Installation and O&M instructions.

- (10) Plan note requiring that the STS installer consult with the designer regarding any intended changes to the plan and requiring installer/designer coordination on the provision of an accurate as-built record.
- (C) An as-built record shall be required to be completed by the registered installer for a completed STS installation or alteration as a condition of the installation or alteration permit and as a condition of registration in accordance with rule 29-04.1 of this Chapter. The as-built record does not substitute for a layout plan or design plan required in accordance with this rule. A designer shall provide oversight as necessary to assure that the registered installer prepares an as-built record documenting installation in accordance with a design plan prepared in accordance with paragraph (B) of this rule. An as-built record shall include:
- (1) A legible record on eight and a half inch by eleven inch or larger pages with copies provided to the owner and the board of health for inclusion in the permit file. Use of layout plan or design plan documents or as-built template forms may be acceptable.
 - (2) Any changes to the approved design plan or layout plan including distances from installed STS components to any items having applicable horizontal isolation distances. A change in location of an STS from that designated on a layout or design plan shall not be made without prior approval by the board of health and shall not violate horizontal isolation distances required by this chapter.
 - (3) A designated vertical and horizontal reference point or benchmark with its location marked at the site.
 - (4) Plan view drawing with elevations for installed STS components per the design plan or layout plan.
 - (5) Profile drawings with pipe and component elevations to confirm depths for hydraulic flow, freeze protection, and other related installation functions.
 - (6) Any additional information for components and materials may be required by the board of health including but not limited to manufacturer or supplier provision of component installation or O&M instructions and verification of compliance with any start-up procedures or aggregate specifications.
 - (7) The as-built record shall include a statement by the registered installer, and the designer as applicable in accordance with paragraph (B)(10) of this rule, indicating that the STS was installed in accordance with all applicable rules and plan specifications.
- (D) A registered installer completing an as-built record in compliance with this rule or requesting a board of health inspection required in accordance with paragraph (B)(5) of rule 29-09 of this Chapter shall avoid delays that could result in damage to STS components and affect the STS operational performance.

This rule addresses the flow and waste strength characteristics that will vary depending on the source of the sewage to be treated by an STS. Also considered in this rule are other conditions that may impact waste strength and flows to a building sewer. All such conditions need to be identified and understood prior to considering the design of an STS.

- (A) The owner or owner's agent shall provide information on the sources of sewage from the dwelling or structures to be served by an STS for the board of health determination of compliance with this rule. The board of health may require submission of building and plumbing plans including plumbing fixture details and other information as needed.
- (B) The daily design flow estimate for an STS shall comply with the following general provisions unless otherwise specified in this chapter:
 - (1) Except as provided in paragraphs (B)(3) and (B)(4) of this rule, the daily design flow for an HSTS shall be a peak flow of one hundred twenty gallons per day per bedroom.
 - (2) The daily design flow for an SFOSTS shall be determined in accordance with the design flow table established by OEPA. For an SFOSTS with periodic large daily flows that are stored to avoid exceeding the one thousand gallon per day treatment limit, the peak daily design flow shall be greater than the average of the daily flows and no actual daily flow shall exceed three thousand five hundred gallons.
 - (3) An increase in the daily design flow estimate for an STS shall be required by the board of health when there is an indication that the flows established in accordance with paragraph (B)(1) or (B)(2) of this rule will be exceeded. Any required increase in daily design flow shall be documented on the installation permit and operation permit.
 - (4) A reduction in daily design flow may be approved by the board of health when the information submitted indicates conditions that justify reduced flow such as limited fixtures, waterless toilets, in-house graywater recycling, or other circumstances that may warrant a reduction in daily design flow. Justification for a proposed reduction in daily design flow shall be included in the site review application and, if approved, shall be documented on the installation permit and operation permit.
- (D) Building sewers shall carry all sewage flow from the dwelling or structure, including graywater or other segregated sewage, and shall be connected to an STS in compliance with this chapter. Building sewers shall comply with the following:
 - (1) The elevation of a building sewer shall be aligned to accommodate the plan elevations of the subsequent STS components and shall be properly bedded in native soil or sand at a uniform grade of not less than one per cent or one eighth of an inch per foot.

- (2) A building sewer shall be a minimum of ten feet from any household water supply source and water service line, unless otherwise specified in applicable state or local regulations.
- (3) A building sewer shall be watertight, have a minimum diameter of four inches and be constructed of durable material conforming to ASTM D 2661 for ABS plastic pipe or ASTM D 2665 for PVC plastic pipe (type DWV) or equivalent. Pipe, fittings, and joining materials shall be chemically and physically compatible.
- (4) Cleanouts shall be required in a building sewer at any turn in the pipe greater than forty-five degrees and at the point a building sewer pipe exceeds one hundred feet and at every one hundred feet interval thereafter.
- (5) A building sewer shall allow for proper venting of STS components. Traps shall not be installed in a building sewer.
- (6) Casing or other form of protection shall be provided for any portion of a building sewer located in areas of vehicle traffic or when the building sewer is subject to other loads that may cause damage.

29-11 **Tanks, pumps, and controls.**

This rule addresses the STS components of tanks, pumps, and controls, including dosing provisions and electrical requirements. The purpose of the rule is to assure that tanks are watertight and structurally sound with adequate capacity, and to assure that tanks, pumps, and controls are selected, installed and maintained to meet intended performance over time.

- (A) Tanks subject to this chapter shall be manufactured to be watertight and structurally sound including septic tanks, other treatment component tanks, dosing tanks, pump vaults, HSTS holding tanks and privy vaults, or other applicable STS components.
 - (1) The board of health may require watertight testing of any STS component.
 - (2) Tank connections shall comply with the following specifications:
 - (a) Joint connections shall be watertight. Any joint sealants for concrete riser connections and tank seams shall be of a butyl rubber blend meeting material, manufacture, and physical requirements specifications of ASTM C 990.
 - (b) Inlet and outlet pipe connections to a tank shall be watertight. Connectors shall be provided by the tank manufacturer and shall meet material and manufacture specifications of ASTM C 923.
 - (3) The board of health may request manufacturer verification that any STS component is structurally sound. The structural integrity of an STS component may be demonstrated through the manufacturer's provision of component design information verifying structural capacity for expected

loads and conditions as certified by a professional engineer or through structural tests conducted in accordance with recognized standards for the component or component materials.

- (C) Septic tanks used in an STS shall be labeled with the manufacturer's name and the tank capacity on the top of each septic tank.

In two compartment tanks, the first compartment shall not be less than one half or more than two-thirds of the total capacity of the septic tank and the transfer port in the center wall shall ensure transfer of liquid from the clear zone only. When using two tanks, the septic tanks shall be connected in series, and if differing in size, the first tank in the series shall be the larger of the two.

- (2) The invert level of the inlet shall be not less than two inches above the liquid level of the tank. A vented inlet baffle or tee shall be fitted by the tank manufacturer to divert the incoming sewage downward and shall penetrate at least six inches below the liquid level but shall not be greater than that for the outlet device.
- (3) Unless otherwise specified in this chapter, the outlet shall be fitted by the tank manufacturer with a vented tee or baffle that shall extend not less than six inches above and not less than eighteen inches below the liquid level of the tank, and shall include an effluent filter device that retains solids greater than one sixteenth of an inch in size.
- (4) The septic tank shall have a liquid drawing depth of not less than four feet and the air gap between the liquid level and internal surface of the top of the tank shall be at least nine inches. An alternative means of compliance with this paragraph includes an air gap of at least fifteen percent of the liquid capacity by volume with the outlet baffle depth required in paragraph (C)(3) of this rule adjusted as needed to access the middle of the clear zone.
- (5) The septic tank access openings shall be located above the inlet and outlet of the tank and shall allow adequate space for pumping of the tank and inspection and maintenance. An access opening and cover shall be provided above the compartment wall in a two compartment tank unless the transfer port in the center wall is a pass through opening that allows a shared liquid level in both compartments. The cover or riser lid shall weigh a minimum of sixty-five pounds or be secured against unauthorized access.
- (6) The tank shall be installed with a minimum of two watertight risers extended to grade or above grade to provide access to the inlet and outlet of the tank. The connection of the riser to the tank and the connection of additional riser sections shall incorporate joint grooves or adapters to prevent lateral movement of the riser. Riser lids shall prevent infiltration of water and have secured covers.
- (7) The septic tank shall be installed, bedded, and backfilled in accordance with manufacturer specifications to assure the structural integrity of the tank. The tank shall be level. To allow for ease of access, the septic tank shall be

installed no deeper than two feet below grade unless the terms of the installation permit allow for greater septic tank depth and the tank is designed to withstand the additional load.

(D) Dosing tanks shall be designed and manufactured in accordance with the following:

- (1) Dosing tanks shall be easily accessible and have secured covers. All connections shall comply with applicable specifications under paragraphs (A)(2)(a) and (A)(2)(b) of this rule.
- (2) Dosing tanks shall be selected to accommodate the volume below maximum drawdown, the maximum design dose including any drainback, and the design portion of the reserve and surge capacities as applicable. The STS design shall provide a reserve capacity for high water alarm events that is not less than the daily design flow. If time dosed, the STS design shall accommodate combined reserve and surge capacities of not less than one hundred and fifty per cent of the daily design flow.
- (3) A septic tank second compartment or a second septic tank in series may be used for low volume dosing if all conditions under paragraph (D)(2) of this rule are met and a filtered step system or screened vault is used in lieu of, or in addition to, the effluent filter device required under paragraph (C)(3) of this rule.

(E) Pumps shall meet the following specifications:

- (1) A pump shall be rated for effluent service by the manufacturer and be a UL or CSA listed product.
- (2) The pump shall be properly sized to meet the design flow rate and total dynamic head requirements specified for the STS.
- (3) A quick disconnect shall be accessible in the pump discharge piping, with adequate lift attachments provided for removal and replacement of the pump and water level control assembly without having to either enter the dosing tank or pump the tank to lower the liquid level.

(F) A dosing siphon may only be used if the STS design requirements, including the design flow rate, dose capacity, and any pressure distribution parameters, can be met and maintained.

(G) Switches, controls, alarms, and electrical components shall be UL or CSA listed products, shall be installed in a manner easily accessible for routine monitoring and maintenance, and shall comply with the following:

- (1) Switches and controls shall accommodate the minimum and maximum dose capacities of the specified distribution component.
- (3) Controls shall have both audible and visual alarms. Alarms and controls shall be on a separate frequently used circuit from dedicated circuits for each pump or motor. The board of health may require that the alarm be

located in closer proximity to the dwelling or structure when the STS location is remote.

- (4) Control panels and alarms shall be mounted in an easily accessible location, shall be field-tested to assure compliance with the STS specifications, and shall include written instructions related to standard operation and alarm events.
- (H) The designer and/or installer shall assure that all electrical wiring meets the national electric code.
- (I) STS components described in this rule shall be installed, operated and maintained as specified by the manufacturer or the approved plan.

29-13 Soil absorption provisions.

This rule addresses technical standards for the siting and design of a soil absorption component. The rule assigns vertical separation distances to allow for treatment in the soil profile and provides options for sites where adequate depth of suitable soil is not available. This rule applies to all STS soil absorption components and includes provisions for applying soil depth credits, determining loading rates, and general design and installation requirements.

- (A) Soil absorption components shall maintain a vertical separation distance of at least one foot to any limiting condition with the exception of a seasonally high water table, bedrock, rock, and other fragments. A seasonally high water table shall require at least a zero feet of vertical separation distance. Bedrock, rock, and other fragments shall require at least four feet of vertical separation distance. The vertical separation distance is the depth from the infiltrative surface of the distribution system of the soil absorption component to a limiting condition.—
- (C) Soil depth credits for infiltrative surface elevation, pretreatment pathogen reduction and/or timed micro-dosed distribution shall be permitted in accordance with ODH special device approval and/or ODH special system design concurrence.
- (D) The soil absorption component area shall be of adequate size and configuration to disperse the effluent and prevent surface seepage. When sizing the soil absorption area the following requirements shall be met:
 - (1) Soil loading rates, including basal loading rates for sand fill systems, shall be based on effluent quality and on soil structure, texture, and consistence and shall be justified through reference to soil and site evaluation information and the loading rate estimates referenced in the appendix to this chapter.
 - (a) The selection of soil loading rates based on effluent quality shall be limited to a rate for septic tank effluent or a rate for effluent meeting the BOD₅/TSS standard.

- (b) The structure, texture, and consistence of the most limiting in situ soil layer within the vertical separation distance shall be used to determine a soil loading rate.
 - (2) Linear loading rate (LLR) estimates shall be used to determine the required length of the distribution system parallel to surface contours and shall be based on soil characteristics, land slope, and depth to limiting conditions. LLR estimates shall be justified through reference to soil and site evaluation information and the loading rate estimates referenced in the appendix to this chapter. If site and soil conditions indicate horizontal subsurface flow, the minimum horizontal isolation distances shall be increased in undisturbed areas around the perimeter or downslope of the soil absorption component as necessary for adequate dispersal and prevention of surface seepage.
- (E) Installation shall be conducted by a registered installer in a manner consistent with an approved plan to assure proper operation and future servicing or monitoring of the soil absorption component.
- (1) Soil moisture conditions shall be evaluated at the time of installation, and the excavation or preparation of the soil infiltration interface, such as a trench or basal area, shall not proceed when there is a risk of smearing or compaction as evidenced by a deformability test, commonly referred to as ribboning, or other means established by the board of health.
 - (2) Proprietary soil absorption components or alternative aggregate product approved by ODH and as specified in an approved design plan or layout plan shall be installed in accordance with the manufacturers installation instructions or product specifications provided these do not conflict with this chapter.
 - (3) Testing of any pressure distribution components shall be conducted prior to installation approval by the board of health. Flow rate and distal pressure or operating head shall meet specifications and a baseline shall be recorded for future performance monitoring.
 - (4) Baseline records and any soil absorption component O&M instructions shall be provided by the installer to both the owner and the board of health as a condition of installation approval.
- (F) STS soil absorption components shall be operated, maintained, and monitored as required by the operation permit issued by the board of health to assure compliance with the requirements of this chapter. A registered service provider offering a service contract for an STS that includes a soil absorption component along with the component or components targeted for service, shall also service and/or monitor the soil absorption component.

Loading rate estimates are provided in Table 1 of the following published documents available through the Small Scale Waste Management Project (SSWMP) at University of Wisconsin, Madison:

Hydraulic Wastewater Loading Rates to Soil. E. J. Tyler. 2001. Proceedings of the 9th International Symposium on Individual and Small Community Sewage Systems. ASAE. Saint Joseph, MI. P.80-86. http://www.wisc.edu/sswmp/SSWMP_4.43.pdf

Designing with Soil: Development and Use of a Wastewater Hydraulic Linear and Infiltration Loading rate Table. E. Jerry Tyler and Laura Kramer Kuns. 2000. Conference Proceedings. NOWRA. Grand Rapids, MI. http://www.wisc.edu/sswmp/SSWMP_4.42.pdf

The selection of a soil loading rate or basal loading rate (referred to as infiltration loading rate in Table 1) and a linear loading rate (referred to as hydraulic linear loading rate in Table 1) shall be justified in an HSTS layout plan or an STS design plan. The following shall be considered when utilizing the values provided in the references cited in this appendix:

1. Table 1 values assume a higher daily design flow than that established in this chapter. Daily design flows generally include a margin of safety and usually are specified as peak flows. Selected loading rate values may differ depending on the incorporation of other safety factors. Some designs may include a means to attenuate peak flows and limit the actual daily flow to a volume significantly less than the peak daily design flow.
2. Table 1 values are estimates. Many factors should be considered when selecting loading rates, starting with close attention to the information from the site and soil evaluation for the specific site selected for the soil absorption component. Other factors include but are not limited to the type of soil absorption component and its configuration and landscape position.
3. Some of the spaces in Table 1 have values of 0.0 for the infiltrative loading rate or are blank for hydraulic loading rate values. Table 1 also does not account for depths of less than eight inches to a limiting condition. This indicates that the site conditions that relate to these circumstances could be unsuitable or very challenging for STS performance. Very conservative loading rates should be selected for such site conditions when an STS is not otherwise prohibited by this chapter.

29-13.1 **Leaching trench requirements.**

This rule provides siting conditions for gravity fed leaching trench soil absorption components with either parallel or serial distribution. If preparing a leaching trench HSTS layout plan for an owner, a registered installer must meet the requirements in this rule. A layout plan would accompany the site review application for a site that has been evaluated and determined to have adequate area and suitable soils to accommodate leaching trenches.

- (A) Leaching trench soil absorption components are subject to this chapter including the following conditions:

- (1) Paragraph (B) of this rule shall only apply to leaching trench soil absorption components with gravity distribution from a septic tank or pretreatment component in compliance with this chapter.
- (2) Site modification and siting limitations for leaching trench soil absorption components include but are not limited to the following:
 - (a) Gradient drains may be used with leaching trench soil absorption components. A leaching trench soil absorption component shall be sited to avoid natural drainage features and depressions that may hold surface water. The plan for a leaching trench STS shall address surface water diversion as needed. An interceptor drain in compliance with paragraph (D) of rule 29-14 of this Chapter may be used upslope of a leaching trench soil absorption component.
 - (b) A leaching trench shall not be sited on slopes greater than fifteen percent unless the STS plan includes special installation criteria.
 - (c) Sites with large trees or numerous smaller trees are less desirable for leaching trenches and such conditions shall be avoided or shall be identified and addressed in the STS plan.
- (B) A registered installer providing a layout plan for a leaching trench HSTS shall comply with paragraph (A) of rule 29-09.1 of this Chapter and this paragraph. While a design plan prepared in accordance with paragraph (B) of rule 29-09.1 of this Chapter may vary from the requirements of this paragraph, a leaching trench soil absorption component layout plan prepared by a registered installer shall comply with the following:
 - (1) The soil loading rate and linear loading rate shall be determined from the site and soil evaluation information required in rule 29-08 of this Chapter. For the purpose of sizing, the soil loading rate shall apply to the trench length and the trench width specified for the leaching trench material or component. The trench shall have a minimum width of one foot and shall not exceed three feet in width. The linear loading rate shall be used to establish the minimum length of the soil absorption area parallel to the natural surface contours. This minimum length and the specified trench width shall be used to determine the number of leaching trenches needed to accommodate the daily design flow.
 - (3) A leaching trench bottom shall be level along its length and shall follow the natural surface contour maintaining the specified trench depth from the natural surface of the ground along the entire trench length. The trench depth shall be specified as a uniform depth of no more than thirty inches and no less than six inches from the natural surface of the ground and shall be determined by the vertical separation distance to the limiting conditions. For shallow trenches with sidewalls extending above grade, the layout plan shall specify the trench materials or components and any fill or backfill specifications.
 - (4) The minimum center to center distance between two trenches shall be six feet. This distance shall be increased on wooded sites and sites with slope

or irregular contours as necessary to avoid trees and to accommodate variations in the surface contour.

- (C) In addition to the applicable installation requirements of paragraph (E) of rule 29-13 of this Chapter and the as-built record required in paragraph (C) of rule 29-09.1 of this Chapter a leaching trench installation shall comply with the following requirements:
- (1) The full soil absorption area shall be free of any site disturbance. If any disturbance or damage has occurred, installation shall not proceed and the registered installer shall contact the owner and the board of health.
 - (2) Prior to excavation the registered installer shall check all elevations in the layout plan relative to the established benchmark including the surface contour and proposed bottom elevation of each trench and the flow line elevation of other STS components to assure proper flow through the system.
 - (3) When soil conditions are suitable, leaching trenches shall be installed to meet all of the specifications and requirements of this chapter. The as-built record shall provide sufficient documentation of excavated trench bottom and natural surface grade elevations to prove compliance. Leaching trench material shall be placed in a manner that prevents compaction of the infiltrative surface. Open trenches shall be avoided for any length of time to prevent impacts from sediments in runoff and windblown silt.
 - (4) Suitable backfill and cover material as required in this rule or proprietary component specifications shall not be compacted and shall allow for settling unless otherwise specified by the proprietary product installation instructions. The completed STS area shall be protected from erosion through surface water diversion and provision of suitable vegetative cover, mulching, or other specified means of protection.
- (D) In conjunction with any operation permit conditions or O&M management provisions required in this chapter or by the board of health, the O&M of a leaching trench STS shall include but is not limited to monitoring the liquid level or capacity of the leaching trench soil absorption component, management of flow diversion mechanisms for the purpose of resting portions of the soil absorption area, and checking for surface water infiltration or clear water flows from the dwelling or structures into the STS or onto the soil absorption area.

29-15 Privies and holding tanks.

The purpose of this rule is to provide for the storage of household sewage under limited circumstances. The board of health determines the conditions and circumstances under which a privy or holding tank may be permitted. It is expected that the use of privies and holding tanks will be infrequent and that holding tanks would generally be used for temporary periods, such as when sanitary sewers would be accessible within a short timeframe or the installation of a soil absorption component is delayed due to site conditions.

- (A) A holding tank or privy vault shall only be installed by a registered installer when authorized by the board of health in compliance with this chapter.
- (B) A privy shall only be permitted and installed as an HSTS under the following limited conditions when a variance has been granted by the board of health:
 - (1) All plumbing or drain connections to the privy vault are prohibited.
 - (2) The vault shall comply with the requirements of paragraph (A) of rule 29-11 of this Chapter and shall have a capacity of not less than five hundred gallons.
 - (3) The location of the vault shall comply with all isolation distance requirements set forth in paragraphs (E) and (F) of rule 29-07 of this Chapter.
 - (4) The superstructure shall be vented and minimize entry of insects or animals.
- (C) A holding tank shall only be permitted as an HSTS under the following limited conditions when a variance has been granted by the board of health.
 - (1) A holding tank shall comply with the requirements of paragraph (A) of rule 29-11 of this Chapter.
 - (2) A holding tank shall be located in compliance with paragraphs (E) and (F) of rule 29-07 of this Chapter and shall be easily accessible for frequent pumping.
 - (3) The size of the holding tank shall take into account the design flow criteria established under paragraph (A) of rule 29-10 of this Chapter. The board of health shall establish a required frequency of pumping for the tank as a condition of the variance. As an alternative to a scheduled pumping frequency, a high water alarm may be installed in compliance with paragraph (G)(4) of rule 29-11 of this Chapter.
- (D) The owner of a privy or holding tank shall have a registered septage hauler remove the contents of the vault or tank before the capacity is exceeded. As a condition of the operation permit required in paragraph (C) of rule 29-09 of this Chapter, the board of health shall require the contents of a privy or holding tank be removed in accordance with this rule and in compliance with any other operation permit or variance conditions established by the board of health.

29-16.2 Residuals management.

This rule includes the requirements for the management of STS residuals and the collection, transportation, disposal, and land application of domestic septage. The land application requirements in this rule are in addition to those in 40 C.F.R. 503 (as published in the July 1, 2005 Code of Federal Regulations).

- (A) The board of health shall assess the management of STS residuals generated within its jurisdiction, including adequate capacity for the disposal of STS residuals and/or land application of domestic septage within the area of its jurisdiction. Residuals management by the board of health shall include but is not limited to the following:
- (1) Notification to septage haulers registered by the board of health of available receiving locations for STS residuals and any prohibitions on the land application of domestic septage. Compliance with paragraph (B) of this rule is required when land application is permitted by the board of health.
 - (2) Provision of information to STS owners on recommended time lines for removal of residuals from STS components including more frequent removal when a garbage disposal is in use. Information may also be provided as applicable for the management of grease interceptor waste when the board of health has authority for SFOSTS.
 - (3) Requirements for reporting of residuals removal or tank pumping as applicable when required as a condition of an operation permit or as necessary to demonstrate compliance with this chapter.
- (B) Land application of domestic septage shall not create a public health nuisance and shall be performed for agronomic benefit in compliance with this paragraph and 40 C.F.R. 503 (as published in the July 1, 2005 Code of Federal Regulations) on sites approved by the board of health.
- (1) A land application site may be considered for approval by the board of health if the following is provided by the registered septage hauler:
 - (a) Written permission from the property owner to land apply septage and information on the presence of any field tile within the proposed land application site.
 - (b) Information from an order two soil survey indicating that the site has a slope no greater than eight per cent, has at least **four** feet of soil above ground water, bedrock, rock and other fragments, and is free of conditions that could allow land application of septage to cause contamination of ground water or run off to surface waters.
 - (c) Additional information required by the board of health concerning the site, the surrounding area, or the land application methods used by the registered septage hauler.
 - (2) The board of health shall conduct a site inspection prior to approval and shall enforce the prohibitions in this paragraph. Land application of domestic septage is prohibited within the sanitary isolation radius of a public water system well as determined in accordance with rule 3745-09-04 of the Administrative Code. Land application of domestic septage is also prohibited within an inner management zone of a drinking water source protection area determined to be highly susceptible to contamination by the OEPA source water protection and assessment program for a community or non-transient non-community public water system as defined in rule 3745-81-01 of the

Administrative Code. The area to be used for land application shall meet the following minimum horizontal isolation distances:

- (a) Two hundred feet from any dwelling, business, or location used for community gatherings or recreational purposes.
 - (b) Fifty feet from any property line.
 - (c) One hundred feet from any private water system, non-potable water well or water supply well used by a transient, non-community public water system as defined in rule 3745-81-01 of the Administrative Code.
 - (d) Fifty feet from any waters of the state excluding ground water but including grass waterways.
 - (e) Three hundred feet from a sinkhole or drainage well, or one hundred feet if a permanent vegetative buffer is maintained round the sinkhole or drainage well.
 - (f) Fifteen hundred feet from a public drinking water surface water intake.
- (3) The amount of septage applied to the site shall not exceed the annual nitrogen application rate required for the type of vegetation on the site. The soil shall be tested every two years for phosphorus and shall not exceed the recommended levels for agronomic loading rates. Any vegetation or crop grown on the application site shall be harvested, grazed, or otherwise removed in accordance with 40 C.F.R. 503 (as published in the July 1, 2005 Code of Federal Regulations).
- (4) Trash shall be screened and removed from the septage prior to land application and shall be dewatered prior to disposal as solid waste.
- (5) Septage shall be land applied in accordance with the following:
- (a) Septage shall not be permitted to pool or flow on the surface of the ground.
 - (b) Septage shall be applied in accordance with the vector attraction reduction requirements and the pathogen reduction requirements of 40 C.F.R. 503 (as published in the July 1, 2005 Code of Federal Regulations).
- (6) Records shall be maintained by the septage hauler for at least five years to demonstrate compliance with this rule and the requirements of 40 C.F.R. 503 (as published in the July 1, 2005 Code of Federal Regulations).