

ONSITE WASTEWATER SEPTIC SYSTEMS

CHAPTER 68
COMMERCIAL SEPTIC TANK CLEANERS

567—68.1(455B) Purpose and applicability. The purpose of this chapter is to implement Iowa Code subsection 455B.172(5) and 2011 Iowa Code Supplement section 455B.172A by providing standards for the commercial cleaning of and the disposal of waste from private sewage disposal systems and on-farm food processing operations and by providing licensing requirements and procedures. These rules govern the commercial cleaning of and the disposal of wastes from private sewage disposal systems and on-farm food processing operations.

[ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—68.2(455B) Definitions. For purposes of this chapter, the following terms shall have the meanings indicated:

“Cleaning” means removal of waste from private sewage disposal systems and other actions incidental to that removal.

“Commercial septic tank cleaner” means a person or firm engaged in the business of cleaning and disposing of waste from private sewage disposal systems, including a person or firm that owns and rents or leases portable toilets.

“Department” means the Iowa department of natural resources.

“Food commodity” means any commodity that is derived from an agricultural animal or crop, both as defined in Iowa Code section 717A.1, which is intended for human consumption in its raw or processed state.

1. A food commodity in its raw state for processing includes, but is not limited to, milk, eggs, vegetables, fruits, nuts, syrup, and honey.

2. A food commodity in its processed state includes, but is not limited to, dairy products, pastries, pies, and meat or poultry products.

“Holding tank for waste” means any receptacle for the retention or storage of waste pending removal for further treatment or disposal.

“On-farm processing operation” means any place located on a farm where the form or condition of a food commodity originating from that farm or another farm is changed or packaged for human consumption, including but not limited to a dairy, creamery, winery, distillery, cannery, bakery, or meat or poultry processor. “On-farm processing operation” does not include food commodities processed by a person exclusively for use by the person and members of the person’s household and the person’s nonpaying guests and employees.

“Private sewage disposal system” means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of fewer than 16 individuals on a continuing basis, including domestic waste, whether residential or nonresidential, but not including industrial waste of any flow rate except as provided for in 567—68.11(455B). “Private sewage disposal system” includes, but is not limited to, septic tanks as defined in 567—subrule 69.1(2); holding tanks for waste; and impervious vault toilets, portable toilets, and chemical toilets as described in 567—69.15(455B).

“Septage” means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

“Tank” means any container which is placed on a vehicle to transport waste removed from a private waste facility.

“Toilet unit” means a portable or fixed tank or vessel holding untreated human waste without secondary wastewater treatment which is emptied for disposal. “Toilet unit” does not include a portable or fixed tank or vessel holding untreated human waste that is part of a recreational vehicle or marine vessel.

“Vehicle” means a device used to transport a tank, including a trailer.

“Waste” means human or animal excreta, water, scum, sludge, septage, and grease solids from private sewage disposal.

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567—68.3(455B) Licensing requirements. Commercial septic tank cleaners must annually apply for and obtain a license from the department before engaging in the commercial cleaning of and disposal of septage from any private sewage disposal system in the state of Iowa. The license period will run from July 1 to June 30 of the following year. The owner of a septic tank may clean the owner's own tank without being licensed if all other requirements of this chapter are met.

567—68.4(455B) Licensing procedures.

68.4(1) *Application for license.* A commercial septic tank cleaner must apply for a license by completing a form provided by the department and submitting it with an annual waste management plan and the license fee to the Department of Natural Resources, License Bureau, Henry A. Wallace Building, 502 E. 9th Street, Des Moines, Iowa 50319. In the case of a commercial septic tank cleaner which is a corporation, partnership, association or any other business entity, the entity itself must apply as provided in this rule. The entity shall designate one person, such as a partner, officer, manager, supervisor, or other full-time employee, to act as its representative for the purpose of applying for a license. Individuals employed by a commercial septic tank cleaner business are not required to be licensed, but each cleaning unit (vehicle or tank) must have the license number (except for the year) displayed and a copy of the current license with the cleaning unit.

68.4(2) *Waste management plan.* The applicant must submit as a part of the application a septage disposal management plan. The plan must also be submitted to the county board of health in each county where septage is to be land-applied. The plan shall include:

- a. The volume of septage expected to be collected from private sewage disposal facilities.
- b. The volume of septage to be taken to permitted publicly owned treatment works.
- c. A letter of acceptance from any publicly operated treatment works where waste is proposed to be disposed.
- d. The location and area of all sites where septage is to be land-applied.
- e. The anticipated volume of septage applied to each site.
- f. The type of crop to be planted on each site and when the crop is to be planted.
- g. The type of application to be used at each site.
- h. A list of vehicles to be registered.
- i. Rescinded IAB 7/11/12, effective 8/15/12.

Allowance may be made in the plan for septage application on the property of the owner of the tank being pumped as long as disposal standards of this chapter are met. A license will be issued only after approval of the waste management plan. If the plan is not approved, it must be modified and resubmitted.

68.4(3) *License fee.* The application fee is \$150 per year for the first registered vehicle and \$50 for each additional vehicle. If the applicant intends to land-apply any septage during the year, there will be an additional application fee of \$7 per 1,000 gallons of septage to be land-applied per year. Land application fees shall be based on the previous year's records. First-time applicants shall pay a \$300 annual land application fee if they propose to land-apply. New license applicants will be charged monthly prorated fees until the next June 30.

68.4(4) *License renewal.* In order to remain valid, a commercial septic tank cleaner license must be renewed by June 30 of each year. Renewal application must be made on a form provided by the department and must be received by the department or postmarked at least 30 days prior to the expiration date.

68.4(5) *Change in ownership.* Within 30 days of the change in ownership of any commercial septic tank cleaner, the new owner shall furnish the department with the following information:

- a. Name of business and license number;
- b. Name, address, and telephone number of new owner; and
- c. Date the change in ownership took place and any change in the waste management plan. The license will transfer with the ownership with no additional fee due until the next renewal date.

68.4(6) *Change in address.* Within 30 days of any change in the address or location of the business, information regarding such change must be reported to the department.

68.4(7) Alteration of waste management plan. An amended waste management plan must be submitted before any new property for land application not listed on the existing plan is used or waste is taken to a publicly operated treatment works not listed on the plan.

[ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—68.5(455B) Suspension, revocation and denial of license.

68.5(1) Basis for suspension, revocation, and denial. The department may suspend, revoke, or deny a commercial septic tank cleaner license for any of the following reasons:

- a. A material misstatement of facts in a license application.
- b. Failure to provide the adequate license fee.
- c. Failure to provide and adhere to an approved waste management plan.
- d. Failure to satisfy the obligations of a commercial septic tank cleaner and the standards as provided in rules 567—68.6(455B), 567—68.9(455B), and 567—68.10(455B).
- e. Failure to pay any fines assessed under 68.5(2).

68.5(2) Civil penalties. The department may assess civil penalties not to exceed \$250 for violations of this rule. Each day that the violation continues constitutes a separate offense.

68.5(3) Appeal. A commercial septic tank cleaner may appeal the suspension, revocation, or denial of a license under the provisions of 567—Chapter 7.

68.5(4) Reinstatement. In the case of a denial, revocation, or suspension pursuant to paragraph 68.5(1) "b" or "e," the department may immediately reinstate or issue a license after receipt of the requisite fee or fine and confirmation that the commercial septic tank cleaner is fulfilling the requirements of rules 567—68.6(455B) and 567—68.9(455B). In case of a denial, revocation or suspension pursuant to paragraph 68.5(1) "a," "c," or "d," the department may reinstate or issue a license no sooner than 60 days after the denial, revocation, or suspension if the department is satisfied that the commercial septic tank cleaner has corrected the deficiency and will comply with departmental rules in the future.

567—68.6(455B) Licensee's obligations.

68.6(1) Supervision. The licensee shall provide supervision for the removal and disposal of septage from private sewage disposal systems.

68.6(2) Standards. The licensee shall meet the standards established in this chapter for the cleaning of and disposal of septage from private sewage disposal systems.

68.6(3) Records. The licensee shall maintain records of private sewage disposal systems cleaned and the location, method of septage disposal, and volume of septage disposed of for each trip. Such records shall be maintained for a period of five years and shall be made readily available upon request by the administrative authority.

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567—68.7(455B) County obligations. The county boards of health shall enforce the standards and licensing requirements contained in this chapter and other referenced rules relating to the cleaning of private sewage disposal systems and disposal of septage from such facilities.

567—68.8(455B) Application sites and equipment inspections. All application sites specified on the waste management plan shall be inspected annually by an agent approved by the department to ensure that the sites meet the requirements for septage disposal and are properly managed. All tank trucks and related storage and handling facilities for septage shall be inspected annually to ensure compliance with these rules. The department may contract with other entities such as the local county health department to carry out the inspections. However, the department shall retain concurrent authority to determine inspection requirements.

567—68.9(455B) Standards for commercial cleaning of private sewage disposal systems.

68.9(1) Vehicles, tanks and equipment. For all vehicles, tanks and equipment used in the commercial cleaning of private sewage disposal systems, the licensee shall:

- a. Prevent the dripping, falling, spilling, leaking, or discharging of waste onto roads, rights-of-way or other public properties.
- b. Provide the equipment necessary for proper cleaning of private sewage disposal systems.
- c. Ensure proper construction and repair of cleaning equipment to allow easy cleaning and maintenance in an essentially rust-free and sanitary condition and appearance.
- d. If septage is to be land-applied, provide a mechanism for properly mixing lime with the septage or a means to incorporate or inject the septage.

68.9(2) Septic tank cleaning. Tanks shall be emptied of all waste. Sludge may be loosened by pumping liquid back into the tank or adding dilution water. The tank does not have to be washed out with fresh water; however, no more than four inches of waste shall be left in the bottom.

68.9(3) Miscellaneous.

- a. Any tanks or equipment used for hauling septage from private sewage disposal systems shall not be used for hauling hazardous or toxic wastes as defined in 567—Chapter 131 or other wastes detrimental to land application or wastewater treatment plants and shall not be used in a manner that would contaminate a potable water supply or endanger the food chain or public health.
- b. Pumps and associated piping shall be installed with watertight connections to prevent leakage.
- c. Agitation capability for use in cleaning private sewage disposal systems to disperse sludge and scum into the liquid for proper cleaning shall be provided.
- d. All vehicles shall display the license number (except for the year) assigned to the commercial septic tank cleaner with three-inch or larger letters and numbers on the side of the tank or vehicle.
- e. The name and address of the license holder shall be prominently displayed on the side of the tank or vehicle in letters at least three inches high.
- f. A direct connection shall not be made between a potable water source and the tank or equipment on the vehicle.

567—68.10(455B) Standards for disposal. Disposal of septage from private sewage disposal systems shall be carried out in accordance with the rules established by the department.

68.10(1) Waste from toilet units shall be disposed of by discharge to a publicly owned treatment works or other permitted wastewater treatment system with the treatment works owner's approval.

68.10(2) Septage from septic tanks or other types of private sewage disposal systems that normally discharge effluent for further treatment (such as mechanical/aerobic treatment tanks, siphon tanks or distribution boxes) shall be disposed of by utilizing one or more of the following methods:

- a. Septage shall be discharged to a publicly owned treatment works or other permitted wastewater treatment system with the treatment works owner's approval.
- b. Septage shall be discharged to permitted septage lagoons or septage drying beds with the septage system owner's approval.
- c. Septage shall be land-applied in accordance with the following requirements:
 - (1) The maximum application rate is 30,000 gallons of septage per acre of cropland per 365-day period. The nitrogen application rate shall be no more than is utilized by the crop. A crop capable of using the nitrogen applied must be grown and harvested from the site after application of the maximum annual allocation or, at a minimum, every third year.
 - (2) The following site restrictions shall be met when septage is applied to land:
 1. Septage shall not be applied to a lawn or a home garden.
 2. Septage shall not be applied to land where there is a bedrock layer or seasonal high water table within 3 feet of the soil surface. Determination of these confining layers may be ascertained by consulting the soil types noted in the county USDA soil surveys.
 3. Land application sites shall have soil pH maintained above 6.0, unless crops prefer soils with lower pH conditions. If the soil pH is below 6.0, it is acceptable to use agricultural lime to increase the pH to an acceptable level. Soil pH shall be measured and reported as part of the annual waste management plan.
 4. The septage shall not be applied to ground that has greater than 9 percent slope.

5. If application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope and application rates of less than 2,500 gallons per acre per day.

6. Septage shall not be applied to land that is 35 feet or less from an open waterway. If septage is applied within 200 feet of a stream, lake, sinkhole or tile line surface intake located downgradient of the land application site, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application.

7. If the septage is applied to land subject to flooding more frequently than once in ten years, the septage shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the department.

8. Septage shall not be applied within 750 feet of an occupied residence, except the residence of the owner of the septic tank that was pumped, nor within 500 feet of a well.

9. Crop harvesting restrictions:

- Food crops with harvested parts that touch the septage/soil mixture and are totally above ground shall not be harvested for 14 months after application of domestic septage.

- Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of domestic septage.

- Animal feed, fiber, and those food crops with harvested parts that do not touch the soil surface shall not be harvested for 30 days after application of the domestic septage. Animals shall not be allowed to graze on the land for 30 days after application of septage.

(3) One of the following vector attraction reduction requirements shall be met when septage is applied to land:

1. Septage shall be injected below the surface of the land. No significant amount of the septage shall be present on the land surface within one hour after the septage is injected.

2. Septage applied to the land surface shall be incorporated into the soil within six hours after application to or placement on the land.

3. Septage shall be stabilized by adding and thoroughly mixing sufficient alkaline material such as hydrated or quick lime to produce a mixture with a pH of 12. For example, adding and thoroughly mixing approximately 50 pounds of lime with each 1,000 gallons of septage is usually sufficient to bring the pH to 12 for 30 minutes. A minimum of 30 minutes of contact time shall be provided after mixing the lime with the septage prior to applying to land. Each container of septage shall be monitored for compliance by testing, using a pH meter or litmus paper, two representative samples of the batch of lime-treated domestic septage taken a minimum of 30 minutes apart to verify that the pH remains at 12 or greater for the minimum 30-minute time period.

(4) When septage is applied to land, the person who applies the septage shall develop the following information and shall retain the information for five years:

1. The location, by either street address or latitude and longitude, of each site on which septage is applied.

2. The number of acres and precise application area in each site on which septage is applied.

3. The gallons of septage applied each time.

4. The total gallons applied at each site to date for the year.

5. The date and time septage is applied to each site.

6. The rate, in gallons per acre, at which septage is applied to each site.

7. A description of how the vector attraction reduction requirements are met.

8. The following certification statement shall be provided with the records when the records are submitted to or requested by the department:

"I certify, under penalty of law, that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

(5) Other methods of stabilization may be acceptable if shown to be equivalent to 68.10(2) "c"(3)"3" above.

d. Septage shall be discharged (with owner approval) to a permitted sanitary landfill in accordance with 567—Chapters 102 and 103 and the following requirements:

(1) Septage shall be stabilized by adding and thoroughly mixing sufficient lime to produce a mixture with a pH of 12.

(2) A minimum of 30 minutes of contact time shall be provided after mixing the lime with the septage prior to discharging to the landfill.

[ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—68.11(455B) Standards for disposal of on-farm food processing wastewater. Disposal of on-farm food processing wastewater shall be carried out by utilizing one or more of the following methods:

68.11(1) On-farm food processing wastewater shall be discharged to a publicly owned treatment works or other permitted wastewater treatment system with the treatment works owner's approval.

68.11(2) On-farm food processing wastewater shall be discharged to a subsurface soil absorption system that is in compliance with 567—Chapter 69 and the United States Environmental Protection Agency's Underground Injection Control Program or other applicable regulations.

68.11(3) On-farm food processing wastewater shall be discharged through a disposal system that meets all of the following:

a. The disposal system is located on the same site as the on-farm processing operation.

b. The disposal system is constructed in conformance with a permit issued by the department in accordance with Iowa Code section 455B.183, implemented by 567—Chapter 64.

c. For a disposal system that discharges wastewater to a water of the United States, the system must be operated in conformance with a National Pollutant Discharge Elimination System permit issued by the department under Iowa Code section 455B.197.

68.11(4) Land application.

a. On-farm food processing wastewater may be land-applied if all of the following apply:

(1) The volume of wastewater produced by the on-farm processing operation is less than 1,500 gallons per day.

(2) The application rate does not exceed 30,000 gallons per acre per year.

(3) The application rate does not exceed 1,500 gallons per acre per day.

b. On-farm food processing wastewater shall be land-applied in accordance with 567—68.10(455B).

c. On-farm food processing operations that meet the requirements for land application in 68.11(4) shall not be required to obtain an operation permit as prescribed in 567—64.3(455B).

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These rules are intended to implement Iowa Code section 455B.172.

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CHAPTER 69
PRIVATE SEWAGE DISPOSAL SYSTEMS
[Prior to 7/1/83, Health Dept. Ch 12]
[Prior to 11/19/86, Water, Air and Waste Management[900] Ch 69]

567—69.1(455B) General.

69.1(1) Applicability. These rules are applicable only to private sewage disposal systems.

69.1(2) Definitions.

“Administrative authority” means the department and the local board of health as authorized by Iowa Code section 455B.172 and Iowa Code chapter 137.

“Aerobic treatment unit” means a disposal system employing bacterial action which is maintained by the utilization of air or oxygen and includes the aeration plant and equipment and the method of final effluent disposal.

“Approved” means accepted or acceptable under an applicable specification stated or cited in these rules or accepted by the administrative authority as suitable for the proposed use.

“Area drain” means a drain installed to collect surface or storm water from an open area of a building or property.

“Building drain” means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the building sewer.

“Building sewer” means that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a private sewage disposal system conveying the drainage of a building site.

“Chamber system” means a buried structure, typically with a domed or arched top, providing at least a 6-inch height of sidewall soil exposure below the invert of the inlet and creating a covered open space above a buried soil infiltrative surface.

“Conventional,” when used in reference to sewage treatment, means a soil absorption system involving a series of 2- to 3-foot-wide trenches filled with gravel 1 foot deep, containing a 4-inch-diameter rigid pipe or other alternative trench technologies to convey the sewage effluent.

“Distribution box” means a structure designed to accomplish the equal distribution of wastewater to two or more soil absorption trenches.

“Domestic sewage” or *“domestic wastewater”* means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.

“Drip irrigation” means a form of subsurface soil absorption using shallow pressure distribution with low-pressure drip emitters.

“Drop box” means a structure used to divert wastewater flow into a soil absorption trench. When the trench is filled to a set level, the drop box then allows any additional wastewater not absorbed by that trench to flow to the next drop box or soil absorption trench.

“Dwelling” means any house or place used or intended to be used by humans as a place of residence.

“Expanded polystyrene (EPS) aggregate systems” means cylinders comprised of expanded polystyrene (EPS) synthetic aggregate contained in high-strength polyethylene netting. The cylinders are 12 inches in diameter and are produced both with and without a distribution pipe. Cylinders may be configured in a trench, bed, at-grade and mound applications to obtain the desired width, height and length. Cylinders containing a distribution pipe shall be connected end-to-end with an internal coupling device.

“Fill soil” means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year.

“Foundation drain” means that portion of a building drainage system which is provided to drain groundwater, not including any wastewater, from the outside of the foundation or over or under the basement floor and which is not connected to the building drain.

"Free access filter" means an intermittent sand filter constructed within the natural soil or above the ground surface, with access to the distributor pipes and top of the filter media for maintenance and media replacement.

"Gravel" means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the department of transportation is acceptable.

"Gravelless pipe system" means a soil absorption system comprised of 10-inch-diameter corrugated plastic pipe, perforated with holes on a 120-degree arc centered on the bottom, wrapped in a sheath of geotextile filter wrap, and installed level in a trench without gravel bedding or cover.

"Grease interceptor" means a watertight device designed to intercept and retain or remove grease and fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) a facility.

"Intermittent sand filter" means a bed of granular materials 24 to 36 inches deep underlain by graded gravel and collecting tile. Wastewater is applied intermittently to the surface of the bed through distribution pipes, and the bed is underdrained to collect and discharge the final effluent. Uniform distribution is normally obtained by dosing so as to utilize the entire surface of the bed. Filters may be designed to provide free access (open filters) or may be buried in the ground (buried filters or subsurface sand filters).

"Lake" means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

"Limiting layer" means bedrock, seasonally high groundwater level, or any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch.

"Mound system" means an aboveground soil absorption system used to disperse effluent from septic tanks in cases in which a seasonally high water table, high bedrock conditions, slowly permeable soils, or limited land areas prevent conventional subsurface soil absorption systems.

"Packed bed media filter" means a watertight structure filled with uniformly sized media that is normally placed over an underdrain system. The wastewater is dosed onto the surface of the media through a distribution network and is allowed to percolate through the media to the underdrain system. The underdrain collects the filtrate and discharges the final effluent.

"Percolation test" means a falling water level procedure used to determine the ability of soils to absorb primary treated wastewater. (See Appendix B.)

"Pond" means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

"Pretreated effluent" means septic tank effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for biochemical oxygen demand (BOD) of 30 mg/L and total suspended solids (TSS) of 30 mg/L.

"Primary treatment unit" means a unit or system used to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment.

"Private sewage disposal system" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than 16 individuals on a continuing basis, including domestic waste, whether residential or nonresidential, but not including industrial waste of any flow rate except as provided for in 567—68.11(455B). "Private sewage disposal system" includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets and portable toilets.

"Professional soil analysis" means an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate. A person performing a professional soil analysis shall demonstrate training and experience in soil morphology, such as testing absorption qualities of soil by the physical examination of the soil's color, mottling, texture, structure, topography, and hillslope position.

"Qualified sampler," for the purposes of collecting compliance effluent samples required under NPDES General Permit No. 4, means one of the following persons: a city or county environmental

health staff person; an Iowa-certified wastewater treatment operator; or an individual who has received training approved by the department to conduct effluent sampling.

"Roof drain" means a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system.

"Secondary treatment system" means a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No. 4. Examples include soil absorption systems, media filters, aerobic treatment units, or other systems providing equivalent treatment.

"Septage" means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

"Septic tank" means a watertight structure into which wastewater is discharged for solids separation and digestion (referred to as part of the closed portion of the treatment system).

"Sewage sludge" means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. "Sewage sludge" includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum septage, portable toilet pumpings, Type III marine device pumpings as defined in 33 CFR Part 159, and sewage sludge products. "Sewage sludge" does not include grit, screenings, or ash generated during the incineration of sewage sludge.

"Stream" means any watercourse listed as a "designated use segment" in rule 567—61.3(455B) which includes any watercourse that maintains flow throughout the year or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

"Subsurface sand filter" means a system in which the effluent from the primary treatment unit is discharged into perforated pipes, filtered through a layer of sand, and collected by lower perforated pipes for discharge to the surface or to a subsurface soil absorption system. A subsurface sand filter is an intermittent sand filter that is placed within the ground and provided with a natural topsoil cover over the crown of the distribution pipes.

"Subsurface soil absorption system" means a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

69.1(3) General regulations.

a. Connections to approved sewer system.

(1) No private sewage disposal system shall be installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. The POTW may be considered as unavailable when such POTW, or any building or any exterior drainage facility connected thereto, is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such POTW. Final determination of availability shall be made by the administrative authority.

(2) When a POTW becomes available within 200 feet, any building then served by a private sewage disposal system shall be connected to said POTW within a time frame or under conditions set by the administrative authority.

(3) When a POTW is not available, every building wherein persons reside, congregate, or are employed shall be provided with an approved private sewage disposal system.

(4) If a building is to be connected to an existing private sewage disposal system, that existing system shall meet the standards of these rules and be appropriately sized.

b. Discharge restrictions. It is prohibited to discharge any wastewater from private sewage disposal systems (except as permitted in this chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, or land drain tile, to the groundwater, or to the surface of the ground. Under no conditions shall effluent from private sewage disposal systems be discharged to any abandoned well, agricultural drainage well or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by the construction of a system in compliance with the requirements of these rules.

c. Construction or alteration. All private sewage disposal systems constructed or altered after March 18, 2009, shall comply with this chapter. Alteration includes any changes that affect the treatment or disposal of the waste. Repair of existing components that does not change the treatment or disposal of the waste is exempt. However, the discharge restrictions in paragraph "b" above apply.

d. Abandonment. Private sewage disposal systems that are abandoned shall have the septic tank pumped, the tank lid crushed into the tank, and the tank filled with sand or soil.

69.1(4) Construction permit required. No private sewage disposal system shall be installed or altered as described in paragraph 69.1(3)"c" unless a construction permit issued by the administrative authority has been obtained. The installation shall be in accordance with these rules.

69.1(5) Permit by rule. This chapter is intended to act as a permit by rule for private sewage disposal systems. Activities in compliance with this chapter are permitted by the director for purposes of compliance with sections 455B.183 and 455B.186 of the Code of Iowa.
[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.2(455B) Time of transfer inspections.

69.2(1) Inspections required. Prior to any transfer of ownership of a building where a person resides, congregates, or is employed that is served by a private sewage disposal system, the sewage disposal system serving the building shall be inspected. In the event that weather or other temporary physical conditions prevent the certified inspection from being conducted, the buyer shall execute and submit a binding agreement with the county board of health to conduct a certified inspection of the private sewage disposal system at the earliest practicable time and to be responsible for any required modifications to the private sewage disposal system as identified by the certified inspection. In the event that all parties agree the existing private sewage disposal system will not pass inspection, the buyer may forego the inspection and execute a binding agreement with the local board of health to install a private sewage disposal system compliant with this rule at a time specified by the administrative authority. The inspection requirement applies to all types of ownership transfers not specifically exempted, including when a seller-financed real estate contract is signed.

a. Inspection exemptions. The following types of real estate transactions are exempt from the inspection requirement. However, the discharge restrictions in paragraph 69.1(3)"b" shall always apply.

(1) A transfer made pursuant to a court order, including but not limited to a transfer under Iowa Code chapter 633 or 633A, the execution of a judgment, the foreclosure of a real estate mortgage pursuant to Iowa Code chapter 654, the forfeiture of a real estate contract under Iowa Code chapter 656, a transfer by a trustee in bankruptcy, a transfer by eminent domain, or a transfer resulting from a decree for specific performance.

(2) A transfer to a mortgagee by a mortgagor or successor in interest who is in default, a transfer by a mortgagee who has acquired real property as a result of a deed in lieu of foreclosure or has acquired real property under Iowa Code chapter 654 or 655A, or a transfer back to a mortgagor exercising a right of first refusal pursuant to Iowa Code section 654.16A.

(3) A transfer by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust.

(4) A transfer between joint tenants or tenants in common.

(5) A transfer made to a spouse or to a person in the lineal line of consanguinity of a person making the transfer.

(6) A transfer between spouses resulting from a decree of dissolution of marriage, a decree of legal separation, or a property settlement agreement which is incidental to the decree, including a decree ordered pursuant to Iowa Code chapter 598.

(7) A transfer in which the transferee intends to demolish or raze the building.

(8) A transfer of property with a system that was installed not more than two years prior to the date of the transfer.

(9) A deed arising from a partition proceeding.

(10) A tax sale deed issued by the county treasurer.

(11) A transfer for which consideration is \$500 or less.

(12) A deed between a family corporation, partnership, limited partnership, limited liability partnership, or limited liability company as defined in Iowa Code section 428A.2, subsection 15, and its stockholders, partners, or members for the purpose of transferring real property in an incorporation or a corporate dissolution or in the organization or dissolution of a partnership, limited partnership, limited liability partnership, or limited liability company under the laws of this state, where the deed is given for no actual consideration other than for shares or for debt securities of the family corporation, partnership, limited partnership, limited liability partnership, or limited liability company.

b. Inspection criteria. If a private sewage disposal system is failing to ensure effective wastewater treatment or is otherwise improperly functioning, the private sewage disposal system shall be renovated to meet current construction standards, as adopted by the department, either by the seller or, by agreement within a reasonable time period as determined by the administrative authority, by the buyer. If the private sewage disposal system is properly treating the wastewater and not creating an unsanitary condition in the environment at the time of inspection, the system is not required to meet current construction standards. However, the discharge restrictions in paragraph 69.1(3) "b" shall always apply.

c. Inspection validity. An inspection is valid for a period of two years for any ownership transfers during that period.

69.2(2) Certified time of transfer inspectors. Inspections shall be conducted by an inspector certified by the department. In order to be a certified time of transfer inspector, an individual shall have met the experience requirements, have successfully completed the inspection course and examination, and have been issued a current certificate by the department in accordance with this rule.

a. Experience requirements. In order to be certified by taking the inspection course and examination only, an individual must have at least two years' experience in the operation, installation, inspection, design or maintenance of private sewage disposal systems. Individuals lacking this experience must complete additional coursework before attending the inspection course with testing. The additional courses shall include, but not be limited to, "Onsite Basics 101" and "Alternative Systems" offered by the Onsite Wastewater Training Center of Iowa or courses determined by the department to be equivalent.

b. Examination application. A person wishing to take the examination necessary to become a certified inspector shall complete the Certified Time of Transfer Inspector Application, Form 542-0192. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate pertinent educational background, training and past experience in providing private sewage disposal services. The completed application and the application fee shall be sent to Time of Transfer Inspector Certification, Iowa Department of Natural Resources, 502 E. 9th Street, Des Moines, Iowa 50319-0034. An application for examination must be received by the department at least 30 days prior to the date of the examination.

c. Application evaluation. The director may designate department personnel or an experience review committee to evaluate all applications for examination. A notification of the application review decision will be sent to the applicant prior to the examination date. The applicant shall have the right to dispute the application evaluation.

d. Certification. Applicants who successfully meet the department's requirements will receive a written certification from the department. The department shall maintain a current listing of certified time of transfer inspectors. The list shall be available on the department's Web site and shall be provided to county boards of health and other interested parties.

e. Fees. The following nonrefundable fees apply:

(1) Examination fee. The fee for each examination shall be \$50.

(2) Certification fee. The fee for inspector certification shall be \$75 for each one-half year of a two-year period from the date of issuance of the certification to June 30 of the next even-numbered year.

(3) Certification renewal fee. The fee for certification renewal shall be \$300 for the two-year period.

(4) Penalty fee. Rescinded IAB 7/11/12, effective 8/15/12.

f. Renewal period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to maintain certification.

g. Renewal rights. Inspectors seeking renewal more than 45 days following expiration of the certificate shall lose the right to renew under the normal renewal process and must retake the inspector class and test to become recertified.

69.2(3) Continuing education.

a. CEU requirements. Continuing education units (CEUs) must be earned during each two-year period from April 1 of the even-numbered year until March 30 of the next even-numbered year. A certified inspector must earn 1.2 CEUs or 12 contact hours during each two-year period. Newly certified time of transfer inspectors (previously uncertified) who become certified after April 1 of a two-year period will not be required to earn CEUs until the next two-year period.

b. CEU approval. All activities for which CEU credit will be granted must be approved by an accredited college or university, an issuing agency, or the department and shall be related to private sewage disposal systems.

c. CEU reporting. It is the personal responsibility of the certified inspector to maintain a written record of and to notify the department of the CEUs earned during the period. The CEUs earned during the period shall be shown on the application for renewal.

69.2(4) Certificate renewal.

a. Certification period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to stay effective.

b. Application for renewal. Renewal applications shall be submitted 60 days before the expiration date of the current certificate. Late applications or incomplete applications may lead to revocation of the certificate. Renewal of certificates will only be granted to inspectors in good standing.

c. CEUs. Only those certified inspectors fulfilling the continuing education requirements before the end of each two-year period (March 31) will be allowed to renew their certificates. The certificates of inspectors not fulfilling the continuing education requirements shall expire on June 30 of the even-numbered year.

d. Renewal fee. A renewal fee in the amount of \$300 must accompany the renewal application in order for the certificate to be renewed. Failure to submit the renewal fee on time may lead to revocation of the certificate.

69.2(5) Obligations of certified inspectors.

a. Certified inspectors shall conduct time of transfer inspections according to this rule.

b. Following an inspection, the inspection form and any attachments shall be provided to the county environmental health department for enforcement of any follow-up mandatory improvements to the system, to the department for record, and to the person ordering the inspection.

69.2(6) Disciplinary action.

a. Reasons for disciplinary action. Disciplinary action may be taken against a certified time of transfer inspector on any of the grounds specified in Iowa Code section 455B.219 and the following more specific grounds.

(1) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified inspector.

(2) Failure to submit required records of inspection or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

(4) Fraud in procuring a certificate.

(5) Professional incompetence.

(6) Knowingly making misleading, deceptive, untrue or fraudulent representations in the practice of the certified inspector's profession or engaging in unethical conduct or practice harmful or detrimental to the public. Proof of actual injury need not be established.

(7) Habitual intoxication or addiction to the use of drugs.

(8) Conviction of a felony related to the profession or occupation of the certified inspector. A copy of the record of conviction or plea of guilty shall be conclusive evidence.

- (9) Fraud in representations as to skill or ability.
- (10) Use of untruthful or improbable statements in advertisements.
- (11) Willful or repeated violations of the provisions of Iowa Code chapter 455B, division III.

b. Disciplinary sanctions. Disciplinary sanctions may include the following:

- (1) Revocation of a certificate. Revocation may be permanent without chance of recertification or for a specified period of time.
- (2) Partial revocation or suspension. Revocation or suspension of the practice of a particular aspect of the inspection of private sewage disposal systems may be imposed.
- (3) Probation. Probation under specified conditions relevant to the specific grounds for disciplinary action may be imposed.
- (4) Additional education, training, and examination requirements. Additional education, training, and reexamination may be required as a condition of reinstatement.
- (5) Penalties. Civil penalties not to exceed \$1,000 may be assessed for causes identified in paragraph 69.2(6)“a” through the issuance of an administrative order.

c. Procedure.

(1) Initiation of disciplinary action. The department staff shall initiate a disciplinary action by conducting such lawful investigation as is necessary to establish a legal and factual basis for action. Written notice shall be given to a certified inspector against whom disciplinary action is being considered. The notice shall provide the certified inspector with 20 days to present any relevant facts and to indicate the certified inspector’s position in the matter.

(2) A certified inspector’s failure to communicate facts and positions relevant to the disciplinary investigation by the required date may be considered by the department when determining appropriate disciplinary action.

(3) If an agreement as to appropriate disciplinary action, if any, can be reached between the department and the certified inspector, a written stipulation and settlement shall be entered into. The stipulation and settlement shall recite the basic facts and violations alleged, any facts established by the certified inspector, and the reasons for the particular sanction imposed.

(4) If an agreement as to appropriate disciplinary action cannot be reached, the department may initiate formal disciplinary procedures through the issuance of a letter imposing such disciplinary sanction as the department has deemed appropriate. Service shall be provided by certified mail.

(5) A certified inspector may appeal any disciplinary sanction imposed by the department by filing a notice of appeal with the director within 30 days of receipt of the letter imposing disciplinary sanction. If an appeal is filed by the certified inspector, contested case proceedings shall be initiated by the department in accordance with 567—Chapter 7 and Iowa Code chapter 17A.

(6) Reinstatement of revoked certificates. Upon revocation of a certificate, application for certification may be allowed after two years from the date of revocation unless otherwise specified in accordance with paragraph 69.2(6)“b.” Any such applicant must meet all eligibility requirements pursuant to subrule 69.2(2) and successfully complete an examination and be certified in the same manner as a new applicant.

69.2(7) Procedures for noncompliance with child support order. Upon receipt of a certification of noncompliance with a child support obligation as provided in Iowa Code section 252J.7, the department will initiate procedures to deny an application for certification or renewal or to suspend a certification in accordance with Iowa Code section 252J.8(4). The department shall issue to the person by restricted, certified mail a notice of its intent to deny or suspend inspector certification based on receipt of a certificate of noncompliance. The suspension or denial shall be effective 30 days after receipt of the notice unless the person provides the department with a withdrawal of the certificate of noncompliance from the child support recovery unit as provided in Iowa Code section 252J.8(4)“c.” Pursuant to Iowa Code section 252J.8(4), the person does not have a right to a hearing before the department to contest the denial or suspension action under this subrule but may seek a hearing in district court in accordance with Iowa Code section 252J.9.

69.2(8) Inspection procedures. Inspections shall be conducted as follows:

a. Inspection form. The inspection shall be conducted using DNR Form 542-0191, Time of Transfer Inspection Report.

b. Record search. Prior to an inspection, the certified inspector shall contact the administrative authority to obtain any permits, as-built drawings or other information that may be available concerning the system being inspected. Information may also be obtained from service providers or the homeowner. If an as-built drawing is available, the system inspection shall verify that drawing. If no as-built drawing is available, the inspector shall develop an as-built drawing as part of the inspection.

c. Septic tank. At the time of inspection, any septic tank(s) existing as part of the sewage disposal system shall be opened and have the contents pumped out and disposed of according to 567—Chapter 68. In the alternative, the owner may provide evidence of the septic tank's being properly pumped out within three years prior to the inspection by a commercial septic tank cleaner licensed by the department which shall include documentation of the size and condition of the tank and its components at the time of such occurrence. If the septic tank(s) is opened, the condition of the tank and its components shall be documented and included in the final report.

d. Pumps and pump chambers. Pump chambers or vaults shall be opened for inspection, and the pump shall be tested to ensure proper operation.

e. Secondary treatment. Proof that a secondary treatment system is in place must be provided. This proof may include, but is not limited to:

(1) Opening a distribution box or uncovering a header pipe for a soil absorption system. Existing distribution boxes shall be opened for inspection.

(2) Verification of the existence of a sand filter by locating the vents and discharge pipe.

(3) Locating and opening the lid(s) of an advanced treatment unit.

(4) Absorption fields shall be probed to determine their condition. The condition of the fields shall be noted on the inspection report. The condition of the absorption field may also be determined with a hydraulic loading test.

f. Discharging systems. An effluent test shall be performed on any legally discharging private sewage disposal system. The effluent quality shall meet the requirements of NPDES General Permit No. 4 for CBOD₅ and TSS. The test results shall be included in the inspection report.

(1) The certified inspector shall report the location of the discharge point of a legally discharging private sewage disposal system and the discharge point's proximity to a perennial stream or drainage tile.

(2) Rescinded IAB 7/11/12, effective 8/15/12.

g. Packaged treatment units. An advanced treatment unit, such as an aerobic treatment unit, textile filter, peat filter or fixed activated sludge treatment system, shall be inspected according to the manufacturer's recommendations.

h. Other systems and system components. Private sewage disposal systems not mentioned above shall be inspected for code compliance, and an effluent sample shall be taken if applicable. Any components of the private sewage disposal system not mentioned above shall be inspected for proper function. Examples of other components include, but are not limited to, effluent screens, tertiary treatment systems, disinfection devices, alarms, control boxes and timers.

i. Inspection reports. Following an inspection, the inspection form and a narrative report describing the condition of the private sewage disposal system at the time of the inspection shall be provided to the county environmental health department, to the department for record, and to the person who ordered the inspection.

The certified inspector shall provide the completed inspection report to the county environmental health office within ten business days of the inspection date.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.3(455B) Site analysis.

69.3(1) Site evaluation. A site evaluation shall be conducted by the administrative authority prior to issuance of a construction permit. Consideration shall be given to, but not be limited to, the impact of the following: topography; drainage ways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed

and abandoned water wells; amount of available area for the installation of the system; evidence of unstable ground; alteration (cutting, filling, compacting) of existing soil profile; and soil characteristics determined from a soil analysis, percolation tests, and soil survey maps if available.

a. Soil survey reports. During a site analysis and investigation, maximum use should be made of soil survey reports, which are available from USDA Natural Resources Conservation Service. A general identification of the percolation potential can be made from soil map units in Iowa. Verification of the soil permeability of the specific site must be performed.

b. Final inspections. All newly constructed private sewage disposal systems shall be inspected by the administrative authority before the system is backfilled or at a time prescribed by the administrative authority. A final as-built drawing shall be made as part of the final inspection.

c. Onsite wastewater tracking system. All pertinent information including, but not limited to, the site address, owner, type, date of installation, and as-built drawing of the private sewage disposal system shall be entered into the department's Web-based onsite wastewater tracking system.

69.3(2) Minimum distances. All private sewage disposal systems shall be located in accordance with the minimum distances shown in Table I.

Table I

Minimum Distance in Feet From	Closed Portion of Treatment System ⁽¹⁾	Open Portion of Treatment System ⁽²⁾
Private water supply well	50	100
Shallow public water supply well ⁽³⁾	200	400
Deep public water supply well ⁽⁴⁾	100	200
Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless a mutual easement is signed and recorded)	10	10
Other type of subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

⁽¹⁾ Includes septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets.

⁽²⁾ Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters and waste stabilization ponds.

⁽³⁾ "Shallow well" means a well located and constructed in such a manner that there is not a continuous layer of low-permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

⁽⁴⁾ "Deep well" means a well located and constructed in such a manner that there is a continuous layer of low-permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.4(455B) Requirements when effluent is discharged into surface water. All discharges from private sewage disposal systems which are discharged into, or have the potential to reach, any designated waters of the state or subsurface drainage tile shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the department of natural resources, as referenced in 567—Chapter 64. Prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by NPDES General Permit No. 4 shall be submitted to the department. Systems covered by this permit must meet all applicable requirements listed in the permit, including effluent sampling and monitoring.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.5(455B) Requirements when effluent is discharged above the ground surface.

69.5(1) All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation.

69.5(2) Private sewage disposal systems that require a maintenance contract shall be inspected by a manufacturer’s certified technician.

69.5(3) Private sewage disposal systems that do not require a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected, and pumped if needed. A record of the inspection and any tank pumping shall be maintained and be made available to the administrative authority upon request.

69.5(4) No private sewage disposal system shall discharge to a state-owned natural or artificial lake, an outstanding Iowa water or an outstanding national water as defined in 567—subrule 61.2(2) unless authorized by an individual NPDES permit.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.6(455B) Requirements when effluent is discharged into the soil. No septage or wastewater shall be discharged into the soil except in compliance with the requirements contained in this chapter.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.7(455B) Building sewers.

69.7(1) Location and construction.

a. The types of construction and distances as shown in Table II shall be maintained for the protection of water supplies. The distances shall be considered minimum distances and shall be increased where possible to provide better protection.

Table II

Sewer Construction	Distance in Feet From Well Water Supply	
	Private	Public
1. Schedule 40 plastic pipe (or SDR 26 or stronger) with approved-type joints or cast-iron soil pipe (extra heavy or centrifugally cast) with joints of preformed gaskets.	10	25
2. Sewer pipe installed to remain watertight and root-proof.	50	75

b. Under no circumstances shall a well suction line pass under a building sewer line.

69.7(2) Requirements for building sewers.

a. *Type.* Building sewers used to conduct wastewater from a building to the primary treatment unit of a private sewage disposal system shall be constructed of Schedule 40 plastic pipe (or SDR 26 or stronger) with solvent-weld or bell-and-gasket-type joints or shall be constructed of cast iron with integral bell-and-gasket-type joints.

b. *Size.* Such building sewers shall not be less than 4 inches in diameter.

c. *Grade.* Such building sewers shall be laid to the following minimum grades:

- 4-inch sewer 12 inches per 100 feet
- 6-inch sewer 8 inches per 100 feet

69.7(3) Cleanouts.

a. *Spacing.* A cleanout shall be provided where the building sewer leaves the house and at least every 100 feet downstream to allow for rodding.

b. *Change of direction or grade.* An accessible cleanout shall be provided at each change of direction or grade if the change exceeds 45 degrees.

69.7(4) Grease interceptors.

a. Applicability. Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.

b. Installation. Grease interceptors shall be installed on a separate building sewer serving kitchen flows into which the grease will be discharged. The discharge from the grease interceptor must flow to a properly designed septic tank or to a building sewer and then to the septic tank.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.8(455B) Primary treatment—septic tanks.**69.8(1) General requirements.**

a. Septic tank required. Every private sewage disposal system shall have as a primary treatment unit a septic tank as described in this rule. All wastewater from the facility serviced shall discharge into the septic tank (except as noted in paragraph “d” below).

b. Easements. No septic tank shall be located upon property under ownership different from the ownership of that property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the proper administrative authority.

c. Effluent discharge requirements. All septic tank effluent shall discharge into a secondary treatment system in compliance with this chapter or into another system approved by the administrative authority according to rule 567—69.21(455B).

d. Prohibited wastes. Septic tanks shall not be used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains.

69.8(2) Capacity.

a. Minimum capacity. The minimum liquid-holding capacity shall be as specified in the following table (capacity may be obtained by using one or more tanks):

Up to and including 3-bedroom homes	1,250 gal.
4-bedroom homes	1,500 gal.
5-bedroom homes	1,750 gal.
6-bedroom homes	2,000 gal.

b. Other domestic waste systems. In the event that an installation serves more than a 6-bedroom home or its equivalent, or serves a facility other than a house and serves the equivalent of fewer than 16 individuals on a continuing basis, approval of septic tank capacity and design must be obtained from the administrative authority. Minimum septic tank liquid-holding capacity shall be two times the estimated daily sewage flow.

c. Determination of flow rates. Residential wastewater flows are based on 150 gallons per bedroom per day. For wastewater flow rates for nonresidential and commercial domestic waste applications serving the equivalent of fewer than 16 individuals on a continuing basis, refer to Appendix A.

d. Minimum depth. The minimum liquid-holding depth in any compartment shall be 40 inches.

e. Maximum depth. The maximum liquid-holding depth for calculating capacity of the tank shall not exceed 6½ feet.

f. Dimensions. The interior length of a septic tank should not be less than 5 feet and shall be at least 1½ times the width (larger length-to-width ratios are preferred). No tank or compartment shall have an inside width of less than 2 feet. The minimum inside diameter of a vertical cylindrical septic tank shall be 5 feet.

69.8(3) Construction details.

a. Fill soil. Any septic tank placed in fill soil shall be placed upon a level, stable base that will not settle.

b. Compartmentalization. Every septic tank shall be divided into two compartments (compartmentalization may be obtained by using more than one tank) as follows:

(1) The capacity of the influent compartment shall not be less than one-half or more than two-thirds of the total tank capacity.

(2) The capacity of the effluent compartment shall not be less than one-third or more than one-half of the total tank capacity.

c. *Inlet/outlet.* The invert of the inlet pipe shall be a minimum of 2 inches and a maximum of 4 inches higher than the invert of the outlet pipe.

d. *Baffles.*

(1) Four-inch-diameter Schedule 40 plastic pipe tees shall be used as inlet and outlet baffles. Inlet tees shall extend at least 6 inches above and 8 inches below the liquid level of the tank. The inlet tee shall extend below the liquid level no more than 20 percent of the liquid depth. The outlet tee shall extend above the liquid level a distance of at least 6 inches and below the liquid level a distance of at least 15 inches but no more than 30 percent of the liquid depth. A minimum 2-inch clearance between the top of the inlet and outlet tees and the bottom of the tank lid shall be provided. A horizontal separation of at least 36 inches shall be provided between the inlet baffle and the outlet baffle in each compartment. Outlet baffles shall be fitted with, or replaced by, an approved effluent screen. All effluent screens shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 46, including appendices, or other equivalent testing as determined by the department. Effluent screens require periodic inspection and cleaning to ensure their continued proper operation.

(2) A horizontal slot 4 inches by 6 inches, or two suitably spaced 4-inch-diameter holes in the tank partition, may be used instead of a tee or baffle. The top of the slot or holes shall be located below the water level a distance of one-third the liquid depth. A ventilation hole or slot, located at least 8 inches above the liquid level, shall be provided in the partition.

e. *Access.*

(1) Access necessary for adequate inspection, operation, and maintenance must be provided to all parts of septic tanks.

(2) An access opening shall be provided at each end of the tank over the inlet and outlet. These openings shall be at least 18 inches in the smallest dimension.

(3) Watertight risers with a minimum diameter of 18 inches shall be installed to bring the access openings to the ground surface. Risers shall be secured using stainless steel fasteners of sufficient complexity, locking devices, concrete lids of sufficient weight, or another device approved by the administrative authority to deter tampering.

69.8(4) Construction.

a. *Materials.* Tanks shall be constructed of watertight poured concrete, fiberglass or plastic resistant to corrosion or decay and shall be designed so that the tanks, whether full or empty, will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures. Metal tanks are prohibited.

b. *Watertight tanks.* Tanks shall be watertight. Prior to approving a tank, the administrative authority may ask for proof that a tank is watertight.

c. *Dividers.* Tank divider walls and divider wall supports shall be constructed of heavy, durable plastic, fiberglass, concrete or other similar corrosion-resistant materials approved by the administrative authority.

d. *Inlet and outlet ports.* Inlet and outlet ports of pipe shall be constructed of heavy, durable Schedule 40 PVC plastic sanitary tees or other similar approved corrosion-resistant material.

69.8(5) Wall thickness. Minimum wall thickness for tanks shall conform to applicable IAPMO¹ standards or the following specifications:

Poured concrete	6 inches thick
Poured concrete, reinforced	4 inches thick
Special concrete mix, vibrated and reinforced	2.5 inches thick
Fiberglass or plastic	.25 inches thick

¹International Association of Plumbing and Mechanical Officials

69.8(6) Concrete specifications. Concrete used in precast septic tank construction shall have a maximum water-to-cement ratio of 0.45. Cement content shall be at least 650 pounds per cubic yard. Minimum compressive strength (f_c) shall be 4,000 psi (28 Mpa) at 28 days of age. The use of ASTM C150 Type II cement or the addition of silica fume or Class F fly ash is recommended.

69.8(7) Tank bottoms. Septic tank bottoms shall conform to the specifications set forth in subrule 69.8(5) for septic tank walls, except that special mix concrete shall be at least 3 inches thick.

69.8(8) Tank tops. Concrete or masonry septic tank tops shall be a minimum of 4 inches in thickness and shall be reinforced with $\frac{3}{8}$ -inch reinforcing rods in a 6-inch grid or equivalent. Fiberglass or plastic tank tops shall be a minimum of $\frac{1}{4}$ inch in thickness and shall have reinforcing and be of ribbed construction.

69.8(9) Reinforcing steel placement. The concrete cover for reinforcing bars, mats, or fabric shall not be less than 1 inch.

69.8(10) Bedding. Fiberglass or plastic tanks shall be bedded according to the manufacturer's specifications. Provisions should be made to prevent flotation of the tanks when they are empty.

69.8(11) Connecting pipes.

a. *Minimum diameter.* The pipes connecting septic tanks installed in series and at least the first 5 feet of pipe on the effluent side of the last tank shall be a minimum of 4-inch-diameter Schedule 40 plastic.

b. *Tank connections.* All inlet and outlet connections at the septic tanks shall be made by self-sealing gaskets cast into the concrete or formed into the plastic or fiberglass.

c. *Joints.* All joints in connecting Schedule 40 plastic pipe shall be approved plastic pipe connections such as solvent-welded or compression-type gaskets.

d. *Pipe in unstable ground.* Schedule 40 plastic pipe shall be used extending across excavations or unstable ground to at least 2 feet beyond the point where the original ground has not been disturbed in septic tank installations. If the excavation spanned is more than 2 feet wide, it must be filled with sand or compacted fill to provide a firm bed for the pipe. The first 12 inches of backfill over the pipe shall be applied in thin layers, using material free from stones, boulders, large frozen chunks of earth or any similar material that would damage or break the pipe.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.9(455B) Secondary treatment—subsurface soil absorption systems. Subsurface soil absorption systems are the best available treatment technology and shall always be used where possible.

69.9(1) General requirements.

a. *Locations.* All subsurface soil absorption systems shall be located on the property to maximize the vertical separation distance from the bottom of the absorption trench to the seasonal high groundwater level, bedrock, hardpan or other confining layer, but under no circumstances shall this vertical separation be less than 3 feet.

b. *Soil evaluation.* A percolation test or professional soil analysis is required before any soil absorption system is installed.

(1) *Percolation test.* The percolation test procedure is outlined in Appendix B.

(2) *Alternative analysis.* If a professional soil analysis is performed, soil characteristics such as soil content, color, texture, and structure shall be used to determine a loading rate.

(3) *Acceptable percolation rate.* An area is deemed suitable for conventional soil absorption if the average percolation rate is 60 minutes per inch or less and greater than 1 minute per inch. However, if an alternative soil absorption system is proposed (e.g., mound system), then the percolation test should be extended to determine whether a percolation rate of 120 minutes per inch is achieved.

(4) *Confining layer determination.* An additional test hole 6 feet in depth or to rock, whichever occurs first, shall be provided in the center of the proposed absorption area to determine the location of groundwater, rock formations or other confining layers. This 6-foot test hole may be augered the same size as the percolation test holes or may be made with a soil probe.

c. *Groundwater.* If the seasonal high groundwater level is present within 3 feet of the trench bottom final grade and cannot be successfully lowered by subsurface tile drainage, the area shall

be classified as unsuitable for the installation of a standard subsurface soil absorption system. The administrative authority shall be consulted to determine an acceptable alternative method of wastewater treatment.

d. Site limitations. In situations where specific location or site characteristics would appear to prohibit installation of a soil absorption system, design modifications which could overcome such limitations may be approved by the administrative authority. Examples of such modifications could be the installation of subsurface drainage, use of shallow or at-grade trenches, drip irrigation, or mound systems or use of pretreated effluent.

e. Prohibited drainage. Roof, foundation and storm drains shall not discharge into or upon subsurface absorption systems. Nothing shall enter the subsurface absorption system which does not first pass through the septic tank.

f. Prohibited construction. There shall be no construction of any kind, including driveways, covering the septic tank, distribution box or absorption field of a private sewage disposal system. Vehicle access should be infrequent, primarily limited to vegetation maintenance.

g. Driveway crossings. Connecting lines under driveways shall be constructed of Schedule 40 plastic pipe or equivalent and shall be protected from freezing.

h. Easements. No wastewater shall be discharged upon any property under ownership different from the ownership of the property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the administrative authority.

69.9(2) Sizing requirements.

a. Percolation and soil loading charts. Table IIIa provides a correlation between percolation rates and soil loading rates. Table IIIb provides soil loading rates based upon soil texture and structure. Table IIIa and Table IIIb shall be used to determine the appropriate soil loading rate. Table IIIc specifies linear feet of lateral trenches required based upon the soil loading rate, wastewater flow rate, and trench width. Table III d provides a method to determine the size of an absorption bed. Absorption beds (Table III d) shall not be used except when the lot size limitations preclude the installation of a lateral trench system. Further details concerning limitations of this alternative shall be obtained from the administrative authority before authorization for installation is requested.

b. Unsuitable absorption. Conventional subsurface soil absorption trenches shall not be installed in soils that have a percolation rate less than 1 minute per inch or greater than 60 minutes per inch. Plans for an alternative method of wastewater treatment shall be submitted to the administrative authority for approval prior to construction.

Table IIIa
Maximum Soil Application Rates Based Upon Percolation Rates
Monthly Averages

Percolation Rate (minutes per inch)	Septic Tank Effluent ⁽¹⁾	Pretreated Effluent
	BOD ₅ 30 mg/L - 220 mg/L TSS 30 mg/L - 150 mg/L (gals/sq ft/day) ⁽²⁾	BOD ₅ ≤ 30 mg/L TSS ≤ 30 mg/L (gals/sq ft/day)
0 to 5	1.2	1.6
Fine sands	0.5	0.9
6 to 10	0.8 - 0.6	1.2
11 to 29	0.6 - 0.5	0.9
30 to 45	0.5 - 0.4	0.7
46 to 60	0.4 - 0.2	0.5
61 to 120	0.0	0.3
Greater than 120	0.0	0.0

NOTE: "BOD" means biochemical oxygen demand. "TSS" means total suspended solids.

⁽¹⁾ Typical waste strengths for domestic waste. Pretreatment should be considered for waste of higher strength.

⁽²⁾ Percolation rates and soil loading rates do not precisely correlate; therefore, a range is provided.

Table IIIb

Maximum Soil Loading Rates Based Upon Soil Evaluations in Gallons per Square Foot per Day (gal/ft²/day) for Septic Tank Effluent. Values in () are for secondary treated effluent.

Soil Texture	Single Grain	Massive	Structure Granular, Blocky, or Prismatic			Platy	
			Weak	Moderate	Strong	Weak	Moderate to Strong
Coarse sand and gravel	1.2 (1.6)	X	1.2 (1.6)	X	X	1.2 (1.6)	X
Medium sands	0.7 (1.4)	X	0.7 (1.4)	X	X	0.7 (1.4)	X
Fine sands	0.5 (0.9)	X	0.5 (0.9)	X	X	0.5 (0.9)	X
Very fine sands*	0.3 (0.5)	X	0.3 (0.5)	X	X	0.3 (0.5)	X
Sandy loam	X	0.3 (0.5)	0.45 (0.7)	0.6 (1.1)	0.65 (1.2)	0.4 (0.6)	0.3 (0.5)
Loam	X	0.4 (0.6)	0.45 (0.7)	0.5 (0.8)	0.55 (0.8)	0.4 (0.6)	0.3 (0.5)
Silty loam	X	NS	0.4 (0.6)	0.5 (0.8)	0.5 (0.8)	0.3 (0.5)	0.2 (0.3)
Clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	0.1 (0.2)	0.1 (0.2)
Silty clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	NS	NS

NOTE: "X" means not found in nature. "NS" means not suitable for soil absorption.

* Flow rates are difficult to determine for some very fine sands; experience may provide better information and flow rates.

Table IIIc

Minimum Length of Absorption Trenches in Feet

	2 bedroom 300 gal.		3 bedroom 450 gal.		4 bedroom 600 gal.		5 bedroom 750 gal.		6 bedroom 900 gal.	
	2'	3'	2'	3'	2'	3'	2'	3'	2'	3'
Width of trench in feet	2'	3'	2'	3'	2'	3'	2'	3'	2'	3'
Soil loading rate gal/ft ²										
0.1	Not suitable for soil absorption trenches									
0.2	750	500	1125*	750	1500*	1000*	1875*	1250*	2250*	1500*
0.3	500	333	750	500	1000*	666	1250*	833*	1500*	1000*
0.4	375	250	562	375	750	500	938*	625	1125*	750
0.5	300	200	450	300	600	400	750	500	900*	600
0.6	250	167	375	250	500	333	625	417	750	500
0.7	214	143	321	214	428	286	536	357	643	429
0.8	188	125	281	188	375	250	469	312	562	375
0.9	167	111	250	167	333	222	417	278	500	333
1.0	150	100	225	150	300	200	375	250	450	300
1.1	136	91	205	136	273	182	341	227	409	273
1.2	125	84	188	125	250	167	313	208	375	250

* Requires pressure distribution (pump)

Table III
Alternative Option for Use of Absorption Bed*

Percolation Rate min./inch	Absorption Area/Bedroom sq. ft.	Loading Rate/Day gal./sq. ft.
1 – 5	300	.5
6 – 15	400	.375
16 – 30	600	.25

*Absorption beds may only be used when site space restrictions require and shall not be used when the soil percolation rate exceeds 30 min./inch.

69.9(3) Construction details for all soil absorption trenches.

a. Depth. Soil absorption trenches shall not exceed 36 inches in depth unless authorized by the administrative authority, but a shallower trench bottom depth of 18 to 24 inches is recommended. Not less than 6 inches of porous soil shall be provided over the laterals. The minimum separation between trench bottom and groundwater, rock formation or other confining layers shall be 36 inches even if extra rock is used under the pipe.

b. Length. No soil absorption trench shall be greater than 100 feet long.

c. Separation distance. At least 6 feet of undisturbed soil shall be left between each trench edge on level sites. The steeper the slope of the ground, the greater the separation distance should be. Two feet of separation distance should be added for each 5 percent increase in slope from level.

d. Grade. The trench bottom should be constructed level from end to end. On sloping ground, the trench shall follow a uniform land contour to maintain a minimum soil cover of 6 inches and a level trench bottom.

e. Compaction. There shall be minimum use or traffic of heavy equipment on the area proposed for soil absorption. In addition, it is prohibited to use heavy equipment on the bottom of the trenches in the absorption area.

f. Fill soil. Soil absorption systems shall not be installed in fill soil. Disturbed soils which have stabilized for at least one year shall require a recent percolation test or soil analysis.

g. Bearing strength. Soil absorption systems shall be designed to carry loadings to meet AASHTO H-10 standards.

h. Soil smearing. Soils with significant clay content should not be worked when wet. If soil moisture causes sidewall smearing, the installation should be discontinued until conditions improve.

69.9(4) Gravel systems.

a. Gravel. A minimum of 6 inches of clean, washed river gravel, free of clay and clay coatings, shall be laid below the distribution pipe, and enough gravel shall be used to cover the pipe. This gravel shall be of such a size that 100 percent of the gravel will pass a 2½-inch screen and 100 percent will be retained on a ¾-inch screen. Limestone or crushed rock is not recommended for soil absorption systems; however, if used, it shall meet the following criteria:

(1) *Abrasion loss.* The percent wear, as determined in accordance with the AASHTO T 96, Grading C, shall not exceed 40 percent.

(2) *Freeze and thaw loss.* When gravel is subjected to the freezing and thawing test, Iowa DOT Materials Laboratory Test Method 211, Method A, the percentage loss shall not exceed 10 percent.

(3) *Absorption.* The percent absorption, determined in accordance with Iowa DOT Materials Laboratory Test Method 202, shall not exceed 3 percent.

b. Trench width. Soil absorption trenches for gravel systems shall be a minimum of 24 inches and a maximum of 36 inches in width at the bottom of the trench.

c. Grade. The distribution pipes shall be laid with a minimum grade of 2 inches per 100 feet of run and a maximum grade of 6 inches per 100 feet of run, with a preference given to the lesser slope.

d. Pipe. Distribution pipe shall be PVC rigid plastic meeting ASTM Standard 2729 or other suitable material approved by the administrative authority. The inside diameter shall be not less than 4 inches, with perforations at least ½ inch and no more than ¾ inch in diameter, spaced no more than 40

inches apart. Two rows of perforations shall be provided located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom centerline). The end of the pipe in each trench shall be sealed with a watertight cap unless, on a level site, a footer is installed connecting the trenches together. Coiled perforated plastic pipe shall not be used.

e. Gravel cover. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the gravel from the soil backfill.

69.9(5) Gravelless pipe systems.

a. Application. Gravelless subsurface soil absorption systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, these systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. Installation. The manufacturer's specifications and installation procedures shall be adhered to.

c. Material. The 10-inch I.D. corrugated polyethylene tubing used in gravelless systems shall meet the requirements of ASTM F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing.

d. Perforations. Two rows of perforations shall be located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom centerline). Perforations shall be cleanly cut into each inner corrugation along the length of the tubing and should be staggered so that there is only one hole in each corrugation.

e. Top marking. The tubing should be visibly marked to indicate the top of the pipe.

f. Filter wrap. All gravelless drainfield pipe shall be encased, at the point of manufacture, with a geotextile filter wrap specific to this purpose.

g. Trench width. The trench width for the gravelless system shall be 24 inches.

h. Length of trench. The total length of absorption trench for a 10-inch gravelless pipe installation shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench.

69.9(6) Chamber systems.

a. Application. Chamber systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, chamber systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. Installation. The manufacturer's specifications and installation procedures shall be adhered to.

c. Length of trench. The total length of soil absorption trench for chambers 15 to 22 inches wide shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench. Chambers 33 inches wide or greater shall be sized as given in Table IIIc for a 3-foot-wide conventional soil absorption trench.

d. Sidewall. The chambers shall have at least 6 inches of sidewall effluent soil exposure height below the invert of the inlet.

69.9(7) Expanded polystyrene (EPS) aggregate system.

a. Application. EPS aggregate systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, EPS aggregate systems shall not be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. Installation. The manufacturer's specifications and installation procedures shall be adhered to.

c. Length of trench. The total length of soil absorption trench for 12-inch EPS aggregate bundles shall be the same as given in Table IIIc for a 2-foot-wide conventional soil absorption trench. Twelve-inch EPS aggregate bundles 33 inches wide or greater shall be sized as given in Table IIIc for a 3-foot-wide conventional soil absorption trench.

d. Gravel cover. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the EPS aggregate from the soil backfill.

69.9(8) Gravity distribution. Dosing is always recommended and preferred to improve distribution, improve treatment and extend the life of the system.

a. On a hillside, septic tank effluent may be serially loaded to the soil absorption trenches by drop boxes or overflow piping (rigid sewer pipe). Otherwise, effluent shall be distributed evenly to all trenches by use of a distribution box or commercial distribution regulator approved by the administrative authority.

b. Design. When a distribution box is used, it shall be of proper design and installed with separate watertight headers leading from the distribution box to each lateral. Header pipes shall be rigid PVC plastic pipe meeting ASTM Standard 2729 or equivalent.

c. Height of outlets. The distribution box shall have outlets at the same level at least 4 inches above the bottom of the box to provide a minimum of 4 inches of water retention in the box.

d. Baffles. There shall be a pipe tee or baffle at the inlet to break the water flow.

e. Unused outlets. All unused outlet holes in the box shall be securely closed.

f. Materials. All distribution boxes shall be constructed of corrosion-resistant rigid plastic materials.

g. Level outlets. All outlets of the distribution box shall be made level. A 4-inch cap with an offset hole approximately 2½ inches in diameter shall be installed on each outlet pipe. These caps shall be rotated until all outlets discharge at the same elevation. Equivalent leveling devices may be approved by the county board of health.

h. Equal length required. The soil absorption area serviced by each outlet of the distribution box shall be equal.

69.9(9) Dosing systems.

a. Pump systems.

(1) Pump and pit requirements. In the event the effluent from the septic tank outlet cannot be discharged by gravity and the proper lateral depths still maintained, the effluent shall discharge into a watertight pump pit with an inside diameter of not less than 24 inches, equipped with a tight-fitting manhole cover at grade level. The pump shall be of a submersible type of corrosion-resistant material.

(2) Pump setting. The pump shall be installed in the pump pit in a manner that ensures ease of service and protection from frost and settled sludge. The pump shall be set to provide a dosing frequency of approximately four times a day based on the maximum design flow. No onsite electrical connections shall be located in the pump pit. These connections shall be located in an exterior weatherproof box.

(3) Pressure line size. The pressure line from the pump to the point of discharge shall not be smaller than the outlet of the pump it serves.

(4) Drainage. Pressure lines shall be installed to provide total drainage between dosing to prevent freezing or shall be buried below frost level up to the distribution box.

(5) High water alarm. Pump pits shall be equipped with a sensor set to detect if the water level rises above the design high water level when the pump fails. This sensor shall activate an auditory or visual alarm to alert the homeowner that repairs are required.

(6) Discharge point. The effluent shall discharge under pressure into a distribution box or may be distributed by small-diameter pipes throughout the entire absorption field.

b. Dosing siphons. Dosing siphons may also be used. The manufacturer's specifications shall be adhered to for installation. Similar dosing volumes and frequencies are recommended. Dosing siphons require periodic cleaning to ensure their continued proper operation.

c. Filtered pump vaults. A filtered pump vault is a device that is installed in a septic tank and houses a pump and screens effluent until it is pumped. Filtered pump vaults may be used when dosing volume is less than 50 gallons. Filtered pump vaults require periodic inspection and cleaning to ensure their continued proper operation.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.10(455B) Mound systems.**69.10(1) General requirements.**

a. Mound systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

b. Mound systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

c. Mound systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 120 minutes per inch occur within 12 inches of natural grade or where creviced bedrock occurs within 20 inches of natural grade.

d. Mound systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. Mound systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the sand in the mound.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 50 feet on the down-gradient side of the mound when the mound is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the mound is in use.

g. Specifications given in these rules for mounds are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a mound system.

69.10(2) Material for mound fill.

a. The mound shall be constructed using clean, medium-textured sand, sometimes referred to as concrete sand. The sand size shall be such that at least 25 percent by weight shall have a diameter between 2.0 and 0.25 mm; less than 35 percent by weight, a diameter between 0.25 and 0.05 mm; and less than 5 percent by weight, a diameter between 0.05 and 0.002 mm.

b. Rock fragments larger than 1/16 inch (2.0 mm) shall not exceed 15 percent by weight of the material used for mound fill.

69.10(3) Construction details.

a. There shall be a minimum of 3 feet of fill material and undisturbed naturally occurring soils between the bottom of the washed gravel and the highest elevation of the limiting conditions defined in paragraph 69.10(1)“c.”

b. Gravel shall meet the requirements specified in paragraph 69.9(4)“a.”

c. From 1 to 2 feet of medium-textured sand (depending upon the underlying soil depth, see paragraph 69.10(3)“a”) must be placed between the bottom of the gravel and the top of the plowed surface of the naturally occurring soil.

d. Mound systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. Minimum spacing between distribution pipes shall be 4 feet, and a minimum of 3 feet shall be maintained between any trench and the sidewall of the mound.

f. No soil under or up to 50 feet down gradient of the mound may be removed or disturbed except as specified herein.

g. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8- to 1/4-inch-diameter wire 1 1/2 inches long or more, the soil moisture content is too high for construction purposes.

h. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

i. The area shall be plowed to a depth of 7 to 8 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled.

j. The base absorption area of the mound is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate.

k. The area of the fill material shall be sufficient to extend 3 feet beyond the edge of the gravel area before the sides are shaped to at least a 4:1 slope (preferably 5:1).

l. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80, with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of ¼-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in paragraph 69.9(4) "a"), with holes downward. The gravel shall be a minimum of 9 inches in depth below the pipe and 3 inches in depth above the pipe.

(4) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(5) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(6) The central pressure manifold should consist of 1½- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

m. Construction should be initiated immediately after preparation of the soil interface by placing all of the sand fill material needed for the mound (to the top of the trench) to a minimum depth of 21 inches above the plowed surface. This depth will permit excavation of the trenches to accommodate the 9 inches of washed gravel or crushed stone necessary for the distribution piping.

n. The absorption trench or trenches shall be hand-excavated to a depth of 9 inches. The bottoms of the trenches shall be level.

o. Nine inches of gravel shall be placed in the trench and leveled. After the distribution pipe is placed, the pipe shall be covered with 3 inches of gravel.

p. The top of the gravel shall be covered with synthetic drainage fabric. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

q. After installation of the distribution system, the distribution system shall be pressure-tested before it is covered with gravel. The entire mound is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire mound shall be crowned by providing 12 inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the mound. The entire mound shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

r. The area surrounding the mound shall be graded to provide for diversion of surface runoff water.

69.10(4) Dosing.

a. Pump dosing shall be required for mound systems.

b. The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.11(455B) At-grade systems.**69.11(1) General requirements.**

a. At-grade systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

b. At-grade systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

c. At-grade systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 60 minutes per inch occur within 36 inches of natural grade.

d. At-grade systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. At-grade systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the gravel in the system.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 25 feet on the down-gradient side of the at-grade system when the at-grade system is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the at-grade system is in use.

g. Specifications given in these rules for at-grade systems are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design an at-grade system.

69.11(2) Construction details.

a. There shall be a minimum of 3 feet of undisturbed naturally occurring soils between the bottom of the gravel in the at-grade system and the highest elevation of the limiting conditions defined in paragraph 69.11(1)“c.”

b. An at-grade system may be installed up to 12 inches deep.

c. Gravel shall meet the requirements specified in paragraph 69.9(4)“a.” EPS aggregate or chambers are acceptable alternatives to gravel.

d. At-grade systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. No soils under or within 15 feet of any at-grade system may be disturbed. On sloping sites, no soils shall be disturbed within 10 feet uphill of the system and within 15 feet downhill of the system plus an additional 5 feet for every 5 percent slope downhill.

f. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8-inch diameter wire 1½ inches long, the soil moisture content is too high for construction purposes.

g. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

h. The area shall be plowed to a minimum depth of 7 to 9 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Chisel teeth on a backhoe bucket shall be at least as long as the depth of plowing. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled. All work shall be done from the uphill side of the at-grade system.

i. The gravel bed absorption area of the at-grade system is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate.

j. One foot of loamy cover material shall be installed over the rock bed. Cover shall extend at least 5 feet from the ends of the rock bed and be sloped to divert surface water. Side slopes shall not be steeper than 4:1. The upper 6 inches of the loamy soil cover must be topsoil borrow. Topsoil borrow must be of a quality that provides a good vegetative cover on the at-grade system.

k. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80 with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of ¼-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in paragraph 69.9(4) "a"), with holes downward. The gravel shall be a minimum of 10 inches in depth below the pipe and 2 inches in depth above the pipe.

(4) Distribution pipe shall be installed in the center of the gravel bed on slopes less than 1 percent and on the upslope edge at the gravel bed absorption width on slopes 1 percent or greater.

(5) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(6) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(7) The central pressure manifold should consist of ½- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

(8) The top of the gravel shall be covered with synthetic drainage fabric. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

(9) After installation of the distribution system, the distribution system shall be pressure-tested before it is covered with gravel. The entire at-grade system is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire at-grade system shall be crowned by providing 12 inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the at-grade system. The entire at-grade system shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

(10) The area surrounding the at-grade system shall be graded to provide for diversion of surface runoff water.

69.11(3) Dosing.

a. Pump dosing shall be required for at-grade systems.

b. The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.12(455B) Drip irrigation.

69.12(1) General design.

a. *Pretreatment required.* Drip irrigation systems must be preceded by a secondary treatment system discharging a treated, filtered effluent with BOD and TSS values less than 30 mg/L.

b. *Separation from groundwater.* Drip irrigation systems shall have a minimum vertical separation distance to high groundwater level or bedrock of 20 inches.

c. *Maximum hillside slope.* Drip irrigation systems shall not be installed on slopes of more than 25 percent.

d. *Additional specifications.* Specifications given in these rules for drip irrigation are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a drip irrigation system.

69.12(2) Emitter layout.

a. *Discharge rate.* Systems shall be designed so that emitters discharge approximately 1 gpm at 12 psi or other rates suggested by the manufacturer and approved by the administrative authority.

b. *Grid size.* Drip lines shall be run in parallel lines 2 feet apart. Emitters shall be placed in the drip lines at 2-foot intervals, with emitters offset 1 foot between adjacent lines. Each emitter shall cover 4 square feet of absorption area.

c. *Field size.* The field shall be sized according to the application rate given in Table IV.

d. *Depth of drip lines.* Drip lines shall be laid on the contour, 6 to 12 inches deep, with a maximum line length of 100 feet. Lines may be of unequal length.

e. *Interconnection.*

(1) All drip lines shall be connected to supply and return headers such that the entire system will automatically drain back to the dosing tank or pump pit upon completion of the pumping cycle. Vacuum breakers shall be positioned at the high point of the supply and return headers.

(2) The dosing tank shall have a high water audio/visual alarm.

Table IV
Length of Drip Line Required per Bedroom

Percolation Rate min./in.	Design Hyd. Loading gpd/sq. ft.	Length of Drip Line feet/bedroom
1 – 5	2.0	40
6 – 15	1.3	60
16 – 30	0.9	90
31 – 45	0.6	150
46 – 60	0.4	200
61 – 90	0.2	400
91 – 120	0.1	800

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.13(455B) Packed bed media filters.

69.13(1) Intermittent sand filters. The general requirements for intermittent sand filters are as follows:

a. *Use.* Intermittent sand filters may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. *Location.* Intermittent sand filters shall be located in accordance with the distances specified in Table I.

c. *Sampling port.* The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line.

d. *Effluent sampling.* All intermittent sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

e. *Prohibited construction.* There shall be no construction, such as buildings or concrete driveways, covering any part of an intermittent sand filter.

69.13(2) Construction.

a. *Number.* Rescinded IAB 7/11/12, effective 8/15/12.

b. *Pipelines.* Each bed shall contain a horizontal set of collector lines. The collector lines shall be equivalent to SDR 35 PVC pipe, 10-inch-diameter gravelless drainpipe, EPS aggregate or other suitable materials.

(1) One collector line shall be provided for each 6 feet of width or fraction thereof. A minimum of two collector lines shall be provided.

(2) The collector lines shall be laid to a grade of 1 inch in 10 feet (or 0.5 to 1.0 percent).

(3) Each collector line shall be vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravelless drainfield pipe with fiber wrap may be used for the collector lines. If fiber wrap is used, no gravel or pea gravel is required to cover the collector lines and the pipe shall be bedded in filter sand.

(5) If 4-inch plastic pipe with perforations is used for the collector lines, the lines shall be covered as follows:

1. Gravel $\frac{3}{4}$ inch to $2\frac{1}{2}$ inches in size shall be placed around and over the lower collector lines until there is a minimum of 4 inches of gravel over the pipes.

2. The gravel shall be overlaid with a minimum of 3 inches of washed pea gravel $\frac{1}{8}$ -inch to $\frac{3}{8}$ -inch size interfacing with the filter media. A layer of fabric filter may be used in place of the pea gravel. Fabric filters must be 30 by 50 mesh with a percolation rate of at least 5 gal/sq. ft.

(6) A minimum of 24 inches of coarse washed sand shall be placed over the pea gravel or above the gravelless drainfield pipe. The sand shall meet the Iowa DOT standards for concrete sand: 100 percent of the sand shall pass a 9.5 mm screen, 90 to 100 percent shall pass a 4.75 mm screen, 70 to 100 percent shall pass a 2.36 mm screen, 10 to 60 percent shall pass a 600 Tm screen, and 0 to 1.5 percent shall pass a 75 Tm screen.

(7) The discharge pipe that extends from the collection system shall be SDR 35 PVC pipe at a minimum.

69.13(3) Subsurface sand filters.

a. Distribution system and cover.

(1) Gravel base. Six inches of gravel $\frac{3}{4}$ inch to $2\frac{1}{2}$ inches in size shall be placed upon the sand in the bed.

(2) Distribution lines. Distribution lines shall be level and shall be horizontally spaced a maximum of 3 feet apart, center to center. Distribution lines shall be rigid perforated PVC pipe.

(3) Venting. Venting shall be placed on the downstream end of the distribution lines, with each distribution line being vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravel cover. Enough gravel shall be carefully placed to cover the distributors.

(5) Separation layer. A layer of material such as unbacked, rolled, $3\frac{1}{2}$ -inch-thick fiberglass insulation, untreated building paper of 40- to 60-pound weight or synthetic drainage fabric shall be placed upon the top of the upper layer of gravel.

(6) Soil cover. A minimum of 12 inches of soil backfill shall be provided over the beds.

(7) Distribution boxes. A distribution box shall be provided for each filter bed where gravity distribution is used. The distribution boxes shall be placed upon undisturbed earth outside the filter bed. Separate watertight lines shall be provided leading from the distribution boxes to each of the distributor lines in the beds.

(8) As an alternative to gravel and rigid PVC pipe, EPS aggregate may be used for the distribution system. The EPS aggregate shall cover the entire surface of the sand filter, and a 3-foot separation between distribution pipes shall be maintained.

(9) Pressure distribution. Pressure dosing is recommended to improve effluent distribution across the surface of the filter. Pressure distribution systems may use conventional rock and PVC pipe, chambers with small-diameter pipe, or EPS aggregate with small-diameter pipe.

b. Sizing of subsurface sand filters.

(1) Gravity flow. For residential systems, subsurface sand filters shall be sized at a rate of 240 square feet of surface area per bedroom.

(2) Siphon-dosed. For residential systems, subsurface sand filters dosed by a dosing siphon shall be sized at a rate of 180 square feet of surface area per bedroom.

(3) Pressure-dosed. For residential systems, subsurface sand filters dosed by a pump shall be sized at a rate of 150 square feet of surface area per bedroom.

(4) Nonhousehold. Effluent application rates for commercial systems treating domestic waste shall not exceed the following:

1. 1.0 gallon/square feet/day for intermittent sand filters.

2. The total surface area for any subsurface sand filter system shall not be less than 200 square feet.

69.13(4) Free access sand filters.

a. *Pretreatment required.* These systems must be preceded by a secondary treatment system discharging a treated effluent with BOD and TSS values less than 30 mg/L.

b. *Description.* Media characteristics and underdrain systems for free access filters are similar to those for subsurface filters. Dosing of the filter should provide uniform distribution across the entire surface of the bed. Dosing frequency is usually greater than four times per day. For coarser media (greater than 0.5 mm), a dosing frequency greater than six times per day is desirable. Higher acceptable loadings on these filters as compared to subsurface filters relate primarily to the accessibility of the filter surface for maintenance. Gravel is not used on top of the sand media, and the distribution pipes are exposed above the surface.

c. *Distribution.* Distribution to the filter may be by perforated pipe laid on the surface, by pipelines discharging to splash plates located at the center or corners of the filter, or by spray distributors. Care must be taken to ensure that lines discharging directly to the filter surface do not erode the sand surface. The use of curbs around the splash plates or large stones placed around the periphery of the plates will reduce the scour. A layer of washed pea gravel placed over the filter media may also be employed to avoid surface erosion. This practice will create maintenance difficulties, however, when it is time to rake or remove a portion of the media surface.

d. *Covers.* Free access filters shall be covered to protect against severe weather conditions and to avoid encroachment of weeds or animals. The cover also serves to reduce odors. Covers may be constructed of treated wooden planks, galvanized metal, or other suitable material. Screens or hardware cloth mounted on wooden frames may also serve to protect filter surfaces. Where weather conditions dictate, covers should be insulated. A space of 12 to 24 inches should be allowed between the insulated cover and sand surface. Free access filters may not be buried by soil or sod.

e. *Loading.* The hydraulic loading for free access sand filters shall be 5.0 gpd/sq. ft.

69.13(5) Dosing. Dosing for sand filters is strongly advised. Without dosing, the entire area of the sand filter is never effectively used. Dosing not only improves treatment effectiveness but also decreases the chance of premature failure.

a. *Pumps.* A pump shall be installed when adequate elevation is not available for the system to operate by gravity.

(1) The pump shall be of corrosion-resistant material.

(2) The pump shall be installed in a watertight pit.

(3) The dosing system shall be designed to flood the entire filter during the dosing cycle. A dosing frequency of greater than two times per day is recommended.

(4) A high water alarm shall be installed.

b. *Dosing siphons.* When a dosing siphon is used where elevations permit, such siphon shall be installed as follows:

(1) Dosing siphons shall be installed between the septic tank and the sand filter bed.

(2) Dosing siphons shall be installed with strict adherence to the manufacturer's instructions.

c. *Dosing tanks.* The dosing tank shall be of such size that the siphon will distribute effluent over the entire filter during the dosing cycle. Smaller, more frequent doses are recommended.

d. *Effluent sampling.* A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All free access sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.13(6) Peat moss biofilter systems. General requirements for individual peat moss biofilter systems are as follows:

a. *Use.* Peat moss biofilter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system or an intermittent sand filter.

b. *Certification.* All peat moss biofilter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

c. Installation and operation. All peat moss biofilter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in paragraph 69.8(2) "a" or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

d. Maintenance contract. Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all peat moss biofilters at the specified intervals. The certified technician shall perform the required maintenance and reporting to the owner and to the administrative authority. The certified technician shall also report any discontinuance of maintenance of the peat moss biofilter system to the administrative authority. Peat moss biofilter systems shall be inspected at least once annually by the certified technician. A copy of the maintenance contract shall be on file in the office of the administrative authority.

e. Effluent sampling. The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All peat moss biofilter systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.13(7) Recirculating textile filter systems. General requirements for recirculating textile filter systems are as follows:

a. Use. Recirculating textile filter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system or an intermittent sand filter.

b. Certification. All recirculating textile filter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

c. Design. Recirculating textile filter systems shall be designed to prevent the passage of untreated waste during an equipment malfunction or power outage.

d. Installation and operation. Recirculating textile filter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in paragraph 69.8(2) "a" or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

e. Maintenance contract. Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all recirculating textile filters at the specified intervals. The certified technician shall perform the required maintenance and reporting to the owner and to the administrative authority. The certified technician shall also report any discontinuance of maintenance of the system to the administrative authority. Recirculating textile filter systems shall be inspected at least once annually by the certified technician. A copy of the maintenance contract shall be on file in the office of the administrative authority.

f. Effluent sampling. The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All recirculating textile filter systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.14(455B) Aerobic treatment units. General requirements for aerobic treatment units are as follows:

69.14(1) Use. Aerobic treatment units may be used only when the administrative authority determines that the site is unacceptable for a soil absorption system or an intermittent sand filter. Because of the higher maintenance requirements of aerobic treatment units, preference should be given to packed bed media filters, where conditions allow.

69.14(2) Certification. All aerobic treatment units shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

69.14(3) Installation and operation. All aerobic treatment units shall be installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The aerobic treatment units shall have a minimum treatment capacity of 150 gallons per bedroom per day or 500 gallons, whichever is greater.

69.14(4) Pre-tank required. All aerobic treatment units shall be preceded by a septic or trash tank with a minimum capacity of 500 gallons. The trash tank may be a single-compartment tank. A trash tank built in as part of the aerobic treatment unit's design satisfies this requirement.

69.14(5) Effluent treatment. The effluent from aerobic treatment units shall receive additional treatment through the use of intermittent sand filters or soil absorption systems of a magnitude prescribed in subrule 69.9(2) for pretreated effluent.

69.14(6) Maintenance contract. Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all aerobic treatment units at the specified intervals. Aerobic treatment units shall be inspected for proper operation at least twice a year at six-month intervals by the certified technician.

69.14(7) Effluent sampling. The discharge point of the aerobic treatment unit system shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All aerobic treatment unit systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

[ARC 7569B, IAB 2/11/09, effective 3/18/09; ARC 0208C, IAB 7/11/12, effective 8/15/12]

567—69.15(455B) Constructed wetlands.

69.15(1) General site design.

a. Application. Constructed wetlands shall only be used where soil percolation rates at the site exceed 120 minutes per inch. Because of the higher maintenance requirements of constructed wetland systems, preference should be given to packed bed media filters, where conditions allow.

b. Effluent treatment. The effluent from a constructed wetland shall receive additional treatment through the use of intermittent sand filters of a magnitude prescribed in subrule 69.9(2) for pretreated effluent.

c. Effluent sampling. All constructed wetland systems having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

d. Additional specifications. Specifications given in this rule for constructed wetlands are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of this rule may be necessary to properly design a constructed wetland system.

69.15(2) Wetland design.

a. Depth. The wetland shall be of a subsurface flow construction with a rock depth of 18 inches and a liquid depth of 12 inches.

b. Materials. Substrate shall be washed river gravel with a diameter of ¾ inch to 2½ inches. If crushed quarried stone is used, it must meet the criteria listed in paragraph 69.9(4) "a."

c. Sizing and configuration. Detention time shall be a minimum of seven days.

(1) *Dimensions.* Detention time may be accomplished with trenches 16 to 18 inches deep (12 inches of liquid), 3 feet wide, with 100 feet of length per bedroom. Detention time may also be done

with beds 16 to 18 inches deep, with at least 300 square feet of surface area per bedroom. The bottom of each trench or bed must be level within $\pm\frac{1}{2}$ inch.

(2) Configuration. Multiple trenches or beds in series should be used. Beds or trenches in series may be stepped down in elevation to fit a hillside application. If the system is on one elevation, it should still be divided into units by earthen berms at about 50 and 75 percent of the total length.

(3) Unit connections. Each subunit shall be connected to the next subunit with an overflow pipe (rigid sewer pipe) that maintains the water level in the first section. Protection from freezing may be necessary.

d. *Liner.* Wetlands shall be lined with a synthetic PVC or PE plastic liner 20 to 30 mils thick.

e. *Inlet pipe.* Effluent shall enter the wetland by a 4-inch pipe sealed into the liner. With beds, a header pipe shall be installed along the inlet side to distribute the waste.

f. *Protective berms.* Wetland system sites shall be bermed to prevent surface water from entering the trenches or beds.

69.15(3) Vegetation.

a. *Setting plants.* Vegetation shall be established on the wetlands at the time of construction. Twelve inches of rock shall be placed in each unit, the plants set, and then the final 4 to 6 inches of rock placed.

b. *Plant species.* Only indigenous plant species, preferably collected within a 100-mile radius of the site, shall be set. Multiple species in each system are recommended. Preferred species include, but are not limited to:

- (1) *Typha latifolia* – common cattail.
- (2) *Typha angustifolia* – narrow leaf cattail.
- (3) *Scirpus* spp. – bullrush.
- (4) *Phragmites communis* – reed.

c. *Plant establishment.* Transplantation is the recommended method of vegetation establishment. For transplanting, the propagule should be transplanted, at a minimum, on a 2-foot grid. The transplants should be fertilized, preferably with a controlled-release fertilizer such as Osmocote 18-5-11 for fall and winter planting, 18-6-12 for spring planting, and 19-6-12 for summer planting. Trenches or beds should be filled with fresh water immediately.

d. *Plant management.* In the late fall, the vegetation shall be mowed and the detritus left on the wetland surface as a temperature mulch. In the early spring, the mulch shall be removed and disposed of to allow for adequate bed aeration.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.16(455B) Waste stabilization ponds.

69.16(1) General requirements. Waste stabilization ponds shall only be used for nonresidential applications and shall be designed by an Iowa-licensed engineer. Waste stabilization ponds may be used if designed and constructed in accordance with the following criteria and provided the effluent is discharged in accordance with the requirements of the NPDES general permit listed in rule 567—69.4(455B). A septic tank sized according to rule 567—69.8(455B) shall precede a waste stabilization pond.

69.16(2) Location. Waste stabilization ponds must meet the following separation distances:

a. 1,000 feet from the nearest inhabitable residence, commercial building, or other inhabitable structure. If the inhabitable or commercial building is the property of the owner of the proposed treatment facility or there is written agreement with the owner of the building, this separation criterion shall not apply. Any such written agreement shall be filed with the county recorder and recorded for abstract of title purposes, and a copy submitted to the department.

- b. 1,000 feet from public shallow wells.
- c. 400 feet from public deep wells.
- d. 400 feet from private wells.
- e. 400 feet from lakes and public impoundments.
- f. 25 feet from property lines and rights-of-way.

69.16(3) Size.

- a. *Dimensions.* Ponds shall have a length not exceeding three times the width.
- b. *Capacity.* When domestic sewage from a septic tank is to be discharged to a waste stabilization pond, the capacity of the pond shall be equivalent to 180 times the average daily design flow.
- c. *Depth.* The wastewater depth for a waste stabilization pond shall be 3 feet to 5 feet and shall be uniform.
- d. *Freeboard.* A minimum freeboard of 2 feet shall be maintained at all times.

69.16(4) Embankments.

- a. *Seal.* Embankments shall be constructed of impermeable materials and shall be compacted. The bottom of the waste stabilization pond shall be cleared and leveled to the required elevation and shall be lined with an impermeable natural or man-made material. Seepage loss through the sides and bottom shall be less than 1/16 inch per day.
- b. *Slopes.* The ratio of inside embankment slopes shall be 3 horizontal to 1 vertical. The outside embankment slope ratio shall be at least 3:1.
- c. *Berm top.* Berm tops shall be at least 4 feet wide.
- d. *Cover.* Embankments shall be seeded from the outside toe to the inside high water line. From the high water line down the embankment diagonally, about 5 feet shall be ripped for erosion and vegetation control.

69.16(5) Inlet and outlet structures.

- a. *Inlet.* The inlet shall be placed no higher than 12 inches above the bottom of the pond. It shall discharge near the middle of the pond at a point opposite the overflow structure and onto a concrete splash plate at least 2 feet square.
- b. *Outlet.* The outlet pipe shall withdraw water from a submerged depth of at least 1 foot. The intake for the outlet pipe shall be 3 to 5 feet from the embankment.
- c. *Separation.* The inlet and outlet should be separated to the maximum extent possible, ideally by a berm or baffle constructed in the lagoon to prevent short-circuiting.

69.16(6) Drainage. All surface water shall be diverted away from the waste stabilization pond.

69.16(7) Effluent sampling. All waste stabilization ponds having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

69.16(8) Maintenance.

a. *Fencing.* All waste stabilization ponds are to be fenced adequately to prevent entrance of livestock and to discourage entrance by people into the area. Signs shall be posted warning of possible health and safety hazards.

b. *Vegetation.* Vegetation on the top and sides of the berm shall be mowed and the length maintained. No trees shall be allowed to become established.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.17(455B) Requirements for impervious vault toilets. All impervious vault toilets shall comply with the following requirements:

69.17(1) Location. Impervious vault toilets shall be located in accordance with the distances given in Table I in rule 567—69.3(455B) for the closed portion of the treatment system.

69.17(2) Construction. The vault shall be constructed of reinforced, impervious concrete at least 4 inches thick. The superstructure including floor slab, seat, seat cover, riser and building shall comply with good design and construction practices to provide permanent, safe, sanitary facilities. The vault shall be provided with a cleanout opening fitted with a fly-tight cover.

69.17(3) Wastewater disposal. Wastewater from impervious vault toilets shall be disposed of at a public sewage treatment facility.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.18(455B) Requirements for portable toilets. All portable toilets shall be designed to receive and retain the wastes deposited in them and shall be located and maintained in a manner that will prevent

the creation of any nuisance condition. Wastewater from portable toilets shall be disposed of at a public sewage treatment facility.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.19(455B) Other methods of wastewater disposal. Other methods or types of private wastewater treatment and disposal systems shall be installed only after plans and specifications for each project have been approved by the administrative authority.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.20(455B) Disposal of septage from private sewage disposal systems.

69.20(1) The collection, storage, transportation and disposal of all septage shall be carried out in accordance with the requirements in 567—Chapter 68.

69.20(2) Commercial septic tank cleaners. Individual administrative authorities shall enforce the licensing program for commercial septic tank cleaners in accordance with the requirements of 567—Chapter 68.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.21(455B) Experimental private sewage disposal systems.

69.21(1) Design requirements. Experimental systems are to be designed and operated in accordance with approved standards and operating procedures established by individual administrative authorities.

a. Plans and specifications, meeting all applicable rule requirements, should be prepared and submitted to the administrative authorities by a licensed professional engineer. Included with the engineering submittal should be adequate supporting data relating to the effectiveness of the proposed system.

b. For systems designed to discharge treated effluent into waters of the state, a Notice of Intent to be covered under the requirements of NPDES General Permit No. 4 shall be obtained. The administrative authority is responsible for determining that the requirements of the permit, including the monitoring program, are met.

c. Administrative authorities should prepare for signature an enforceable agreement to be placed on record which would require that present and future system owners meet all applicable rule requirements. In the event of noncompliance, the administrative authority shall require that adequate steps be taken by the system owner to bring the system into compliance or that the system owner replace the system with a system prescribed in these rules.

69.21(2) Reserved.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

567—69.22(455B) Variances. Variances to these rules may be granted by the department of natural resources or the administrative authority provided sufficient information is submitted to substantiate the need for and propriety of such action. Applications for variances and justification shall be in writing and copies filed with the department.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

These rules are intended to implement Iowa Code chapter 455B, division III, part 1.

Appendix A
Estimates of Nonhousehold Domestic Sewage Flow Rates

Source of use for sewage unit	(units)	Gallons per day per unit
Dwelling Units		
Hotels or luxury motels	(Each guest)	60
	(Add per employee)	13
or	(Per square foot)	0.3
Discount motels	(Each guest)	40
	(Add per employee)	13
or	(Per square foot)	0.46
Rooming house	(Each resident)	50
	(Add per nonresident meal)	4.0
Commercial/Industrial		
Retail stores	(Per square foot of sales area)	0.15
or	(Each customer)	5
	(Plus each employee)	15
or	(Each toilet room)	630
Offices	(Each employee)	18
or	(Per square foot)	0.25
Medical offices	(Per square foot)	1.6
Industrial buildings	(Each employee)	20
	(Does not include process ware or cafeteria)	
Construction camp	(Each employee)	20
Visitor center	(Each visitor)	20
Laundromat	(Each machine)	690
or	(Each load)	50
or	(Per square foot)	2.9
Barber shops	(Per chair)	80
Beauty shops	(Per station)	300
Car washes	(Per inside square foot)	10
	(Does not include car wash water)	
Eating and Drinking Establishments		
Restaurant	(Per meal)	4.0
	(Does not include bar or lounge)	
or	(Each seat)	40
	(Plus add for each employee)	13
Dining hall	(Per meal)	4.0
Coffee shop	(Each customer)	2.5
	(Add per employee)	13
Cafeteria	(Each customer)	2.5
	(Add per employee)	13
Drive-in	(Per car stall)	145
Bar or lounge	(Each customer)	5.5
	(Add per employee)	16

Source of use for sewage unit	(units)	Gallons per day per unit
or	(Per seat)	40
Country clubs	(Per member) (No meals)	22
or	(Per member) (Meals and showers)	130
or	(Per member in residence)	100
Resorts		
Housekeeping cabin	(Per person)	50
Lodge	(Per person)	74
Parks/swimming pools	(Per guest)	13
Picnic parks with toilet only	(Per guest)	10
Movie theaters	(Per guest)	4.0
Drive-in theaters	(Per space)	5
Skating rink/dance hall	(Per customer)	10
Bowling lanes	(Per lane)	200
Transportation		
Airport, bus or rail depot	(Per passenger)	4
or	(Per square foot)	6.5
or	(Per public restroom)	630
Auto service station	(Each vehicle served)	13
	(Add per employee)	16
or	(Per inside square foot)	0.6
or	(Per public restroom)	630
Institutional		
Hospitals	(Each medical bed)	250
	(Add per employee)	16
Mental institution	(Each bed)	175
	(Add per employee)	16
Prison or jail	(Each inmate)	160
	(Add per employee)	16
Nursing home	(Each resident)	145
	(Add per employee)	16
Schools and Churches		
School	(Per student) (No gym, cafeteria or showers)	17
	(Per student) (Cafeteria only)	17
	(Per student) (Cafeteria, gym & showers)	30
Boarding school	(Per student)	115
Churches	(Per member)	2
	(Per member with kitchen)	5

Source of use for sewage unit	(units)	Gallons per day per unit
Recreational		
Campground/with hookups	(Per person)	40
or	(Per site with central bath)	100
	(Per site)	75
	(Add for dump station w/ hookup)	16
Day camp (no meals)	(Per person)	16
Weekly overnight camp	(Per member)	33

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

Appendix B
Percolation Test Procedure

1. At least three test holes distributed evenly over the proposed lateral field are required.
2. Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).
3. Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.
4. The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.
5. The hole shall be filled with at least 12 inches of clean water, and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained. Failure to perform the presoak when required will invalidate the percolation test results.
6. In sandy soils with little or no clay, soaking is not necessary. If, after the hole has been filled twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.
7. Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed, and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.
8. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest $\frac{1}{8}$ inch at 30-minute intervals. The test is continued until two successive water level drops do not vary by more than $\frac{1}{8}$ inch. At least three measurements are made.
9. After each measurement, the water level is readjusted to the 6-inch level. The last water level drop is used to calculate the percolation rate.
10. In sandy soils or soils in which the first 6 inches of water added after the soaking period seep away in less than 30 minutes, water level measurements are made at 10-minute intervals for a 1-hour period. The last water level drop is used to calculate the percolation rate.
11. The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged. (If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged.) EXAMPLE: If the last measured drop in water level after 30 minutes is $\frac{3}{8}$ inch, the percolation rate = (30 minutes)/($\frac{3}{8}$ inch) = 48 minutes/inch.

[ARC 7569B, IAB 2/11/09, effective 3/18/09]

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CHAPTER 93
NONPOINT SOURCE POLLUTION CONTROL SET-ASIDE PROGRAMS

567—93.1(455B,466) Statutory authority. The authority for the Iowa department of natural resources to administer the clean water state revolving fund (CWSRF) to assist in the construction of wastewater treatment facilities and water pollution control projects is provided by Iowa Code sections 455B.291 to 455B.299.

567—93.2(455B,466) Scope of title. The department has jurisdiction over the surface water and groundwater of the state to prevent, abate and control pollution. As part of that general responsibility, the department and the Iowa finance authority are jointly delegated the administration of the CWSRF. Definitions provided in 567—Chapter 90 apply to this chapter.

567—93.3(455B,466) Purpose. Iowa's nonpoint source management plan identifies several sources of nonpoint source pollutants. In addition to assisting publicly owned treatment works, it is the intent of the commission to set aside a portion of the CWSRF for the purpose of making low-interest loans for nonpoint source water pollution control projects. Four separate set-asides are identified as follows:

93.3(1) Onsite wastewater treatment and disposal systems set-aside. The purpose of this set-aside is to assist homeowners to rehabilitate or improve existing onsite wastewater treatment and disposal systems.

93.3(2) Livestock water quality facilities set-aside. The purpose of the set-aside is to assist owners of existing animal feeding operations to meet state and federal requirements or to prevent, minimize or eliminate water pollution. Projects may be selected using the rating and ranking process in 567—Chapter 91.

93.3(3) Local water protection projects set-aside. The purpose of the set-aside is to assist local water protection projects that will provide water quality improvement or protection. Projects may be selected using the rating and ranking process in 567—Chapter 91.

93.3(4) General nonpoint source project assistance set-aside. The purpose of the set-aside is to assist general nonpoint source projects that will provide water quality improvements or water quality protection. This set-aside allows for funding of the water quality protection portion of nontraditional projects. Projects may be selected using the rating and ranking process in 567—Chapter 91.
[ARC 8596B, IAB 3/10/10, effective 4/14/10; ARC 1336C, IAB 2/19/14, effective 3/26/14]

567—93.4(455B,466) Onsite wastewater system assistance program.

93.4(1) Onsite wastewater system assistance program. Assistance under the onsite wastewater treatment system assistance program shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF. The following eligibility conditions and restrictions apply to such assistance.

a. Location restrictions. Assistance is available for the improvement or rehabilitation of onsite wastewater treatment systems serving homes that do not have a connection to a publicly owned treatment works.

b. County eligibility. Assistance shall be provided only for systems located in counties that have an environmental health program meeting minimum standards for onsite sewage systems. The department shall maintain for public record a list of all counties meeting such standards. At a minimum, counties must carry out statutory responsibilities as provided in Iowa Code section 455B.172 as well as provide for the following measures. The department will adopt guidance in cooperation with county boards of health to evaluate the adequacy of county programs.

(1) Proper site evaluations to determine the appropriate design and size of onsite wastewater treatment systems prior to permitting and installation.

(2) Inspection of onsite systems by a qualified inspector at the time of renovation or construction.

(3) Enforcement of existing monitoring requirements, in accordance with rule 567—69.2(455B), for existing, permitted onsite systems with secondary treatment which discharge aboveground, such as those authorized by NPDES General Permit No. 4 in rule 567—64.6(455B).

(4) Assurance of regular system maintenance and monitoring for the life of the loan for those systems receiving assistance under the onsite wastewater systems assistance program.

c. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the repair, rehabilitation, or replacement of an onsite treatment system needed to meet state or local standards for onsite systems. Eligible costs include all costs directly related to the design, permitting and construction of an onsite wastewater treatment system.

d. Applicant eligibility. Assistance is limited to applicants who meet the applicable provisions of 567—Chapter 69 and all other local provisions for the siting and construction of onsite wastewater treatment and disposal systems.

e. Project eligibility. Assistance can be provided only for the repair, rehabilitation, or replacement of existing onsite wastewater treatment and distribution systems. Assistance is not available for new housing. A system serving an equivalent of 16 individuals or more (with an average daily flow of 1500 gallons or more) is considered a public system (requiring permitting by the DNR) and is not eligible under this program.

93.4(2) Applying for assistance. Prior to applying for a loan from a participating lending institution, an eligible individual or entity must receive approval of the proposed improvements from the county in which the onsite wastewater treatment system is located. Application for project approval shall be made on forms provided by the department or its agent. Forms may also be downloaded from www.iowasrf.com.

a. County requirements for individual applicants. County approval forms shall include:

- (1) A description of the type and general specifications of the proposed work.
- (2) Project cost estimate(s).
- (3) A proposed construction schedule.

b. County requirements for cluster system applicants. County applications for cluster systems using onsite technology must include:

(1) A description, if available, of each participating property owner's current onsite wastewater treatment system, including a discussion of existing and potential problems or failures in the current treatment scheme.

- (2) An estimate of the population and number of households to be served.
- (3) A rationale for the proposed design of the new treatment system.
- (4) Descriptions of the management entity and program.

93.4(3) County review and approval. The county shall review applications to determine if the proposed work meets the applicable provisions of 567—Chapter 69 and all other relevant local provisions for the siting and construction of onsite wastewater treatment and distribution systems. For proposed projects that meet relevant criteria, the county shall issue a permit or certificate. The county permit or certificate shall be accompanied by a cost estimate and proposed construction schedule. A county may deny an application for reasons of noncompliance with applicable state and local criteria. Written notification of the denial shall be provided to the applicant and shall state the reason(s) that the application was denied.

93.4(4) Eligible costs. All costs directly related to the design, permitting, construction, and financing of the onsite wastewater treatment system are eligible for loans. Eligible costs include the removal of existing structures, such as abandoned septic tanks, earth moving or any land purchases directly related to proper wastewater treatment.

93.4(5) Ineligible costs. Costs for additional earthwork, reseeding, replanting, or any other aesthetic improvements are not eligible. Maintenance or monitoring costs will not be allowed as part of the loan.

93.4(6) Recipient record keeping. The loan recipient shall maintain adequate records that document all costs associated with the project. The loan recipient shall agree to provide access to these records to the department, the state auditor, the EPA SRF project manager, and the Office of the Inspector General at the Environmental Protection Agency. The loan recipient shall retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

93.4(7) Site access. The loan recipient shall agree to provide the department and the administrative authority access to the construction site to verify that the loan was used for the purpose intended and that the constructed works meet applicable state and local environmental requirements and ordinances for onsite wastewater treatment systems. The loan recipient also shall agree to provide access to the onsite system for periodic monitoring by the department and administrative authority, at times mutually agreed upon with the system owner, for the duration of the loan.

93.4(8) Priority allocation of funds and intended use plan. The department shall, on an annual basis, prepare a plan describing the amount of funding available for loans under the program for the coming state fiscal year. The plan shall also identify those counties qualified to participate in the program and provide an estimate of the loan funds needed in those counties within the coming year. To the extent that the pool of funds available for lending involves funds controlled by Title VI of the federal Clean Water Act, this plan shall be incorporated into the annual intended use plan authorized in 567—Chapter 92.

93.4(9) Targeted assistance. The department may set aside a portion of the annual available funds identified in the IUP for financing onsite wastewater treatment systems in targeted areas. Such targeted areas may include impaired watersheds, high-density housing areas, agricultural drainage areas, or other environmentally sensitive or degraded areas where the repair and rehabilitation of onsite wastewater treatment systems are needed to preserve and protect water quality. The annual intended use plan shall specify the need for targeted assistance, the areas covered, and the estimate of funds needed to address the water quality problems.

[ARC 8596B, IAB 3/10/10, effective 4/14/10; ARC 1336C, IAB 2/19/14, effective 3/26/14]

567—93.5(455B) Livestock water quality facilities requirements.

93.5(1) Livestock water quality facilities assistance. Assistance shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF. The following eligibility conditions and restrictions for participation apply to such assistance.

a. Eligible project costs. All costs directly related to the design, permitting, construction, and financing of the water pollution control facilities are eligible. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable and directly related to the facilities required to provide water pollution control as required by the department or to prevent, minimize or eliminate water pollution.

b. Applicant eligibility. Assistance is limited to livestock producers operating animal feeding operations according to federal law. Concentrated animal feeding operations as defined in 40 CRF Section 122.23 are not eligible.

Loans will be made only to livestock producers that are operators of record or have legal control of the property containing the animal feeding operation for the duration of the loan. The department has the discretion to deny applications for producers if the department has issued an administrative order to the producer pursuant to Iowa Code section 455B.175, if the department notifies the producer in writing of intent to recommend referral or the commission refers the action to the attorney general pursuant to Iowa Code section 455B.175, or if the attorney general has commenced legal proceedings against the producer pursuant to Iowa Code section 455B.112.

c. Eligible projects. The water pollution control facilities considered eligible for assistance include: manure storage structures, solids settling basins, composting facilities and equipment, lagoons (including fencing), portions of feeding floors or loafing areas used for waste collection, water and sediment control basins, vegetative filters or buffers, surface water diversion structures, agitation or transfer pumps, dry bedded confinement feeding operation buildings or structures pursuant to 2009 Iowa Code Supplement chapter 459B when all or part of an open feedlot is replaced, and other practices shown to improve or protect water quality. Replacement animal feeding operations may be eligible where an existing animal feeding operation is eliminated to prevent a water quality impairment or mitigate a documented impairment. Engineering or technical service fees associated with the aforementioned practices are also eligible. A one-time purchase of attachments integral to the manure management system, such as blades, buckets, choppers, or spreaders, may be eligible at the time that an open feedlot is replaced with a dry bedded confinement building.

d. Funding formula. Loans for water quality projects for facilities being expanded by an increase in the animal unit capacity shall be funded according to the following formula:

Existing animal unit capacity/new animal unit capacity × total eligible project cost × 1.5 = maximum linked deposit amount

Example: 450 AUC / 900 AUC × \$500,000 × 1.5 = \$375,000

Example: 300 AUC / 600 AUC × \$300,000 × 1.5 = \$225,000

Example: 50 AUC / 900 AUC × \$500,000 × 1.5 = \$41,666

If existing areas in open feedlots are kept open where some pens are replaced and the operation is expanded through the addition of a dry bedded confinement feeding operation building, the remaining open lot areas must comply with 567—65.101(459A).

93.5(2) *Applying for assistance.* Application for project approval shall be made on forms provided by the department or its agent. Forms may also be downloaded from www.iowasrf.com.

93.5(3) *Project review and approval.* Prior to receiving assistance, the applicant shall submit an application to the local soil and water conservation district. The district will evaluate the application, provide an estimated cost, and certify that the practice is eligible and compatible with state water quality goals. All practices must comply with 567—Chapter 65 and shall be constructed to applicable USDA Natural Resource Conservation Service (NRCS) standards. NRCS staff or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

93.5(4) *Duration of the project.* The project is to be maintained, kept in place or operated as proposed for the life of the loan. If an open lot is closed and replaced with an eligible replacement facility, the department or department's agent shall place a restrictive covenant that prohibits the operation of an open feedlot at the site being replaced for the life of the loan. The site or portion of the site that may not house animals shall be defined by the local soil and water conservation district.

93.5(5) *Manure management plan required.* The livestock producer shall have a manure management plan that fits the requirements of 567—65.17(459), a nutrient management plan as defined in 567—65.112(459A), or a comprehensive nutrient management plan as defined by the NRCS, to be eligible for the loan or, as part of the loan, develop a manure management plan, nutrient management plan, or comprehensive nutrient management plan.

a. Costs for development of a manure management plan, nutrient management plan, or comprehensive nutrient management plan are eligible costs.

b. Costs for updating a manure management plan, nutrient management plan, or comprehensive nutrient management plan are eligible costs if required for the implementation of a water quality project financed through the livestock water quality facilities program.

93.5(6) *Ineligible costs.* Costs for development of a new AFO as defined in 567—90.2(455B) are ineligible. Other ineligible costs include but are not limited to: costs for water pollution control facilities, including design, permitting, construction or financing, that allow for the animal feeding operation to expand and become a concentrated animal feeding operation; costs for the purchase of land to be used for application of wastewater or manure; costs for operation and maintenance; and costs for refinancing of water pollution control facilities constructed prior to approval by the department or the department's agent.

93.5(7) *Recipient record keeping.* The loan recipient shall maintain adequate records that document all costs associated with the project. The loan recipient shall agree to provide access to these records to the department, the state auditor, the EPA SRF project manager, and the Office of the Inspector General at the Environmental Protection Agency. The loan recipient shall retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

93.5(8) *Site access.* The livestock producer shall agree to provide the department and the department's agent access to the construction site to verify that the loan was used for the purpose intended and that the construction work meets the applicable state and federal requirements for animal feeding operations. The livestock producer also shall agree to provide the department and the department's agent periodic access to the animal feeding operation, pursuant to biosecurity requirements

in 567—paragraph 65.113(9)“b,” for the duration of the loan to ensure that the constructed facility is being operated and maintained as designed.
[ARC 8596B, IAB 3/10/10, effective 4/14/10]

567—93.6(455B) Local water protection project requirements.

93.6(1) Local water protection project assistance. Assistance under the CWSRF shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF. The following eligibility conditions and restrictions for participation apply to such assistance.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable and directly related to the practices required to provide water quality improvements.

b. Applicant eligibility. Assistance is available to any person who owns or has legal control over land that needs local water protection projects installed to control runoff of sediments, nutrients, pesticides or other nonpoint source pollutants into waters of the state. Loans will be made only to persons who are owners of record or persons who have legal control of the property where the local water protection projects are to be installed.

c. Eligible practices. The local water protection practices that are considered eligible include, but are not limited to, contour buffer strips, diversion, fence, field border, field windbreak, filter strips, grade stabilization structure, grassed waterway, pasture and hayland planting, planned grazing system, pond, riparian forest and vegetative buffers, sediment basin, terrace, underground outlet with secondary water quality treatment, waste management system, water and sediment control basin, stream bank stabilization and restoration, and other practices that are shown to improve or protect water quality.

93.6(2) Applying for assistance. Application for project approval shall be made on forms provided by the department or its agent. Forms may also be downloaded from www.iowasrf.com.

93.6(3) Project review and approval. Prior to receiving assistance, the applicant shall submit an application to the local soil and water conservation district. The local soil and water conservation district will evaluate the application, provide an estimated cost, and certify that the practice is compatible with state water quality goals. All practices shall be constructed to meet NRCS standards and specifications. NRCS or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

93.6(4) Duration of the project. The project is to be maintained, kept in place or operated as proposed for the life span of the practice, but in no case for less than the life of the loan.

93.6(5) Eligible costs. All costs directly related to the implementation of local water protection projects approved in the memorandum of project approval are eligible costs.

93.6(6) Ineligible costs. Ineligible costs include costs for overbuilding a practice beyond what is required to maintain or improve water quality and costs for the purchase of land.

93.6(7) Site access. The applicant shall agree to provide the department or the department's agent access to the project site to verify that the loan was used for the purpose intended.
[ARC 8596B, IAB 3/10/10, effective 4/14/10]

567—93.7(455B) General nonpoint source project requirements.

93.7(1) General nonpoint source assistance. Assistance under the CWSRF general nonpoint source (GNS) set-aside shall be in the form of low-interest loans made directly or by participating lending institutions through a linked deposit or participation arrangement with the CWSRF. The following eligibility conditions and restrictions for participation apply to such assistance.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable and directly related to the facilities or practices required to provide water quality improvements, restoration or protection. Participation in nontraditional projects where the primary purpose is not water quality protection or improvement will be limited to the portion of the project that is directly related to water quality improvement, restoration or protection.

b. Applicant eligibility. Assistance is available to projects for which facilities are needed to protect, restore or improve water quality from nonpoint source pollution. Only applicants that are

owners of record of the property or have long-term control of the property where the project is to be implemented are eligible. In applications where the water pollution control project is a plan or document that will direct water quality protection or improvement efforts, loans will be made to applicants that have the capacity and capability of implementing the plan and repaying the loan.

c. Project eligibility. Eligible projects include, but are not limited to, practices to address nonpoint source pollution control needs associated with storm water treatment and green infrastructure, silviculture, groundwater protection, marinas, resource extraction, brownfield remediation, aboveground and underground storage tanks, sanitary landfills, hydromodification, and watershed planning. Nontraditional nonpoint source projects that may have a water quality protection or improvement component include, but are not limited to, bird sanctuaries and wildlife enhancement projects, vegetative plants, sediment removal and other lake restoration practices, wetland mitigation bank and education programs.

93.7(2) Applying for assistance. Applications for storm water and green infrastructure projects shall be submitted to local soil and water conservation districts. Applications for other GNS projects shall be submitted to the department at State Revolving Fund, Iowa Department of Natural Resources, 401 SW 7th Street, Suite M, Des Moines, Iowa 50309. Forms may also be downloaded from www.iowasrf.com. Application forms will be provided by the department. Applications shall include an explanation of how the water quality will be protected, improved or restored by the proposed project. Applications will be accepted on a continuous basis.

93.7(3) Project approval. The department will evaluate eligibility and project design and provide the applicant a memorandum of approval for the proposed water pollution control project. The department will earmark the set-aside funds for the water pollution control projects to be funded.

93.7(4) Eligible costs. All costs directly related to the implementation of the project approved in the memorandum of approval are eligible costs.

93.7(5) Ineligible costs. Costs for livestock water quality facilities are not eligible under this set-aside and are provided for in rule 567—93.5(455B). Costs for the purchase of land are not eligible costs unless specifically approved by the commission.

93.7(6) Site access. The recipient shall agree to provide the department and the department's agent access to the project site to verify that the loan was used for the purpose intended.

[ARC 8596B, IAB 3/10/10, effective 4/14/10]

These rules are intended to implement Iowa Code sections 455B.291 to 455B.299, 466.8 and 466.9 and 2009 Iowa Code Supplement chapter 459B.

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Iowa Department of Natural Resources

National Pollutant Discharge Elimination System (NPDES)

**General Permit No. 4
For
Discharge from Private Sewage Disposal Systems**

Effective Dates: August 15, 2012 through August 15 2017

502 East 9th Street, Des Moines, IA 50319
515-281-8263 FAX 515-281-8895

<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/PrivateSepticSystems/GeneralPermit4.aspx>

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Part I. Coverage Under This Permit

A. Permit Area.

This permit covers all the areas of the State of Iowa.

B. Eligibility.

1. This permit covers the discharge from any Private Sewage Disposal System which discharges to a designated surface water of the state or a subsurface drainage tile and is constructed in accordance with 567 IAC Chapter 69.
2. Limitations on Coverage. This permit does not cover the following types of discharges:
 - 1) Discharge from any system which does not meet the minimum construction standards described in 567 IAC Chapter 69.
 - 2) Any non-domestic wastewater discharge such as a car wash, autobody shop, or any other source of industrial wastewater.
 - 3) Any private sewage disposal system with a currently effective individual NPDES permit.
 - 4) Any private sewage disposal system that discharges to a state owned natural or artificial lake, an Outstanding Iowa Water or an Outstanding National Water as defined in IAC 567-61.2(2).
3. Exclusions. The following private sewage disposal systems' discharges do not require an NPDES permit:
 - 1) Private sewage disposal systems which discharge to the surface of the ground where the effluent will not reach a designated water of the state or a subsurface drainage tile.
 - 2) Private sewage disposal systems that discharge to the subsurface. Such systems include soil absorption trenches, mound systems, drip irrigation systems, or any other system with subsurface absorption.

C. Requiring An Individual Permit.

1. The Iowa Department of Natural Resources (Department) may require any person authorized to discharge under this permit to apply for and obtain an individual NPDES permit. The causes for such a request may include but are not limited to location of the discharge, amount of discharge, and history of non-compliance with the general permit condition. When the Department notifies a discharger to apply for an individual permit, a deadline, not longer than one year, will be established for submitting the application. If a person fails to submit an individual NPDES permit application by the deadline established by the Department under this paragraph, his/her coverage under this general permit is automatically terminated at the end of the day specified for the application submittal.

2. Any person authorized to discharge by this permit may apply for an individual permit from the Department. The application for an individual permit shall include DNR Form 30 (542-3220) and all applicable fees and shall be submitted to the Department in accordance with 567 IAC 64.3(4)(a).
3. When an individual NPDES permit is issued to a discharger, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the issuance date of the individual permit. When an individual NPDES permit is denied to a person for a discharge otherwise subject to this general permit, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the date of such denial, unless otherwise specified by the Department.

D. Authorization.

1. If the owner of a private sewage disposal system proposes to discharge from the disposal system to a designated water of the state or a subsurface drainage tile, he/she must submit a complete Notice of Intent (NOI) in accordance with the requirements of Part II of this general permit to be authorized to discharge under this general permit.
2. Unless notified by the Department to the contrary, owners who have submitted complete NOIs are authorized to discharge effluent from a private sewage disposal system constructed in accordance with IAC 567 Chapter 69 and meet all the terms and conditions of this permit. Upon review of the NOI, the Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit pursuant to Part I.C.1 of this general permit. If the Department determines that the discharge is eligible for coverage under this general permit, an authorization will be sent to the applicant.

E. Reauthorization.

1. The permit will be reauthorized and reissued prior to the expiration date of this permit.
2. Prior to the expiration of an authorization issued under this permit, the owner shall resubmit a NOI with the Department for coverage under the reissued general permit.
3. If this permit is not reissued prior to the expiration date, it will be administratively continued in accordance with 40 CFR 122.6 and IAC 567 64.8 and it will remain in force and effect for discharges that were covered prior to permit expiration date. If a system was granted permit coverage prior to the permit expiration date and the owner resubmitted NOI as specified above, the system will automatically remain covered by this permit until the earliest of:
 - 1) Authorization for coverage granted by the Department under a reissued or replacement of this general permit, following owner's timely submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
 - 2) Owner's submittal of a Notice of Discontinuation; or
 - 3) Issuance of an individual permit for the system's discharge; or
 - 4) A formal decision by the Department not to require permit coverage for the discharge.

Part II. Notice of Intent Requirements

A. Deadlines for Filing a Notice of Intent.

1. The owner shall file a NOI for coverage under this general permit with the Department when the construction permit is issued by the local administrative authority. A copy of the NOI must also be filed with the local administrative authority.

2. Owners of existing private sewage disposal systems constructed prior to the effective date of this general permit shall file a NOI by December 31, 2012.

B. Failure to Notify.

1. Owners who fail to notify the Department of their intent to be covered by this general permit, or who discharge pollutants to designated waters of the state or a subsurface drainage tile without an NPDES permit, are in violation of the Clean Water Act and the Code of Iowa 455B.

C. Contents of the Notice of Intent.

1. A complete NOI shall include DNR Form 542-1541, signed in accordance with Part IV.C of this permit. The information on the form shall include the following:
 - 1) The owner's name, address, and telephone number.
 - 2) The location of the private sewage disposal system. Location shall be provided as ¼, ¼, ¼ Section, Township, Range, and County in which the system discharges, or as the GPS coordinates and County.
 - 3) The type of secondary treatment system from which the discharge originates (i.e., sand filter, aerobic treatment unit, peat filter, textile filter, waste stabilization pond, constructed wetland).
 - 4) A certification that the information provided is accurate.
 - 5) A certification that the terms and conditions of the general permit will be met.
 - 6) Certification that the system will be constructed in conformance with the requirements of IAC 567 Chapter 69, if permit coverage is for a new or replacement private sewage disposal system.

D. Where to Submit.

1. The NOI must be filed with the Department at the following address (or as directed by the Department)

NPDES Section
Iowa Department of Natural Resources
502 E. 9th Street
Des Moines, IA 50319-0034
2. A copy of the completed NOI shall be submitted to the local administrative authority after applying for a construction permit for a private sewage disposal system.

Part III. Compliance Requirements

A. Compliance.

1. The system owner shall be responsible for assuring that compliance with all the permit terms and conditions is met.

B. Effluent Sampling by Qualified Samplers.

1. The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a "qualified sampler" shall conduct effluent sampling for compliance monitoring. "Qualified samplers" shall be one of the following:
 - 1) A county or city environmental health staff person;
 - 2) An Iowa-certified wastewater treatment operator; or
 - 3) An individual who has received training approved by the Department to conduct effluent sampling.

C. Sampling Frequency and Testing Parameters.

All permitted discharging private sewage disposal systems shall be sampled and tested no less than twice a year at six-month intervals for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Escherichia coli (E. coli), and once a year for total suspended solids (TSS).

D. Effluent quality limits are as follows:

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
Class "A1", "A3" waters	235	25	25
Class "A2" waters	2880	25	25

E. Sampling Location and Procedure:

1. Effluent samples must be collected from an approved sampling port or from the end of the discharge pipe (if accessible) following the final treatment component of the system. If the system is not discharging at time of sampling, but appears to have been discharging, water must be added to the system through the building plumbing to create a discharge. If there is no evidence of a discharge from the system within the previous six months, only a physical inspection of the discharge area for any signs of surfacing effluent is required. If no sample was collected, a brief inspection report must be submitted to the local administrative authority and to the Department explaining why no sample was collected.
2. Effluent samples must be analyzed by a laboratory certified by the Department. A list of certified laboratories is available from the Department or the local administrative authority. Sample containers provided by the laboratory must be used for the sample. The sample must be collected from a free falling effluent pipe or sampling port where the effluent is flowing. Samples shall not be taken from a pooled location. Samples must be cooled to 4 degrees C (38 degrees F) immediately after collection and be maintained at this temperature during transport to the laboratory. (Packing the sample in ice is satisfactory). The sampler must ensure that the laboratory receives samples within one day (24 hours) of collection.

F. Reporting of Sample Results and Repeat Sampling:

1. The owner must submit all required sample test results to the Department and to the local administrative authority. All required sample test results must also be sent to the maintenance contractor, if applicable.

G. Duty to mitigate

1. If a sample does not meet the effluent limits, the owner must investigate the potential causes of the problem, and a repeat sample must be taken within 30 days for the specific parameter that was out of compliance. If three consecutive samples do not meet the effluent limits, the owner must take corrective actions to bring the system into compliance.

H. Retention of Records

1. The owner shall retain records of all monitoring information required by this permit for a period of three years.
2. The records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurement;
 - 2) The name of the individual who performed the sampling or measurement;
 - 3) The date analyses were performed;
 - 4) The name of the laboratory that performed the analyses; and,
 - 5) The results of the analyses.

Part IV. Standard Permit Conditions.

A. Duty to Comply.

1. The owner of a private sewage disposal system that discharges to a designated water of the state or a subsurface drainage tile must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the Code of Iowa and the Clean Water Act and is grounds for enforcement action, termination of coverage under this general permit, or for denial of a request for coverage under a reissued general permit.

B. Duty to Provide Information.

1. The owner shall furnish to the Department or to the local administrative authority any information relative to the construction, operation or maintenance of this facility, including effluent sample test results, within the time period specified by the Department.

C. Signatory Requirements.

1. An NOI for this permit shall be signed by the owner of the system.
2. If the owner is not an individual, the person signing the NOI shall be as follows:
 - 1) Corporations. In the case of corporations, a principal executive officer of at least the level of vice-president.
 - 2) Partnerships. In the case of a partnership, a general partner.
 - 3) Sole proprietorships. In the case of a sole proprietorship, the proprietor.

D. Severability.

1. If any provision or application of any provision to any circumstances is found to be invalid by this Department or by a court of law, all other provisions and conditions shall remain effective.

E. Permit Actions:

1. Coverage under this general permit may be terminated for cause. The filing of a request by the owner for a permit discontinuance, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Legal and Financial Liability Waiver:

1. No legal or financial responsibility arising from the operation or maintenance of any disposal system or part thereof installed by the permittee to achieve compliance with this permit shall attach to the State of Iowa or the Department.

G. Transfer of coverage under this permit:

1. For discharges covered under this general permit, when the property with a private sewage system changes ownership, the Department must be notified of the title transfer prior to the new owner taking possession of the property. After the Department is thus notified, the new owner(s) shall be subject to all terms and conditions of this general permit from and after the date the Department receives written notice of transfer of responsibility.

H. Notice of Discontinuation:

1. If a private sewage disposal system is modified to a system that does not discharge to a designated water of the state or a subsurface drainage tile, the owner of the system shall submit a Notice of Discontinuation to the Department.
2. The Notice of Discontinuation shall include the following information:
 - 1) the name of the owner to which the permit authorization was issued;
 - 2) the general permit authorization number;
 - 3) the date the discharge is discontinued; and,
 - 4) the following certification signed in accordance with Part IV.C.2 of this permit:

"I certify under penalty of law that discharge from the above private sewage system is discontinued. I understand that by submitting this Notice of Discontinuation, I am no longer authorized to discharge from my private sewage disposal system by Iowa Department of Natural Resources NPDES General Permit No. 4 and that discharging pollutants from my private sewage disposal system to designated waters of the state or a subsurface drainage tile is unlawful under the Clean Water Act and Code of Iowa.

Part V. Reopener Clause

If there is evidence indicating potential or realized impacts to water quality due to any discharge from an authorized private sewage disposal system covered by this general permit, the owner of such system may be required to obtain an individual permit in accordance with Part I.C of this general permit.

Part VI. Definitions.

"Administrative Authority" means the local (county or city) or regional Board of Health authorized under Code of Iowa 455B.172 to regulate private sewage disposal systems and the Department.

"Carbonaceous Biochemical Oxygen Demand (CBOD5)" means a five-day measurement of the amount of oxygen used by microorganisms in the biochemical oxidation of organic matter.

"Class 'A1' water," also referred to as a primary contact recreational use water, means waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

"Class 'A2' water," also referred to as a secondary contact recreational use water, means waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. Such uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.

"Class 'A3' water," also referred to as a children's recreational use water, means waters in which recreational uses by children are common. Such waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.

"Department" means the Department of Natural Resources of the State of Iowa.

"Private sewage disposal system" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis. This includes domestic waste, whether residential or nonresidential, but does not include industrial waste of any flow rate except as provided for in IAC 567-68.11. "Private sewage disposal systems" includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets, and portable toilets.

"Qualified sampler" means one of the following persons, for the purposes of collecting compliance effluent samples required under NPDES General Discharge Permit No. 4: a county or city environmental health staff person, an Iowa-certified wastewater treatment operator, or an individual who has received training approved by the Department to conduct effluent sampling.



THE ON-SITE WASTEWATER ASSISTANCE PROGRAM (OSWAP)

is a source of low-cost financing to help rural homeowners replace outdated septic systems. Upgrading these inadequate systems with approved on-site systems helps prevent pollution of surface water, groundwater and water wells in Iowa.

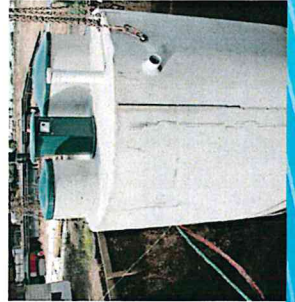
Approved systems include both a septic tank and a secondary treatment system such as a leachfield. Without treatment, human waste containing harmful bacteria and viruses is discharged directly into the environment. The program offers low-interest loans through participating local lenders. An applicant must own an existing home with a septic system in an unincorporated area (outside city limits), not served by a public sewer.

LOAN TERMS

- Loan amounts start at \$2,000
- Loan terms up to 10 years
- Can fund up to 100% of actual costs, no up-front cash required
- Up to 3% interest fixed for the life of the loan
- Available through the lender of your choice

The Clean Water State Revolving Fund offers financing programs to help Iowans address water quality problems.

Project applications are accepted at any time during the year, and the approval process is simple, convenient and fast.



“We started having a lot of septic problems and found out that we were going to have to replace our current system. Thanks to OSWAP’s low-interest loan and City National Bank, we were able to get it fixed. I was surprised how affordable my payments were with the 3% interest over 10 years. It is a very convenient, affordable and easy program that I would recommend to anyone.”

Mark Feller—Borrower
Sherandoah



“The program is a benefit for our customers as well as a service to the communities we serve. We have issued 50 loans through the program since 2002 and have received excellent service. Our customers appreciate the 3% interest rate and the fact that the loan can be for the entire cost of the improvements they make to their system. Amortization can be established to make the payments affordable for everyone. A major benefit to Hills Bank is the fact that the entire loan amounts are fully funded by the Iowa Finance Authority.”

Don Wilson—Lender
*First Vice President, Commercial Banking
Hills Bank and Trust Company*



“I am a big advocate of the OSWAP program. Together we are able to improve water quality through educating and encouraging rural residents to update or replace outdated septic systems. I’m proud to say Washington County is the leader in OSWAP loans. I strongly encourage other county sanitarians to promote the program to local banks and real estate agencies as we have found great success.”

Jeff Thoman—Sanitarian
Washington County Sanitarian



HOW TO APPLY

1. Contact your county sanitarian or county environmental health agency to apply for an on-site wastewater system permit and complete the project application form.
2. Obtain construction bids.
3. Apply for a loan through a participating lender. If your lender is not familiar with the program, ask them to contact the Iowa Finance Authority at 800.432.7230 or visit www.iowasrf.com.

FOR MORE INFORMATION, GO TO:

www.iowasrf.com

OR CONTACT:

Dan Olson

Iowa Department of Natural Resources

daniel.olson@dnr.iowa.gov

515.281.8263

ON-SITE WASTEWATER ASSISTANCE PROGRAM

Low-interest loans for on-site septic system replacement



INVESTING IN IOWA'S WATER

APPLICATION FOR A PERMIT TO CONSTRUCT, RECONSTRUCT OR ALTER A PRIVATE SEWAGE DISPOSAL SYSTEM IN XXXX COUNTY

- 1. Permit Application Fee: \$100.00 Date of Application: _____
- 2. Owner: _____ Address: _____
City: _____ Zip: _____ Telephone: _____
- 3. Address of Installation: _____ City: _____ Zip: _____
Township: _____ Section: _____ Lot Size: _____ x _____ or acres: _____
- 4. Contractor: _____ Address: _____ Telephone: _____
- 5. Building Type: New Existing Basement fixtures (toilet, shower, washer) Yes No
 Commercial: Type of business or building _____ # employees _____
Describe business and source of waste: _____
 Single Family House: Number of Bedrooms _____
 Multi Family: Number of Units _____ No. of Bedrooms/unit: 1BR ___ 2BR ___ 3BR ___ -4BR ___

6. Water Supply: (check all that apply): Public and/or Private Well
_____ Distance of Well to Septic System _____ Distance of Well to Distribution Lines
(Location of any and all wells must be identified even if you are hooked to rural water and not drinking from the well)

7. Attach a diagram (drawn to scale) of the proposed septic system, identifying the following:
(a) lot lines (b) building (c) septic tank (d) laterals (e) wells (f) driveways (g) lake, stream, pond, drainage ditch (h) foundation drains/ subsurface tiles (if known) (i) water lines under pressure

8. If you are replacing or repairing an existing system, would you like information about the Onsite Wastewater Loan Program? Yes No *(If yes, please contact Xxxx County Public Health)- Not available for new construction*

9. Certification
I certify that, to the best of my knowledge, the proceeding attached information is correct, that all proposed work will be completed in accordance with Chapter 69 of the Iowa Administrative Code (On-site wastewater treatment and disposal systems) before the system is placed in operation, and that adequate maintenance procedures will be followed during the life of the system.

No part of the proposed system shall drain into any ditch, body of water, stream, drainage tile, or be exposed to open air.

The Xxxx County Board of Health may require the property owner to connect to a public sewer system when one becomes reasonable accessible. The Xxxx County Board of Health, by issuance of this permit and performance of related inspections, does not warrant the performance of this wastewater disposal system, nor that it be free from defects.

Signature of Applicant _____
Date of Application
Please return with permit fee to: Xxxx County Public Health ~

For use by Xxxx County Public Health

Permit to Construct A Private Sewage Disposal System

Permit Fee Received: _____ Permit No.: _____
Date
Application Approved: _____
Xxxx County Environmental Health Specialist _____
Date Approved

System Requirements: Septic Tank _____ gallons - Leach Field _____ ft 24" wide trench or _____ ft 36" wide trench

**MARION COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
PRIVATE SEWAGE SYSTEM INSPECTION REPORT
SUBSURFACE SOIL ABSORPTION - LATERALS**

GENERAL INFORMATION

Owner:	Contractor:
Address:	Inspector:
Inspection Date:	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved

S = Satisfactory U = Unsatisfactory NA = Not Applicable

S U NA	SITE PREPARATION
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Sewer Permit No:
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Percolation/Soil Test No:
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	System Exposed for Inspection

S U NA	SETBACKS
Minimum Setbacks to Closed / Open Portions of Septic System:	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Private Water Well 50' / 100'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Shallow Public Water Well 200' / 400'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Deep Public Water Well 100' / 200'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Heat Pump Borehole 50' / 100'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Lake or Reservoir 50' / 100'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Stream or Pond 25' / 25'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Edge of Drainage Ditch 10' / 10'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dwelling or Other Structure 10' / 10'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Property Lines 10' / 10' (Unless an easement is signed and recorded.)
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Other Subsurface Treatment Systems 5' / 10'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Water Line under Pressure 10' / 10'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Suction Water Line 50' / 100'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Foundation Drain or Subsurface Tiles 10' / 10'

S U NA	SEWER PIPE FROM BUILDING TO PRIMARY TREATMENT
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Min. Setback to Wells Private Wells 10' / Public Wells 25'
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Material Sch. 40 Plastic Pipe (or SDR 26 or Stronger) or Cast Iron
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Cleanouts At building, every 100', and each change of direction > 45°.

S U NA	PRIMARY TREATMENT – SEPTIC TANK
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Gallon Capacity <input type="checkbox"/> 1000 <input type="checkbox"/> 1250 <input type="checkbox"/> 1500 <input type="checkbox"/> 2000 <input type="checkbox"/> Other:
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Watertight Material <input type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass <input type="checkbox"/> Plastic (ribbed const)
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Manufacturer
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Compartments At least 2 compartments or 2 tanks in series.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Influent Compartment 1/2 to 2/3 of total tank capacity.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Effluent Compartment 1/3 to 1/2 of total tank capacity.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Inlet 2" to 4" higher than outlet.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Baffles 4" Diameter schedule 40 plastic tees.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Effluent Screen Meets NSF Standard 46 or equivalent.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Watertight Risers Min. 18" diameter at or above ground surface.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Inlet/Outlet Connections Self-sealing gaskets formed or cast into tank material.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Schedule 40 Pipe At least 5' past outlet and 2' past disturbed ground.

S	U	NA	DOSING SYSTEMS			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Type	<input type="checkbox"/> Pump	<input type="checkbox"/> Siphon	<input type="checkbox"/> Other:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Watertight Pit	At least 24" in diameter.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Watertight Riser	With tight-fitting cover at or above ground level.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pump	Submersible pump of corrosion-resistant material.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Line Size	Not smaller than outlet of pump it serves.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Line Drainage	Drains between dosing or buried below frost level.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High Water Alarm	Visual or audio alarm to alert of high water in pit.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical Connections	No connections located inside pump pit.		

S	U	NA	DISTRIBUTION BOX			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Placement	Placed on undisturbed soil.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Material	Corrosion-resistant rigid plastic.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Baffle	Pipe tee or baffle at inlet.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Outlet Heights	Outlets at same level and min. 4" above bottom of box.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Levelers	Outlets equipped with leveling device for equal flow.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unused Outlets	Securely closed.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Header Pipes	Rigid PVC (ASTM Standard 2729 or stronger).		

S	U	NA	LATERALS			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Material	<input type="checkbox"/> Chamber	<input type="checkbox"/> Tile	<input type="checkbox"/> Other:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trench Width	<input type="checkbox"/> 24"	<input type="checkbox"/> 36"	<input type="checkbox"/> Other:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Total Length	Required: ft	Installed: ft	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No. of Lines	Trenches installed at equal lengths.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spacing	6' Min. between trenches.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Depth	Max. trench depth of inches. (See perc/soil test)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil Cover	6" Min. soil cover over laterals.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Confining Layer	3' Min. separation between confining layer and trench bottom.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perc/Soil Test	Lateral field installed in perc/soil test area.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water Discharge	No sump, roof, foundation, or storm drains discharging into or upon field.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distribution Pipe	4" Ridged PVC pipe or approved alternative.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Aggregate Material	Min. 6" approved aggregate below and enough to cover pipe.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Separation Material	Material laid to separate aggregate from soil.		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Construction	No construction of any kind over system.		

Additional Comments:

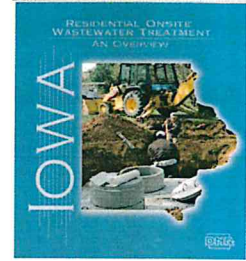
This report indicates the condition of the installed private sewage system at the time of inspection and does not guarantee the future condition or proper function of the system. To the best of my knowledge, all of the listed local and state ordinances have been adhered to.

Septic System Resources

Residential Onsite Wastewater Treatment, An Overview

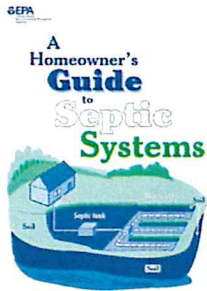
Iowa Department of Natural Resources

<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/PrivateSepticSystems.aspx>



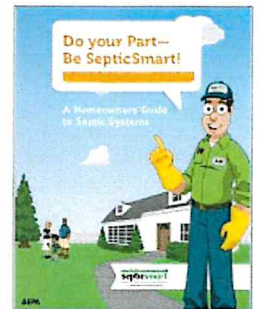
A Homeowner's Guide to Septic Systems

http://www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf



SepticSmart

<http://water.epa.gov/infrastructure/septic/homeowner-resources.cfm>
<http://water.epa.gov/infrastructure/septic/images/LongHomeownerGuide.jpg>



On-Site Waste Water Assistance Program

http://www.iowasrf.com/program/other_water_quality_programs/onsite_waste_water_assistance_program.cfm

Iowa Farm*A*Syst – Assessing your Household Wastewater Management

<http://www.iowafarmbureau.com/resources/handlers/storagecontainer.ashx?path=16a20332-0a7b-4c3c-b150-064f08f0d7a3>



National Environmental Services Center – Small Flow Clearinghouse

<http://www.nesc.wvu.edu/subpages/septic.cfm>



