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ST. LOUIS COUNTY HEREBY ADOPTS BY REFERENCE MINNESOTA RULES, CHAPTERS 7080, 7081, 7082, and 7083 IN THEIR ENTIRETY AS NOW CONSTITUTED AND FROM TIME TO TIME AMENDED. THIS ADOPTION DOES NOT SUPERSEDE THE COUNTY'S RIGHT OR ABILITY TO ADOPT LOCAL STANDARDS THAT ARE IN COMPLIANCE WITH MINNESOTA STATUTE 115.55.

CHAPTER 7080

FROM MINNESOTA POLLUTION CONTROL AGENCY

INDIVIDUAL SUBSURFACE SEWAGE TREATMENT SYSTEMS

DESIGN STANDARDS FOR INDIVIDUAL SUBSURFACE SEWAGE TREATMENT SYSTEMS

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DESIGN STANDARDS FOR INDIVIDUAL SUBSURFACE SEWAGE TREATMENT SYSTEMS

7080.1050 PURPOSE AND INTENT.

The proper location, design, installation, use, and maintenance of an individual subsurface sewage treatment system (ISTS) protects the public health, safety, and general welfare by the discharge of adequately treated sewage to the groundwater. In accordance with the authority granted in Minnesota Statutes, chapters 103F, 103G, 115, and 116, the Pollution Control Agency provides minimum environmental protection standards for ISTS as defined in this chapter. These environmental protection standards shall be adopted countywide and administered and enforced by local units of government as directed by chapter 7082 and Minnesota Statutes, section 115.55. This chapter regulates all ISTS as defined in this chapter. This chapter does not regulate systems that do not receive sewage as defined in this chapter. If systems receive both sewage and nonsewage, the requirements of this chapter apply, plus any additional requirements governing the nonsewage portion of the wastewater. Systems serving two or more dwellings, systems serving other establishments that serve over 20 persons, and systems receiving nonsewage are also regulated under Code of Federal Regulations, title 40, parts 144 and 146. This chapter does not regulate systems that discharge to the ground surface or surface waters. Those systems require a national pollution discharge elimination system permit. In addition, this chapter provides prescriptive design, construction, and operational standards toreasonably protect surface water and groundwater and promote public health, safety, and general welfare. This chapter also provides public health and environmental outcomes as a basis for a custom-designed system. Technology and products employed in system design shall adequately protect the public health and the environment as determined by chapter 7083 and be approved for use by the local unit of government.

In conjunction with these standards, the agency encourages the use of advanced treatment methods and waste reduction to further reduce the discharge of contaminants. Companion to this chapter are standards for midsized ISTS, chapter 7081; administrative requirements for local ordinances, permit, and inspection programs, chapter 7082; and certification and licensing requirements for those who design, install, inspect, manage, or maintain ISTS, chapter 7083.

7080.1100 DEFINITIONS.

Certain terms. In addition to the definitions in chapters 7081, 7082, and 7083, which are incorporated in this part, and Minnesota Statutes, section 115.55, the following terms have the meanings given them. For the purposes of this chapter, if a term used in this chapter is defined in chapter 7081, 7082, or 7083 it shall apply to other SSTS if referenced in later chapters. For the purposes of these standards, certain terms or words used are interpreted as follows: the words "shall" and "must" are mandatory and the words "should" and "may" are permissive. All distances specified in this chapter are horizontal distances unless otherwise specified.

Absorption Area. “Absorption Area” means the area of Original Soil below a Mound that is designed to absorb sewage tank effluent. The Absorption Area for Trenches, Seepage Beds, and At-grade Systems is the bottom area in contact with the Distribution Medium and the Original Soil designed to absorb sewage tank effluent.

Agency. "Agency" means the Minnesota Pollution Control Agency.

Alarm device. "Alarm device" means a device that alerts a system operator or system owner of a component's status using a visual or audible device. An alarm device can be either on site or remotely located.

Alternative Local Standards. “Alternative Local Standards” means Individual Sewage Treatment System Standards that differ from the state standard.

Applicable requirements. "Applicable requirements" means:

A. local ISTS ordinances that comply with parts 7080.2150, subpart 2, and 7081.0080, subparts 1 to 5; chapter 7082; and Minnesota Statutes, section 115.55; or
B. in areas without complying ordinances to regulate ISTS, the requirements of this chapter.

At-grade system. "At-grade system" means a pressurized soil treatment and dispersal system where sewage tank effluent is dosed to an absorption bed that is constructed directly on original soil at the ground surface and covered by loamy soil materials.

Baffle. "Baffle" means a device installed in a septic tank to retain solids and includes, but is not limited to, vented sanitary tees with submerged pipes and effluent screens.

Bedrock. "Bedrock" means geologic layers, of which greater than 50 percent by volume consist of unweathered in-place consolidated rock or rock fragments. Bedrock also means weathered in-place rock which cannot be hand augered or penetrated with a knife blade in a soil pit.

Bedroom. "Bedroom" means, for the sole purpose of estimating design flows from dwellings, an area that is:

A. a room designed or used for sleeping; or
B. a room or area of a dwelling that has a minimum floor area of 70 square feet with access gained from the living area or living area hallway. Architectural features that affect the use as a bedroom under this item may be considered in making the bedroom determination.

Biochemical oxygen demand or BOD. "Biochemical oxygen demand" or "BOD" means the measure of the amount of oxygen required by bacteria while stabilizing, digesting, or treating biodegradable organic matter under aerobic conditions over a five-day incubation period, commonly expressed in milligrams per liter (mg/l).

Building sewer. "Building sewer" means the part of the drainage system which extends from the end of the building drain and conveys its discharge to a subsurface sewage treatment system. Building sewers are regulated under Minnesota Rules, Chapters 4715 and 4725.

Carbonaceous biochemical oxygen demand or CBOD $_5$. "Carbonaceous biochemical oxygen demand" or "CBOD $_5$" means the measure of the amount of oxygen required by bacteria while stabilizing, digesting, or treating the organic matter under aerobic conditions over a five-day incubation period while in the presence of a chemical inhibitor to block nitrification. CBOD is commonly expressed in milligrams per liter (mg/l).

Certificate of compliance. "Certificate of compliance" means a document, written after a compliance inspection, certifying that a system is in compliance with applicable requirements at the time of the inspection.

Certified statement. "Certified statement" means a statement signed by a certified individual, apprentice, or qualified employee under chapter 7083 certifying that the licensed business or qualified employee completed work in accordance with applicable requirements.

Cesspool. "Cesspool" means an underground pit, receptacle, or seepage tank that receives sewage directly from a building sewer and leaches sewage into the surrounding soil, bedrock, or other soil materials. Cesspools include sewage tanks that were designed to be watertight, but subsequently leak below the designed operating depth.

Clean Sand. "Clean Sand" means sand for the purpose of Mound construction shall meet the following sieve sizing requirements as referenced in 7080.2220, subp. 3. C.

Commissioner. "Commissioner" means the commissioner of the Pollution Control Agency.

Compliance inspection. "Compliance inspection" means an evaluation, investigation, inspection, or other such process for the purpose of issuing a certificate of compliance or notice of noncompliance.

Compliant. "Compliant" means meeting the SSTS treatment, operational, and safety goals of MN 7080.1500.

Contour Loading Rate. "Contour loading rate means the amount of effluent loaded to the soil per the length of the dispersal unit or units along the contour.

County. "County" means St. Louis County, Minnesota.

Design Flow. "Design Flow" means the daily volume of wastewater for which an SSTS is designed to treat and discharge.

Director. "Director" means the St. Louis County Environmental Services Director.

Distinct. "Distinct" means a soil color that is not faint as described in subpart 29.

Distribution box. "Distribution box" means a device intended to distribute sewage tank effluent concurrently and equally by gravity to multiple segments of a soil dispersal system.

Distribution device. "Distribution device" means a device used to receive and transfer effluent from supply pipes to distribution pipes or downslope supply pipes, or both. These devices include, but are not limited to, drop boxes, valve boxes, distribution boxes, or manifolds.

Distribution medium. "Distribution medium" means the material used to provide void space in a dispersal component, through which effluent flows and is stored prior to infiltration. Distribution media includes, but is not limited to, drainfield rock, polystyrene beads, chambers, and gravelless pipe.

Distribution pipes. "Distribution pipes" means perforated pipes that distribute effluent within a distribution medium.

Drop box. "Drop box" means a distribution device used for the serial gravity application of sewage tank effluent to a soil dispersal system.

Dwelling. "Dwelling" means any building with provision for living, sanitary, and sleeping facilities.

Effluent screen. "Effluent screen" means a device installed on the outlet piping of a septic tank for the purpose of retaining solids of a specific size.

EPA. "EPA" means the United States Environmental Protection Agency.

Existing systems. "Existing systems" means systems that have been previously inspected and approved by the local unit of government during installation. In addition, all operating systems installed before the adoption of a local permitting and inspection program are considered existing systems.

Faint. "Faint" means a soil color:

A. with the same hue as another soil color but that varies from the other color by two or less units of value and not more than one unit of chroma;
B. that differs from another soil color by one hue and by one or less units of value and not more than one unit of chroma; or
C. that differs from another soil color by two units of hue with the same value and chroma.

Fecal coliform or FC. "Fecal coliform" or "FC," for purposes of this chapter, means bacteria common to the digestive systems of humans that are cultured in standard tests. Counts of these organisms are typically used to indicate potential contamination from sewage or to describe a level of disinfection, generally expressed in colonies per 100 mL.

Fine sand. "Fine sand" means a sand soil texture, as described in the Field Book for Describing and Sampling Soils, which is incorporated by reference in subpart 36, where more than 50 percent of the sand has a particle size range of 0.05 millimeters, sieve size 270, to 0.25 millimeters, sieve size 60.

Flood fringe. "Flood fringe" means that portion of the floodplain outside the floodway. Flood fringe is synonymous with the term "floodway fringe" used in flood insurance studies.

Floodplain. "Floodplain" means the area covered by a 100-year flood event along lakes, rivers, and streams as published in technical studies by local, state, and federal agencies, or in the absence of these studies, estimates of the 100-year flood boundaries and elevations as developed according to a local unit of government's floodplain or related land use regulations.

Floodway. "Floodway" means the bed of a wetland or lake, the channel of a watercourse, and those portions of the adjoining floodplain that are reasonably required to carry the regional flood discharge.

Flow measurement. "Flow measurement" means any method to accurately measure water or sewage flow, including, but not limited to, water meters, event counters, running time clocks, or electronically controlled dosing.

Geomorphic description. "Geomorphic description" means the identification of the landscape, landform, and surface morphometry of the proposed area of the soil treatment and dispersal system as described in the Field Book for Describing and Sampling Soils: Version 2.0 (2002), developed by the National Soil Survey Center and Natural Resources Conservation Service of the United States Department of Agriculture. The field book is incorporated by reference, is not subject to frequent change, and is available through the Minitex interlibrary loan system.

Gray water. "Gray water" means sewage that does not contain toilet wastes.
Gray water system. "Gray water system" means a system that receives, treats, and disperses only gray water or other similar system as designated by the commissioner.

Hazardous waste. "Hazardous waste" means any substance that, when discarded, meets the definition of hazardous waste in Minnesota Statutes, section 116.06, subdivision 11.

Holding tank. "Holding tank" means a tank for storage of sewage until it can be transported to a point of treatment and dispersal. Holding tanks are considered a septic system tank under Minnesota Statutes, section 115.55.

Individual subsurface sewage treatment system or ISTS. "Individual subsurface sewage treatment system" or "ISTS" means a subsurface sewage treatment system or part thereof, as set forth in Minnesota Statutes, sections 115.03 and 115.55, that employs sewage tanks or other treatment devices with final discharge into the soil below the natural soil elevation or elevated final grade that are designed to receive a sewage design flow of 5,000 gallons per day or less. ISTS also includes all holding tanks that are designed to receive a design flow of 10,000 gallons per day or less; sewage collection systems and associated tanks that discharge into ISTS treatment and dispersal components; and privies. ISTS does not include those components defined as plumbing under chapter 4715.

Inner wellhead management zone. "Inner wellhead management zone" means the drinking water supply management area for a public water supply well that does not have a delineated wellhead protection area approved by the Department of Health under part 4720.5330.

Invert. "Invert" means the lowest point of a channel inside a pipe.

Liquid capacity. "Liquid capacity" means the liquid volume of a sewage tank below the invert of the outlet pipe or, for holding tanks and pump tanks, the liquid volume below the invert of the inlet.

Lot. "Lot" means a tract of land which is all or part of a block and is identified on a plat as per Minnesota Statutes, Chapter 505.

Management plan. "Management plan" means a plan that requires the periodic examination, adjustment, testing, and other operational requirements to meet system performance expectations, including a planned course of action in the event a system does not meet performance expectations.

Matrix Color. "Matrix Color" means the majority of the color in a soil horizon, as described in the Field Book for Describing and Sampling Soils, which is incorporated by reference in 7080.1100, Subpart 36.

Mottles. "Mottles" means the minority of the variegated colors in a soil horizon, as described in the Field Book for Describing and Sampling Soils, which is incorporated by reference in subpart 36.

Mound system. "Mound system" means a soil treatment and dispersal system designed and installed such that all of the infiltrative surface is installed above grade, using clean sand between the bottom of the infiltrative surface and the original ground elevation, utilizing pressure distribution and capped with suitable soil material to stabilize the surface and encourage vegetative growth.

New construction. "New construction" means installing or constructing a new ISTS or altering, extending, or adding capacity to a system that has been issued an initial certificate of compliance.

Non-conforming. "Non-conforming" means any existing soil treatment system that has less than the equivalent of 30.6 inches but at least 12 inches of vertical separation between the bottom of the distribution media and saturated soil level or bedrock in SWF areas or less than the equivalent of 24 inches but at least 12 inches of vertical separation between the bottom of the distribution media and saturated soil level or bedrock in non-SWF areas; or any system that discharges sewage to a Seepage Pit, Dry Well or Leaching Pit with at least 12 inches of vertical separation in a non-SWF area; or Individual Sewage Treatment Systems in use that are undersized relative to occupancy; or any system that does not meet minimum required setbacks.

Notice of noncompliance. "Notice of Noncompliance" means a written document issued by the Department based upon a signed inspection by a licensed inspector notifying a system owner that the owner's onsite/cluster treatment system has been inspected by a certified inspector and determined to be noncompliant with the standards of this Ordinance.

Operating Permit. "Operating Permit" means an ISTS permit that is issued for the construction, installation or use of a system that includes Performance Standards, time limitations, maintenance requirements, and other conditions as may be required by the Director to evaluate and assure adequate system construction, installation, maintenance, or performance.

Ordinary high water level. "Ordinary high water level" of surface water has the meaning given in Minnesota Statutes, section 103G.005, subdivision 14.

Original soil. "Original soil" means naturally occurring soil that has not been cut, filled, moved, smeared, compacted, altered, or manipulated to the degree that the loading rate must be reduced from that associated with natural soil conditions.

Other pit. "Other pit" means any pit or other device designed to leach sewage effluent that is greater than 30 inches in height or has a bottom area loading rate of sewage greater than two gallons per square feet per day.

Owner. "Owner" means any person having possession of, control over, or title to property with an ISTS.

Parent material. "Parent material" means the unconsolidated and chemically weathered geologic mineral or organic matter from which soils are developed by soil forming processes.

Percolation rate. "Percolation rate" means the rate of a drop of water infiltrating into a test hole as specified in part 7080.1720, subpart 6, item B.

Periodically saturated soil. "Periodically saturated soil" means the highest elevation in the soil that is in a reduced chemical state due to soil pores filled or nearly filled with water causing anaerobic conditions. Periodically saturated soil is determined by the presence of redoximorphic features in conjunction with other established indicators as specified in part 7080.1720, subpart 5, items E and F, or determined by other scientifically established technical methods or empirical field measurements acceptable to the permitting authority in consultation with the commissioner.

Person. “Person” means an individual, partnership, firm, corporation, or association, or other legal entity, the state, or any other political subdivision thereof or government entity, but not including the County of St Louis.

Plastic limit. "Plastic limit" means a soil moisture content above which manipulation will cause compaction or smearing. The plastic limit can be measured by American Society for Testing and Materials, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D4318 (2005). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change.

Pressure distribution. "Pressure distribution" means a network of distribution pipes in which effluent is forced through orifices under pressure.

Privy. "Privy" means an above ground structure with an underground cavity meeting the requirements of part 7080.2280 that is used for the storage or treatment and dispersal of toilet wastes, excluding water for flushing and gray water. A privy also means a nondwelling structure containing a toilet waste treatment device.

Public waters. "Public waters" means any public waters or wetlands defined in Minnesota Statutes, section 103G.005, subdivision 15, or identified as public waters or wetlands by the inventory prepared according to Minnesota Statutes, section 103G.201.

Pump tank. "Pump tank" means a sewage tank or separate compartment within a sewage tank, which receives sewage tank effluent, that serves as a reservoir for a pump. A separate tank used as a pump tank is considered a septic system tank under Minnesota Statutes, section 115.55, subdivision 1, paragraph (p).

Redoximorphic features. "Redoximorphic features" means:

A. a color pattern in soil, formed by oxidation and reduction of iron or manganese in saturated soil coupled with their removal, translocation, or accrual, which results in the loss (depletion) or gain (concentration) of mineral compounds compared to the matrix color; or

B. a soil matrix color controlled by the presence of ferrous iron. Redoximorphic features are described in part 7080.1720, subpart 5, item E.

Repair. “Repair” means the repair or replacement of a damaged or faulty component part of an Individual Sewage Treatment System such that completion of such repair will return the system to its original operable condition. The repair shall not alter the original area, dimensions, or concept of the system.

Replacement. "Replacement" means the removal or discontinued use of any major portion of an ISTS and reinstallation of that portion of the system, such as reinstallation of a new sewage tank, holding tank, dosing chamber, privy, or soil dispersal system.

Rock fragments. "Rock fragments" means pieces of rock greater than two millimeters in diameter that are strongly cemented and resistant to rupture. Rock fragments are commonly known as gravel, stones, cobbles, and boulders.

Sand. "Sand" means a sand soil texture, as described in the Soil Survey Manual (1993) developed by the Natural Resource Conservation Service, United States Department of Agriculture. The manual is incorporated by reference, is not subject to frequent change, and is available through the Minitex interlibrary loan system.

Seepage bed. "Seepage bed" means a soil treatment and dispersal system, the absorption width of which is greater than three feet but no greater than 10 feet.

Seepage pit. "Seepage pit" means an underground pit that receives sewage tank effluent and from which the liquid seeps into the surrounding soil and that meets the design requirements in part 7080.2550.

Septage. "Septage" means solids and liquids removed from an SSTS and includes solids and liquids from cesspools, seepage pits, other pits, or similar systems or devices that receive sewage. Septage also includes solids and liquids that are removed from portable, incinerating, composting, holding, or other toilets. Waste from Type III marine sanitation devices, as defined in Code of Federal Regulations, title 33, section 159.3, and material that has come into contact with untreated sewage within the past 12 months is also considered septage.

Septic tank. "Septic tank" means any watertight, covered receptacle that is designed and constructed to receive the discharge of sewage from a building sewer or preceding tank, stores liquids for a detention period that provides separation of solids from liquid and digestion of organic matter, and allows the effluent to discharge to a succeeding tank, treatment device, or soil dispersal system.

Serial distribution. "Serial distribution" means distribution of sewage tank effluent by gravity flow that progressively loads one section of a soil treatment and dispersal system to a predetermined level before overflowing to the succeeding section and does not place a dynamic head on the lower section of the soil treatment and dispersal system. The distribution medium is allowed to serve as a conveyance medium to the next section.

Setback. "Setback" means a separation distance measured horizontally.

Sewage. "Sewage" means waste produced by toilets, bathing, laundry, or culinary operations or the floor drains associated with these sources, and includes household cleaners, medications, and other constituents in sewage restricted to amounts normally used for domestic purposes.

Sewage tank. "Sewage tank" means a receptacle used in the containment or treatment of sewage and includes, but is not limited to, septic tanks, aerobic tanks, pump tanks, and holding tanks. Requirements for sewage tanks are described in parts 7080.1900 to 7080.2030. Sewage tanks are considered a septic system tank in Minnesota Statutes, section 115.55, subdivision 1, paragraph (p).

Sewage tank effluent. "Sewage tank effluent" means the liquid that flows from a septic tank or other treatment device.

Site. "Site" means the area required for the proper location of the ISTS.

Slope. "Slope" means the vertical rise or fall divided by the horizontal distance, expressed as a percentage.

Soil dispersal area. "Soil dispersal area" means the area required for the soil dispersal system, including spacing between individual units or zones.

Soil dispersal system. "Soil dispersal system" means a system where sewage effluent is dispersed into the soil for treatment by absorption and filtration and includes, but is not limited to, trenches, seepage beds, at-grade systems, mound systems, and drip dispersal systems.

Soil texture. "Soil texture" means the soil particle size classification and particle size distribution as specified in the Field Book for Describing and Sampling Soils, incorporated by reference in subpart 36.

Structure. "Structure" means a constructed lot improvement that is intended or used for human occupancy or that is determined by the local unit of government to:

A. interfere with the construction, operation, or maintenance of an SSTS; or
B. be interfered with by the construction, operation, or maintenance of an SSTS.

Subsoil. "Subsoil" means a soil layer that has a moist color value of 3.5 or greater and has undergone weathering and soil formation processes.

Subsurface sewage treatment system or SSTS. "Subsurface sewage treatment system" or "SSTS" is either an individual subsurface sewage treatment system as defined in subpart 41 or a midsized subsurface sewage treatment system as defined in part 7081.0020, subpart 4, as applicable.

Supply pipe. "Supply pipe" means a nonperforated pipe, the purpose of which is to transport sewage tank effluent.

SWP or Systems in shoreland areas or wellhead protection areas or systems serving food, beverage, or lodging establishments. "Systems in shoreland areas or wellhead protection areas or systems serving food, beverage, or lodging establishments" or "SWF" means the following three categories of systems:

A. SSTS constructed in shoreland areas where land adjacent to public waters has been designated and delineated as shoreland by local ordinance as approved by the Department of Natural Resources;
B. SSTS constructed in wellhead protection areas regulated under Minnesota Statutes, chapter 103I; and
C. SSTS serving food, beverage, and lodging establishments that are required to obtain a license under Minnesota Statutes, section 157.16, subdivision 1, including manufactured home parks and recreational camping areas licensed according to Minnesota Statutes, chapter 327.

Toilet waste. "Toilet waste" means waste commonly disposed of in toilets, including fecal matter, urine, toilet paper, and water used for flushing.

Toilet waste treatment devices. "Toilet waste treatment devices" means other toilet waste apparatuses including incinerating, composting, biological, chemical, recirculating, or holding toilets or portable restrooms.

Topsoil. "Topsoil" means the natural, in-place organically enriched soil layer with a color value of less than 3.5.

Topsoil borrow. "Topsoil borrow" means a loamy soil material having:

A. less than five percent material larger than two millimeters, No. 10 sieve;
B. no material larger than 2.5 centimeters;
C. a moist color value of less than 3.5; and
D. adequate nutrients and pH to sustain healthy plant growth.

Treatment Level. "Treatment Level" means treatment system performance levels defined in Minnesota Rules, Chapter 7083.4030, Table III for testing of proprietary treatment products, which include the following:

Level A:	$cBOD_5 \leq 15$ mg/L; TSS $\leq$ 15 mg/L; fecal coliforms $\leq$ 1,000/100 mL.
Level A-2:	cBOD5 < 15 mg/L; TSS < 15 mg/L.
Level B:	$cBOD_5 \leq 25$ mg/L; TSS $\leq$ 30 mg/L; fecal coliforms $\leq$ 10,000/100 mL.
Level B-2:	$cBOD_5 \leq 25$ mg/L; TSS $\leq$ 30 mg/L.
Level C:	$cBOD_5 \leq 125$ mg/L; TSS $\leq$ 80 mg/L; fecal coliforms N/A.
Level TN:	Total Nitrogen < 20 mg/L or actual value.
Level TP:	Total Phosphorus < 5 mg/L or actual value.

Trench. "Trench" means a soil treatment and dispersal system, the absorption width of which is 36 inches or less.

Type I System. "Type I System" means an ISTS that follows a standard trench, bed, at-grade, mound, or graywater system design in accordance with MPCA rules, Minnesota Rules, Chapter 7080.2200 through 7080.2240.

Type II System. "Type II System" means an ISTS with acceptable modifications or sewage containment system that may be permitted for use on a site not meeting the conditions acceptable for a standard Type I system. These include systems on lots with rapidly permeable soils or lots in floodplains and privies or holding tanks.

Type III System. "Type III System" means a custom designed ISTS having acceptable flow restriction devices to allow its use on a lot that cannot accommodate a standard Type I soil treatment and dispersal system. A mound system design on a site with less than 12 inches of unsaturated soil.

Type IV System. "Type IV System" means an ISTS, having an MPCA registered pretreatment device and incorporating pressure distribution and dosing, that is capable of providing suitable treatment for use where the separation distance to a shallow saturated zone is less than the minimum allowed.

Type V System. "Type V System" means an ISTS, which is a custom engineered design to accommodate the site taking into account pretreatment effluent quality, loading rates, loading methods, groundwater mounding, and other soil and other relevant soil, site, and wastewater characteristics such that groundwater contamination by viable fecal coliforms is prevented.

Uniform distribution. "Uniform distribution" means a method that distributes effluent evenly over the entire absorption area of a component over both time and space.

Valve box. "Valve box" means a watertight structure designed for alternate distribution of sewage tank effluent to segments of a soil treatment system.

Vertical separation. "Vertical separation" means the vertical measurement of unsaturated soil or sand between the bottom of the distribution medium and the periodically saturated soil level or bedrock.

Watertight. "Watertight" means constructed so that no liquid can get into or out of a device except through designed inlets and outlets.

Wellhead protection area. "Wellhead protection area" means the surface and subsurface area surrounding a well or well field that supplies a public water system, through which contaminants are likely to move toward and reach the well or well field as regulated under chapter 4720. For the purposes of this chapter, wellhead protection area is that area bounded by the drinking water supply management area as regulated under chapter 4720.

7080.1200 ADMINISTRATION OF DESIGN STANDARDS.

Subpart 1. **Administrative scope**. ISTS must be designed, constructed, and operated according tothis chapter, except as modified through a local ordinance in compliance with chapter 7082 and Minnesota Statutes, section 115.55. ISTS must be designed, installed, inspected, pumped, serviced, and operated by licensed businesses meeting the qualifications in parts 7083.0070 to 7083.2040. ISTS must conform to all applicable state laws and rules.

Subp. 2. **Federal regulation.** SSTS that are designed to receive sewage or nonsewage from atwo-family dwelling or greater or receive sewage or nonsewage from another establishment that servesmore than 20 persons per day, are regulated under Code of Federal Regulations, title 40, parts 144 and 146.

Subp. 3. **Variance procedures**. The standards in this chapter are provided to be incorporated into a local ordinance according to chapter 7082 and Minnesota Statutes, section 115.55. Variance requests to the standards made by an owner or owner's agent must be issued or denied by the local unit of government. Local units of government shall not issue variances for part 7080.2150, subpart 2, items A to D.

7080.1500 COMPLIANCE CRITERIA.

Subpart 1. **Treatment required**. Sewage discharged from a dwelling, group of dwellings, or other establishment that is not served by a system issued a permit by the agency that contains effluent and discharge limits or specific monitoring requirements must be treated according to applicable requirements.

Subp. 2. **Hand-carried graywater.** Graywater that originated from hand-carried water must not be discharged directly to surface waters, drainageways, or poorly drained soils; in a manner or volume harmful to the environment or public health; or in a manner that creates a public health nuisance as determined by the local unit of government.

Subp. 3. **Compliance criteria for new construction**. An ISTS regulated under a current construction permit is considered compliant if it meets the applicable requirements of parts 7080.2150 to7080.2400.

Subp. 4. **Compliance criteria for existing systems.** To be in compliance, an existing ISTS must meet the provisions of this subpart.

A. The ISTS must be protective of public health and safety. A system that is not protective is considered an imminent threat to public health or safety. At a minimum, a system that is an imminent threat to public health or safety is a system with a discharge of sewage or sewage effluent to the ground surface, drainage systems, ditches, or storm water drains or directly to surface water; systems that cause a reoccurring sewage backup into a dwelling or other establishment; systems with electrical hazards; or sewage tanks with unsecured, damaged, or weak maintenance hole covers. A determination of protectiveness for other conditions must be made by a qualified employee inspector or licensed inspection business.
B. The ISTS must be protective of groundwater. A system that is not protective is considered a system failing to protect groundwater. At a minimum, a system that is failing to protect groundwater is a system that is a seepage pit, cesspool, drywell, leaching pit, or other pit in SWF areas; all cesspools; or seepage pits, drywells, leaching pits or other pits with less than 12 inches of vertical separation in non-SWF areas; a system with less than the required vertical separation distance described in items D and E; and a system not abandoned in accordance with part 7080.2500. A determination of the threat to groundwater quality for other conditions must be made by a qualified employee or licensed inspection business.
C. The ISTS must be operated, meet performance standards, and be managed according to its operating permit.
D. A Compliant ISTS built after March 31, 1996, or in an SWF area must have at least 30.6 inches of vertical separation between the bottom of the dispersal system and periodic saturation or bedrock. The 30.6 inches includes a 15 percent reduction to account for settling of sand or soil, normal variation of measurements, and interpretations of the limiting layer conditions, or a vertical separation in compliance with part 7080.2350, subpart 2, Table XI; A Non-Conforming ISTS built after March 31, 1996, or in an SWF area has less than the equivalent of 30.6 inches but more than 12 inches of vertical separation between the bottom of the distribution media and saturated soil level or bedrock.
E. A compliant SSTS built before April 1, 1996, and outside a designated SWF area must have at least 24 inches of vertical separation between the bottom of the dispersal system and periodic saturation or bedrock. A non-conforming SSTS built before April 1, 1996, and outside designated SWF areas has less than the equivalent of 24 inches but at least 12 inches of vertical separation between the bottom of the distribution media and saturated soil level or bedrock.
F. The vertical separation measurement for items D and E must be measured outside the area of system influence in an area of similar soil.

Subp. 5. **Compliance criteria for systems with a flow of greater than 2,500 gallons per day.** In addition to the requirements under subpart 4, systems designed under part 7080.2150, subpart 4, must demonstrate that the additional nutrient reduction component required under those items is in place and functioning.

Subp. 6. **Compliance criteria for systems receiving replacement components**. Components of an existing system that result in the system being in noncompliance must be repaired or replaced according to part 7082.0100, subpart 1. The repaired or replacement components must meet technical standards and criteria for new construction according to local ordinance. The remaining components of the existing system must result in the system being in compliance with subpart 4.

7080.1550 ACCEPTABLE AND PROHIBITED DISCHARGES.

Subpart 1. **Sewage**. This chapter provides design standards for ISTS that exclusively receive sewage. If ISTS receive both sewage and nonsewage, the requirements of this chapter and requirements governing the nonsewage portion of the waste apply.

Subp. 2. System influent.

A. Footing or roof drainage and chemically treated hot tub and pool water must not be discharged into any part of a system. Products containing hazardous chemicals and hazardous waste must not be discharged to a system other than in normal amounts of household products and cleaners designed for household use. Substances not intended for use in household cleaning, including but not limited to solvents, pesticides, flammables, photo finishing chemicals, paint, and dry-cleaning chemicals must not be discharged to the system. Other unused products or substances, or unused medicines, must not be

discharged to the system solely as a method of disposal. Floor drains from garages serving dwellings must not be connected to the system.

B. An ISTS must be designed to provide additional treatment if:
   (1) raw sewage exceeds 300 mg/l BOD, 200 mg/l TSS, or 50 mg/l oil and grease; or
   (2) sewage tank effluent applied to the soil from the sewage tank or other secondary treatment device is greater than the concentrations in part 7080.2150, subpart 3, item K.
   Additional treatment must be designed by a Minnesota licensed professional engineer or according to the recommendations in the Prescriptive Designs and Design Guidance for Advanced Designers, which is incorporated by reference in item C, or must use a product registered under chapter 7083.
C. Prescriptive Designs and Design Guidance for Advanced Designers, Minnesota Pollution Control Agency (September 2009 and as subsequently amended), is incorporated by reference, is subject to frequent change, and is available at www.pca.state.mn.us/programs/ists/technical.html.

7080.1670 REQUIREMENTS TO CONDUCT WORK.

Systems must be designed, installed, inspected, operated, and maintained by appropriately licensed businesses and certified individuals according to part 7083.0700 and any other applicable state requirements.

7080.1700 DESIGN PHASE I; SITE EVALUATION.

Site evaluations consisting of preliminary and field evaluations according to parts 7080.1710 and 7080.1720 must be conducted for all proposed sites for ISTS. The site evaluation is considered the first phase of an ISTS design.

7080.1710 PRELIMINARY EVALUATION.

A preliminary evaluation of a proposed site for an ISTS consists of determining the following items:

A. design flow, anticipated effluent concentrations of biochemical oxygen demand, total suspended solids, and oil and grease, and anticipated presence of nondomestic waste from the dwelling, dwellings, or other establishments;
B. proposed or existing:
   (1) water supply wells within 100 feet of the proposed ISTS;
   (2) noncommunity transient public water supply wells within 200 feet of the proposed ISTS if alternative local standards are in effect;
   (3) a community or noncommunity nontransient water supply in a drinking water supply management area if alternative local standards are in effect;
   (4) existing and proposed buildings or improvements on the lot; and
   (5) buried water supply pipes within 50 feet of the proposed system;
C. easements on the lot;
D. the ordinary high water level of public waters, if adjacent to the lot;
E. floodplain designation and flooding elevation from published data or data that is acceptable to and approved by the local unit of government or the Department of Natural Resources, if applicable;
F. property lines;
G. all required setbacks from the system;
H. the soil characteristics at the proposed soil treatment and dispersal areas as obtained from the soil survey report, if available, including the soil map, map units, landscape position, parent material, flooding potential, slope range, periodically saturated soil level, depth to bedrock, texture, color, depth to redoximorphic features, and structure and consistence of soil horizons;
I. a township, range, and section number and other unique property identifiers as required by local government and lot dimensions;
J. names of property owners; and
K. the inner wellhead management zone or wellhead protection area of a public water supply, if applicable.

7080.1720 FIELD EVALUATION.

Subpart 1. **Scope**. A field evaluation consists of the items described in subparts 2 to 7.

Subp. 2. **Lot lines**. Lot lines shall be established to the satisfaction of the property owner or the property owner's agent. Lot improvements, required setbacks, and easements must be identified.

Subp. 3. **Surface features**. The following surface features must be described:

A. the percent and direction of the slope at the proposed system location;
B. vegetation types;
C. any evidence of cut or filled areas or disturbed or compacted soil;
D. the flooding or run-on potential; and
E. a geomorphic description.

Subp. 4. **Soil observations**. A minimum of three soil observations are required for the initial and replacement soil treatment area and at least one soil observation must be performed in the portion of the soil treatment area anticipated to have the most limiting conditions. The total number of soil observations required is based on the judgment of the certified individual or the local unit of government. Soil observations must comply with the following requirements:

A. the soil observations must be conducted within or on the borders of the proposed site;
B. the soil observations must be performed in an exposed pit or by hand augering or probing. The use of flight augers is not ` allowed;
C. the soil observation method must allow observation of the different soil horizons that constitute the soil profile and, if determining the loading rate by part 7080.2150, subpart 3, item E, Table IX, an undisturbed sample must be observed;
D. underground utilities must be located before soil observations are undertaken;
E. required safety precautions must be taken before entering soil pits;
F. soil observations must be conducted prior to any required percolation tests to determine whether the soils are suitable to warrant percolation tests and, if suitable, at what depth percolation tests shall be conducted; and
G. the minimum depth of the soil observations must be to the periodically saturated layer, to the bedrock, or three feet below the proposed depth of the system, whichever is less.

Subp. 5. **Soil descriptions for determination of limiting layer**. Each soil profile observed at the proposed soil treatment area must be evaluated under adequate light conditions with the soil in a moist unfrozen state for the characteristics in items A to H:

A. the depth of each soil horizon measured from the ground surface. Soil horizons are differentiated by changes in texture, color, redoximorphic features, bedrock, structure, consistence, and any other characteristic that affects water movement or treatment of effluent;
B. a description of all soil colors for each horizon according to the Munsell Soil Color Charts, Revised Edition, Munsell Color Corporation (1992), or equivalent. The color charts are incorporated by reference, are available through the Minitex interlibrary loan system, and are not subject to frequent change;
C. a description of the soil texture, structure, and consistence using the United States Department of Agriculture (USDA) soil classification system as specified in the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36;
D. depth to the bedrock;
E. depth to the periodically saturated soil for new construction or replacement as determined by redoximorphic features and other indicators, as determined in subitems (1) to (3):
   (1) in subsoil and parent material, redoximorphic features include:
      (a) distinct redoximorphic iron accumulations or distinct redoximorphic iron depletions;
      (b) a gleyed or depleted soil matrix or redoximorphic mottles having a color chroma of two or less or a depleted matrix or redoximorphic mottles having a color hue of 5Y and a chroma of three or less; or
      (c) faint redoximorphic concentrations or faint redoximorphic depletions in subsoil or parent material with a hue of 7.5YR or redder;
   (2) in lower topsoil layers that are deeper than 12 inches from the surface and are immediately followed in depth by a periodically saturated horizon, redoximorphic features include:
      (a) soil colors with a redoximorphic chroma of two or less; or
      (b) redoximorphic accumulations or depletions;
   (3) in the upper 12 inches of the topsoil layer, if it is immediately followed by a periodically saturated horizon, the depth of seasonal saturation is determined by one or more of the indicators in units (a) to (f):
      (a) soil colors with a chroma of zero;
      (b) organic soil textures or mineral soil textures with an organic modifier;
      (c) dominance of hydrophytic vegetation;

(d) the soil treatment area at or near the elevation of the ordinary high water level of a surface water or in a concave hill slope position;
(e) redoximorphic accumulation or depletions; or
(f) the soil expressing indicators of seasonal saturation as determined in Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, USDA Natural Resource Conservation Service (2006 and as subsequently amended). The field indicators are incorporated by reference, are available through the Minitex interlibrary loan system, and are subject tofrequent change;

F. depth to the periodically saturated soil for all existing systems, determined by redoximorphic features in item E, except subitems (2), unit (a), and (3), units (a), (c), and (d), as measured outside the area of system influence in an area of similar soil;
G. depth of standing water in the soil observation excavation, measured from the soil surface, if observed; and
H. any other soil characteristic that needs to be described to design a system, such as hardpans or restrictive layers. These other characteristics must be classified according to the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36.

Subp. 6. Determination of loading rate and absorption area size.

A. Contour Loading Rate - Above grade systems must be designed with the appropriate contour loading rate which is based on the soil texture, structure, slope and depth to the limiting soil characteristics.
B. The effluent loading rate and absorption area size must be determined by examination of soil texture, undisturbed soil structure, and soil consistence of the most restrictive layer within the unsaturated zone three feet underlying the proposed soil absorption area, using the United States Department of Agriculture (USDA) soil classification system as specified in the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36; and
C. Refer to contour and soil loading rates in 7080.2150, subpart.3, item E, Table IX.

Subp. 7. **Site protection**. The proposed soil treatment and dispersal area site shall be protected from disturbance, compaction, or other damage by staking, fencing, posting, or other effective method.

7080.1730 PHASE I; SITE EVALUATION REPORTING.

A written report on the site evaluation must be prepared and include the following:

A. preliminary and field evaluation results from parts 7080.1710 and 7080.1720;
B. dates of preliminary and field evaluations;
C. a map drawn to scale or dimension with a north arrow, and including:
(1) horizontal and vertical reference points of the proposed soil treatment and dispersal areas, soil observations, percolation tests, and pertinent distance from the proposed ISTS to all required setbacks, lot improvements, easements, ordinary high water mark of public waters, property lines, and direction and percent slope;
(2) the location of any unsuitable, disturbed, or compacted areas; and
(3) the access route for system maintenance;
D. the estimated depth of periodically saturated soil layer, bedrock, or flood elevation, if appropriate;
E. the proposed elevation of the bottom of the soil treatment and dispersal system;
F. anticipated construction-related issues;
G. the name, address, telephone number, and certified statement of the individual conducting the site evaluation;
H. an assessment of how known or reasonably foreseeable land use changes are expected To affect system performance, including, but not limited to, changes in drainage patterns, increased impervious surfaces, and proximity of new water supply wells;
I. a narrative explaining any difficulties encountered during the site evaluation, including but not limited to identifying and interpreting soil and landform features and how the difficulties were resolved; and
J. a notation of any differences between observed soil characteristics and those identified in the soil survey report.

7080.1750 DESIGN PHASE II.

Subpart 1. **System design**. Completion of tasks outlined in parts 7080.1850 to 7080.2430 is considered the second phase of ISTS design.

Subp. 2. **Compliance**. Designs for new construction or replacement ISTS must comply with applicable requirements and any other applicable codes, rules, and laws.

7080.1850 SEWAGE FLOW DETERMINATION FOR DWELLINGS.

Subpart 1. **System sizing**. If construction of additional dwellings or bedrooms, the installation of water-using devices, or other factors likely to affect the operation of the ISTS can be reasonably anticipated, the system must be designed to accommodate these factors.

Subp. 2. **Design flow**. The estimated design flow for any dwelling must provide for at least two bedrooms. For multiple or multifamily dwellings, the design flow must be calculated according to part 7081.0120.

7080.1860 DESIGN FLOW (GALLONS PER DAY).

TABLE IV

Classification of dwelling

	I**	II	III	IV
Number of bedrooms	Gallons per day			
2 or less	300	225	180	*
3	450	300	218	*
4	600	375	256	*
5	750	450	294	*
6	900	525	332	*

* Flows for Classification IV dwellings are 75 percent of the values as determined for Classification I, II, or III systems.

** Design flows for Class I dwellings wastewater systems with design flows at a minimum 100 gallons per day per bedroom must meet the requirements of 7080.2300, Item I.

For more than six bedrooms, the design flow is determined by the following formulas:

Classification I: Classification I dwellings are those with more than 800 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, or where more than two of the following water-use appliances are installed or anticipated: clothes washing machine, dishwasher, water conditioning unit, bathtub greater than 40 gallons, garbage disposal, or self-cleaning humidifier in furnace. The design flow for Classification I dwellings is determined by multiplying 150 gallons by the number of bedrooms.

Classification II: Classification II dwellings are those with 500 to 800 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, and where no more than two of the water-use appliances listed in Classification I are installed or anticipated. The design flow for Classification II dwellings is determined by adding one to the number of bedrooms and multiplying this result by 75 gallons.

Classification III: Classification III dwellings are those with less than 500 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, and where no more than two of the water-use appliances listed in Classification I are installed or anticipated. The design flow for Classification III dwellings is determined by adding one to the number of bedrooms, multiplying this result by 38 gallons, then adding 66 gallons.

Classification IV: Classification IV dwellings are dwellings with wastewater systems designed under part 7080.2240.

7080.1880 SEWAGE FLOW DETERMINATION FOR OTHER ESTABLISHMENTS.

Design sewage flow and waste concentration levels for other establishments with a flow of 5,000 gallons per day or less shall be determined by part 7081.0130.

7080.1885 OTHER FLOW CONSIDERATIONS.

If the system is served by a sewage collection system, part 7081.0140 applies.

7080.1900 SEWAGE TANKS; GENERAL.

Sewage tanks serving ISTS must meet or exceed the applicable requirements of parts 7080.1910 to 7080.2030 unless otherwise approved by a licensed professional engineer and approved by the local unit of government.

7080.1910 TANK STRENGTH.

Subpart 1. **Requirements**. Tanks, fittings, risers, and apertures must:

A. be capable of supporting long-term vertical loads for the conditions in which the tank will be placed. These loads include, but are not limited to, saturated soil load, based on 130 pounds per cubic foot;
B. be capable of withstanding a lateral load for the conditions the tank will be placed;
C. with proper maintenance and venting, not be subject to failure due to corrosion and degradation from sewage or sewage gases, including risers and maintenance hole covers; and
D. be structurally capable of withstanding exposure and stresses from freezing conditions.

Subp. 2. **Poured-in-place concrete tanks**. Poured-in-place concrete tanks must be designed to meet each requirement of subpart 1 and be designed by a Minnesota licensed professional engineer.

7080.1920 SEPTIC TANK DESIGN.

Septic tanks must:

A. have a liquid depth of at least 30 inches. Any liquid depth that is greater than 84 inches must not be used when calculating the septic tank liquid capacity;
B. have a minimum of six feet between the inlet and outlet of the tank, rather than between compartments, or have a minimum of six feet from the inlet of the first tank to the outlet of the last tank in series;
C. if site conditions warrant, the inlet and outlet are allowed to be located on walls that are not opposite each other along the axis of maximum dimension; however, the requirements of item B must be met;
D. have an inlet invert at least two inches above the outlet invert; and
E. have a space between the liquid surface and the top of the inlet and outlet baffles of not less than six inches or 100 gallons. There must be at least one-inch between the underside of the top of the tank and the highest point of the inlet and outlet baffles.
F. have an effluent screen with alarm installed on the outlet of the last septic tank or septic tank chamber.

7080.1930 SEPTIC TANK CAPACITY.

Subpart 1. **Dwellings**. The liquid capacity of septic tanks must be at least as large as the liquid capacities given in Table V.

TABLE V

Number of bedrooms	Septic tank liquid minimum capacities (gallons)
3 or less	1,000
4 or 5	1,500
6 or 7	2,000
8 or 9	2,500

Where more than nine bedrooms are present, the septic tank capacity must be calculated by the following formula: 2,500 + ([# of bedrooms - 9] x 250).

Subp. 2. **Garbage disposals.** If a garbage disposal unit is anticipated or installed in a dwelling, the septic tank capacity must be at least 50 percent greater than that required in subpart 1 and must include either multiple compartments or multiple tanks. In addition, an effluent screening device is required.

Subp. 3. **Sewage pumping.** If sewage is pumped from a sewage ejector or grinder pump from a dwelling to a septic tank, the septic tank capacity must be at least 50 percent greater than that required in subpart 1 and must include either multiple compartments or multiple tanks. In addition, an effluent screening device is required.

Subp. 4. **Sewage pumping and garbage disposals.** If conditions in both subparts 2 and 3 apply to a dwelling, the mitigative requirements of either subpart 2 or 3 apply; the requirements of both subparts 2 and 3 need not be additive.

Subp. 5. Septic tank capacity for multiple dwellings.

A. For systems serving ten or fewer dwellings with a common septic tank, the liquid capacity must be determined by adding the capacities for each dwelling as determined in this part or according to subpart 6.
B. For systems serving more than ten dwellings with a common septic tank, the requirements of subitem (1) or (2) apply:
   (1) total septic tank liquid capacity for common tanks serving multiple dwellings under gravity flow to common tanks is determined by multiplying the design flow by 3.0 or according to subpart 6; or
   (2) total septic tank liquid capacity for common tanks serving multiple dwellings under pressure flow to common tanks is determined by multiplying the design flow by 4.0 or according to subpart 6.
C. Total septic tank liquid capacity for systems employing individual tanks at each dwelling discharging into a collection system must be determined:
   (1) by a Minnesota licensed professional engineer; or
   (2) according to the Prescriptive Designs and Design Guidance for Advanced Designers, incorporated by reference under part 7080.1550, subpart 2.

Subp. 6. **Prior to other treatment devices.** Septic tank liquid capacity prior to other treatment devices must accord with manufacturer's requirements, accepted engineering principles, or as identified in the product registration recommended standards and criteria.

Subp. 7. **Septic tank capacity for other establishments.** Total septic tank liquid capacity for other establishments with domestic strength waste as described in part 7080.1550, subpart 2, item B, subitem (1), is determined by multiplying the design flow by 3.0 if receiving sewage under gravity flow, by multiplying the design flow by 4.0 if receiving sewage under pressure flow, or in accordance with subpart 6. Additional design considerations, such as equalization tanks, additional capacity, grease interceptors, or secondary treatment, are required for influent concentrations that exceed the levels identified in part 7080.1550, subpart 2, item B, subitem (1).

7080.1940 MULTIPLE SEPTIC TANKS.

A. If more than one septic tank is used to obtain the required liquid capacity as determined in part 7080.1930, septic tanks must be connected in series or employ multiple collection systems.

B. When tanks are connected in series, each tank or compartment must contain at least 25 percent of the required total liquid capacity.

7080.1950 COMPARTMENTALIZATION OF SINGLE TANKS.

If septic tanks are compartmentalized, items A to E apply.

A. When septic tanks are divided into compartments, the volume of the first compartment must be equal to or larger than any succeeding compartments. Each compartment must contain at least 25 percent of the total required liquid capacity and have an inside horizontal dimension of at least 24 inches.
B. Flow between compartments can be achieved by an unbaffled transfer hole with a minimum size of 50 square inches located in the clarified liquid zone or a minimum 12-square-inch transfer hole located above the clarified liquid zone that is baffled according to part 7080.1960. The final compartment of a tank that employs a transfer hole in the clarified zone shall not be used as a pump tank.
C. Septic tanks must have at least a two-inch drop between the invert of the inlet to the invert of the outlet. No liquid level drop is required between the compartments.
D. Adequate venting must be provided between compartments by baffles or by an opening of at least 12 square inches near the top of the compartment wall.
E. All compartmental walls must be designed to withstand the weight of the effluent against an empty compartment.

7080.1960 SEPTIC TANK BAFFLES.

All septic tanks must be baffled according to items A to G. Effluent screens are allowed to be substituted for outlet baffles.

A. Baffles must be installed at each inlet and outlet of septic tanks. Outlet baffles are required on compartment walls if the transfer hole is at the liquid level.
B. Baffles must be resistant to corrosion or decay. Inlet baffles must not restrict the movement of solids.
C. Baffles must be integrally cast with the tank or affixed at the top and bottom with connectors that are not subject to corrosion or decay. Baffles for fiberglass-reinforced polyester tanks are allowed to be either resin bonded or secured with suitable structural adhesive. Sanitary tees used as baffles must be affixed to the inlet or outlet pipes with a permanent waterproof adhesive.
D. The inlet baffle must extend at least six inches, but not more than 20 percent of the total liquid depth, below the liquid surface. The inlet baffle must extend above the liquid surface in compliance with part 7080.1920, item E, and at least one inch above the crown of the inlet sewer.
E. The outlet baffle and any baffles between compartments must extend below the liquid surface a distance equal to 40 percent of the liquid depth, except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks must be 35 percent of the total liquid depth. They must also extend above the liquid surface as determined in part 7080.1920, item E.
F. There must be at least one inch between the underside of the top of the tank and the highest point of the inlet and outlet baffles.
G. The nearest point on the inlet baffles other than sanitary tees must be no less than six inches and no more than 12 inches from the end of the inlet pipe. The nearest point on the outlet baffle, other than sanitary tees, must not be closer than six inches and no more than 12 inches from the beginning of the outlet pipe to the baffle. Sanitary tees used as inlet or outlet baffles must be at least four inches in diameter.

7080.1970 SEWAGE TANK ACCESS.

A. Septic tanks must have a minimum of two maintenance holes with a minimum diameter of 20 inches (least dimension). Maintenance holes must be placed over the inlet baffle or the center of the tank and the outlet device (baffle or screen). The maintenance holes must be large enough to allow pumping without interference. Enough maintenance holes must be provided so access can be gained within six feet of all walls for solids removal of each compartment. Inspection pipes of no less than six inches must be provided over any baffles that are not otherwise accessible through a maintenance hole.
B. Pump tanks must have a minimum of one maintenance hole with a minimum diameter of 20 inches (least dimension). Enough maintenance holes must be provided so access can be gained within six feet of all walls for solids removal.

C. All maintenance hole risers must extend through the tank cover above final grade.
D. Covers for maintenance holes must:
(1) be secured by being locked, being bolted or screwed, having a weight of at least 95 pounds, or other methods approved by the local unit of government. Covers shall also be leak resistant; and be designed so the cover cannot be slid or flipped, which could allow unauthorized access to the tank;
(2) have a written and graphic label warning of the hazardous conditions inside the tank;
(3) be capable of withstanding a load that the cover is anticipated to receive; and
(4) be made of a material suitable for outdoor use and resistant to ultraviolet degradation.

7080.1980 TANK CONSTRUCTION.

A. All precast reinforced concrete sewage tanks must be constructed to meet the requirements of this chapter. Information on best practices for tank construction is found in the National Precast Concrete Association's best practices manual, Precast Concrete On-site Wastewater Tanks (2005). This manual is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change. If a conflict exists between the manual and this chapter, this chapter applies.
B. All fiberglass-reinforced polyester and polyethylene tanks must be constructed to meet the requirements of this chapter. Information on best practices for these tanks is found in the International Association of Plumbing and Mechanical Officials (IAPMO), Material and Property Standard for Prefabricated Septic Tanks, Standard PS 1-2006 (2006). This standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change. If conflicts exist between the standard and this chapter, this chapter applies.

7080.1990 TANK STORAGE, TRANSPORT, AND USE.

Subpart 1. **Precast reinforced concrete tanks.** Precast reinforced concrete tanks must:

A. have a method to lift the tank for an ultimate load that is four times the working load;
B. undergo proper curing to achieve a compressive strength of 4,000 pounds per square inch before transport, placement, or use; and
C. have no pipe penetration points or openings in the exterior walls or tank bottom below the tank liquid level, unless designed for a specific operational purpose and approved by the local unit of government.

Subp. 2. **Other tanks.** Fiberglass-reinforced polyester or polyethylene tanks must be protected against deterioration during storage.

7080.2000 LOCATION AND INSTALLATION OF TANKS.

A. Sewage tanks must not be placed in areas that prohibit the removal of solids and liquids from the tank according to part 7080.2450.
B. Sewage tanks must be set back as specified in Table VII in part 7080.2150, subpart 2, item F.
C. The top of sewage tanks must not be buried deeper than four feet from final grade for new dwellings, unless a local ordinance allows for burial at a greater depth, not to exceed the tank manufacturer's maximum designed depth for the tank. The minimum depth of soil cover over the insulation on the top of the tank is six inches.
D. Sewage tanks must not be placed in floodways, drainageways, or swales. Upslope drainage must be diverted away from the location of all tanks. A tank's final cover must be crowned or sloped to shed surface water.
E. Sewage tanks must not be placed in areas subject to vehicular traffic unless engineered for the anticipated load.
F. Sewage tanks must be placed on firm and evenly compacted soil and with the soil level in all directions. The bottom shall be excavated in a manner so the vertical load is borne by the tank walls and not the tank bottom. If the bottom of the tank excavation contains rocks, bedding material must be used according to manufacturer's instructions. The soil beneath the tank must be capable of bearing the weight of the tank and its contents.
G. Sewage tanks and risers must be installed according to manufacturer's requirements and in a structurally sound and watertight fashion.
H. If the top of a sewage tank is to be less than two feet from final grade, the lid of the tank must be insulated to an R-value of

ten. Maintenance hole covers must be insulated to an R-value of ten. All insulating materials must be resistant to water absorption.

I. Sewage tanks placed below the level of the periodically saturated soil must employ a method to protect against flotation under periodic saturated soil conditions when the tank is empty.

J. Connections between the concrete tank and the building sewer or supply pipe must meet the requirements of American Society for Testing and Materials, Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals, ASTM C923 (2002), or equivalent. The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change.

K. Joints of concrete tanks, concrete tank lids, and concrete risers must be sealed using a bonding compound that meets American Society for Testing and Materials, Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants, ASTM C990 (2003). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change.

7080.2010 TANK ASSESSMENT.

Subpart 1. **General.**

A. All sewage tanks must be watertight, including at all tank and riser joints, riser connections, and pipe connections.

B. An assessment of all models of sewage tanks to be used must be conducted to determine:
(1) the structural integrity of the tank design; and
(2) the adequacy of the manufacturing process of watertightness.

C. Sewage tanks, including riser joints, riser connections, and pipe connections must be designed, manufactured, and installed to be watertight under normal use.

Subp. 2. **Structural integrity of design test.** The structural integrity of each model of tank manufactured and all poured-in-place tanks must be verified by calculation, proof testing, or a licensed professional engineer to determine the horizontal and vertical loads that the tank can withstand when empty. Tanks must be reverified for structural integrity if the design, materials, or construction methods are modified. A licensed professional engineer shall certify in writing if different manufactured models are similar enough so that the structural integrity information for one model is valid for other models. Verifications must be submitted to the commissioner. The commissioner shall maintain and make available the verifications upon request.

Subp. 3. Watertightness test.

A. At least one tank per year, per model must be tested for watertightness. All poured-in-place tanks shall be tested for watertightness. Records of testing must be maintained by the manufacturer for three years and must be available to the commissioner and local unit of government if requested. Tanks must be tested and meet or exceed the applicable requirements of subitem (1), (2), or (3):
(1) when empty, a tank must maintain a vacuum of at least two inches of mercury for five minutes, without loss of pressure;
(2) concrete tanks must hold water for one hour, without loss, after the tank has been filled with water to the top of the tank, let stand for 24 hours, and then refilled to the same level; or
(3) fiberglass-reinforced polyester or polyethylene sewage tanks must hold water without loss for one hour after being filled.

B. Sewage tanks that do not pass the tests listed in item A must not be used until repaired and retested. The repair and retest procedure must be repeated until the tank passes the test or the tank must not be used.

7080.2020 TANK IDENTIFICATION.

A. Sewage tanks must be marked near the outlet with:
(1) the manufacturer's name;
(2) model number;
(3) liquid capacity;
(4) date of manufacture; and
(5) maximum depth of burial.

B. The tank manufacturer or manufacturer's agent shall provide the information in item A to the installer in writing.

C. The tank inlet or outlet must be clearly marked.

D. The installer shall submit the information in item A with the as-built drawing.

7080.2030 EFFECTIVE DATE.

Sewage tanks must meet the requirements of parts 7080.1910 to 7080.2020 by April 4, 2012. Tanks produced and installed before April 4, 2012, must meet either the requirements of Minnesota Rules 2005, part 7080.0130, or the requirements of Minnesota Rules 2009, parts 7080.1910 to 7080.2020.

7080.2050 DISTRIBUTION OF EFFLUENT.

Subpart 1. **General.** Distribution of effluent for ISTS must meet or exceed the requirements of this part. Location and size of building sewer line cleanouts shall meet the requirements of Minnesota Rules, Chapter 4715.1010.

Subp. 2. **Supply pipes.**

A. The supply pipe extending from the septic tank to the undisturbed soil beyond the tank excavation must meet the strength requirements of American Society for Testing and Materials (ASTM), Schedule 40 Pipe, contained in Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120, ASTM D1785 (2006). The schedule is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change.
B. Supply pipes must:
   (1) be made from materials resistant to breakdown from sewage and soil;
   (2) be watertight, including all joints;
   (3) be durable throughout the design life;
   (4) not deflect, buckle, crush, or longitudinally bend;
   (5) be resistant to pressures, fatigue, and strain for the application;
   (6) be installed according to American Society of Testing and Materials, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications, ASTM D2321 (2005). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (7) be designed, installed, and protected to minimize the danger of freezing in the pipe;
   (8) not be closer than six inches from final grade. Pipes susceptible to freezing shall be insulated; and
   (9) be set back from water supply wells and water service pipes according to chapters 4715 and 4725.
C. The minimum slope for gravity supply pipes is one percent (1/8 inch per linear foot). There is no maximum slope. Pipe restraints must be used for slopes greater than 20 percent or where fluid velocities in the pipe exceed 15 feet per second. For pressure systems, a minimum slope of one percent for drainback or other frost protection measures must be employed.
D. Access to each supply pipe must be provided for cleanout. The access point must be accessible from final grade.

Subp. 3. **Gravity distribution**.

A. Serial distribution must be used to distribute effluent to individual trenches in a soil treatment and dispersal system. If the necessary elevation differences between trenches for serial distribution cannot be achieved by natural topography or by varying the excavation depths, parallel distribution must be used. Serial distribution must not create a pressure head on trenches at lower elevations.
B. If drop boxes are used for serial distribution, subitems (1) to (6) apply.
   (1) The drop box must be watertight and constructed of durable materials not subject to corrosion or decay.
   (2) The invert of the inlet supply pipe must be at least one inch higher than the invert of the outlet supply pipe to the next drop box.
   (3) The invert of the outlet supply pipe to the next drop box must be no greater than two inches higher than the crown of the distribution pipe serving the trench in which the box is located.
   (4) When sewage tank effluent is delivered to the drop box by a pump, the pump discharge must be directed against a wall or side of the box on which there is no outlet or directed against a deflection wall, baffle, or other energy dissipater. The discharge rate into the drop box must not result in surfacing of sewage from the drop box. The supply pipe must drain after the pump shuts off.
   (5) The drop box must be covered by a minimum of six inches of soil. If the top of the box is deeper than six inches, access must be provided above, at, or within six inches of finished grade.
   (6) The drop box must be placed on firm and settled soil.
C. If valve boxes are used, all requirements of item B apply to valve boxes.
D. Distribution boxes must meet the standards in subitems (1) to (6).
   (1) The box must be watertight and constructed of durable materials not subject to corrosion or decay.
   (2) The distribution box must be covered by a minimum of six inches of soil. If the top of the box is deeper than six inches,

access must be provided above, at, or within six inches of the finished grade.

(3) The inverts of all outlets must be set and maintained at the same elevation.

(4) The inlet invert must be either at least one inch above the outlet invert or sloped such that an equivalent elevation above the outlet invert is obtained within the last eight feet of the inlet pipe.

(5) Each trench line must be connected separately to the distribution box and must not be subdivided. Distribution boxes must not be connected to one another if each box has distribution pipes.

(6) When sewage tank effluent is delivered by pump, a baffle wall must be installed in the distribution box or the pump discharge must be directed against a wall, baffle, side of the box on which there is no outlet, or directed against a deflection wall, baffle, or other energy dissipater. The baffle must be secured to the box and extend at least one inch above the crown of the inlet pipe. The discharge rate into the distribution box must not result in surfacing of sewage from the drop box. Pressure must not build up in the box during pump discharge.

E. Nonpressurized distribution pipes must meet the requirements of subitems (1) to (4) and subpart 2, item B, subitems (1) and (3) to (5).

(1) Distribution pipes used for gravity distribution must be at least four inches in diameter.

(2) Distribution pipes used for gravity distribution must have at least one row of holes of no less than one-half inch in diameter spaced no more than 40 inches apart.

(3) Distribution pipes for gravity distribution must be laid level or on a uniform slope oriented away from the distribution device of no more than four inches per 100 feet.

(4) Distribution pipes for gravity distribution in seepage beds must be uniformly spaced no more than five feet apart and not more than 30 inches from the side walls of the seepage bed.

Subp. 4. Pressure distribution.

A. All systems must be pressurized as required in parts 7080.2200 to 7080.2400.

B. Pressurized distribution pipes must conform to the requirements of subpart 2, item B, subitems (1) and (3) to (5).

C. Pressure distribution pipes and associated fittings must be properly joined together. The pipe and connections must be able to withstand a pressure of at least 40 pounds per square inch.

D. The distribution network must be designed so there is less than a ten percent variance in flow for all perforations.

E. Perforations must be no smaller than one-eighth inch diameter and no larger than one-quarter inch diameter. The number of perforations, perforation spacing, and pipe size for pressure distribution must be in accordance with Table VI. The friction loss in any individual perforated lateral must not exceed 20 percent of the average pressure head on the perforations.

Table VI. Maximum number of perforations per pressure distribution lateral.

Perforation		Maximum Number of Perforations per Lateral*					
		Nominal Lateral Inside Diameter (in.)					
Diameter (in.)	Spacing (ft)	1	1¼	1½	2	2½	3
1/4†	2	8	14	19	29	40	58
	2.5	8	13	17	27	37	54
	3	7	12	16	25	34	50
	3.5	7	11	15	24	33	48
	4	6	11	14	23	31	45
	4.5	6	10	14	22	30	44
	5	6	10	13	21	29	42
7/32†	2	10	17	22	35	48	69
	2.5	9	15	21	32	44	64
	3	9	14	19	30	41	60
	3.5	8	14	18	28	39	57
	4	8	13	17	27	37	54
	4.5	7	12	17	26	35	52
	5	7	12	16	25	34	50
3/16†	2	13	21	27	43	58	85
	2.5	12	19	25	39	54	79
	3	11	18	24	37	50	74
	3.5	10	17	22	35	48	70
	4	10	16	21	33	45	66
	4.5	9	15	20	32	44	64
	5	9	15	20	31	42	61
5/32‡	2	16	27	35	55	75	109
	2.5	15	25	33	51	69	101
	3	14	23	31	48	65	94
	3.5	13	22	29	45	61	89
	4	13	21	27	43	58	85
	4.5	12	20	26	41	56	82
	5	12	19	25	40	54	79
1/8§	2	22	37	48	74	101	147
	2.5	21	34	44	69	93	136
	3	19	32	41	64	88	128
	3.5	18	30	39	61	83	121
	4	17	28	37	58	79	115
	4.5	17	27	36	56	76	111
	5	16	26	35	54	73	107

* Total allowable perforations including the end perforation for Schedule 40 polyvinyl chloride (PVC) pipe based on lateral friction loss – determined
Using a Hazen-Williams C-factor of 145 - of less than or equal to 20% of perforation distal head.

† For 2.5-ft distal pressure: 1.17 gpm perforation discharge rate for 1/4-inch perforation, 0.89 gpm discharge rate for 7/32-inch perforation, and
0.66 gpm discharge rate for 3/16-inch perforation.

‡ For 3.5-ft distal pressure: 0.54 gpm perforation discharge rate.

§ For 5-ft distal pressure: 0.41 gpm perforation discharge rate.

F. Perforation holes must be drilled straight into the pipe and not at an angle. Pressurized distribution laterals must be installed level. Perforation holes must be free of burrs. Holes must be spaced no more than five feet apart. A method to introduce air into the pipe after dosing must be provided. The pipes must completely drain after the pump turns off.

G. Pressure distribution laterals must be spaced no further than 42 inches apart in seepage beds and mound absorption beds, and no further than 24-inches from the outside edge of the bed.
H. Pressure distribution laterals must be connected to a header or manifold pipe that is of a diameter such that the friction loss in the header or manifold will be no greater than five percent of the average head at the perforations. The header or manifold pipe must be connected to the supply pipe from the pump.
I. Pressure Perforated laterals must not be installed closer than 12 inches from the edges of the absorption bed and perforated laterals must terminate no closer than 12 inches from the ends of the absorption bed.
J. Pressure distribution pipe cleanouts must be provided to check the system for proper operation and cleaning of plugged perforations. Cleanouts must be accessible from final grade.

7080.2100 DOSING OF EFFLUENT.

Subpart 1. **General**. When pumping or dosing is necessary, it must comply with this part.

Subp. 2. **Pump tanks**.

A. Pump tanks shall meet or exceed the requirements of parts 7080.1910, 7080.1970, and 7080.1980 to 7080.2020. All dosing chambers must be vented.
B. The pump, pump controls, and pump discharge line must be installed to allow access within two feet from riser cover for servicing or replacement without entering the pump tank.
C. The pump tank must either include an alternating two-pump system or have a minimum total capacity of 500 gallons for design flow values of 600 gallons per day or less or 100 percent of the design flow for design flow values of greater than 600 gallons per day.
D. An ISTS with a pump must employ an alarm device to warn of failure.
E. The inlet of pumps must be elevated at least four inches from the bottom of the pump tank or protected in some other manner to prevent the pump from drawing excessive settled solids.
F. Electrical installations must comply with applicable laws and ordinances including the most current codes, rules, and regulations of public authorities having jurisdiction and with part 1315.0200, which incorporates the National Electrical Code.

Subp. 3. **Pumps for gravity distribution.** If a pump is used to lift effluent into a gravity distribution system, items A to C apply.

A. The pump must discharge at least ten gallons per minute but no more than 45 gallons per minute.
B. The pump must be constructed and fitted with sound, durable, and corrosion-resistant materials.
C. The pump must have sufficient dynamic head for both the elevation difference and friction loss.

Subp. 4. **Pumps for pressure distribution.** Pumps for pressure distribution must meet the requirements in items A to D.

A. Pumps must be constructed and fitted with sound, durable, and corrosion-resistant materials.
B. The pump discharge capacity must be based on the perforation discharges for a minimum average head of 2.5 feet for 3/16-inch to 1/4-inch perforations and 5.0 feet for 1/8-inch perforations for dwellings and for other establishments. Perforation discharge is determined by the following formula:

$$Q = 19.65\ cd^2h^{1/2}$$

where: Q = discharge in gallons per minute

c = 0.60 = coefficient of discharge

d = perforation diameter in inches

h = head in feet.

C. The pump discharge head must be at least five feet greater than the head required to overcome pipe friction losses and the elevation difference between the pump and the distribution device.
D. The quantity of effluent delivered for each pump cycle must be no greater than 25 percent of the design flow and at least four times the volume of the distribution pipes plus the volume of the supply pipe.

7080.2150 FINAL TREATMENT AND DISPERSAL.

Subpart 1. **General.** Treatment and dispersal of all sewage for new construction or replacement ISTS must be in compliance with this part and parts 7080.2200 to 7080.2400 as adopted into local ordinances.

Subp. 2. **General technical requirements for all systems.** All new construction or replacement ISTS must be designed to meet or exceed the provisions in items A to F.

A. All treatment and dispersal methods must be designed to conform to all applicable federal, state, and local regulations.
B. Treatment and dispersal processes must prevent sewage or sewage effluent contact with humans, insects, or vermin.
C. Treatment and dispersal of sewage or sewage effluent must be in a safe manner that adequately protects from physical injury or harm.
D. An unsaturated zone in the soil must be maintained between the bottom of the soil treatment and dispersal system and the periodically saturated soil or bedrock during loading of effluent.
E. Soil treatment and dispersal systems must not be designed in floodways. Soil treatment and dispersal systems installed in flood fringes must meet the requirements in part 7080.2270. All soil treatment systems located in areas subject to excessive run-on must have a diversion constructed upslope from the system.
F. ISTS components must be set back in accordance with Table VII.

TABLE VII

MINIMUM SETBACK DISTANCES (FEET)

Feature	Sewage tank, holding tank, or sealed privy	Absorption area or unsealed privy	Building sewer or supply pipes
Water supply wells	*	*	*
Buried water lines	*	*	*
Structures	10	20	
Property lines **	10	10	
Ordinary high water level of public waters	***	***	

* Setbacks from buried water lines and water supply wells are governed by chapters 4715 and 4725, respectively.
** Infringement on property line setbacks must be made through accepted local procedures.
*** Setbacks from lakes, rivers, and streams are governed by chapters 6105 and 6120.
**** Structures, including privy setback from lakes, rivers and streams are governed by St. Louis County Zoning Ordinance dimensional standards (or MN DNR Shoreland Rules).

Sewage Treatment System Setback Standards From Protected Waters	ISTS Setback
Natural Environment Lakes	150 feet
Recreation Development Lakes	75 feet
General Development Lakes	50 feet
Mine Pit Lakes	75 feet
Trout Streams	150 feet
DNR Remote Rivers*	150 feet
DNR Forested*	100 feet
SLC Primitive Rivers**	250 feet
SLC Remote Rivers**	150 feet
SLC Urban **	75 feet
Rural / Agricultural Rivers	150 feet
Recreational Rivers	150 feet
All other protected lakes and rivers	75 feet
~~Natural Environment/ Recreational Development (NERD)***~~	~~150 feet~~
~~Non-classified 5 to 25 acres***~~	~~75 feet~~
~~Non-classified under 5 acres***~~	~~50 feet~~

* Minnesota Department of Natural Resources
** St. Louis County
*** Protected Waters classification discontinued as of 5/22/2019; fall under *All other protected lakes and rivers*

Subp. 3. **Other technical requirements for systems.** Items A to M are required for specific designs as determined in parts 7080.2200 to 7080.2400.

A. Employ components registered under parts 7083.4070 and 7083.4080 that are installed, used, and operated according to the conditions placed on registration.
B. Employ structural components and joint sealants that meet or exceed the system's expected design life.
C. For acceptable treatment of septic tank effluent by soil, the soil treatment and dispersal systems must meet the requirements of subitems (1) and (2).
   (1) A minimum three-foot vertical soil treatment and dispersal zone must be designed below the distribution media that meets the criteria in units (a) to (d):
      (a) the zone must be above the periodically saturated soil and bedrock. The zone must be continuous and not be interrupted by seasonal zones of saturation;
      (b) Soil absorption areas with a soil texture of loamy sand or medium sand (Table IX) must use at least one of the following treatment techniques:
         (1) distribute the sewage tank effluent by pressure flow over the absorption area as specified in section 7080.2050, subpart 4; or
         (2) divide the total soil treatment system into at least four parts with no part larger than 25 percent of the area required by section 7080.2050, subpart 3 and the parts constructed for serial application;
      (c) For coarse soils (soil textures of loamy coarse sand, loamy very coarse sand, coarse sand, or very coarse sand), soil absorption areas must use at least one of the following treatment techniques:
         (1) a trench system, with at least one foot of clean sand placed between the distribution medium and the coarse soil along the excavation bottom and sidewalls, that satisfies the requirements of item (b), subitem (1) or (2) in this section;
         (2) a mound system;
         (3) additional pretreatment sufficient to provide Treatment levels A, A-2, B, or B-2 effluent for absorption area dispersal;
      (d) the entire treatment zone depth must be within five and one half feet from final grade.
   (2) The distribution system or media must not place a hydraulic head greater than 30inches above the bottom of the bottom absorption area.
D. The system's absorption area must be original soil.
E. The system's absorption area and mound contour loading rate must be sized according to Table IX.

Table IX. Effluent absorption and contour loading rates for determining absorption area size and configuration using detailed soil descriptions.*

USDA Soil Classification			Absorption Loading Rate (gpd/ft²)		Contour Loading Rate (gpd/ft)†‡											
					0-3% Slope			4-7% Slope			8-10% Slope			>10% Slope		
			Effluent Treatment Level		Horizon Depth (in.)§			Horizon Depth (in.)			Horizon Depth (in.)			Horizon Depth (in.)		
Texture		Structure and Grade	C‖	A, A-2, B, B-2¶‡	≥6-12	>12-24	>24-36	≥6-12	>12-24	>24-36	≥6-12	>12-24	>24-36	≥6-12	>12-24	>24-36
very coarse sand, coarse sand, loamy very coarse sand, or loamy coarse sand	≥ 35% coarse fragments	single grain#	LR**	1.0	6	8	10	8	10	10	8	10	10	8	10	10
	< 35% coarse fragments	single grain#	LR	2.0												
sand, loamy sand	≥ 35% coarse fragments	single grain#	0.5‡	1.0	5	6	7	6	8	10	7	9	10	8	10	10
	< 35% coarse fragments	single grain or weak††	0.8	1.6												
fine sand, loamy fine sand, very fine sand, loamy very fine sand		weak to strong non-platy††	0.6	1.0	3.5	4	5	4.5	5.5	7	4.5	6	9	5	8	10
		massive††	0.4	0.8	3	3.5	4	3.5	4	5	3.5	5	6	4	5	7
coarse sandy loam, sandy loam		moderate to strong non-platy‡‡	0.6	1.0	4.5	5.5	6	5	6	9	5.5	7	10	6	8	10
		massive or weak††	0.5	0.8	4	4.5	5.5	4.5	5	6	4.5	5.5	6	5	6	7
fine sandy loam, very fine sandy loam, loam		moderate to strong non-platy‡‡	0.6	0.8	3.5	4	5	4	5	7	5	6	8	5.5	7	9
		massive or weak††	0.4	0.6	3	3.5	4	3.5	4	5	3.5	4	5.5	4	5	6
silt loam		moderate to strong non-platy‡‡	0.5	0.8	3.5	4	4	3.5	4.5	5.5	4	5	7	4.5	6	8
		massive or weak††	0.4	0.6	3	3.5	3.5	3	4	4.5	3	4	5	3.5	4.5	5.5
sandy clay loam, clay loam, silty clay loam ●		moderate to strong non-platy††	0.4	0.6	3	3.5	4	3	3.5	4	3	4	4.5	3.5	4	4.5
silt, sandy clay, silty clay, clay ●		moderate to strong non-platy††	0.2	0.3	3	3	3.5	3	3	3.5	3	3.5	3.5	3.5	3.5	3.5

* Only applies to original soil horizons with < 50% coarse fragments (particle sizes having > 2.00 mm nominal diameters, i.e. gravel or coarser). Absorption area surfaces must not be in contact with soil horizons having ≥ 50% coarse fragments.

† Estimated rates for ISTS. For soil conditions not included in the table, e.g. non-original soil, ~~< 6 in., ≥ 50% coarse fragments~~, firmer consistence, etc., evaluation of soil morphology and contour loading rate by a by a licensed Professional Soil Scientist (PSS) who is also an MPCA-licensed SSTS designer (Designer) is required. Rates projected using hydraulic conductivities measured by a licensed PSS-Designer supersede table estimates.

‡ Pressure distribution required.

§ Unsaturated.

‖ Residential strength septic tank effluent with up to 170 mg BOD_5/L, 60 mg TSS/L, and 25 mg O&G/L.

¶ Additionally pretreated septic tank effluent with up to 25 mg $CBOD_5$/L and 30 mg TSS/L.

Non-cemented, loose to very friable consistence.

** LR = Liner required. Use clean sand for liner, to separate distribution media from soil, and its associated absorption loading rate (1.0 gpd/ft^2).

†† Very friable to friable consistence.

‡‡ Very friable to firm consistence.

⁂ 4:1 slope required for mound down-slope toe.

F. If drainfield rock medium is employed, a durable, nonwoven geotextile fabric must be used to cover the distribution rock medium. The fabric must be of sufficient strength to undergo installation without rupture. The fabric must permit passage of water without passage of overlying soil material into the rock medium.
G. All excavation into the absorption area, or surface preparation of the upper 12 inches of absorption area, must be in a manner to expose the original soil structure in an unsmeared and uncompacted condition. Excavation is only allowed when the soil moisture content is at or less than the plastic limit and is not frozen or freezing.
H. Excavation equipment or other vehicles must not be driven on the excavated or prepared absorption area. Foot traffic on these areas must be minimized and not cause compaction. The exposed areas must be immediately covered with media or the designed coverage materials. If the areas are exposed to direct rainfall, they must be allowed to dry and must be re-prepared according to item G.
I. A minimum of six inches of topsoil borrow must be placed over the system.
J. A close-growing, vigorous vegetative cover must be established over the soil treatment and dispersal system and other vegetatively disturbed areas. The sodding, seeding, or other vegetation establishment must begin immediately after the placement of the topsoil borrow. If the climatic season does not allow immediate establishment of vegetation, the soil treatment and dispersal system must be protected from erosion and excessive frost and a vegetative cover must be established as soon as favorable climatic conditions exist. The vegetative cover established must not interfere with the hydraulic performance of the system and must provide adequate frost and erosion protection. Trees, shrubs, deep-rooted plants, or hydrophytic plants must not be planted on the system.
K. Sewage tank effluent concentrations to the soil dispersal system must not exceed a BOD concentration of 170 mg/l, a $CBOD_5$ concentration of 125 mg/l, a TSS concentration of 60 mg/l, or an oil and grease concentration of 25 mg/l.
L. The distribution media must not be in contact with soils with any of the USDA soil textures classified as sand with 35 percent or more rock fragments or loamy sand with 35 percent or more rock fragments.
M. The contour loading rate for soil dispersal systems must be between 1 and 12 gallons per lineal foot per day.

Subp. 4. **Systems with a design flow greater than 2,500 gallons per day.** At a minimum, systems designed under this chapter with a design flow of greater than 2,500 gallons per day, which impact water quality of an aquifer, as defined in part 4725.0100, subpart 21, must employ best management practices for nitrogen reduction developed by the commissioner to mitigate water quality impacts to groundwater.

7080.2200 TYPE I SYSTEMS.

Systems designed according to parts 7080.2200 to 7080.2240 are considered Type I systems.

7080.2210 TRENCHES AND SEEPAGE BEDS.

Subpart 1. **Characteristics.** To qualify as a trench or seepage bed system, the system must meet the requirements of items A to E:

A. employ flow values in parts 7080.1850 to 7080.1885;
B. meet applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;
C. provide flow measurement if a pump is to be employed;
D. meet the requirements of part 7080.2150, subparts 2 and 3, except subpart 3, item M; and
E. meet the requirements of subparts 2 to 4.

Subp. 2. **General.** Seepage bed placement must be limited to areas having natural slopes of less than six percent. Absorption areas for seepage beds and trenches must not be placed in soils with a loading rate of less than 0.45 gallons per day per square foot or as shown in Table IX in part 7080.2150, subpart 3, item E. Seepage beds must not be located in floodplains.

Subp. 3. **Sizing of trenches and seepage beds.** The trench bottom absorption area is calculated by dividing the design flow by the appropriate soil loading rate in Table IX in part 7080.2150, subpart 3, item E. If gravity distribution is used in seepage beds, the seepage bed absorption area is calculated by dividing the design flow by the soil loading rate in Table IX in part 7080.2150, subpart 3, item E, multiplied by 1.5. If pressure distribution is used in seepage beds, the seepage bed absorption area is determined by dividing the design flow by the soil loading rate in Table IX in part 7080.2150, subpart 3, item E.

Subp. 4. Design and construction of trenches and seepage beds.

A. Trenches must be no more than 36-inches wide. Any excavation wider than 36-inches is a seepage bed. A seepage bed must

not be wider than 10 feet. Natural, undisturbed soil must exist between multiple trenches and seepage beds. Multiple seepage beds must be spaced at a minimum of one-half the bed width.

B. A vertical inspection pipe at least four inches in diameter must be installed and secured in the distribution medium of every trench or seepage bed. The inspection pipe must be located at an end opposite from where the sewage tank effluent enters the medium. The inspection pipe must have three-eighths inch or larger perforations spaced vertically no more than six inches apart. At least two perforations must be located in the distribution medium. Perforations must not be located above the geotextile cover or wrap. The inspection pipe must extend to the bottom of the distribution medium, be secured, and be capped flush with or above finished grade.
C. The top and bottom of the distribution medium must be level along the contour. Sidewalls must be as vertical as practical and not intentionally sloped.
D. The minimum depth of cover over the distribution medium shall be at least six inches. The maximum depth of cover over the distribution pipes shall be no more than 18-inches, preferably no more than 12-inches.
E. Trenches or seepage beds must be backfilled and crowned above finished grade to allow for settling. The top six inches of the backfill must have the same texture as the adjacent soil.

7080.2220 MOUNDS AND ABOVE GRADE FILL SYSTEM.

Subpart 1. **Mound system requirements.** To qualify as a mound system, the system must meet or exceed the following requirements:

A. employ flow values in parts 7080.1850 to 7080.1885;
B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;
C. meet or exceed the requirements of part 7080.2150, subparts 2 and 3;
D. employ flow measurement; and
E. meet the requirements of subparts 2 and 3.

Subp. 2. **Location of mounds.**

A. For sites where the absorption area will be less than 12 inches above periodically saturated soil or bedrock, i.e. sites with less than 12 inches of original soil above a restrictive condition, mounds must meet the requirements of 7080.2300.
B. Setbacks must be according to Table VII in part 7080.2150, subpart 2, item F. Setbacks must be measured from the original soil absorption area.
C. On slopes of one percent or greater and where the original soil mound absorption loading rate in Table IX, 7080.2150, subpart 3, item E is 0.3 gallons per day/square foot or less, mounds must not be located where the ground surface contour lines that lie directly below the long axis of the distribution media bed represent a swale or draw, unless the contour lines have a radius of curvature greater than 100 feet. Mounds must never be located in swales or draws where the radius of curvature of the contour lines is less than 50 feet.

Subp. 3. **Mound design and construction**.

A. The mound distribution media bed area consists of bottom area only and must be calculated by dividing the design flow by 1.0 gallons per square foot per day.
B. Mound distribution media beds must be determined according to part 7080.2150, subpart 3, item M, and must be no wider than ten feet.

C. Clean sand must be used to elevate the mound distribution media bed and must consist of sound, durable material that conforms to the following requirements:

Sieve Size	Percent Passing
3/8 inch	80-100
No. 4	80-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	05-30
No.100	0-10
No. 200	0-5

~~NOTE: The fine aggregate shall not have more than forty-five percent (45%) sand retained between any two consecutive sieves.~~

NOTE: Discard the #4 and larger aggregate for computation of percent passing the #8 through #200 sieve.

Clean sand must also contain less than three percent deleterious substances and be free of organic impurities.

D. The original soil mound absorption area is determined by the daily design wastewater flow divided by the absorption loading rate of the in-situ soil. The original soil mound absorption length shall equal the mound distribution media bed length. The original soil mound absorption width is determined by the original soil mound absorption area divided by the mound distribution media bed length. The absorption loading rate of the in-situ soil shall be determined according to Table IX in 7080.2150, subpart 3, item E.

E. The required original soil absorption width for mounds constructed on slopes from zero to one percent must be centered under the mound distribution media bed width. The required original mound soil absorption width constructed on slopes greater than one percent must be measured downslope from the upslope edge of the mound distribution media bed width and measured in the direction of the original land slope and perpendicular to the original contours.

F. The side slopes on the mound must not be steeper than three horizontal units to one vertical unit and shall extend beyond the required original soil absorption area, if necessary.

G. Distribution of effluent over the mound distribution media bed must be by level perforated pipe under pressure according to parts 7080.2050 and 7080.2100.

H. The supply pipe from the pump to the original soil absorption area must be installed before surface preparation of the original mound soil absorption area. The trench excavated for the supply pipe must be carefully backfilled and compacted to prevent seepage of effluent.

I. Vegetation in excess of two inches in length and dead organic debris including leaf mats must be removed from the original soil mound absorption area. Trees must be cut nearly flush with the ground and stumps must not be removed.

J. The original soil mound absorption area must be roughened by backhoe teeth, or chisel plow. The soil must be roughened to a depth of eight inches. Discing is allowed if the upper eight inches of soil has a texture of sandy loam or coarser. If plowed, furrows must be thrown uphill and there must not be a dead furrow in the original soil mound absorption area. A rubber-tired tractor is allowed for plowing or discing. Rototilling or pulverizing the soil is not allowed. The original soil must not be excavated or moved more than one foot from its original location during soil surface preparation.

K. Prior to placement of six inches of clean sand, vehicles must not be driven on the original soil mound absorption area before or after the surface preparation is completed. The clean sand must immediately be placed on the prepared surface.

L. The clean sand must be placed by using a construction technique that minimizes compaction. If the clean sand is driven on for construction, a crawler or track-type tractor must be used. At least six inches of sand must be kept beneath equipment to minimize compaction of the prepared surface.

M. A minimum of 6 inches of clean sand must be placed in contact with the bottom area of the mound distribution media bed and must be uniformly tapered to cover the entire original soil absorption area. Other sandy materials are allowed to be used outside of this area to complete construction of the mound.
N. The top of the clean sand layer upon which the mound distribution media bed is placed must be level in all directions.
O. A vertical inspection pipe at least four inches in diameter must be installed and secured at the distribution medium and sand interface. The inspection pipe must have three-eighths inch or larger perforations spaced vertically no more than six inches apart. At least two perforations must be located in the distribution medium. Perforations must not be located above the permeable synthetic fabric, if used. The inspection pipe must extend to the bottom of the distribution medium, be secured, and be capped, flush with or above finished grade.
P. On slopes of one percent or greater, the upslope edge of the mound absorption bed must be placed on the contour.
Q. The sidewalls of the mound absorption bed must be as vertical as practical and not intentionally sloped.
R. The top of the mound distribution media bed must be level in all directions.
S. A minimum of six inches of sandy to loamy soil material must be placed on the top of the mound absorption bed and sloped upwards toward the center of the mound a minimum of ten horizontal units to one vertical unit.
T. Construction vehicles must not be allowed on the distribution media until backfill is placed as described in item S.
U. A minimum of six inches of topsoil borrow must be placed over the entire mound.

Subp. 4. **Above Grade Fill System Requirements.** An above grade fill system is a gravity distribution mound that may only be used for the following conditions:

A. where high water table or bedrock is within five feet of ground surface;
B. where the site has an onsite water supply;
C. where no electricity is available to the site. If electricity is available to the site, a mound with pressure distribution must be installed;
D. where distribution of effluent shall comply with 7080.2050, subpart 3;
E. where the bottom area of the rock bed must be sized 1.5 times larger than the absorption area of a pressure mound;
F. where original soil conditions exist so there is at least 36” of separation between the bottom of the drain field rock layer and the limiting soil condition;
G. where a minimum of 12" of original soil above a periodically saturated soil, bedrock, or other limiting soil condition with soil textures from coarse sand through clay loam as identified in Table IX, in 7080.2150, subpart 3, item E; and
H. where the original soil has a texture of sand or coarser, as identified in Table IX, in 7080.2150, subpart 3, item E, a minimum 12” of sandy loam textured soil must be placed between the clean sand layer and the original soil.

7080.2230 AT-GRADE SYSTEMS.

Subpart 1. **At-grade system.** To qualify as an at-grade system, the system must meet or exceed the following requirements:

A. employ flow values in parts 7080.1850 to 7080.1885;
B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;
C. meet or exceed the requirements of part 7080.2150, subparts 2 and 3;
D. employ flow measurement; and
E. meet the requirements of subparts 2 and 3.

Subp. 2. Location of at-grade systems.

A. The upper 12 inches of the absorption area must be original soil with a loading rate of 0.45 gallons per day per square foot or greater as shown in Table IX in 7080.2150, subpart 3, item E.
B. At-grade systems must not be installed in areas with slopes greater than 25 percent.
C. Setbacks must be according to part 7080.2150, subpart 2, item F. Setbacks must be measured from the absorption area.

Subp. 3. Design and construction of at-grade systems.

A. The at-grade bed absorption width must be determined according to ~~SLC Amended part~~ 7080.2150, subpart 3, item M, and must not exceed a width of 15 feet. The at-grade bed absorption width for slopes of one percent or greater does not include any width of the media necessary to support the upslope side of the pipe.
B. The at-grade absorption length must be calculated by dividing the design flow by the soil loading rate found in Table IX in part 7080.2150, subpart 3, item E, for the upper 12 inches of soil and dividing by the absorption bed width.
C. At-grade systems must employ pressurized distribution by meeting or exceeding the applicable requirements of parts

7080.2050 and 7080.2100. At-grade systems located on slopes of one percent or greater require only one distribution pipe located on the upslope edge of the distribution media, with the absorption bed width being measured from the distribution pipe to the downslope edge of the media. Multiple distribution pipes are allowed to be used to provide even distribution, if necessary, based on site conditions.

D. The upslope edge of an at-grade absorption bed must be installed along the natural contour.
E. At-grade materials must be placed by using construction techniques that minimize compaction.
F. Six inches of loamy or sandy cover material must be installed over the distribution media. Cover must extend at least five feet from the ends of the media bed and be sloped to divert surface water. Side slopes must not be steeper than four horizontal units to one vertical unit. Six inches of topsoil borrow must be placed on the cover material.
G. One vertical inspection pipe of at least four inches in diameter must be installed along the downslope portion of the absorption bed. The inspection pipes must have three-eighths inch or larger perforations spaced vertically no more than six inches apart. Perforations must not exist above the distribution medium. The inspection pipes must extend to the absorption bed/soil interface and must be secured and capped flush with or above finished grade.

7080.2240 GRAY WATER SYSTEMS.

Subpart 1. **General.** To qualify as a gray water system, the system must meet or exceed the following requirements:

A. employ 75 percent of the flow values in parts7080.1850 to 7080.1885;
B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100, except as modified in this part;
C. provide flow measurement if a pump is to be employed;
D. meet or exceed the requirements of parts 7080.2210 to 7080.2230;
E. meet or exceed requirements of part 7080.2150, subparts 2 and 3; and
F. meet or exceed requirements of 2 and 3.
G. The building sewer for a Gray water system shall be no greater than two inches in diameter.
H. Garbage grinders shall not be connected to the drainage system.
I. Grinder pumps shall not be connected to the drainage system.

Subp. 2. **Toilet waste.** Toilet waste must not be discharged to a gray water system.

Subp. 3. **Sewage tank.** The liquid capacity of a gray water septic tank serving a dwelling must be based on the number of bedrooms existing and anticipated in the dwelling served and shall be at least as large as the capacities given in Table X.

TABLE X

Number of Bedrooms	Tank Liquid Capacity (in Gallons)
Primitive (no water under pressure, sink drain only and limited seasonal use)*	55
3 or less	750
4 or 5	1000
6 or 7	1250
8 or 9	1500

For ten or more bedrooms, the gray water septic tank shall be sized as: (1,500 + ((# of bedrooms - 9) x 150)).

*This category may be used in cases of limited development and use such as DNR and county leased lots, islands, water access only lots and saunas. A plastic 55 gallon drum may be used for the tank along with the appropriate plastic pipe tees for baffles.

Subp. 4. **Graywater recycle.** In addition to the graywater standards found in Minnesota Rules Section7080.2240, the County supports graywater recycle and re-use designs which fall outside of the Type I and Type II categories. These systems must be issued an Operating Permit. The County will consider all design options but at a minimum the plan must:

1. Demonstrate an acceptable treatment component.
2. Not allow surface or subsurface discharge.

The County also recognizes that many graywater options, such as lawn or garden irrigation, are seasonal in nature. These options will require that the residential SSTS be sized to handle all graywater flows during the periods when the graywater system cannot be used.

7080.2250 TYPE II SYSTEMS.

Systems designed according to parts 7080.2270 to 7080.2290 are considered Type II systems.

7080.2260 [Repealed, 35 SR 1353]

7080.2270 FLOODPLAIN AREAS.

Subpart 1. **General.** ISTS must be designed under this part if the system is proposed to be located in a floodplain. A system located in a floodplain must meet or exceed the following requirements:

A. employ flow values in parts 7080.1850 to 7080.1885;
B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100, except as modified in this part;
C. provide flow measurement if a pump is to be employed; meet or exceed the requirements of parts 7080.2210 to 7080.2230;
E. meet or exceed requirements of part 7080.2150, subparts 2 and 3, except as modified in this subpart; and
F. meet the requirements of subparts 2 to 11.

Subp. 2. **State and local requirements.** The allowed use of systems in floodplains must be according to state and local floodplain requirements.

Subp. 3. **Location of system.** An ISTS must not be located in a floodway and, whenever possible, placement within any part of the floodplain should be avoided. If no alternative exists, a system is allowed to be placed within the flood fringe if the requirements in subparts 4 to 11 are met.

Subp. 4. **Openings.** There must be no inspection pipe or other installed opening from the distribution media to the soil surface.

Subp. 5. **Highest ground.** An ISTS must be located on the highest feasible area of the lot and must have location preference over all other improvements except the water supply well. If the ten-year flood dataare available, the bottom of the distribution media must be at least as high as the elevation of the ten-year flood.

Subp. 6. **Pump.** If a pump is used to distribute effluent to the soil treatment and dispersal system, provisions shall be made to prevent the pump from operating when inundated with floodwaters.

Subp. 7. **Raising elevation.** When it is necessary to raise the elevation of the soil treatment system to meet the vertical separation distance requirements, a mound system as specified in part 7080.2220 is allowed to be used with the following additional requirements:

A. the elevation of the bottom of the mound bed absorption area must be at least one-half foot above the ten-year flood elevation if ten-year flood data are available;
B. inspection pipes must not be installed unless the top of the mound is above the 100-year flood elevation; and
C. the placement of clean sand and other fill must be done according to any community-adopted floodplain management ordinance.

Subp. 8. **Inundation of top.** When the top of a sewage tank is inundated, the dwelling must cease discharging sewage into it.

Subp. 9. **Backflow.** Backflow prevention of liquid into the building when the system is inundated must be provided. If a holding tank is used, the system must be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.

Subp. 10. **Holding tank.** If a holding tank is used to serve a dwelling, the holding tank's liquid capacity must equal 100 gallons times the number of bedrooms times the number of days between the ten-year stage on the rising limb of the 100-year flood hydrograph and the ten-year stage on the falling limb of the hydrograph, or 1,000 gallons, whichever is greater. The holding tank must be accessible for removal of tank contents under flooded conditions.

Subp. 11. **Water level above top.** Whenever the water level has risen above the top of a sewage tank, the tank must be pumped to remove all solids and liquids after the flood has receded and before use of the system is resumed.

7080.2280 PRIVIES AND OTHER TREATMENT DEVICES.

A. To qualify as a privy, the system must:
   (1) meet or exceed the requirements of part 7080.2150, subpart 2;
   (2) have soil beneath the bottom of the pit that meets or exceeds the requirements of part 7080.2150, subpart 3, item C, employ a watertight tank meeting applicable requirements of parts 7080.1900 to 7080.2030, or employ a toilet treatment device; and
   (3) meet the requirements of items B to H.
B. Pits or vaults must have sufficient capacity for the dwelling they serve, but must have at least 27 cubic feet of capacity.
C. The sides of the pit must be curbed to prevent cave-in.
D. The privy must be easily maintained and insect proof. The door and seat must be self-closing. All exterior openings, including vent openings, shall be screened.
E. Privies must be adequately vented.
F. Privies shall meet the setback requirements of item 7080.2150, subpart 2, item F.
G. When the pit is filled to within one foot of the top, the solids shall be removed or a new pit shall be constructed. The abandoned pit shall be filled with clean earth and slightly mounded to allow for settling. Removed solids shall be disposed in accordance with 7080.2450.
H. Other treatment devices may be used where reasonable assurance of performance is provided. Other treatment devices shall be vented. All electric, gas, and water connections to another treatment device shall conform to all local ordinances and codes. Operation and Maintenance of all other treatment devices shall follow the manufacturer's recommendations. All materials removed from other treatment devices shall be in accordance with 7080.2450, subpart 4, item A.

7080.2290 HOLDING TANKS.

A. To qualify as a holding tank, the system must:
   (1) meet or exceed applicable requirements of parts 7080.1900 to 7080.2030;
   (2) meet or exceed the applicable requirements of part 7080.2150, subpart 2;
   (3) meet or exceed the requirements of part 7080.2150, subpart 3, item B; and
   (4) meet the requirements of items B to F.
B. A cleanout pipe of at least six inches in diameter must extend to the ground surface and be provided with seals to prevent odor emissions and exclude insects and vermin. A maintenance hole of at least 20 inches in least dimension must extend through the cover to surface and must be secured according to part 7080.1970, item C.
C. For a dwelling, the minimum size is 1,000 gallons or 400 gallons times the number of bedrooms, whichever is greater. For other establishments, the minimum capacity shall be at least five times the design flow. Tank sizing for floodplain areas must be calculated according to part 7080.2270, subpart 10.
D. Holding tanks must be located in an area readily accessible to the pump truck under all weather conditions and where accidental spillage during pumping will not create a nuisance and must meet the setback requirements as specified in Table VII in part 7080.2150, subpart 2, item F.
E. Holding tanks must have an alarm device to minimize the chance of accidental sewage overflows unless regularly scheduled pumping is used. An alarm device shall identify when the holding tank is at 75 percent capacity.

7080.2300 TYPE III SYSTEMS.

A system that deviates from the requirements in parts 7080.2210 to 7080.2240 is a Type III system. Deviations from the standards in parts 7080.2210 to 7080.2240 must be submitted to the local unit of government for approval or denial. However, no deviation is allowed from the following standards and at a minimum a Type III system must:

A. employ design flow values in parts 7080.1850 to 7080.1885;
B. meet technical requirements of part 7080.2050;
C. meet the requirements of parts 7080.1900 to 7080.2030;
D. meet the requirements of part 7080.2100 with mound and at-grade systems required to have pressure distribution;
E. provide flow measurement;
F. meet the requirements of part 7080.2150, subparts 2 and 4;
G. meet the requirements of part 7080.2150, subpart 3, items A, B, C, F, I, J, and L; and
H. follow the contour loading rates in Part 7080.2150, subpart.3, item E, Table IX.

If the site cannot accommodate a soil treatment and dispersal system sized in accordance with Table IX in 7080.2150, subpart 3, item E, a smaller soil treatment and dispersal system is allowed to be constructed if it employs flow restriction devices (for example: time dosing/surge storage), that do not allow loadings in excess of those in Table IX of part 7080.2150, subpart 3, item E. ~~In those cases where a loading rate is not listed in Table IX in part 7080.2150, subpart 3, item E, an alternative loading rate is allowed to be proposed per footnote section of 7080.2150, subpart 3, item E, Table IX.~~

I. ~~for Class I dwellings only, if designing on flows of 100 gallons per day per bedroom, then~~ The system design must include:
   (1) a time dose panel;
   (2) a surge storage dosing tank ~~s~~ with a minimum capacity of two days of flow based on 150 gallons per day per bedroom;
   ~~(3) trench, seepage and mound bed distribution media areas are designed based on 150 gallons per day per bedroom;~~
   (4) seepage and mound distribution media beds must be no wider than 10 feet; and
   (5) a dosing tank draw down test is performed to confirm proper dosing to the dispersal area.
   (6) an operating permit shall be established;
   (7) a written narrative stating why the site cannot accommodate a standard STA shall be provided.
J. For sites with <6" of soil a CLR of no greater than 3 shall be utilized and 36" of approved sand utilized under the distribution media, or a LSS can determine CLR based on their site evaluation and soil analysis.
K. For sites with ≥ 50% rock fragments a SHLR of no greater than 1 shall be utilized and up to 36" of approved sand utilized under the distribution media and a minimum of 1 foot of approved sand along the sides, or a LSS can determine SHLR based on their site evaluation and soil analysis.

7080.2350 TYPE IV SYSTEMS.

Subpart 1. **General**. A system designed according to this part is considered a Type IV system. The system must:

A. employ design flow values in parts 7080.1850 to 7080.1885;
B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;
C. meet or exceed the requirements of part 7080.2150, subpart 2;
D. meet the requirements of part 7080.2150, subpart 3, except as modified in this part;
E. meet the requirements of Table XI in subpart 2; and
F. meet soil dispersal requirements of parts 7080.2210, 7080.2220, and 7080.2230, except that the reductions in part 7080.2210, subpart 3, item B, are not applicable.

Subp. 2. **Table XI.**

TABLE XI

TREATMENT COMPONENT PERFORMANCE LEVELS AND METHOD OF DISTRIBUTION BY TEXTURE GROUP[1]

Vertical Separation (inches)	Texture Group[2]	Texture Group[2]	Texture Group[2]
	All sands and loamy sands	Sandy loam, loam, silt loam	Clay, clay loam
12 to 17[3]	Treatment level A Uniform distribution Timed dosing	Treatment level A Uniform distribution Timed dosing	Treatment level A Uniform distribution Timed dosing
18 to 35[3]	Treatment level B Uniform distribution Timed dosing	Treatment level B Uniform distribution Timed dosing	Treatment level B Uniform distribution
36+ [3]	Treatment level A-2 or B-2 Uniform distribution Treatment level C	Treatment level A-2 or B-2 Uniform distribution Treatment level C	Treatment level A-2 or B-2 Uniform distribution Treatment level C

[1]The treatment component performance levels correspond with those established for treatment components under the product testing requirements in 7083.4030, Table III.
[2] With less than 50 percent rock fragments.
[3]Additional vertical separation distance is required as determined in part 7080.2150, subpart 3; item C. Subitem (1), unit (b)

Subp. 3. **Soil loading rates.** The absorption area must be sized according to Table IX.

7080.2400 TYPE V SYSTEMS.

A system designed according to this part is considered a Type V system. The system must:

A. employ design flow values in parts 7080.1850 to 7080.1885;
B. meet the requirements of part 7080.2150, subpart 2; and
C. be designed with a vertical separation that ensures adequate sewage dispersal and treatment. Design factors to consider include, but are not limited to, effluent quality, loading rates, groundwater mounding if loading rates are in excess of those in part 7080.2150, subpart 3, item E, Table IX, loading methods, and soil conditions.

ISTS must not contaminate underground waters or zones of periodic saturation with viable fecal organisms.

7080.2430 REPORTING.

Phase II design reports must include detailed drawings, design flows, system component sizing and calculations, hydraulic and organic loading rates, setbacks, location and elevations for construction, and management plans as described in part 7082.0600, subpart 1, and a certified statement.

7080.2440 COLLECTION SYSTEMS.

Collection of greater than 2,500 gallons per day of sewage from multiple buildings or multiple other establishments discharging into an ISTS must be:

A. according to the Prescriptive Designs and Design Guidance for Advanced Designers, incorporated by reference under part 7080.1550, subpart 2; or
B. designed by a Minnesota licensed professional engineer.

7080.2450 MAINTENANCE.

Subpart 1. **General.** All ISTS must be operated under the regulatory requirements of part 7082.0600. ISTS and all components must be maintained in compliance with this chapter and manufacturer requirements. Subpart 2, items A and B, are intended to apply to ISTS and systems that do not qualify as an ISTS, but receives sewage such as cesspools, drywells, leaching pits, or other pits.

Subp. 2. **Frequency of assessment.** The owner of an ISTS or the owner's agent shall regularly, but in no case less frequently than every three years:

A. assess whether sewage tanks leak below the designed operating depth and whether sewage tank tops, riser joints, and riser connections leak through visual evidence of major defects; and
B. measure or remove the accumulations of scum, grease, and other floating materials at the top of each septic tank and compartment, along with the sludge, which consists of the solids denser than water.

Subp. 3. **Removal of material.**

A. All solids and liquids must be removed by pumping from all tanks or compartments in which the top of the sludge layer is less than 12 inches from the bottom of the outlet baffle or transfer hole or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle or transfer hole. Total sludge and scum volume must not be greater than 25 percent of the tank's liquid capacity.
B. Removal of accumulated sludge, scum, and liquids from septic tanks and pump tanks must be through the maintenance hole. The removal of solids from any location other than the maintenance hole is not a compliant method of solids removal from a sewage tank, and this method does not fulfill the solids removal requirement of this part or a management plan. Liquid and solids removal from clean-out pipes is allowed for holding tanks.

C. After removal of solids and liquids from a system installed after the adoption of a local ordinance adopted after February 4, 2008, the maintenance hole cover must be secured as described in part 7080.1970, item D. Covers secured by screws must be refastened in all screw openings.
D. After removal of solids and liquids from a system installed before the adoption of a local ordinance adopted after February 4, 2008, maintenance hole covers must be sound, durable, and of adequate strength as specified in part 7080.1970, item D, subitem (3), and:
   (1) be buried with a minimum of 12 inches of soil cover or, if the cover is currently at or above the ground surface or within 12 inches from final grade, be secured by a method that was deemed secure by the local ordinance that was in effect before February 4, 2008; or
   (2) meet the requirements of part 7080.1970, item D, if the cover is to be raised to be at or above the ground surface or within 12 inches from final grade.
E. Pump tanks must be maintained according to this part. Sludge must be removed if within one inch of the pump intake.

Subp. 4. **Toilet waste treatment devices and privies.**

A. For primitive dwellings using toilet waste treatment devices in low dwelling density areas, septage disposal from these devices by the owner must be in accordance with local ordinances. If no ordinance exists, the septage must not be discharged to surface waters, drainageways, steeply sloping areas, or wet areas in a manner or volume that is harmful to the environment or public health or that creates a nuisance. The material must be buried or covered with soil. For site conditions not met in this subpart, the solids disposal from toilet waste treatment devices shall be according to subpart 6 by a licensed maintenance business.
B. When the privy is filled to one-half of its capacity, the solids must be removed. Abandoned pits must have the sewage solids and contaminated soil removed and must be filled with clean earth and slightly mounded to allow for settling. Removed solids shall be disposed of according to subpart 6.

Subp. 5. **Additive.** Additive means a chemical, biochemical, or biological substances added to sewage discharged to, or to any effluent of, an SSTS for the intended purpose of altering the performance of any system component. Approved additives include those that are an integral component of a registered treatment product or an engineered treatment process. The use of additives does not fulfill the solids removal requirement of this part or a management plan. Other additives that liquefy or emulsify system solids, or are classified as hazardous, are prohibited.

Subp. 6. **Septage disposal.** Septage or any waste mixed with septage must be disposed of in accordance with state, federal, and local requirements for septage and other wastes. If septage is disposed of into a sewage or septage treatment facility, a written agreement must be provided between the accepting facility and the maintenance business.

Subp. 7. **Use of soil treatment site.** Activities on the current soil dispersal and treatment system or the reserve soil dispersal and treatment area as specified in part 7082.0100, subpart 3, item F, that impair the current or future treatment abilities or hydraulic performance of the soil treatment and dispersal system are prohibited. This includes, but is not limited to, covering all or part of the soil treatment system with an impermeable surface as determined by the local unit of government.

Subp. 8. **System remediation.** Any maintenance activity used to increase the acceptance of effluent to a soil treatment and dispersal system must:

A. not be used on a system failing to protect groundwater as defined in part 7080.1500, subpart 4, item B, unless the activities meet the requirements of parts 7080.2350 and 7080.2400;
B. not cause preferential flow from the soil treatment and dispersal system bottom to the periodically saturated soil or bedrock; and
C. be conducted by an appropriately certified qualified employee or an appropriately licensed business as specified in part 7083.0790.

Any substance added with the intent to increase the infiltration rate of the soil treatment and dispersal system must not contain hazardous substances.

7080.2500 SYSTEM ABANDONMENT.

Subpart 1. **Tank abandonment.** All systems with no future intent for use must be abandoned according to this part. Tank abandonment procedures for sewage tanks, cesspools, leaching pits, drywells, seepage pits, vault privies, and pit privies must meet the requirements in items A to C.

A. All solids and liquids must be removed and disposed of according to part 7080.2450, subpart 6, by a licensed maintenance business.
B. All electrical devices and devices containing mercury must be removed and disposed of according to applicable regulations.
C. Abandoned tanks or any other underground cavities must be removed or remain in place and crushed with the remaining cavity filled with soil or rock material.

Subp. 2. **Future discharge.** Access for future discharge to the system must be permanently denied.

Subp. 3. **Removal of system.** If soil treatment and dispersal systems are removed, contaminated materials shall be properly handled to prevent human contact. Contaminated materials include distribution media, soil or sand within three feet of the system bottom, distribution pipes, tanks, and contaminated soil around leaky tanks. Contaminated material also includes any soil that received sewage from a surface failure. Contaminated materials must be disposed of according to items A to D.

A. Contaminated materials disposed of off-site must be disposed of according to part 7080.2450, subpart 6.
B. If contaminated material is to be spread or used on-site within one year of contact with sewage, the material must be placed in an area meeting the soil and setback requirements described in part 7080.2150, subparts 2, item F, Table VII, and 3, item C, and the material must be covered with a minimum of six inches of uncontaminated soil and protected from erosion. After one year following contact with sewage, the material is allowed to be spread in any location meeting the setback requirement of part 4725.4450, covered with a minimum of six inches of uncontaminated soil, and protected from erosion. After one year following contact with sewage, the material is allowed to be used to fill in the abandoned in-place sewage tanks.
C. Contaminated pipe, geotextile fabric, or other material must be dried and disposed of in a mixed municipal solid waste landfill.
D. The person or business abandoning the system must complete and sign a record of abandonment that states the system was abandoned according to this part. The record must be sent to the local unit of government within 90 days of abandonment.

7080.2550 SEEPAGE PITS, DRYWELLS, AND LEACHING PITS.

Subpart 1. **Intended use of this part.** This part must be used when conducting existing system compliance inspections. This part defines what constitutes seepage pit, drywell, or leaching pit systems. Seepage pit, drywell, or leaching pit systems are not considered compliant systems as determined in part 7080.1500, subpart 4, item B, but these existing systems may be allowed continued use under Minnesota Statutes, section 115.55, subdivision 5a, paragraph (f), by local units of government that have adopted alternative local standards for these systems under part 7082.0050, subpart 5.

Subp. 2. **Requirements for seepage pits, drywells, and leaching pits.** A seepage pit, drywell, or leaching pit is a system that:

A. has a sewage tank that does not obviously leak below the designed liquid capacity preceding the pit;
B. has at least one foot of vertical separation from the bottom of the pit to the periodically saturated soil or bedrock in non-SWF areas; and
C. meets all setback requirements.

CHAPTER 7081
FROM MINNESOTA POLLUTION CONTROL AGENCY
MIDSIZED SUBSURFACE SEWAGE TREATMENT SYSTEMS

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7081.0010 PURPOSE AND INTENT.

The proper location, design, installation, use, and maintenance of midsized subsurface sewage treatment systems (MSTS) protects the public health, safety, and general welfare by the discharge of adequately treated sewage to the groundwater. In accordance with the authority granted in Minnesota Statues, chapters 103F, 103G, 115, and 116, the Pollution Control Agency, hereinafter referred to as the agency, provides minimum environmental protection standards for MSTS as defined in this chapter.

These standards shall be adopted countywide and administered and enforced by local units of government as directed by chapter 7082 and Minnesota Statutes, section 115.55.

This chapter does not regulate subsurface treatment systems that do not receive sewage as defined inthis chapter. If systems regulated under this chapter receive both sewage and nonsewage, the requirements of this chapter apply, plus any additional requirements governing the nonsewage portion of the wastewater. Systems serving two or more dwellings, systems serving other establishments that serve over 20 persons, and systems receiving nonsewage are also regulated under Code of Federal Regulations, title 40, parts 144 and 146.

This chapter does not contain design standards for sewage treatment systems that discharge to the ground surface or surface waters. Those systems require a national pollution discharge elimination systems permit.

Primarily, this chapter provides measurable performance outcomes for MSTS, but this chapter also includes limited design, construction, inspection, and operational standards that are believed to reasonably protect surface water, groundwater, public health, safety, general welfare, and the environment.

In conjunction with these standards, the agency encourages the use of advanced treatment methods and waste reduction to further reduce the discharge of contaminants.

Other chapters that have a bearing on MSTS are standards for individual subsurface sewage treatment systems in chapter 7080, administrative requirements for subsurface sewage treatment systems local permit and inspection programs in chapter 7082 and certification and licensing requirements for those who design, install, inspect, maintain, or operate subsurface sewage treatment systems and product registration in chapter 7083.

7081.0020 DEFINITIONS

Subpart 1. **Certain terms**. In addition to the definitions in chapters 7080, 7082, and 7083 and Minnesota Statutes, section 115.55, which are incorporated by reference, the terms used in this chapter have the meanings given them. For the purposes of this chapter, if a term used in this chapter is defined in chapter 7080, 7082, or 7083, it shall apply to MSTS and other SSTS if referenced in later chapters. Certain terms or words used in this chapter must be interpreted as follows: the words "shall" and "must" are mandatory and the words "should" and "may" are permissive. All distances specified in this chapter are horizontal distances unless otherwise specified.

Subp. 2. **Capillary fringe**. "Capillary fringe" means the soil layer directly above a saturated layer in which the pore spaces are nearly filled with water as water is drawn upward due to adhesive and cohesive forces.

Subp. 3. **Groundwater mound**. "Groundwater mound" means the rise in height of the periodically saturated soil or regional water table caused by the addition of sewage effluent from a subsurface sewage treatment system into the soil.

Subp. 4. **Midsized subsurface sewage treatment system or MSTS**. "Midsized subsurface sewage treatment system" or "MSTS" means a subsurface sewage treatment system, or part thereof, as set forth in Minnesota Statutes, sections 115.03 and 115.55, that employs sewage tanks or other treatment devices with final discharge into the soil below the natural soil elevation or elevated final grade and that is designed to receive sewage design flow of greater than 5,000 gallons per day to 10,000 gallons per day. MSTS also includes sewage collection systems and associated tanks that discharge into MSTS treatment or dispersal components. MSTS does not include those components defined as plumbing under chapter 4715.

Subp. 5. **NPDES permit**. "NPDES permit" means a national pollutant discharge elimination system permit issued by the agency.

Subp. 6. **Other establishment**. "Other establishment" means any public or private structure other than a dwelling that generates sewage that discharges to an SSTS.

Subp. 7. **SDS permit**. "SDS permit" means a state disposal system permit issued by the agency.

Subp. 8. **Well capture zone**. "Well capture zone" means the surface and subsurface area that supplies water to a water supply well.

7081.0040 STATE REGULATION.

Subpart 1. **Agency regulation.**

A. All MSTS must be designed and operated according to this chapter, except as modified through an ordinance in compliance with chapter 7082 and Minnesota Statutes, section 115.55. All MSTS must be designed, installed, inspected, pumped, and operated by a qualified employee under part 7083.1010 or a licensed business under part 7083.0710. All MSTS must conform to applicable state statutes and rules.
B. The owner or owners of a single SSTS or a group of SSTS under common ownership must obtain an SDS permit from the agency according to chapter 7001 when all or part of proposed or existing soil dispersal components are within one-half mile of each other and the combined flow from all proposed and existing SSTS is greater than 10,000 gallons per day. For proposed SSTS, the flow must be determined according to item D. For existing SSTS, the flow is determined by the greater of:
   (1) the average maximum seven-day measured flow; or
   (2) the flow determined according to item D.
C. An SDS permit is required for any subsurface sewage treatment system or group of subsurface sewage treatment systems that the commissioner determines has the potential or an increased potential to cause adverse public health or environmental impacts if not regulated under a state permit. Conditions for these permits include systems in environmentally sensitive areas, unsubstantiated or unexpected flow volumes, and systems requiring exceptional operation, monitoring, and management.
D. Flow amounts to calculate whether an SDS permit is required must be determined according to part 7081.0110. The highest calculated value of the various methods in Table I under part 7081.0130, subpart 1, must be used to make this determination, with no reduction allowed. An SDS permit is not required if a factor of safety is added to the design flow that results in a design flow that is in excess of the SDS permit threshold.

Subp. 2. Other state regulations.

A. MSTS must conform to all applicable state statutes and rules.
B. MSTS serving establishments licensed or regulated by the state of Minnesota, or MSTS owned by the state of Minnesota, must conform to this chapter.

7081.0050 FEDERAL REGULATION.

A. All subsurface sewage treatment systems serving two-family dwellings or larger and systems serving other sewage generating establishments that serve more than 20 people are regulated by the United States Environmental Protection Agency as Class V injection wells under Code of Federal Regulations, title 40, parts 144 and 146. Code of Federal Regulations, title 40, parts 144 and 146, prescribe additional design regulations applicable to certain systems designed under this chapter. In addition, single-family dwellings systems that receive nonsewage wastewater are regulated by these federal regulations. All systems that receive hazardous wastes are regulated by the United States Environmental Protection Agency as Class IV injection wells. Disposal of hazardous waste must be according to state and federal regulations.
B. The owner or owner's agent of a system classified as a Class V injection well shall submit to the commissioner of the Pollution Control Agency and the United States Environmental Protection Agency the inventory information specified in Code of Federal Regulations, title 40, section 144.26.
C. All septage generated from MSTS must be treated and dispersed according to applicable standards for septage in Code of Federal Regulations, title 40, part 503, and any local requirements.

7081.0060 LOCAL REGULATION.

MSTS must be regulated under local ordinances in compliance with this chapter as described in Minnesota Statutes, section 115.55. Local administrative requirements for design review, construction permit issuance, construction inspections, variance procedures, enforcement, operational requirements, and other administrative processes must be according to chapter 7082.

7081.0070 VARIANCE PROCEDURES.

Parts 7081.0080 to 7081.0300 are provided to be incorporated into a local ordinance according to chapter 7082 and Minnesota Statutes, section 115.55. Variance requests to these design standards as adopted into local ordinances made by an owner or owner's agent must be issued or denied by the local unit of government. Variances must not be issued by the local unit of government for the minimal environmental protection outcomes in part 7081.0080, subparts 2 to 5. Variances may be granted to part 7081.0080, subpart 4, item D, subitem (1), for replacement MSTS serving existing dwellings or other establishments.

7081.0080 PERFORMANCE AND COMPLIANCE CRITERIA.

Subpart 1. **General**. New construction, replacement, or existing MSTS designed under this chapter are considered conforming if they meet the requirements of this part. Existing MSTS constructed before February 4, 2008, are considered conforming if they meet the requirements of this part, except for subpart 4, items D and E.

Subp. 2. **Treatment required**. All sewage discharged from a dwelling or other establishment not served by a system issued a permit containing effluent and discharge limits or specific monitoring requirements by the agency must be treated according to local ordinances that comply with this chapter, chapter 7082, and Minnesota Statutes, section 115.55.

Subp. 3. Public health and safety; imminent threat.

A. To be in compliance, all MSTS must:
   (1) have treatment processes and devices that do not allow sewage or sewage effluent contact with humans, insects, or vermin;
   (2) disperse sewage effluent into soil or sand below final grade, with the effluent remaining below final grade;
   (3) not discharge to drainage tile, the ground surface, or surface water or back up sewage into dwellings or other establishments;
   (4) treat and disperse sewage effluent in a safe manner, including protection from physical injury and harm; and
   (5) not have received hazardous material.
B. MSTS must be deemed an imminent threat to public health or safety for noncompliance with item A and any other condition that poses an imminent threat as determined by a qualified employee MSTS inspector or licensed MSTS inspection business.

Subp. 4. **Groundwater protection**. To be in compliance, all MSTS must:

A. meet the requirements of part 7080.1500, subpart 4, item D;
B. not be seepage pits, cesspools, drywells, leaching pits, sewage tanks, and treatment vessels that observably leak below the designated operating depth;
C. not allow viable fecal organisms to contaminate underground waters or zones of seasonal saturation;
D. employ nitrogen reduction processes that reduce nitrogen contribution to groundwater as determined in subitem (1) or (2):
   (1) if the discharge from an MSTS will impact water quality of an aquifer, as defined in part 4725.0100, subpart 21, the effluent from an MSTS, in combination with the effective recharge to the groundwater, must not exceed a concentration of total nitrogen greater than 10 mg/l at the property boundary or nearest receptor, whichever is closest; and
   (2) if the discharge from an MSTS will not impact water quality of an aquifer, as defined in part 4725.0100, subpart 21, best management practices developed by the commissioner to mitigate water quality impacts to groundwater must be employed; and
E. not exceed a groundwater discharge of phosphorus to a surface water that exceeds the phosphorus standard to the receiving water.

Subp. 5. **Other conformance**. To be in compliance, MSTS must meet the requirements of items A and B.

A. All methods and devices used to treat and disperse sewage must be designed to conform to all applicable federal, state, and local regulations.
B. Systems no longer in use must be abandoned according to part 7080.2500.

Subp. 6. **System operation**. To be in compliance, an MSTS must meet performance standards and be operated and managed according to its operating permit and management plan, as described in part 7081.0290. To be in compliance, an MSTS designed before February 4, 2008, must be operated according to applicable requirements of part 7080.2450.

Subp. 7. **Compliance criteria for systems receiving replacement components.** Components of existing MSTS that cause noncompliance must be repaired or replaced. The repaired or replacement components must meet technical standards and criteria in parts 7081.0110 to 7081.0280. The remaining components of the existing system must comply with subparts 2 to 5, including subpart 4, item D, if constructed after February 4, 2008.

Subp. 8. Upgrade requirements.

A. MSTS in compliance with this part shall be issued a certificate of compliance. Systems found not in compliance shall be issued a notice of noncompliance.
B. MSTS issued a notice of noncompliance based on criteria in subpart 3 shall be repaired or replaced within ten months or as directed by Minnesota Statutes, chapter 145A, whichever is most restrictive.
C. MSTS issued a notice of noncompliance based on criteria in subpart 4 or 5 shall be repaired or replaced according to local ordinance requirements.
D. Systems issued a notice of noncompliance based on criteria in subpart 6 must immediately be maintained, monitored, or managed according to the operating permit.

7081.0100 PROFESSIONAL REQUIREMENTS.

Systems must be designed, installed, inspected, operated, and maintained by appropriately licensed businesses and certified individuals according to chapter 7083 and other requirements.

7081.0110 SEWAGE FLOW DETERMINATION.

The design flow is the combined values determined in parts 7081.0120, 7081.0130, and 7081.0140.

7081.0120 DESIGN FLOW DETERMINATION FOR DWELLINGS.

Subpart 1. **Sum of design flow for existing dwellings**. The design flow for MSTS serving existing dwellings is determined by the following calculation in conjunction with part 7080.1850: the total flow from the ten highest flow dwellings + (total flow from the remaining dwellings * 0.45)

Subp. 2. **New housing developments**. For new housing developments to be served by a common SSTS, the developer must determine and restrict the total number of bedrooms for the development. Proposed dwellings are determined to be Classification I dwellings for flow determination purposes unless different classifications are approved by the local unit of government. The determined classification system must be used in conjunction with the flow calculation method in subpart 1. If the ultimate development of phased or segmented growth meets or exceeds the thresholds in part 7081.0040, subpart 1, item B, the initial system or systems and all subsequent systems require a state disposal system permit.

Subp. 3. **Additional capacity**. If construction of additional dwellings or bedrooms, installation of additional water-using devices, or other factors likely to increase the flow volumes can be reasonably anticipated, the MSTS must be designed to accommodate the additional capacity as determined by the local unit of government.

7081.0130 FLOW AND WASTE CONCENTRATION DETERMINATION FOR OTHER ESTABLISHMENTS.

Subpart 1. **Method.** Design flows for other establishments are determined by methods in item A or B.

A. The design flow of sewage for MSTS serving other establishments is estimated using Table I.

TABLE I

ESTIMATED DESIGN SEWAGE FLOW FROM OTHER ESTABLISHMENTS

(1) Dwelling units (also see outdoor recreation)	Unit	Design flow (gal/ day/unit)
(a) Hotel or luxury hotel	guest	55
	square foot	0.28
(b) Motel	guest	38
	square foot	0.33
(c) Rooming house	resident	45
	add for each nonresident meal	3.3
(d) Daycare (no meals)	child	19
(e) Daycare (with meals)	child	23
(f) Dormitory	person	43
(g) Labor camp	person	18
(h) Labor camp, semi permanent	employee	50
(2) Commercial/Industrial		
(a) Retail store	square foot	0.13
	customer	3.8
	toilet	590
(b) Shopping center	employee	11.5
	square foot	0.15
	parking space	2.5
(c) Office	employee/8-hour shift	18
	square foot	0.18
(d) Medical office*	square foot	1.1
	practitioner	275
	patient	8
(e) Industrial building*	employee/8-hour shift	17.5
	employee/8-hour shift with showers	25
(f) Laundromat	machine	635
	load	52.5
	square foot	2.6
(g) Barber shop*	chair	68
(h) Beauty salon*	station	285
(i) Flea market	nonfood vendor/space	15
	limited food vendor/space	25
	with food vendor/space	50
(3) Eating and drinking establishments		
(a) Restaurant (does not include bar or lounge)	meal without alcoholic drinks	3.5
	meal with alcoholic drinks	8
	seat (open 16 hours or less)	30
	seat (open more than 16 hours)	50
	seat (open 16 hours or less, single service articles)	20
	seat (open more than 16 hours, single service articles)	35
(b) Restaurant (short order)	customer	7
(c) Restaurant (drive-in)	car space	30
(d) Restaurant (carry out, including caterers)	square foot	0.5
(e) Institutional meals	meal	5.0
(f) Food outlet	square foot	0.2

ESTIMATED DESIGN SEWAGE FLOW FROM OTHER ESTABLISHMENTS (CONT'D.)

Dwelling units	Unit	Design flow (gal/ day/unit)
(g) Dining hall	meal	8.5
(h) Coffee shop	customer	7
(i) Cafeteria	customer	2.5
(j) Bar or lounge (no meals)	customer	4.5
	seat	36
(4) Entertainment establishments		
(a) Drive-in theater	car stall	5
(b) Theater/auditorium	seat	4.5
(c) Bowling alley	alley	185
(d) Country club	member (no meals)	22
	member (with meals and showers)	118
	member (resident)	86
(e) Fairground and other similar gatherings	visitor	1.5
(f) Stadium	seat	5
(g) Dance hall	person	6
(h) Health club/gym	member	35
(5) Outdoor recreation and related lodging facilities		
(a) Campground	campsite with sewer hook-up (per person)	32
	campsite with sewer hook-up (per site/space)	100
	campsite without sewer hook-up, with central toilet or shower facility (per site)	50
	campsite without sewer hook-up, with central toilet or shower facility, served by central dump station (per site)	63
(b) Permanent mobile home	mobile home	225
(c) Camp, day without meals	person	20
(d) Camp, day with meals	person	25
(e) Camp, day and night with meals	person	45
(f) Resort/lodge hotel	person	62
(g) Cabin, resort	person	50
(h) Retail resort store	customer	4
(i) Park or swimming pool	guest	10
(j) Visitor center	visitor	13
(6) Transportation		
(a) Gas station/convenience store	customer	3.5
(b) Service station*	customer	11
	service bay	50
	toilet	250
	square foot	0.25
(c) Car wash* (does not include car wash water)	square foot	5
(d) Airport, bus station, rail depot	passenger	5
	square foot	5
	restroom	565

ESTIMATED DESIGN SEWAGE FLOW FROM OTHER ESTABLISHMENTS (CONT'D.)

Dwelling units	Unit	Design flow (gal/ day/unit)
(7) Institutional		
(a) Hospital*	bed	220
(b) Mental health hospital*	bed	147
(c) Prison or jail	inmate	140
(d) Nursing home, other adult congregate living	resident	125
(e) Other public institution	person	105
(f) School (no gym, no cafeteria, and no showers)	student	14
(g) School (with cafeteria, no gym and no showers)	student	18
(h) School (with cafeteria, gym, and showers)	student	27.5
(i) School (boarding)	student	95
(j) Church	seat	4
	add for each meal prepared	5
(k) Assembly hall	seat	4
(8) Miscellaneous		
(a) Public lavatory	user	5
(b) Public shower	shower taken	11

* Waste other than sewage is only allowed to be discharged into the system if the waste is suitable to be discharged to groundwater.

Unless otherwise noted in Table I, the flow values do not include flows generated by employees. A flow value of 15 gallons per employee per eight-hour shift must be added to the flow amount. Design flow determination for establishments not listed in Table I shall be determined by the best available information and approved by the local unit of government.

B. The measured design flow of sewage for MSTS serving other establishments is determined by averaging the measured daily flows for a consecutive seven-day period in which the establishment is at maximum capacity or use.

Subp. 2. **Waste concentration**. If concentrations from the sewage tank to the soil dispersal system are expected to be higher than 170 mg/l BOD (or 125 mg/l CBOD5), 60 mg/l TSS, or 25 mg/l of oil and grease, an estimated or measured average concentration must be determined and be acceptable to the local unit of government. System design must account for concentrations of these constituents so as not to cause internal system malfunction, such as, but not limited to, clogging of pipes, orifices, treatment devices, or media.

7081.0140 INFILTRATION.

The design flow must also include 200 gallons of infiltration and inflow per inch of collection pipe diameter per mile per day with a minimum pipe diameter of two inches to be used for the calculation. Flow values are allowed to be further increased if the system employs treatment devices that are exposed to atmospheric conditions that will infiltrate precipitation. Flow estimates as calculated in this chapter shall not be relied upon for the design of collection systems.

7081.0150 NECESSITY OF SOIL AND SITE EVALUATIONS.

Soil and site evaluations must be conducted for MSTS design. The evaluations must be conducted according to parts 7081.0160 to 7081.0200. Evaluations must identify and delineate an initial and replacement soil treatment and dispersal area with appropriate system site boundaries.

7081.0160 PRELIMINARY EVALUATION.

A preliminary evaluation consists of determining:

A. the design flow, anticipated effluent concentrations of biochemical oxygen demand, total suspended solids, and oil and grease, and anticipated presence of nondomestic waste from the dwelling, dwellings, or other establishments;

B. whether the location of water supply wells impacts the location of the system due to the setback constraints;
C. whether buildings or improvements will be within 50 feet of the proposed soil dispersal area;
D. whether buried water supply pipes will be within 50 feet of the proposed system;
E. whether easements will be within 50 feet of the proposed system;
F. whether the ordinary high water level of public waters will be within 500 feet of the proposed soil treatment and dispersal area and if so, a preliminary assessment of phosphorus impacts to the surface water;
G. whether the system will be located in a floodplain and the system location in relation to the 100-year flooding elevation from published data if available or data that is acceptable to the local unit of government;
H. the required setbacks from the proposed soil treatment and dispersal system;
I. the soil survey information on the proposed soil dispersal area, including the soil map, map units, landscape position, parent material, flooding potential, slope range, periodically saturated soil level, depth to bedrock, texture, color, and structure of soil horizons, and permeability of soil horizons;
J. the township, range, section number, and other unique property identifiers, as required by the local unit of government, dimensions, and size of the proposed soil treatment area;
K. the names of property owners; and
L. the location of the system on a United States Geological Survey quadrangle map of the proposed soil treatment and dispersal area and the area within one mile.

7081.0170 FIELD EVALUATION.

Subpart 1. **Generally**. Before conducting a field evaluation, the designer shall confer with the local unit of government to determine the requirements and scope of the evaluation, dependent upon system size, soil conditions, and other applicable factors. At a minimum, the requirements in this part must be met.

Subp. 2. **Property marks**. Property lines must be identified as acceptable to the owner. Site improvements, required setbacks, and easements must be identified, located, and marked.

Subp. 3. **Site area**. A general evaluation and description of the proposed soil dispersal area, including a general geomorphic description, current land use, and past land use, if known, must be provided.

Subp. 4. **Surface features.** The following surface features must be identified and described:

A. the dominant vegetation;
B. evidence of disturbed or compacted soil or flooding or run-on potential; and
C. landscape position, including landform, slope gradient, slope direction, and surface morphometry as described in the Field Book for Describing and Sampling Soils Version 2.0, September 2002, developed by the National Soil Survey Center and Natural Resources Conservation Service of the United States Department of Agriculture. The field book is incorporated by reference, is not subject to frequent change, and is available through the Minitex interlibrary loan system.

Subp. 5. **Soil pits**.
A. Soil pits are required to investigate the soil for MSTS design. The required number of soil pits to adequately define the limiting layer and soil dispersal system sizing must be determined by professional judgment based on the size of the area and consistency of the soil and must be approved by the local unit of government.
B. The qualifying soil pits or borings to be used for the MSTS design must be located on or near the borders of the proposed soil treatment and dispersal area. Soil pits must be dug outside the soil dispersal area if possible. The soil must be observed and described to a depth of at least three feet below the proposed depth of the system. Other soil observations are allowed to be made to supplement the required soil pit information.
C. Underground utilities must be located before soil observations are undertaken. Required safety precautions must be taken before entering soil pits.

Subp. 6. **Soil description.**

A. The soil properties and features in subitems (1) to (13) must be described according to Field Book for Describing and Sampling Soil, version 2, Natural Resources Conservation Service, United States Department of Agriculture (September 2002), for each soil horizon at each qualifying soil pit. The field book is incorporated by reference under subpart 4, item C.

(2) Soil features that have different colors from the matrix color, including but not limited to clay films, organic stains, silt coats, nodules, and concretions.
(3) Abundance, size, color, and contrast of redoximorphic features.
(4) Soil texture, with modifiers.
(5) Grade, size, and shape of soil structure.
(6) Moist soil consistence.
(7) Abundance and size of rock fragments.
(8) Abundance and size of roots.
(9) Horizon boundary conditions.
(10) Parent materials.
(11) Pores, quantity and size.
(12) Quantity of boulders and tree stumps affecting construction.
(13) Any other characteristic or feature that affects permeability of the soil or treatment of sewage effluent.

B. The depth of bedrock, if encountered, must be determined by requirements of part 7080.1100, subpart 8.
C. The elevation of standing water evident in any soil pit must be identified.
D. The soil must not be described when frozen, at an improper moisture content, or under poor light conditions.

Subp. 7. **Method**. Hydraulic conductivity testing of the soil must be employed, along with a determination of the soil's texture, structure, and consistence, to determine the loading rate of effluent to the soil. The frequency of the observations and measurements must be determined by the professional judgment of the designer, dependent on the variation in soil conditions and the system size, with the frequency of the observations and measurements approved by the local unit of government.

Subp. 8. **Comparison with soil survey**. All field soil information gathered must be compared with soil survey information. Any discrepancies shall be identified.

7081.0180 SOIL INTERPRETATION FOR SYSTEM DESIGN.

Subpart 1. **Site and soil information.** Site and soil information gathered in parts 7081.0160 and 7081.0170 must be interpreted for suitability for MSTS siting, design, and construction, with consideration of the following:

A. surface features impacts from precipitation, run-on, and interflow or any other item that could have potential to adversely impact the ability of the soil to accept water;
B. cultural features impacts, including, but not limited to, setbacks and easements;
C. site conditions affecting system layout, distribution system requirements, and constructability;
D. layers of coarse soil textures that affect treatment;
E. disturbed, compacted, cut-filled, or other unnatural condition, if present;
F. the uniformity of the soil over the site;
G. future surrounding land use changes;
H. soil sizing factor or loading rate; and
I. an approximation of the rise in groundwater from system operation as determined by groundwater mounding calculations. A narrative evaluation of the accuracy of the approximation must be provided. The approximation must be related to the requirements in part 7081.0270, subpart 6.

Subp. 2. **Flood fringes.** Systems proposed to be located in flood fringes must determine feasibility of relocating the system outside the floodplain.

Subp. 3. **Depth**. The limiting layer in the soil shall be determined based on the depth of bedrock or periodically saturated soil if encountered. The depth to the periodically saturated soil shall be determined according to part 7080.1720, subpart 5, item E, and the depth of bedrock shall be as defined under part 7080.1100, subpart 8.

7081.0190 SITE PROTECTION.

The proposed soil treatment and dispersal area must be protected from disturbance, compaction, or other damage by staking, fencing, posting, or other effective method.

7081.0200 SOIL AND SITE REPORT.

All information required in parts 7081.0150 to 7081.0180 must be submitted for review and approval by the local unit of government prior to final design. The submittal must also contain:

A. a map of the proposed soil dispersal area, drawn to scale, showing:
   (1) features with a setback within 150 feet of the system;
   (2) easements within 50 feet of the system;
   (3) floodplains, wetlands, and surface waters, within 100 feet of the system;
   (4) location and elevation of all soil pits, borings, and hydraulic tests; and
   (5) two-foot contour lines;
B. dates and weather conditions during the field evaluation;
C. elevations of the periodically saturated soil or bedrock;
D. proposed depths of the system bottom;
E. proposed soil loading rate;
F. system site boundaries;
G. anticipated construction-related issues;
H. name, address, telephone number, and certified statement of the certified individual conducting the site evaluation; and
I. a narrative explaining any difficulties encountered during the site evaluation, such as, but not limited to, identifying and interpreting soil and landform features, and how the difficulties were resolved.

7081.0210 GROUNDWATER INVESTIGATION.

Subpart 1. **Necessity of investigation.** A preliminary groundwater evaluation must be conducted for all proposed MSTS according to this part.

Subp. 2. **Preliminary investigation**. The following information must be ascertained from the best available information:

A. the size of the soil dispersal system, proposed loading rate, and system geometry;
B. the township, range, section number, and other unique property identifiers, as required by the local unit of government, of the parcel where the proposed soil dispersal area is to be located;
C. any anticipated discharges from nondomestic sources to the proposed MSTS;
D. the location of the MSTS on a United States Geological Survey quadrangle topographic map, including the area within a one-mile radius of the proposed soil treatment system;
E. a determination of the general geology, periodic soil saturation, regional groundwater setting, and aquifers used for water supply and a description of the general site hydrology characteristics, including, but not limited to, identification and estimated depth measurements to geologic units and aquifers, and identification of groundwater confining strata;
F. a determination whether the proposed system is in a drinking water supply management area, inner wellhead management zone, source water protection area, or groundwater sensitive area;
G. an assessment of all water supply wells within a 300-foot radius of the proposed soil treatment area with a minimum assessment of well locations and casing depths from well construction log records. If no records exist, the well locations and casing depths must be estimated;
H. a determination or estimation of groundwater flow direction; and
I. an assessment of nitrogen impacts from the system.

Subp. 3. **Field or further investigation**. The designer must consult with the local unit of government to determine whether the local unit of government will require a field or further groundwater investigation and, if so, the extent of the investigation. The field or further investigation must be conducted if information gained in subpart 2 indicates that a proposed system is a potential contaminant threat to a regional water table, an aquifer, or water supply well(s). The threats of concern include, but are not limited to, fecal organism contamination, nitrate contamination, or phosphorus impacts to surface waters.

Subp. 4. **Monitoring**. The designer must consult with the local unit of government to determine if the local unit of government will require effluent or groundwater monitoring and, if so, the extent of the monitoring. Monitoring must be conducted if information gained in subpart 2 or 3 indicates that a proposed system is a potential contaminant threat to a regional water table, an aquifer,

or a water supply well or impacts surface waters. The potential groundwater mound height must be monitored under all MSTS during operation.

Subp. 5. **Hydrological interpretations**. The information gathered in this part must be used to estimate or measure if the system adequately protects the groundwater and surface water as prescribed in part 7081.0080, subpart 4. The interpretation must include an evaluation of whether contaminant plumes will intersect water supply well capture zones.

Subp. 6. **Groundwater report**. All information required in this part must be submitted for review and approval of the local unit of government prior to final design, including all applicable information delineated on a map.

7081.0230 DESIGN STANDARDS.

A. The design standards for new construction or replacement MSTS in parts 7081.0240 to 7081.0270 are provided to meet many of the public health and environmental outcomes in part 7081.0080. In some cases, specific engineered methods must be employed in addition to the standards provided in parts 7081.0240 to 7081.0270.
B. MSTS must not receive storm water or other sources of clean water.
C. All structural components of the system and sealants must be designed to operate throughout the system's design life.
D. A flow measure device must be employed on all MSTS.
E. The system must be designed with sufficient access and ports to monitor the system as applicable.
F. MSTS must employ components registered under parts 7083.4000 to 7083.4110 or have sufficient regulatory oversight in the operating permit.

7081.0240 SEWAGE TANKS.

Subpart 1. General. All holding or treatment tanks or vessels, including lined vessels and grease interceptors serving MSTS, must conform to the applicable requirements of part 7080.1900 except as modified in this part or as designed by a professional engineer and approved by the local unit of government.

Subp. 2. [Repealed, 35 SR 1353]

Subp. 3. Lint filters, effluent screens, and pressure filters. An effluent screen or pressure filter must be used on all systems. If multiple septic tanks are used, the effluent screen must be placed in the last tank in the series and provided with an alarm. Lint filters are recommended if the sewage contains laundry waste.

Subp. 4. Tank geometry. The maximum liquid depth of septic tanks to determine liquid capacity must be no greater than 84 inches. The length-to-width ratio and the length-to-depth ratio must facilitate settling of solids.

Subp. 5. Tank testing. All tanks used for MSTS must be tested for watertightness according to part 7080.2010, subpart 3. The test shall be conducted to include the watertightness of all connections and risers.

Subp. 6. Liners. Liners used as watertight barriers for treatment devices must be designed and constructed according to liner requirements developed by the commissioner of the Pollution Control Agency. If conflicts exist between this chapter and those requirements, this chapter applies. Compacted soil liners must not be used as watertight barriers for treatment devices. Liners must be tested and must hold water without loss for 24 hours after being filled to the top of the liner.

7081.0250 DISTRIBUTION OF EFFLUENT.

Distribution of effluent into a soil treatment and dispersal system must comply with part 7080.2050 or be designed by a registered professional engineer and approved by the local unit of government. MSTS must employ pressure distribution. The distribution system must be designed to dose and rest zones in accordance with operational requirements.

7081.0260 DOSING OF EFFLUENT.

A. Dosing of effluent into a soil treatment and dispersal system must comply with part 7080.2100 except as modified in this part.
B. The dosing system must include an alternating two-pump system and have a minimum total capacity of 50 percent of the design flow.
C. The pump discharge capacity must be based on the perforation's discharge, with a minimum average head of 2.5 feet for 1/4-inch and 3/16-inch perforations and 5 feet for 1/8-inch perforations.

7081.0270 FINAL TREATMENT AND DISPERSAL.

Subpart 1. **General.** Final treatment and dispersal must be according to applicable design requirements in chapter 7080, except as modified in this part. Code of Federal Regulations, title 40, parts 144 and 146, prescribe additional design regulations applicable to certain systems designed under this chapter. At a minimum, flow amounts to be used for the purposes of this part must be derived from part 7081.0110.

Subp. 2. **Setbacks**. MSTS components must meet the setbacks in Table II.

Table II
Minimum Setback Distances (feet)

Feature	Sewage Tank, Holding Tank, or Sealed Privy	Absorption Area or Sealed Privy	Building Sewer or Sewage Supply Pipes
Water supply wells	*	*	*
Buried water lines	*	*	*
Buildings**	10	20	
System site boundaries	10	10	
The ordinary high water level of public waters	***	***	

* Setbacks from buried water pipes and water supply wells are governed by chapters 4715 and 4725, respectively.
** If setbacks are reduced through local administrative processes, the system shall not be located under or within the structure.
*** Setbacks from lakes, rivers, and streams are governed by chapters 6105 and 6120.

Subp. 3. **Minimal soil and site conditions**. The site proposed to support the soil treatment and dispersal system must:

A. have the upper 12 inches of the absorption area:
   (1) be original soil;
   (2) have a soil loading rate of greater than zero as listed in Table IX, in part 7080.2150, subpart 3, item E; and
   (3) be above the periodically saturated soil or bedrock; or
   (4) if the absorption area is less than 12” above the periodically saturated soil or bedrock, then a Type III Mound may be installed according to 7080.2300.
B. meet the area size requirements in subpart 5 and setbacks in subpart 2 and all easements;
C. not be a wetland or floodway;
D. not be in an area in which surface runoff from precipitation will concentrate (concave hillslope); and
E. allow the system to be placed on contour.

Subp. 4. **Inspection pipes**. Inspection pipes must be located to adequately assess the hydraulic performance of the entire soil dispersal system.

Subp. 5. **Soil absorption area sizing.**

A. Effluent loading rates to the soil must be determined in:
   (1) part 7080.2150, subpart 3, item E, Table IX; or

(2) part 7080.2400, if allowed by the local unit of government.

B. If the absorption area receives septic tank or treatment level C effluent as described in part 7083.4030, the absorption area shall be increased by 50 percent of the amount derived in item A, subitem (1), and zoned for dosing and resting.

Subp. 6. **System geometry, lawn area sizing, and groundwater mounding**. The system geometry and lawn area sizing shall be sized to prevent groundwater mounding from violating the unsaturated zone beneath the soil system according to subpart 7, for proper hydraulic functioning, and for concentration reduction of nitrogen and phosphorus, if applicable.

Subp. 7. **Reserve land area**. Additional set-aside land area of 100 percent of the size determined in subpart 6 is required for systems whose absorption area receives effluent meeting treatment level A or B in part 7083.4030 or designed in accordance with part 7080.2400. Additional land area of 50 percent of the size determined in subpart 6 is required for systems whose absorption area receives treatment level C in part 7083.4030. The reserve land area must be identified and protected for future use if necessary. Replacement

MSTS proposed on sites that cannot meet this requirement are allowed to be exempted by the local unit of government.

Subp. 8. **Soil treatment zone**. For treatment of effluent by soil to meet the performance criteria in part 7081.0080, subpart 4, item C, the soil treatment and dispersal systems must meet the requirements of item A, B, or C.

A. For soil treatment and dispersal systems that receive treatment level A-2, B-2, or C effluent as described in part 7083.4030, the soil treatment zone requirements must meet part 7080.2150, subpart 3, item C. The required three-foot vertical separation must be maintained during operation after accounting for groundwater mounding.
B. For soil treatment and dispersal systems that receive treatment level A or B effluent as described in part 7083.4030, the soil treatment zone requirements must meet part 7080.2150, subpart 3, item C, unless it is modified in Table XI of part 7080.2350, subpart 2, with a minimum vertical separation of two feet. The required vertical separation must be maintained during operation after accounting for groundwater mounding.
C. The minimum vertical separation can be determined by the method described in part 7080.2400 to meet provisions of part 7081.0080, subpart 4, item C, if allowed by the local unit of government.
D. An observation well to measure the height of the periodically saturated soil beneath the operating system must be installed and monitored according to the operating permit.

Subp. 9. **Nitrogen reduction**. Systems must employ nitrogen mitigation methods to achieve compliance with part 7081.0080, subpart 4, item D, and must be monitored in accordance with part 7081.0210, subpart 4.

Subp. 10. **Phosphorus reduction**. Phosphorus mitigation methods must be employed to achieve compliance with part 7081.0080, subpart 4, item E, if natural processes are found inadequate.

Subp. 11. **Design report**. All information required in this part shall be submitted for review and approval by the local unit of government prior to system construction, including all applicable information delineated on a map.

7081.0275 COLLECTION SYSTEMS.

The collection system for collection of sewage from multiple buildings or multiple other establishments discharging into an MSTS must be designed:

A. according to the Prescriptive Designs and Design Guidance for Advanced Designers, incorporated by reference under part 7080.1550, subpart 2; or
B. by a Minnesota licensed professional engineer.

7081.0280 CONSTRUCTION REQUIREMENTS.

A. MSTS construction must be according to applicable construction requirements of chapter 7080.
B. The advanced designer must observe critical periods of system construction. The designer shall prepare a report of observed construction activities and submit the report to the local unit of government prior to final inspection.

7081.0290 OPERATION AND MAINTENANCE.

A. New and existing systems must be maintained according to part 7080.2450 except as modified in this part.
B. All external grease interceptors must be routinely inspected to determine the volume of grease present. All external grease interceptors must be properly maintained to prevent clogging of downstream piping and system components.
C. For all systems constructed after February 4, 2008, the designer must complete an operation and maintenance manual and the manual must be submitted to the local unit of government before system operation. The manual shall include a copy of the plans and specifications, as-built drawings of the system, and information to properly operate the system.
D. All new systems shall be operated under a local operating permit submitted and approved with the design.
E. All groundwater shall be monitored in accordance with part 7081.0210, subpart 4.
F. Any operational noncompliance must be immediately corrected and reported by the owner or service provider to the local unit of government.

7081.0300 SYSTEM ABANDONMENT.

MSTS no longer in use must be abandoned according to part 7080.2500.

CHAPTER 7082
FROM MINNESOTA POLLUTION CONTROL AGENCY
LOCAL ISTS PROGRAMS

7082.0010 PURPOSE AND INTENT.
7082.0020 DEFINITIONS.
7082.0040 REGULATORY ADMINISTRATION RESPONSIBILITY.
7082.0050 GENERAL REQUIREMENTS FOR LOCAL ORDINANCES.
7082.0100 REQUIREMENTS FOR LOCAL ORDINANCES.
7082.0300 LOCAL PROGRAM ADMINISTRATION.
7082.0500 PERMIT PROGRAM FOR SSTS.
7082.0600 SYSTEM MANAGEMENT.
7082.0700 INSPECTION PROGRAM FOR SUBSURFACE SEWAGE TREATMENT SYSTEMS.

7082.0010 PURPOSE AND INTENT.

Subpart 1**. Effect.** The proper location, design, installation, use, and maintenance of subsurface sewage treatment systems (SSTS) protects the public health, safety, and general welfare by the discharge of adequately treated sewage to groundwater.

Subp. 2. **Authority**. In accordance with the authority granted in Minnesota Statutes, chapters 103F, 103G, 115, and 116, the Pollution Control Agency provides the minimum standards for local SSTS ordinances and administrative programs. The agency offers these standards to reasonably ensure proper permitting, inspection, and operation of SSTS.

Subp. 3. **Local ordinances; construction**. Local ordinances referencing individual sewage treatment rules issued by the agency shall be construed to mean rules governing both individual subsurface sewage treatment systems and mid-sized subsurface sewage treatment systems, as defined in parts 7080.1100, subpart 41, and 7081.0020, subpart 4.

7082.0020 DEFINITIONS.

Subpart 1. **Certain terms**. In addition to the definitions in chapters 7080, 7081, and 7083 and Minnesota Statutes, section 115.55, which are incorporated by reference, the terms used in this chapter have the meanings given them. For purposes of these standards, certain terms or words are interpreted as follows: the words "shall" and "must" are mandatory and the word "may" is permissive.

Subp. 2. **Permittee**. "Permittee" means a person who is named on a permit issued pursuant to local ordinance.

7082.0040 REGULATORY ADMINISTRATION RESPONSIBILITY.

Subpart 1. Agency responsibilities. The agency is responsible for providing the framework for local SSTS ordinances along with providing minimum administrative procedures or strategies to ensure effective permitting and inspection of SSTS. The agency is also responsible for reviewing local ordinances to ensure adequate protection of public health and the environment and that local administration is sufficient to ensure compliance.

Subp. 2. County responsibilities.

A. All counties must adopt and implement SSTS ordinances in compliance with chapters 7080 and 7081 that also comply with this chapter. Ordinances must apply to all land area within the county, except in towns and cities that have adopted ordinances that are in conformance with the county ordinance and this chapter. All counties with SSTS ordinances must permit and inspect SSTS within cities and townships that do not administer an SSTS ordinance that complies with these rules.
B. Counties must send written invitations to all cities and townships within the county soliciting their input and involvement with the county-coordinated process of establishing countywide SSTS ordinance standards.

Subp. 3. **City and township responsibilities**. Cities and townships with SSTS ordinances must effectively administer and enforce an ordinance that conforms with this chapter and is administratively and technically as strict as the county ordinance, as determined by the agency. Cities and townships are authorized to adopt conventional programs as described in part 7082.0050, subpart 3, even if the county has adopted a performance program.

Subp. 4. **Required fiscal and physical capacity for local programs**. All local governments that administer SSTS programs must have:

A. adequate personnel to properly conduct SSTS technical and administrative functions. All local governments that administer SSTS programs must have:
   (1) at least one certified inspector as described in 7083.1020, subpart 1, item C, who is employed by the local unit of government or a contracted licensed SSTS inspection business. Multiple local units of government are allowed to contract for services with the same certified inspector; and
   (2) at least one person who is employed by the local unit of government who has received accredited training on administration of local SSTS programs; and
B. an enforceable ordinance that meets the requirements of this chapter.

Subp. 5. **Reporting requirements for all local programs**. Local units of government that administer SSTS programs must provide an annual report to the commissioner. The report must be submitted to the commissioner no later than February 1 for the previous calendar year. The report must include:

A. the name and address of the program administrator, all qualified employees, and contracted licensed businesses authorized to perform services on behalf of the local unit of government;

B. the number of permits issued in the reporting year in the following categories:
Total SSTS by flow permitted in year:
1-2,499 gallons per day
2,500-4,999 gallons per day
5,000-10,000 gallons per day

	Type I	Type II	Type III	Type IV	Type V
New SSTS Construction					
Replacement SSTS					
Total SSTS by type permitted in year:					
Residential					
Other Establishments					

C. the total number of systems serving full-time residences and seasonal residences, the total number of cluster systems, and the total number of other establishments in the jurisdiction;

D. the estimated percentage of existing SSTS in compliance within the local government's jurisdictional boundaries and how the estimate was developed;

E. the number of septic system tanks installed by each licensed installation business or homeowner;

F. the number of systems regulated under an operating permit;

G. for counties, the names of cities and townships that have local ordinances within the county; and

H. a narrative description of problem areas in local SSTS administration.

7082.0050 GENERAL REQUIREMENTS FOR LOCAL ORDINANCES.

Subpart 1. **Adoption of local ordinances**.

A. The regulation of SSTS by local governments must be implemented through an ordinance based on the requirements of this chapter, except that counties are allowed to choose between options described in subpart 3 or 4 and are allowed to adopt alternative local standards according to subpart 5. Cities and towns must adopt the regulatory option used by the county and must be as strict as the county ordinance. Cities and townships are authorized to adopt conventional programs as described in subpart 3 even if the county has adopted a performance program.

B. County ordinances that administer SSTS programs must be updated to the standards of chapters 7080 to 7083 within 24 months of February 4, 2008. City and township ordinances must be updated no more than 12 months after adoption of the county ordinance in which the city or township is located and must comply with the standards of chapters 7080 to 7083 and must be as strict as the applicable county ordinance.

Subp. 2. **Review by agency**.

A. A copy of all local ordinances regulating SSTS and all future ordinances or amendments must be submitted to the commissioner 30 days prior to adoption, accompanied by a completed ordinance review checklist on a form provided by the commissioner.

B. Local ordinances and programs must be reviewed by the commissioner for compliance with this chapter and to ensure that, based on local circumstances in that jurisdiction, the ordinance adequately protects public health and the environment. The commissioner must complete the ordinance review within six months of receipt. A local unit of government is authorized to implement ordinances during the review process. The commissioner must supply comments on the ordinance to the local unit of government when the review is complete.

Subp. 3. **Conventional programs**. Each SSTS ordinance must have technical standards. Conventional programs are comprehensive programs that employ ISTS and MSTS technical standards and criteria as specified in chapters 7080 and 7081 and program administrative functions in parts 7082.0100, subparts 1, 2, 3, and 5, and 7082.0300 to 7082.0700.

Subp. 4. **Performance programs**. A county is authorized to further choose to develop and implement a comprehensive, performance-based program using ISTS and MSTS designs tailored to adequately protect the public health and the environment based on local environmental sensitivity. Performance programs must meet the requirements of the conventional program plus include provisions necessary to implement part 7082.0100, subpart 4.

Subp. 5. **Requirements for alternative local standards**. Counties are authorized to adopt and enforce by ordinance alternative local standards for existing or new construction or replacement of SSTS as part of a conventional program. The alternative local standards must protect public health and the environment as stipulated in Minnesota Statutes, section 115.55, subdivision 7, paragraphs (a) and (b), and must comply with items A to F.

A. Alternative local standards must not apply to systems in shoreland areas or wellhead protection areas or systems serving food, beverage, or lodging establishments.
B. Alternative local standards must comply with requirements of other applicable state laws or rules or local ordinances.
C. Local SSTS ordinances with alternative local standards for existing systems must include a time period to upgrade, replace, or discontinue use of a noncomplying system. The draft local ordinance, including the alternative local standards, must be submitted to the commissioner for comment before adoption to demonstrate that, based on local circumstances in that jurisdiction, the alternative local standards adequately protect public health and the environment. Possible considerations for justification of the alternative local standard for existing systems include:
   (1) soil separation;
   (2) soil classification;
   (3) vegetation;
   (4) system use;
   (5) localized well placement and construction;
   (6) localized density of systems and wells;
   (7) extent of area to be covered by the alternative local standard;
   (8) groundwater flow patterns; and
   (9) existing natural or artificial drainage systems.
D. In accordance with Minnesota Statutes, section 115.55, subdivision 7, paragraph (b), counties are authorized to adopt alternative local standards that are less restrictive than the agency's rules for new construction or replacement in areas of sustained and projected low population density where conditions render conformance to this chapter difficult or otherwise inappropriate after submitting documentation of the following information and conditions to the commissioner:
   (1) population density of the area covered by the alternative local standard;
   (2) reasons why conformance to this chapter is difficult or otherwise inappropriate;
   (3) a description of the hardship that would result from strict adherence to the agency's rules;
   (4) evidence of sustained and projected low population density;
   (5) evidence that the proposed alternative local standard provides cost-effective and long-term treatment alternatives;
   (6) a map delineating the area of the county to be served by the local standard; and
   (7) applicable justifications under item C.
E. If the draft county SSTS ordinance includes alternative local standards for new construction and replacement, the ordinance must be submitted to the local water planning advisory committee created under Minnesota Statutes, section 103B.321, subdivision 3, and then submitted with justification to the commissioner at least 30 days before adoption for review and comment demonstrating that the ordinance adequately protects public health and the environment.
F. When a county has completed the applicable steps in this subpart, an ordinance containing alternative local standards may be adopted. The county is responsible for developing the processes and procedures necessary to administer the conventional program in addition to the alternative local standards. Processes and procedures must include providing maps to SSTS professionals depicting the areal extent of the alternative local standards, developing inspection procedures to be used to verify compliance with the alternative local standards for both new and existing systems, and developing an addendum to the state's existing system inspection form that reflects the altered compliance standards for the alternative local standards systems in the county, if applicable.

7082.0100 REQUIREMENTS FOR LOCAL ORDINANCES.

Subpart 1. **Requirement**. All SSTS ordinances must contain the provisions in items A to C.

A. A provision requiring the upgrade, replacement, repair, or discontinued use of a system failing to protect groundwater as described in part 7080.1500, subpart 4, item B, within a specified time period after the owner receives a notice of noncompliance.
B. A provision requiring the upgrade, replacement, repair, or discontinued use of a system that represents an imminent threat to public health or safety as described in part 7080.1500, subpart 4, item A, within ten months after the owner receives a notice of noncompliance or within a shorter period if required by an applicable local ordinance.
C. Local ordinance requirements regulating vertical separation for systems built before April 1, 1996, in systems that are not SWF as defined in part 7080.1100, subpart 84, must meet the requirements in part 7080.1500, subpart 4, item E.

Subp. 2. **List of differences**. A local unit of government must prepare and make available to the commissioner, and to the public upon request, a written list of all technical and administrative differences between its ordinance and chapters 7080 and 7081.

Subp. 3. **Additional ordinance requirements for all programs**. Ordinances adopted by a local unit of government under part 7082.0050 must contain the provisions in items A to R.

A. A provision that requires all design, installation, alteration, repair, maintenance, operation, pumping, and inspection activities for SSTS to be completed by an appropriately licensed business, an appropriately certified qualified employee, or a person exempted under part 7083.0700, subpart 1. A local unit of government is not authorized to require additional local licenses, local registrations, local certificates, or other similar professional credentials to perform SSTS work.
B. A provision that requires abandonment of SSTS, or part thereof, that will no longer be used, according to part 7080.2500.
C. Technical standards and criteria for new and existing SSTS that adequately protect the public health and environment, as determined by parts 7080.1500, 7080.2150, subpart 2, and 7081.0080. The local unit of government is authorized to specifically adopt technical standards in parts 7080.1710 to 7080.2400 and 7081.0110 to 7081.0290.
D. Whether variances to local ordinance provisions are allowed and, if so, the specific variance procedures required to obtain a variance from local ordinance requirements.
E. Provisions for design review, permit issuance, construction inspection, and system management.
F. All lots created after February 22, 1979 must have a minimum of two soil treatment and dispersal areas which meet the requirements of St. Louis County Subsurface Sewage Ordinance, Article 5, Section 4.
G. A provision that specifies the conditions necessary to allow the use of holding tanks. The ordinance must specify holding tank operation and maintenance requirements. At a minimum, a monitoring and disposal contract signed by the owner and a licensed maintenance business is required unless the owner is a farmer exempt from licensing under Minnesota Statutes, section 115.56, subdivision 2 paragraph (b), clause (3). The homeowner is responsible for ensuring that the contract guarantees the removal of the tank contents before overflow or any discharge.
H. A provision that prohibits surface discharge of sewage from SSTS unless issued a national pollution discharge elimination system permit by the agency.
I. A provision specifying the allowable use and location of SSTS in floodplains in compliance with applicable state and local requirements.
J. A provision requiring that a management plan be submitted by the designer to the local unit of government before issuance of a construction permit for all new or replacement ISTS as described in part 7080.1100, subparts 51 and 66.
K. A provision requiring operating permits for all systems installed under parts 7080.2350 and 7080.2400 and chapter 7081. An operating permit is recommended for holding tanks regulated under part 7080.2290.
L. For systems not operated under a management plan, a provision requiring solids removal from septic tanks or determination of the need to remove solids from septic tanks no less than every three years. The ordinance must require removal of solids if the solids accumulation needs to be removed based on part 7080.2450.
M. A provision requiring that all owners of new or replacement Class V injection wells, as defined in Code of Federal Regulations, title 40, part 144, submit inventory information to the Environmental Protection Agency and the agency and that all Class V wells be identified as such in property transfer disclosures.
N. A provision outlining how conflicting inspections and other technical disputes between SSTS certified individuals will be resolved if they occur as described in part 7082.0700, subpart 5.
O. A provision specifying what level of local approval is needed for repair, rejuvenation, or remediation of SSTS, as defined in local ordinance.
P. A provision specifying the allowed methods to determine the loading rate from part 7080.2150, subpart 3, item E, Table IX for sizing of soil treatment and dispersal systems.

Q. A provision that requires all sewage generated in the jurisdiction to be treated either in an agency-permitted facility or a system that meets the requirements of an ordinance adopted under this chapter.
R. If the ordinance allows a reduced vertical separation distance as described in part 7080.1500, subpart 4, item D, it must not allow more than a 15 percent reduction in the vertical separation distance to account for settling of sand or soil, normal variation of measurements, and interpretations of the limiting layer conditions.

Subp. 4. **Ordinance requirements for performance programs**. Performance programs are broader in scope than conventional programs and go beyond the minimum technical requirements of this chapter. Performance programs must meet the requirements of subpart 3 and items A to J.

A. An education program must be established to educate owners on the purpose, use, and care of SSTS and notify owners of impending scheduled submittals of compliance monitoring reports.
B. A program must be established to evaluate potential risks of SSTS-receiving environments, inform the local planning authority of changes in regulations, and evaluate the potential impacts of SSTS regulation changes on land use.
C. A program must be established to determine performance requirements necessary to protect public health and water resources for each defined receiving environment in the regulatory jurisdiction. At a minimum, the performance requirements must protect underground sources of drinking water according to chapter 4717 and protect surface waters according to chapter 7050.
D. The ordinance must establish site evaluation requirements that define the process to characterize the receiving environment.
E. A program must be established to administer renewable operating permits issued to system owners, stipulating system performance and compliance monitoring requirements renewable upon documentation of compliance with operating permit stipulations. The program must provide for tracking and reviewing compliance monitoring reports for timely submittal by owners and ensuring the system is operating within its performance requirements stipulated in the operating permit.
F. A program must be established to track residuals hauling, treatment, and disposal according to Code of Federal Regulations, title 40, part 503, and Use and Disposal of Sewage Sludge, Code of Federal Regulations, title 40, part 257, and applicable state, tribal, and local requirements.
G. A program must be established for notifying owners of pending scheduled submittals of compliance monitoring reports and performing system inspections randomly or at the time of operating permit renewal.
H. An enforcement program must be established that includes penalties for failure to comply with the compliance schedule and requires system assessments by a certified inspector at the time of operating permit renewal.
I. A record-keeping program must be established that includes a database inventory of all systems, including locations, site evaluations, record drawings, permits, and inspection reports, tracking for operating permits, and compliance reporting.
J. A financial assistance and funding program must be established providing the legal and financial support to sustain the management program.

Subp. 5. **More restrictive**. Technical or administrative requirements in local ordinances are allowed to be more restrictive than this chapter.

7082.0300 LOCAL PROGRAM ADMINISTRATION.

Subpart 1. Variance from requirements of this chapter.

A. A local unit of government is authorized to request a variance from the commissioner from the standards in this chapter or request a variance to the public health or environmental protection standards in parts 7080.2150, subpart 2, and 7081.0080, subparts 2 to 5.
B. Before granting a requested variance, the commissioner must find that by reason of exceptional circumstances, the strict enforcement or strict conformity with this chapter or public health or environmental standards would be unreasonable, impractical, or not feasible under the circumstances. The commissioner may permit a variance under part 7000.7000 in harmony with the general purpose of this chapter and chapters 7080 and 7081 and the intent of applicable state laws. The variance request must contain, as applicable:
   (1) the specific provision in the rule or rules from which the variance is requested;
   (2) the reasons why compliance with the rule is difficult or inappropriate;
   (3) a description of the hardship that prevents compliance with the rule;
   (4) the alternative measures that will be taken to ensure a comparable degree of compliance with the intention of the applicable chapter;
   (5) the length of time for which the variance is requested;
   (6) cost considerations; and
   (7) other relevant information requested by the commissioner as necessary to properly evaluate the variance request.

C. Variances must be submitted to and approved by the commissioner prior to implementation.

Subp. 2. **Prohibited variation**.

A. Local ordinances or locally issued variances must not deviate from flow determinations under part 7081.0110 if the deviation reduces the average daily flow from more than 10,000 gallons to 10,000 gallons per day or less without approval of the commissioner.
B. Programs adopted under part 7082.0100, subpart 3, must not issue variances from provisions in part 7080.2150, subpart 2, items A to D, or 7081.0080, subparts 2 to 5.
C. Only the governing state agency or locally delegated authority is authorized to issue variances to chapters 4715, 4720, 4725, 6105, and 6120.

Subp. 3. **Variation from local ordinance requirements**. Variances to standards and criteria not listed in subpart 2 are allowed to be granted on a site-by-site basis by the local unit of government, if applicable local variance procedures are followed.

Subp. 4. **Record keeping requirements**. Local units of government must maintain records of certificates of compliance, notices of noncompliance, permit applications, issued permits, enforcement proceedings, variance requests, and other actions taken. Records must be available for review by the commissioner. Permit files must also include:

A. site evaluation reports, including items identified in parts 7080.1730 and 7081.0200;
B. design reports for items identified in parts 7080.2430 and 7081.0270, subpart 11;
C. as-built drawings;
D. management plans and results from approved management plans; and
E. an annual list of all sewage system tanks installed in the jurisdiction, sorted by the licensed installation business.

Subp.5. **Enforcement of local ordinances**. Local units of government shall administer local programs and enforce local ordinances that regulate SSTS as adopted in compliance with this chapter. Local units of government are authorized to also enforce local ordinances under Minnesota Statutes, section 115.071, subdivisions 3 and 4.

7082.0500 PERMIT PROGRAM FOR SSTS.

Subpart 1. **General requirements for permit program**.

A. Local units of government shall enforce local ordinances that regulate SSTS through permitting programs that meet the minimum requirements of this chapter.
B. A local unit of government with an SSTS ordinance adopted under part 7082.0040, subparts 2 and 3, must have a permit program that specifically addresses the following:
   (1) permit application requirements;
   (2) site, design, and soil review and approval requirements and procedures;
   (3) record keeping; and
   (4) reporting to the commissioner.
C. Permits must be required for all new construction and replacement. A local unit of government is authorized to require permits for all or certain types of SSTS repairs.
D. A local unit of government with a local ordinance to regulate bedroom additions must comply with subpart 3, item C.

Subp. 2. **SSTS permit application requirements.** SSTS permit applications must require the submittal of exhibits necessary for issuing a permit as described in this chapter, along with general requirements for identifying the property and owners, a site evaluation report, a design report, a management plan, and any other information requested by the local unit of government pertinent to this process. Exhibits for site evaluation, design, and applicable construction information must be complete and include a certified statement from the certified person who conducted or oversaw the work. An approval process must be developed to address changes in the approved design that served as the basis for issuing a permit.

Subp. 3. **Permit approval requirements and procedures**. The permit program must include the requirements in items A to D.

A. A qualified employee with jurisdiction or licensed inspection business who is authorized by the local unit of government must review the permit application and other exhibits to determine whether site evaluation procedures, observations, and conclusions are accurate and fulfill applicable requirements and whether the proposed system will meet applicable requirements. An infield verification of the periodically saturated soil or bedrock at the proposed soil treatment and dispersal sites must be conducted by a qualified employee with jurisdiction or licensed inspection business who is authorized by the

local unit of government. An advanced inspector is required to perform the duties listed in this item for Type IV and Type V ISTS as described in parts 7080.2350 and 7080.2400, ISTS design flow of greater than 2,500 gallons per day, and MSTS. The infield verification of the periodically saturated soil or bedrock must occur prior to issuance of the certificate of compliance.

B. The local unit of government must review and either approve or deny the permit application before issuing a construction permit. Construction must not be initiated until a construction permit is granted. Final approval of the system must be evidenced by issuance of a certificate of compliance.

C. Local units of government shall not issue a building permit or variance for a bedroom addition on property served by a system unless the SSTS is in compliance with applicable requirements, as evidenced by a certificate of compliance. A local unit of government is authorized to temporarily waive the certificate of compliance requirement in this item for a bedroom addition permit for which application is made during the period from November 1 to April 30, provided a compliance inspection of the system is performed by the following June 1 and the applicant submits a certificate of compliance by the following September 30. This item does not apply if the local unit of government does not have an ordinance requiring a permit to add a bedroom.

D. A licensed inspection business working on behalf of a local unit of government must not design or install systems that the business will be responsible for permitting or inspecting as part of its local government duties.

7082.0600 SYSTEM MANAGEMENT.

Subpart 1. **Management plans**.

A. Local units of government must require management plans for all new or replacement SSTS as described in parts 7080.2210 to 7080.2400. These plans must be submitted to the local government before issuance of a construction permit.

B. Management plans must include:
(1) maintenance requirements, including frequency;
(2) operational requirements, including which tasks the owner can perform and which tasks a licensed service provider or maintainer must perform;
(3) monitoring requirements;
(4) requirements that the owner notify the local unit of government when management plan requirements are not met;
(5) disclosure of the location and condition of the additional soil treatment and dispersal area on the lot or serving that residence; and
(6) other requirements as determined by the local unit of government.

Subp. 2. **SSTS operating permits**.

A. Local units of government must issue and enforce an operating permit for SSTS specified in part 7082.0100, subpart 3, item K.

B. An operating permit must include:
(1) maintenance requirements, including frequency of maintenance;
(2) operational requirements;
(3) monitoring requirements;
(4) compliance limits and compliance boundaries;
(5) reporting frequency;
(6) a requirement that the permittee notify the local unit of government when permit requirements are not met. Corrective actions must be taken as directed by the local unit of government;
(7) disclosure of the location and condition of the additional soil treatment and dispersal system; and
(8) stipulation of acceptable and prohibited discharges.

7082.0700 INSPECTION PROGRAM FOR SUBSURFACE SEWAGE TREATMENT SYSTEMS.

Subpart 1. **Inspection requirements.** Local units of government must adopt and implement a construction inspection program for new construction and replacement SSTS to enforce requirements under this chapter. The construction inspection program must specify the frequency and times of inspections, specify the requirements of an inspection, establish an inspection protocol, provide for when an inspection cannot be completed in a timely manner, and, at a minimum, include the requirements for a compliance inspection under subparts 2 and 3, except for subpart 3, item E.

Subp. 2. **Compliance inspection; new construction or replacement.**

A. A compliance inspection for all new construction or replacement must be conducted:
   (1) to ensure compliance with applicable requirements;
   (2) to ensure compliance before issuance of a permit for the addition of a bedroom on property served by an SSTS, if the local unit of government issues permits for the addition of a bedroom, unless the requirements under part 7082.0500, subpart 3, item C, are met;
   (3) by a qualified employee or licensed inspection business, authorized by the local unit of government, who is independent of the owner and the installer; and
   (4) for an evaluation, investigation, inspection, recommendation, or other process used to prepare a disclosure if conducted by a party who is not the system owner. This disclosure action constitutes a compliance inspection and must be conducted according to this chapter.

B. A licensed inspection business that inspects an existing SSTS is allowed to subsequently design and install a new SSTS for that property, provided the inspection business is also licensed to design and install.

C. A licensed inspection business working on behalf of a local unit of government must not design or install a new or replacement system if there is a likelihood that the inspector or business will be responsible for permitting or inspecting the new or replacement system or system site.

D. A licensed inspection business may inspect an existing system that they designed or installed once it has been independently inspected.

E. A person working for or on behalf of a local unit of government is not allowed to use the person's position to solicit for private business gain.

Subp. 3. **Certificate of compliance; notice of noncompliance**.

A. SSTS in compliance with applicable requirements must be issued a certificate of compliance and systems found not in compliance must be issued a notice of noncompliance. SSTS not in compliance with part 7080.1500, subpart 4, item A, or 7081.0080, subpart 3, must be repaired or replaced within ten months or as directed under Minnesota Statutes, chapter 145A. Systems out of compliance with other applicable requirements must be repaired or replaced according to local ordinance requirements. Systems issued a notice of noncompliance for operational or monitoring deficiencies must immediately be maintained, monitored, or managed according to the operating permit.

B. The initial certificate of compliance must be issued if reasonable assurance is evident that the system was built according to applicable requirements as specified in the construction permit.

C. Local units of government must develop a certificate of compliance document or use a certificate of compliance developed by the agency for new construction and replacement. The certificate of compliance for new construction and replacement must include the vertical separation distance report described in subpart 4, item B, subitem (2), and the management plan developed under part 7082.0600, subpart 1. All certificates of compliance and notices of noncompliance for new construction and replacement must include property and property owner identification, date of inspection, system components, system location (dimensioned or drawn to scale), well setback distance, field check of soil conditions, SWF, as defined under part 7080.1100, subpart 84, designations as applicable, and Class V designation as applicable.

D. A certificate of compliance or notice of noncompliance for new construction or replacement must be signed by a licensed inspection business or by a qualified employee certified as an inspector who is authorized by the local unit of government. The certificate of compliance or notice of noncompliance for new construction and replacement must be submitted to the local unit of government no later than 30 days after any compliance inspection. The certificate of compliance or notice of noncompliance for new construction and replacement must be submitted to the owner or owner's agent within 5 days after any compliance inspection.

E. A certificate of compliance or notice of noncompliance must include a certified statement from the certified individual or qualified employee who conducted the compliance inspection and indicate whether the SSTS is in compliance with local ordinance requirements.

F. If a compliance inspection for new construction and replacement indicates that the system is not in compliance with applicable requirements, the notice must contain a statement to this effect and specify the reason for noncompliance.

G. Certificates of compliance for new construction or a replacement system remain valid for five years from the date of issuance unless the local unit of government finds evidence of noncompliance.

Subp. 4. **Compliance inspection; existing systems**.

A. A compliance inspection of an existing system must first determine whether the soil dispersal system, sewage tanks, or other conditions pose an imminent threat to public health and safety as defined in part 7080.1500, subpart 4, item A. A determination must then be made as to whether the sewage tanks and soil dispersal area are failing to protect ground water as

defined in part 7080.1500, subpart 4, item B. The inspection must also verify compliance with part 7080.1500, subpart 4, item C.

B. The agency's inspection report form for existing SSTS, supplemented with any necessary or locally required supporting documentation, must be used for the existing system compliance inspections in subitems (1) to (4). Allowable supporting documentation includes tank integrity assessments made within the past three years and prior soil separation assessments.
   (1) A tank integrity and safety compliance assessment must be completed by a licensed SSTS inspection, maintenance, installation, or service provider business or a qualified employee inspector with jurisdiction. An existing compliant tank integrity and safety compliance assessment is valid for three years unless a new evaluation is requested by the owner or owner's agent or is required according to local regulations.
   (2) A soil separation compliance assessment must be completed by a licensed inspection business or a qualified employee inspector with jurisdiction. Compliance must be determined either by conducting new soil borings or by prior soil separation documentation made by two independent parties. The soil borings used for system design or previous inspections are allowed to be used. If the soil separation has been determined by two independent parties, a subsequent determination is not required unless requested by the owner or owner's agent or required according to local regulations.
   (3) Determination of hydraulic performance and other compliance in part 7080.1500, subpart 4, item A, must be completed by either a licensed inspection business or a qualified employee inspector with jurisdiction.
   (4) A determination of operational performance and other compliance in part 7080.1500, subparts 4, item C, and 5, must be completed by a licensed advanced inspection business, a qualified employee with an advanced inspector certification with jurisdiction, or a service provider. A passing report is valid until a new inspection is requested.

C. A certificate of compliance or notice of noncompliance for an existing system must be based on the results of the verifications in item B. The certificate of compliance or notice of noncompliance for an existing system must be signed by a licensed inspection business or a qualified employee inspector with jurisdiction. The certificate or notice for an existing system must be submitted to the local unit of government with jurisdiction and the property owner or owner's agent no later than 30 days after a compliance inspection. The completed form must also be submitted to the owner or owner's agent. The certificate of compliance for an existing system is valid for three years from the date of issuance, unless a new inspection is requested by the owner or owner's agent or is required according to local regulations.

D. If a compliance inspection for an existing system indicates that the system is noncompliant, the notice must be signed by a licensed inspection business or qualified employee inspector with jurisdiction, contain a statement of noncompliance, and specify the reasons for noncompliance of each component specified in item B.

Subp. 5. **Periodically saturated soil disagreements**.

A. In the case of a dispute between:
   1. Two licensed SSTS businesses, the dispute must be resolved in the following manner:
      a. The two disputing parties must first meet on site in an attempt to resolve differences. If the parties still cannot agree, they must proceed to step 1.b or 1.c.
      b. A County SSTS professional must meet on site with the disputing parties in an attempt to resolve the difference.
      c. If the disputing parties still do not agree, the parties must obtain the opinion of a:
         1. currently licensed Minnesota soil scientist, who is also a certified and licensed SSTS designer or inspector for soil related disputes and independent of, and agreed upon by both parties; or
         2. currently certified and licensed SSTS advanced designer for non-soils related disputes and independent of, and agreed upon by both parties.

The opinion of the soil scientist or the advanced designer must settle the dispute and must be the basis for the issuance of a Permit to Construct or the issuance of a Certificate of Compliance or Notice of Noncompliance.

   2. A licensed SSTS business and a County SSTS professional, the dispute must be resolved by having the County SSTS professional meet on site with the licensed SSTS business and attempt to resolve the difference. If the parties cannot agree, then the dispute will be resolved by using step 1. c above.

CHAPTER 7083
FROM MINNESOTA POLLUTION CONTROL AGENCY
SSTS CREDENTIALING AND PRODUCT REGISTRATION

7083.0010 PURPOSE AND INTENT.
7083.0020 DEFINITIONS.
7083.0040 ADMINISTRATION BY AGENCY.

7083.0010 PURPOSE AND INTENT.

The proper location, design, installation, use, and maintenance of a subsurface sewage treatment system (SSTS) protects the public health, safety, and general welfare by the discharge of adequately treated sewage to the groundwater. In order to reasonably accomplish the proper location, design, installation, operation, and maintenance of an SSTS, the Pollution Control Agency provides in this chapter criteria for certifying trained individuals and licensing SSTS businesses, registering SSTS products, and provisions for an advisory committee to the agency concerning SSTS issues. The authority for this chapter is granted in Minnesota Statutes, chapters 103F, 103G, 115, and 116. This chapter does not address the licensing of wastewater treatment plant operators regulated under chapter 9400 or Type IV land application of waste professionals as regulated in chapter 7048. It is the intent of this chapter to provide standards for adequate training, experience, continuing education, insurance, and bonding for SSTS businesses and certified individuals. These standards also present the foundation for enforceable violations along with the agency's enforcement procedures. It is the intent of this chapter to register SSTS products for use in Minnesota, as technology and products employed in SSTS shall adequately protect the public health and the environment as determined by this chapter and be approved for use by the local unit of government. It is the further intent of this chapter to determine the duties, structure, and administration of the SSTS Advisory Committee as established in Minnesota Statutes, section 115.55.

7083.0020 DEFINITIONS.

Subpart 1. **Certain terms**. In addition to the definitions in chapters 7080, 7081, and 7082 and Minnesota Statutes, section 115.55, which are incorporated by reference, the terms used in this chapter have the meanings given them. For purposes of these standards, certain terms or words are interpreted as follows: the words "shall" and "must" are mandatory and the word "may" is permissive. All distances, unless otherwise specified, must be measured horizontally.

Subp. 2. **Agency**. "Agency" means the Pollution Control Agency.

Subp. 3. **Apprentice**. "Apprentice" means an individual who meets the requirements in part 7083.1090 by completing training, passing the examination, and gaining experience under part 7083.1050, subpart 2.

Subp. 4. **As-builts**. "As-builts" means drawings and documentation specifying the final in-place location, elevation, size, and type of all system components. These records identify the results of materials testing and describe conditions during construction. Information provided must be verified by a certified statement.

Subp. 5. **ASTM**. "ASTM" means the American Society for Testing and Materials.

Subp. 6. **Certified**. "Certified" means an individual is included on the agency's SSTS certification list and is qualified to design, install, maintain, repair, pump, operate, or inspect an SSTS as appropriate with the individual's qualifications. A certified individual who is working under a license is subject to the obligations of the license. Certified individuals were previously known as registered professionals.

Subp. 7. **Disinfection**. "Disinfection" means the process of destroying or inactivating pathogenic microorganisms in sewage to render them noninfectious.

Subp. 8. **Drip dispersal system**. "Drip dispersal system" means a small diameter pressurized wastewater distribution system in which the treated effluent is distributed under pressure to the infiltrative surface via drip tubing and enters the receiving environment.

Subp. 9. **ISTS**. "ISTS" means an individual sewage treatment system as defined under part 7080.1100, subpart 41.

Subp. 10. **Licensee**. "Licensee" means a person to whom a license is issued under this chapter.

Subp. 11. **Mentor**. "Mentor" is a person who holds a mentor designation as described in part 7083.2000 and provides mentorship.

Subp. 12. **Mentorship**. "Mentorship" means providing direct and personal supervision to an individual who is seeking to gain qualifying work experience to become a certified individual.

Subp. 13. **MSTS**. "MSTS" means a midsized SSTS as defined in part 7081.0020, subpart 4.

Subp. 14. **O&G**. "O&G" means oil and grease, a component of sewage typically originating from foodstuffs such as animal fats or vegetable oils or consisting of compounds of alcohol or glycerol with fatty acids such as soaps and lotions, typically expressed in mg/l (also known as FOG or fats, oil, and grease).

Subp. 15. **Proprietary product**. "Proprietary product" means a sewage treatment or distribution technology, method, or material subject to a patent or trademark.

Subp. 16. **Public domain technology**. "Public domain technology" means a sewage treatment or distribution technology, method, or material not subject to a patent or trademark.

Subp. 17. **Qualified employee**. "Qualified employee" means a state or local government employee who designs, installs, maintains, pumps, or inspects SSTS as part of the person's employment duties.

Subp. 18. **Subsurface sewage treatment system or "SSTS."** "Subsurface sewage treatment system" or "SSTS" means an individual sewage treatment system as defined in part 7080.1100, subpart 41, or a midsized sewage treatment system as defined in part 7081.0020, subpart 4, as applicable.

Subp. 19. **Subsurface sewage treatment system business or SSTS business**. "Subsurface sewage treatment system business" or "SSTS business" means a business that designs, installs, maintains, repairs, pumps, operates, or inspects an SSTS as appropriate with the organization's license and qualifications.

Subp. 20. **TN**. "TN" means total nitrogen, which is the measure of the complete nitrogen content in wastewater including nitrate (NO3 -), nitrite (NO2 -), ammonia (NH3), ammonium (NH4 +), and organic nitrogen, expressed as mg/l.

Subp. 21. **Total suspended solids or TSS**. "Total suspended solids" or "TSS" means solids that are in suspension in water and that are removable by laboratory filtering, expressed as mg/l.

Subp. 22. **TP**. "TP" means total phosphorus, which is the sum of all forms of phosphorus in effluent, expressed as mg/l.

7083.0040 ADMINISTRATION BY AGENCY.

Subp. 1. **Agency to administer**. This chapter is administered by the agency.

Subp. 2. **Variance procedures**.

A. In certain cases, the commissioner may grant a variance from the standards in this chapter. This variance provision is not intended to provide relief for licensed businesses or certified individuals from missed expiration dates or enforcement actions.
B. Before granting a requested variance, the commissioner or agency must find that, by reason of exceptional circumstances, the strict enforcement or strict conformity with this chapter would be unreasonable, impractical, or not feasible under the circumstances. The agency may permit a variance under part 7000.7000 in harmony with the requirements of part 7000.7000, the general purpose of this chapter, and the intent of applicable state laws. The variance request must contain, as applicable:
   (1) the specific provision in the rule or rules from which the variance is requested;
   (2) the reasons why the rule is unreasonable, impractical, or not feasible under the circumstances and state the underlying circumstances;
   (3) a description of the hardship that compliance with the rule presents;
   (4) the alternative measures that will be taken to ensure a comparable degree of compliance with the intention of the chapter;
   (5) the length of time for which the variance is requested;
   (6) a statement that the party applying for the variance will comply with the terms of the variance, if granted; and
   (7) economic considerations.
C. In addition to the variance information required in item B, the commissioner has the authority to also require the requesting party to submit other relevant information for the specific purpose of properly evaluating the variance request.

CHAPTER 7083
FROM MINNESOTA POLLUTION CONTROL AGENCY
LICENSING AND CERTIFICATION

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7083.0700 LICENSES.

A state SSTS license applicable to the type of work being performed is required for any business that conducts work to design, install, repair, maintain, operate, or inspect all or part of an SSTS. A license is also required to land spread septage and operate a sewage collection system discharging to an SSTS. Property owners that employ a business to perform this work shall hire a business that is licensed according to this chapter. Individuals exempt from a state SSTS license must follow all applicable local, state, and federal requirements. A license is not required for:

A. an individual who is a qualified employee performing work as directed by a state or local government employer;
B. an individual who, after obtaining a signed site evaluation and design report from a licensed design business, constructs an ISTS to serve a dwelling that is owned by the individual and functions solely as a dwelling or seasonal dwelling for that individual. Any assistance provided to the system owner in construction of a system under this item must be performed by a licensed installation business. In addition, a property owner who wishes to construct a SSTS, which is to treat wastewater solely from their own dwelling or a seasonal dwelling, may install their own system providing the following conditions are followed:
   1. Homeowner exemption will be limited to Type I and Type II systems only.
   2. The system must be designed by an individual licensed in accordance with Minnesota Rules, Chapter 7083.0700, Subp. B,
   3. The property owner must schedule a pre-construction inspection with the Department prior to installation, and
   4. The property owner must comply with all other provisions of this Ordinance.
C. an individual who performs supervised labor or services as an employee of a licensed SSTS business;
D. a farmer who pumps septage from an ISTS that serves dwellings or other establishments that are owned or leased by the farmer and applies septage on land that is owned or leased by the farmer;
E. a property owner who personally gathers existing information, evaluates, and investigates an ISTS to provide a disclosure as defined in Minnesota Statutes, section 115.55, subdivision 6, for a dwelling that is owned by the individual and functions solely as a dwelling or seasonal dwelling for that individual;
F. an individual or business who abandons an SSTS;
G. an individual who maintains a toilet waste treatment device for a dwelling that is owned by the individual and functions solely as a dwelling or seasonal dwelling for that individual;
H. an individual who performs tasks identified in the system's management plan that do not require a maintainer or service provider license for a dwelling that is owned by the individual and functions solely as a dwelling or seasonal dwelling for that individual; or
I. the owner or designee of a campground or other similar facility who removes and transports sewage wastes from recreational vehicles into a holding or treatment system located on the same property as the facility.

7083.0710 CATEGORIES, AUTHORIZATIONS, AND RESPONSIBILITIES.

Except as described in part 7083.0700, an individual or business must not perform the services described in this chapter and chapters 7080 to 7082 unless licensed by the commissioner under the appropriate license category in parts 7083.0720 to 7083.0800.

7083.0720 REQUIREMENTS FOR SSTS LICENSED BUSINESSES.

A licensed business must:

A. ensure that all SSTS work is conducted according to applicable requirements;
B. ensure that the business's certified individuals or apprentices fulfill the conditions under parts 7083.0710 to 7083.0800;
C. designate an adequate number of certified individuals to meet the requirements under this chapter;
D. maintain the bond and insurance required under part 7083.1000;
E. prepare and submit written reports according to local ordinance requirements and requirements in this chapter and chapters 7080 and 7081;
F. notify the commissioner in writing within 30 days if the business has:
   (1) a change of address;
   (2) a change in certified individuals; or
   (3) a change in bond or insurance coverage; and
G. maintain all reports for a minimum of five years.

7083.0730 REQUIREMENTS FOR CERTIFIED INDIVIDUALS.

A certified individual must:

A. provide direct and personal supervision to noncertified employees working on an SSTS;
B. ensure the work completed meets applicable requirements; and
C. complete a certified statement for required reports.

7083.0740 DESIGN LICENSE.

Subpart 1. **Authorization**.

A. A licensed basic design business is authorized to conduct site and soil evaluations, design systems, and write management plans for a Type I, II, or III ISTS as described under parts 7080.2200 to 7080.2300 serving dwellings or other establishments with a design flow of 2,500 gallons per day or less.
B. A licensed advanced design business is authorized to conduct site and soil evaluations, design systems, and write management plans for all sizes and types of SSTS.

Subp. 2. **Responsibilities**. All design licensees must:

A. inform the proposed system owner of the type classification of the system under parts 7080.2200 to 7080.2400;
B. provide written reasonable assurance of system performance to the local unit of government including, but not limited to:
   (1) adherence to system type requirements; or
   (2) technical basis for design elements for Type II to Type V systems; and
C. prepare detailed design sheets, drawings, calculations, materials, system layout, and elevations.

Subp. 3. **Certified designers**. Certified designers must conduct the soil descriptions and review other site evaluations and designs by noncertified employees. This review includes both verification of field observations and conclusions and design assumptions and calculations.

7083.0750 INSPECTION LICENSE.

Subpart 1. **Authorization**.

A. A licensed basic inspection business is authorized to conduct compliance inspections and issue written certificates of compliance and notices of noncompliance for an existing ISTS described in part 7083.0740, subpart 1, item A. An inspection business is allowed to install a new system for a property in which the business has conducted an existing ISTS compliance inspection, provided the business holds the appropriate licenses. A local unit of government is allowed to authorize a licensed inspection business to review and approve site evaluations and designs, inspect new construction and replacement systems, verify the submittal of management plans, and issue written certificates of compliance and notices of noncompliance for systems described in part 7083.0740, subpart 1, item A.
B. A licensed advanced inspection business is authorized to conduct compliance inspections and issue written certificates of compliance and notices of noncompliance for existing systems described in part 7083.0740, subpart 1, item B. An inspection business is authorized to install a new system for a property in which the business has conducted an existing system compliance inspection, provided the business holds the appropriate licenses. A local unit of government is allowed to authorize a licensed advanced inspection business to review and approve site evaluations and designs, inspect new construction and replacement systems, verify the submittal of management plans, and issue written certificates of compliance and notices of noncompliance for systems described in part 7083.0740, subpart 1, item B.

Subp. 2**. Responsibilities**. Basic and advanced inspection licensees must submit a completed version of the agency's existing inspection form to the local unit of government and the property owner within 15 days after any existing system compliance inspection.

Subp. 3. **Certified inspectors**. Certified inspectors are responsible for personally conducting the necessary procedures to assess system compliance. Certified inspectors must complete and sign the agency's existing system inspection form.

7083.0760 INSTALLATION LICENSE.

Subpart 1. **Authorization**. A licensed installation business is authorized to construct, install, alter, extend, maintain, or repair all SSTS according to an approved design.

Subp. 2. **Responsibilities**. Installation licensees must:

A. ensure all work is done according to an approved design report;
B. notify the local unit of government when work is in need of required inspections;
C. provide as-built drawings to the owner and local unit of government within 30 days of system installation;
D. maintain quality control and quality assurance records for five years;
E. provide system owners with information concerning system operation and maintenance;
F. ensure that all construction activities comply with applicable storm water regulations;
G. follow recommended standards and guidance documents for registered products and check the quality of materials used;
H. negotiate with the system owner and jointly determine who will be responsible for seeding, erosion and frost protection, watering, and other vegetation establishment activities; and
I. pay the septic system tank fee and submit the form according to Minnesota Statutes, section 115.551, including notification if no tanks were installed during the reporting year. The form and payment are due to the commissioner by January 31 for the previous calendar year's installations.

Subp. 3. **Certified installers**. Certified installers must be at the worksite to meet supervision needs as determined by the training and experience level of the crew and local requirements and to ensure that the installation, alteration, or extension of an SSTS is in accordance with an approved design report and permit. The certified installer must prepare quality control and quality assurance records and prepare and sign as-built drawings. The certified installer must personally determine, supervise, and verify:

A. the system layout and placement;
B. that site conditions allow for construction;
C. the proper soil moisture conditions for excavation;
D. the elevations of sewage tanks and soil treatment systems;
E. the quality of tanks and suitability of other materials;
F. solutions to problems encountered; and
G. upgrade and repair advice provided.

7083.0770 MAINTENANCE LICENSE.

Subpart 1. **Authorization**. A licensed maintenance business is authorized to measure scum and sludge depths in sewage tanks for the accumulation of solids and removing these deposits; remove solids and liquids from toilet waste treatment devices; transport septage; land apply septage or dispose of septage in a treatment facility; identify problems related to sewage tanks, baffles, maintenance hole covers, extensions, and pumps and make the repairs; evaluate sewage tanks, pump tanks, distribution devices, valve boxes, or drop boxes for leakage; identify cesspools, seepage pits, leaching pits, and drywells; and clean supply pipes and distribution pipes for all SSTS.

Subp. 2. **Responsibilities**. Maintenance licensees must:

A. record pump-out date, gallons removed, any tank leakage below or above the operating depth, the access point used to remove the septage, the method of disposal, the reason for pumping, any safety concerns with the maintenance hole cover, and any troubleshooting or repairs conducted. This information must be submitted to the homeowner within 30 days after the maintenance work is performed. Maintenance business pumping record information must be maintained by the business for a period of five years;
B. observe and provide written reports of any noncompliance to the system owner within 30 days; and
C. obtain a signed statement if the owner refuses to allow the removal of solids and liquids through the maintenance hole.

Subp. 3. **Certified maintainers**. Certified maintainers must provide proper training, daily review of work, and periodic observation of work conducted by noncertified individuals. Certified maintainers are responsible for conducting or supervising:

A. the measurement of scum and sludge depths;
B. the making of sensory observations if nondomestic wastes have been discharged into the system;

C. the identification of problems and watertightness related to sewage tanks;
D. the assessment of the condition of baffles, effluent screens, maintenance hole covers, and extensions;
E. the removal of septage; and
F. the land application of septage or disposal in a treatment facility.

7083.0780 SERVICE PROVIDER LICENSE.

Subpart 1. **Authorization**. A licensed service provider business is authorized to measure scum and sludge depths for the accumulation of solids; identify problems related to sewage tanks, baffles, effluent screens, maintenance hole covers, extensions, and pumps and make the repairs; evaluate sewage tanks, dosing chambers, distribution devices, valve boxes, or drop boxes for leakage; and clean supply pipes and distribution pipes. Service provider businesses are also authorized to assess, adjust, and service systems for proper operation; take, preserve, store, and ship samples for analysis; interpret sampling results and report results for an SSTS; and operate sewage collections systems discharging to an SSTS.

Subp. 2. **Responsibilities**. Service provider licensees must:

A. report sampling results, operational observations, system adjustments, and other management activities in compliance with local ordinances, management plans, or operating permit requirements; and
B. observe and provide written reports of any noncompliance to the system owner and the local unit of government within 30 days.

Subp. 3. **Certified service providers**. Certified service providers must provide proper training, daily review of work, and periodic observation of work conducted by noncertified individuals. Certified service providers are responsible for conducting or supervising:

A. the measurement of scum and sludge depths for the accumulation of solids;
B. the making of sensory observations if nondomestic wastes have been discharged into the system;
C. the identification of problems and watertightness related to sewage tanks; and
D. the assessment of the condition of baffles, effluent screens, maintenance hole covers, and extensions.

Subp. 4. **Certified service providers**. Certified service providers must personally:

A. assess the operational status and system performance by sampling, measuring, and observing in compliance with the management plan or operating permit;
B. preserve, store, and ship samples for analysis and interpret sampling results;
C. adjust, repair, or replace components to bring the system into proper operational compliance;
D. assess the operational status of sewage collection systems and adjust, repair, or replace components to bring the system into proper operational status; and
E. complete and submit any necessary reporting to the system owner and the local unit of government.

7083.0790 OTHER WORK.

In the case of SSTS work not described under parts 7083.0740 to 7083.0780, the commissioner shall determine if a license is necessary and, if so, which license category is applicable along with the requirements necessary to obtain a license.

7083.0800 RESTRICTED LICENSES.

The commissioner is allowed to add restrictions to a license for the following reasons:

A. as the result of an enforcement action under part 7083.2020;
B. as a method to allow an apprentice to gain experience as described under part 7083.1050, subpart 2, item B; or
C. as a method to limit the scope of the work to be conducted under the license to coincide with restrictions placed on the certified individual according to part 7083.2010, subpart 6.

7083.0900 APPLICATION FOR LICENSE; FEES; RENEWAL.

Subpart 1. **Eligibility**. A business is eligible to apply for an SSTS license when it has:

A. one or more certified individuals with specialty area certifications matching the requested license to meet the conditions under parts 7083.0710 to 7083.0800;
B. general liability insurance as required by part 7083.1000; and
C. a corporate surety bond as required by part 7083.1000.

Subp. 2. **Requirements for obtaining or renewing licenses**. A business that meets the eligibility requirements under subpart 1 must apply for or renew a license on forms provided by the commissioner. The application must be submitted to the agency no later than 60 days prior to the expiration or renewal date. Issuance of a new license also requires a 60-day review and approval period.

Subp. 3. **Fees**. The annual SSTS license fee is $100 for each license category under parts 7083.0710 to 7083.0800. The annual license fee for a business with multiple licenses shall not exceed $200.

Subp. 4. **Issuance**. Upon the commissioner's approval of the license application and payment of the license fee, a license must be issued to the proprietor of a sole proprietorship, the partners of a partnership, or the corporate chief executive officer or a qualifying person in Minnesota designated by a corporation.

Subp. 5. **Term**. A license is valid for one year after the date of issuance. An applicant is allowed to request a license renewal for longer periods up to three years. The fee is determined by multiplying the approved number of years by the fee in subpart 3.

Subp. 6. **Denial**. The commissioner shall deny an application for issuance or renewal of a license if the applicant is not eligible under subpart 1. The commissioner is authorized to deny a license application as the result of an enforcement action under part 7083.2020. A denial based on part 7083.2020 must not be issued before an opportunity is provided for a contested case hearing complying with Minnesota Statutes, chapter 14.

7083.1000 BONDING AND INSURANCE FOR SSTS LICENSED BUSINESSES; LIABILITY.

Subpart 1. **Bond and insurance requirements**.

A. To be eligible for SSTS licensing, a business must have a minimum of $100,000 of general liability insurance. The minimal amount is not increased for businesses with multiple licenses. The insurance must be written by a business licensed to provide insurance in Minnesota.
B. To be eligible for SSTS licensing, proof of general liability insurance must be evidenced by a certificate of insurance form that shows the minimum coverage that will be in effect for at least the term of the license. The licensee is responsible for providing written notice to the commissioner within 30 days of cancellation or change in liability insurance. If the insurance is canceled or the amount of coverage is reduced to less than the amounts in item A, the license immediately and automatically becomes invalid and the business must not perform SSTS work until the business obtains insurance meeting the requirements of this part and submits notification of insurance coverage to the commissioner.
C. To be eligible for SSTS licensing, a business must hold a corporate surety bond in the amounts specified in Table I or greater. If a business seeks more than one license, then the license category with the highest bonding amount fulfills the bond requirement for all licenses sought.

License	Minimum Bond Amounts
Basic design	$10,000
Advanced design	$25,000
Inspection	$10,000
Advanced inspection	$25,000
Installation	$10,000
Maintenance	$10,000
Service provider	$10,000

D. The corporate surety bond must be written by a corporate surety licensed to do business in Minnesota.
E. The corporate surety bond must be submitted to the commissioner on the bond form provided in this chapter, or on an alternate bond form provided by the commissioner, and must name the applicant as the principal.
F. The corporate surety bond must be signed by an official of the business who is legally authorized to represent the business and must list a contact if a claim is to be filed.
G. The corporate surety bond must cover work to be done under all SSTS licenses to be held by the business.

Subp. 2. **Bond use**.
A. The corporate surety bond must be conditioned on the principal faithfully performing the duties and complying with all laws, ordinances, and rules pertaining to the SSTS license applied for and all contracts entered into.
B. A person suffering a loss from the principal failing to act according to item A is allowed to petition the corporate surety to seek and be granted a partial or full payment of the bond.

Subp. 3. **Term of bond**. The term of the corporate surety bond must be continuous with the term of the license or, in the case of a plumbing bond provided according to Minnesota Statutes, section 326B.46, subdivision 2, concurrent with the term of the plumbing license. The penal sum of the bond is noncumulative and must not be aggregated every year that the bond is in force.

Subp. 4. **Notification of bond actions**. The corporate surety must provide written notice to the commissioner within 30 days of cancellation or reduction of a licensee's bond. If a corporate surety bond is canceled or the amount of coverage is reduced to less than the amounts in subpart 1, Table I, the license immediately and automatically becomes invalid and the business must not perform SSTS work until the business obtains another corporate surety bond meeting the requirements of this part and submits notification of renewed bond coverage to the commissioner. The corporate surety must notify the principal of any claims pending against the bond within five days of the receipt of the claim and notify the principal of any payments made against the bond within five days of payment.

Subp. 5. **Other professional assistance**. An SSTS business that seeks, accepts, and implements work products developed by a noncertified individual is responsible and liable for the related performance of the system.

7083.1010 QUALIFIED EMPLOYEE REQUIREMENTS.

A qualified employee must fulfill the applicable responsibilities under parts 7083.0710 to 7083.0800 that are applicable to the work being performed. Qualified employees must be certified with specialty area certifications applicable to the work being conducted. An apprentice is eligible to be a qualified employee if the individual has specialty area certifications applicable to the work to be completed, has fulfilled the requirement under part 7083.1050, subpart 2, and has been issued performance restrictions.

7083.1020 SSTS INDIVIDUAL CERTIFICATION AND TRAINING PROGRAM.

Subpart 1. **Purpose**. Parts 7083.1020 to 7083.1090 establish the SSTS individual certification and training program. This program establishes training, experience, and examination requirements for SSTS individual certification. An individual is allowed to be certified in the following specialty areas:

A. designer;
B. advanced designer;
C. inspector;
D. advanced inspector;
E. installer;
F. maintainer; and
G. service provider.

Subp. 2. **Program components**. An individual must successfully complete the following components for a specialty area to qualify for certification in that specialty area:

A. training described under part 7083.1030;
B. examination described under part 7083.1040;
C. experience described under part 7083.1050; and
D. continuing education described under part 7083.1060.

Subp. 3. **Application**. An individual who qualifies under subpart 2, items A to C, for a specialty area is allowed to apply to be certified by the commissioner according to part 7083.1080. Individuals who complete subpart 2, items A and B, for a specialty area are allowed to apply to receive an apprentice designation according to part 7083.1090.

Subp. 4. **Certification period**. A certification issued by the commissioner is valid for a three-year period.

Subp. 5. **Applicable certification specialty area**. In the case of SSTS work not described under parts 7083.0710 to 7083.0800, the commissioner shall determine which certification specialty area is applicable.

7083.1030 TRAINING.

Subpart 1. **Required training**. To fulfill the training requirement for one or more specialty areas under the certification and training program, an individual must successfully complete formal coursework that covers basic SSTS knowledge and specialty area training as described in items A and B.

A. All certified individuals must have formal SSTS training in soil treatment theory; design and construction fundamentals; system operational requirements; statute and rule requirements; technology options; and state licensing requirements, standards, and criteria.
B. SSTS specialty area certifications must have formal training to perform the required responsibilities for each specialty area in parts 7083.0710 to 7083.0800. Advanced designers must receive training in a specific technology before designing and writing a management plan for that technology.

Subp. 2. **Accreditation of training**. Training used to fulfill the requirements under subpart 1 and part 7083.1060 must be accredited by the commissioner according to part 7083.1070.

7083.1040 EXAMINATION.

Subpart 1. **Examinations**. An examination for basic information regarding an SSTS and each of the specialty areas under part 7083.1020, subpart 1, must be offered by the commissioner at least annually. The examinations must be based on the skill, knowledge, experience, and education that a person must have to perform the authorized duties and responsibilities under parts 7083.0710 to 7083.0800 for each specialty area sought. An individual must successfully complete the basic and specialty area examinations with a passing score of 70 percent or greater to qualify for certification and apprentice designation. The commissioner shall require a passing score of 70 percent or greater on any portion or subpart of an examination, which focuses on a critical skill component, in order to pass the entire examination.

Subp. 2. **Expiration of test score**. An examination that qualifies for certification expires if the continuing education requirements under part 7083.1060, subpart 1, are not fulfilled. The period within which continuing education must be completed starts when the first examination is taken in which a passing score is received.

Subp. 3. **Failure on examination**. An individual who fails an examination is ineligible to retake the same examination for six months unless the individual has completed additional training approved by the agency in the subject matter covered by the failed examination in addition to that required under part 7083.1030, subpart 1. Official documentation of this additional training must be provided at the time the examination is retaken. Training hours used to fulfill this reexamination requirement must not be used to fulfill continuing education requirements. Failure to pass the examination in a specialty area or the basic examination does not prevent the person from taking an examination for a different specialty area certification.

7083.1050 EXPERIENCE.

Subpart 1. **Experience requirements**. An individual seeking certification must:

A. complete the experience requirement according to one of the methods under subpart 2;
B. complete the amount of experience according to subpart 5;
C. acquire necessary experience within the six years immediately preceding submission of the completed certification application; and

D. complete and submit the documentation requirements under subpart 4.

Subp. 2. **Options to gain experience**. The experience needed to qualify for a specialty area must be acquired by one of the methods in items A to C or other method approved by the commissioner:

A. as an employee or worker of a licensed SSTS business under an experience plan as described in subpart 3;
B. as an apprentice under a restricted license. Qualifying experience under a restricted license must be completed under an experience plan as described in subpart 3; or
C. through field work experience from an agency-accredited training program that provides realistic in-field work situations.

Subp. 3. **Experience plan.** Experience plans must meet the requirements in this subpart.

A. Experience gained under an experience plan must be gained under the supervision of an unrestricted certified individual who has a specialty area certification that is the same as the specialty area sought by the individual acquiring the experience or under the supervision of an inspector who is authorized to design and inspect the system. After December 31, 2010, an individual providing experience oversight must be a mentor as described in part 7083.2000. If an apprentice loses the apprentice's mentor before completing the approved experience plan, the apprentice must notify the agency. The apprentice must not perform any more work until a new mentor is secured and the revised experience plan is approved by the agency.
B. Experience plans must be submitted to and approved by the commissioner before apprentice designation is granted. The commissioner shall require that the plan be discontinued or modified to correct the problems if the objectives for acquiring experience are not being fulfilled. The commissioner shall make a final evaluation to determine if the experience gained under the plan successfully fulfilled the experience requirement.
C. Experience plans must include the number of systems to be worked on to obtain experience and the applicable specialty area requirements in subitems (1) to (4).

(1) Experience plans for apprentice designer must verify the completeness and accuracy of the preliminary and field evaluation work products. This includes the in-field verification of the soil borings and the interpretation of the height of the periodically high saturated soil level and bedrock. All design assumptions and calculations must be verified.
(2) Experience plans for apprentice installer must verify construction of systems according to the approved design and applicable construction requirements. Verification must include on-site observations during the work periods identified in part 7083.0760, subpart 3, items A to G.
(3) Experience plans for apprentice inspector must verify the completeness and accuracy of inspecting the compliance status of a newly constructed or existing ISTS. This verification includes a field verification of all field observations and conclusions. Design reviews must also be verified.
(4) Experience plans for an apprentice maintainer must verify that sewage tanks were maintained and septage disposal was in accordance with applicable rules. This verification includes a field verification of all work activities.

Subp. 4. **Experience plan reporting**.

A. All work used to gain experience for certification must be documented. Documentation shall include all information, records, or other documents required by this chapter or chapters 7080 to 7082. The documentation must be submitted to the commissioner from a minimum of five jobs along with the experience plan from those same jobs. The documentation must provide the basis for approval or denial of a certification.
B. Approvals, sign-offs, or certificates of compliance issued by the local unit of government must be submitted to the commissioner for the five jobs noted in item A.
C. The completed experience plan must contain the signature and certification number of the mentor.
D. The submittal must contain any other information necessary to determine compliance with this part.

Subp. 5. **Amount of experience**.

A. An applicant for certification as a basic designer must have co-completed with a mentor a minimum of 15 ISTS site and soil evaluations, designs, and management plans for a Type I, II, or III system, as defined under parts 7080.2200 and 7080.2300, with a flow of 2,500 gallons per day or less, with a minimum of one aboveground system design, and a minimum of one belowground system design. An applicant must observe five installations and five service or operational instances, with mentorship not required. No additional experience is required to qualify for the advanced designer certification.

B. An applicant for certification as an installer must have completed a minimum of 15 ISTS installations, with a minimum of one aboveground system installation and a minimum of one belowground system installation. An applicant must observe five service or operational instances, with mentorship not required.
C. An applicant for certification as a basic inspector must have:
   (1) co-completed, with a mentor, a minimum of 15 inspections of Type I, II, or III systems, as defined under parts 7080.2200 and 7080.2300, with a flow of 2,500 gallons per day or less. The inspections must include a minimum of one aboveground system inspection and one belowground system inspection; and
   (2) observed, with or without a mentor:
      (a) five soil evaluations, system designs, and management plans being developed;
      (b) five system installations; and
      (c) five service or operational instances.

   No additional experience is required to qualify for the advanced inspector certification.
D. An applicant for certification as a maintainer must have co-completed with a mentor a minimum of 15 pump-outs with properly disposed of septage.
E. No experience is required to qualify for the service provider certification.

7083.1060 CONTINUING EDUCATION.

Subpart 1. **Renewal requirements.**

A. All designers and inspectors who are certified or apprentices must complete 18 hours of continuing education training related to SSTS every three years, with a minimum of six of those hours devoted to soils education with a field component. All installers and service providers who are certified or apprentices must complete 12 hours of continuing education training related to SSTS every three years.
B. An individual with a maintainer certification must complete 12 hours of continuing education related in general to SSTS or nine hours of continuing education specifically related to SSTS maintenance or land application of septage every three years.
C. Certified individuals and apprentices must complete the applicable hours of continuing education under items A and B that meet the criteria under subpart 2 for each time period specified in those items. The continuing education requirement is not increased for multiple specialty area certifications. Continuing education hours earned in excess of those required under this subpart shall not be carried over to meet the requirements for future renewal periods. The renewal period begins when the first examination is taken in which a passing score is received under part 7083.1040.
D. The continuing education must be taken during the time specified in this subpart and remains valid even though not reported before the end of the certification period. However, certification is considered expired until the training is reported. If adequate continuing education training is not taken during the certification period, recertification must be gained by taking the necessary continuing education hours and retaking the examinations.
E. In each certification period, certified individuals and apprentices must accrue continuing education hours specified in items A to C. At least one-half of the required training must be directly related to the administrative and technical parts of chapters 7080 to 7083 as determined by the commissioner.

Subp. 2. **Criteria for continuing education**. Coursework that qualifies for continuing education credit is coursework related to the technical aspects of sewage, sewage treatment, SSTS, soil identification, soil interpretation, soil water movement, engineering or environmental health related to SSTS, maintenance or operation of an SSTS, land application of wastes, or other related topics. Credit must also be given for coursework relating to state SSTS rules and statutes and coursework related to the administration of local ordinances, permitting, and inspection. Only programs accredited or otherwise authorized by the commissioner for continuing education credit are allowed to be used to maintain a certification or apprentice designation.

7083.1070 ACCREDITATION OF TRAINING PROGRAMS AND AUTHORIZATION OF TRAINING FOR CONTINUING EDUCATION CREDITS.

Subpart 1. **Requirements**. To receive training program accreditation for basic, specialty area, or continuing education training, the program sponsor must submit to the commissioner:

A. a written objective that describes expected outcomes for the participant;

B. the credentials of the persons conducting the training that demonstrates the trainers' educational and professional background and expertise in and knowledge of SSTS and state SSTS standards, rules, and statutes and specifies the subject areas that the trainers will be responsible for;
C. a training plan that demonstrates how the course will meet the requirements in parts 7083.1030 and 7083.1060;
D. a method for evaluating successful completion, including the form that will document course participation and successful completion;
E. a description of the topics and how much time will be spent on training for each topic during the hours the course is conducted; and
F. a document signed by a representative of the sponsoring organization certifying that the sponsor will maintain records of participants, attendance, and successful completions for a minimum of three years.

Subp. 2. **Procedures for approval**. The commissioner shall approve a training course if the information submitted under subpart 1 demonstrates that the course meets the objectives for a specific specialty area under part 7083.1030 or for continuing education under part 7083.1060. The commissioner shall evaluate the submitted information to determine how many continuing education credits will be awarded. The commissioner shall require that the training program be updated to ensure recent industry developments are included. The commissioner shall cancel accreditation if the program sponsor does not respond to the commissioner's written request for program information or training course revisions or if the commissioner determines that the program has not met its training objective.

Subp. 3. **Authorization of training for continuing education credits**. Nonaccredited training qualifies for continuing education credits only if authorized by the commissioner. The person requesting the credits must provide the information requirements of subpart 1 for any nonaccredited training attended and document in written format how the course will meet or has met the requirements under part 7083.1030 or 7083.1060, including proof of successful completion of the training. The commissioner is authorized to prorate the credit hours granted based on the amount of the training that pertains to the SSTS specialty area for which it is requested.

7083.1080 SSTS CERTIFICATION.

Subpart 1. **Qualifications**. The commissioner shall certify in the appropriate specialty area individuals who successfully satisfy the requirements in parts 7083.1030 to 7083.1060 as applicable to a specialty area in part 7083.1020, subpart 1, and submit a completed application under part 7083.2010, subpart 1, that is approved by the commissioner.

Subp. 2. **Multiple certifications**. A certification for each specialty area successfully completed must be added to an individual's certification.

Subp. 3. **Certification required**. Except as provided under part 7083.1090, subpart 1, certified individuals under part 7083.0900, subpart 1, item A, and qualified employees must be certified under this part.

Subp. 4. **Maintaining certification**. To maintain certification, an individual must fulfill the continuing education requirements under part 7083.1060, complete the renewal requirements under part 7083.2010, subpart 4, and fulfill the responsibilities under parts 7083.0710 to 7083.0800 that are applicable to specialty area certifications.

Subp. 5. **Certification maintenance**. The commissioner shall assign certification numbers, maintain a statewide certification list, record training, and monitor performance of all persons certified.

7083.1090 APPRENTICE.

Subpart 1. **Qualifications**.

A. An individual is designated as an apprentice if the individual:
   (1) successfully completes the requirements in parts 7083.1030 and 7083.1040 for the specialty areas listed in part 7083.1020, subpart 1;
   (2) is gaining experience through a method approved in part 7083.1050, subpart 2; and
   (3) submits a complete application as required in part 7083.2010, subpart 1, that is approved by the commissioner.
B. An apprentice is allowed to perform the duties of a certified individual according to parts 7083.0730 to 7083.0780 under a restricted license or as a restricted qualified employee if the experience requirements of part 7083.1050 are met.

Subp. 2. **Maintaining apprentice designation**. To maintain an apprentice designation, an individual must:

A. fulfill the continuing education requirements in part 7083.1060;
B. complete the renewal requirements in part 7083.2010, subpart 4; and
C. fulfill the responsibilities in parts 7083.0710 to 7083.0800 that are applicable to specialty area certifications. A certification for each specialty area successfully completed must be added to an individual's certification or apprentice designation.

7083.2000 MENTOR DESIGNATION.

Subpart 1. **Qualifications**. To be authorized to provide mentorship to an individual to gain the necessary experience for certification under part 7083.1050, subpart 2, items A and B, a mentor must:

A. be certified in the mentor specialty area or be an inspector; and
B. not have had a violation that resulted in a successful enforcement action within the past five years.

Subp. 2. **Commissioner designation**. A candidate found to meet the qualifications as a mentor under this part must be designated by the commissioner as a mentor. The commissioner shall revoke mentorship designation upon finding a violation that results in an administrative penalty order, stipulation agreement, or schedule of compliance; incompetence; negligence; fraud; illegal activity; or inappropriate conduct in the performance of the duties authorized under the mentorship designation.

Subp. 3. **Responsibility**. The mentor is not responsible for any noncompliance attributed to the work of the apprentice. The licensed SSTS business is responsible if the mentor and apprentice are working as employees or on behalf of the same licensed SSTS business.

7083.2010 ADMINISTRATION OF CERTIFICATION AND APPRENTICE PROGRAM.

Subpart 1. **Application; issuance**. An individual meeting the qualifications in part 7083.1080, subpart 1, or 7083.1090, subpart 1, is eligible to apply for certification or apprentice designation on a form provided by the commissioner. The commissioner requires 60 days for review of the application. A complete application consists of documentation of training and experience or the experience gaining method meeting the requirements under part 7083.1050, subpart 2. A certification or apprentice applicant is not allowed to fulfill the duties and responsibilities of a certified or apprentice individual until designated as such in writing by the commissioner.

Subp. 2. **Approval of certification or apprentice designation**. Upon the commissioner's approval of the certification or apprentice application, the commissioner shall issue a number and verification of the individual's status.

Subp. 3. **Certification and apprenticeship period**. Certifications or apprenticeships issued by the commissioner are valid for three years.

Subp. 4. **Renewal**. Every three years, the certified individual or apprentice shall submit an application for renewal on forms provided by the commissioner no later than 60 days prior to the expiration date. The renewal application must be accompanied by documentation of continuing education under part 7083.1060.

Subp. 5. **Denial of application**. If the commissioner finds evidence of actions listed under part 7083.2020, the commissioner is allowed to deny an application or renewal application for a certification or apprentice. Notice of the pending denial must be served on the applicant by mail. Any pending denial based on part 7083.2020 shall not be issued before an opportunity is provided for a contested case hearing complying with Minnesota Statutes, chapter 14.

Subp. 6. **Restrictions; conditions**. The commissioner is allowed to add performance restrictions and training conditions to an individual certification or apprentice designation at any time to address unusual work situations or experience requirements, to take enforcement action under part 7083.2020, or to limit the scope of responsibilities under parts 7083.0710 to 7083.0800, for an individual. Notice of the pending restriction must be served on the applicant by mail. Any pending restriction shall not be issued before an opportunity is provided for a contested case hearing complying with Minnesota Statutes, chapter 14.

7083.2020 ENFORCEMENT ACTION.

Subpart 1. **SSTS business licenses**. The commissioner is authorized to deny, suspend, restrict, revoke, place corrective action, fine, raise bond amounts, or institute other sanctions against an SSTS business license for any of the following reasons:

A. failure to meet the requirements for a license;
B. failure to comply with applicable requirements;
C. submission of false or misleading information or credentials in order to obtain or renew a license;
D. failure to provide adequate supervision to noncertified employees;
E. incompetence, negligence, fraud, illegal activity, or inappropriate conduct in the performance of the duties authorized under the license;
F. failure to report the number of sewage tanks installed and pay tank fees as prescribed in Minnesota Statutes, section 115.551; or
G. failure to comply with applicable soil dispute resolution requirements.

Subp. 2. **Certification and apprentice**. If the commissioner finds any of the following faults, the commissioner is authorized to deny, suspend, restrict, revoke, place corrective action, fine, or institute other sanctions against a certification or apprentice designation:

A. failure to meet the certification or apprenticeship requirements;
B. failure to comply with applicable requirements;
C. submission of false or misleading information or credentials in order to obtain or renew a certification or apprentice designation;
D. incompetence, negligence, fraud, illegal activity, conflict of interest, or inappropriate conduct in the performance of the duties authorized under the certification or apprenticeship; or
E. failure to comply with applicable soil dispute resolution requirements.

Subp. 3. **Complaints**.

A. Upon receiving a signed written complaint that alleges the existence of grounds for enforcement action against a licensed SSTS business or a certified or apprenticed individual under subpart 1 or 2, the commissioner shall initiate an investigation.
B. The complaint must contain the name, address, and telephone number of the complainant; the name of the alleged violators; the alleged violations, dates, and locations; and any other pertinent information to demonstrate the validity of the complaint.
C. The commissioner shall evaluate the results of the investigation and consider expert advice as needed in order to determine whether enforcement actions are necessary.
D. Enforcement actions shall not be taken before written notice is given to the licensee or individual and an opportunity is provided for a contested case hearing complying with Minnesota Statutes, chapter 14.

Subp. 4. **Enforcement action.** If the commissioner finds that enforcement action is necessary, the actions described in items A to C must be taken.

A. A written notice must be sent by certified mail to the licensee, certified individual, or apprentice. The written notice must contain, as applicable, the effective date of the enforcement action, the nature of the violation constituting the basis for the enforcement action, the facts that support the conclusion that a violation has occurred, specific actions necessary to fulfill the terms of the notice, and a statement that a licensee, certified individual, or apprentice who desires a contested case hearing must, within ten calendar days, exclusive of the day of service, file a written request with the commissioner.
B. If a hearing is requested, the enforcement action is stayed pending the outcome of the hearing. If the licensee, certified individual, or apprentice does not request a hearing, the business or individual forfeits any opportunity for a hearing.
C. A licensee, certified individual, or apprentice whose license, certification, or apprenticeship has been revoked is not entitled to apply for a license, certification, or apprenticeship for one year following the effective date of revocation or for any longer period of time specified in the revocation notice. A licensee, certified individual, or apprentice with a revoked or suspended license, certification, or apprenticeship shall return the license, certification, or apprentice identification card to the commissioner.

Subp. 5. **Enforcement; general**. General agency enforcement authority under Minnesota Statutes, sections 115.03, 115.071, 115.072, 115.56, 116.072, and 116.073, is also available for enforcement actions under this part.

Subp. 6. **Nonlicensed violations**. The commissioner shall fine, or impose other sanctions, for those implying or advertising to be a certified individual, apprentice, or licensed business or conducting SSTS activities without the required certification, apprenticeship, or license.

7083.2030 MINNESOTA POLLUTION CONTROL AGENCY SURETY BOND FORM.

Bond No. _____

MINNESOTA POLLUTION CONTROL AGENCY
SUBSURFACE SEWAGE TREATMENT SYSTEM (SSTS)
SURETY BOND
KNOW ALL PERSONS BY THESE PRESENTS:

THAT _____
(Name of Licensee)

doing business as..... at

_____, Minnesota, as Principal, and
(Address)

_____, a corporation authorized
(Name of Surety)

to do surety business in the State of Minnesota, as Surety, are hereby held and firmly bound to the Commissioner of the Minnesota Pollution Control Agency-State of Minnesota and any persons aggrieved by reason of the Principal's failure to faithfully perform the duties, and in all things comply with all laws, ordinances, and rules, pertaining to the Principal's license or any permit applied for and all contracts entered into, in the sum of _____THOUSAND DOLLARS ($_____). For the payment of this sum, Principal and Surety bind themselves, their heirs, representatives, successors and assigns, jointly and firmly by these presents.

THE CONDITION of the above obligation is such, that WHEREAS the said Principal is making application with the Minnesota Pollution Control Agency to be licensed as, or has been licensed as, a subsurface sewage treatment system business: _____(specific licenses).

NOW THEREFORE, if said Principal shall faithfully and lawfully perform the duties, and in all things comply with the laws and ordinances, including all amendments thereto, appertaining to the license or permit applied for, then this obligation shall be void; otherwise to remain in full force and effect.

The aggregate liability of the Surety, regardless of the number of claims made against the bond or the number of years the bond remains in force, shall in no event exceed the amount set forth above. Any revision of the bond amount shall not be cumulative. This bond may be canceled by the Surety as to future liability by giving written notice to the Minnesota Pollution Control Agency, stating the date of cancellation, which in no event shall be less than thirty (30) days after the mailing of said notice; however, the Surety shall remain liable for any and all acts of the Principal covered by this bond up to the date of cancellation.

PROVIDED, it is the intention of the parties that this bond be continuous. This bond may be canceled at any time upon giving the said Principal and the Minnesota Pollution Control Agency 30 days written notice, said notice to be served by certified mail, whereupon, except as to any liabilities or indebtedness incurred prior to the termination of this said 30 day notice, the liability of the Surety under this bond shall cease. The Surety shall notify the Principal and the Minnesota Pollution Control Agency if payment on the bond has been made which results in the value of the bond falling below the legal requirement.

By their signatures below, the parties certify that the wording of this surety bond is identical to the wording specified in Minnesota Rules, part 7083.2030, as the rules were constituted on the date the parties executed the bond.

Signed this _____ day of _____, 20__.

Signed, sealed and delivered in the presence of:

_____ _____
(Witness as to Principal) (Licensee name)

_____ _____
(Signature)

_____ _____
(Witness as to Surety) (Name of Surety Company)

_____

By _____
(Attorney-in-Fact)

INDIVIDUAL OR PARTNERSHIP ACKNOWLEDGMENT

STATE OF _____)

COUNTY OF _____)

On the _____day of _____, 20__, before me, a Notary Public within and for said county, personally appeared,

_____to me known to be the person(s) described in and who executed the foregoing instrument, as

Principal(s), and acknowledged to me that _____ s/he executed the same as her/his free act and deed.

Notary Public, _____

County, _____

My Commission Expires _____

(Notarial Seal)

CORPORATE ACKNOWLEDGMENT

STATE OF _____)

COUNTY OF _____)

On the _____day of _____, 20__, personally appeared, _____ to me, who being duly sworn, did depose and say: that s/he resides in _____; that s/he is the_____ _____President of the_____the corporation described in and which executed the foregoing instrument; that s/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation; and that s/he signed her/his name thereto by like order.

Notary Public, _____

County, _____

My Commission Expires _____

(Notarial Seal)

ACKNOWLEDGMENT OF CORPORATE SURETY

STATE OF _____)

COUNTY OF _____)

On the _____ day of _____, 20____before me personally appeared, _____ to me known, who being duly sworn,did say: that s/he resides in _____; that s/he is the aforesaid officer or attorney in fact of _____ a corporation; that the seal affixed to the foregoing instrument is the corporate seal of said corporation; and that said instrument as signed and sealed in behalf of said corporation by the aforesaid officer, by authority of its board of directors; and the aforesaid officer acknowledged said instrument to be the free act and deed of said corporation.

Notary Public, _____

County, _____

My Commission Expires _____

(Notarial Seal)

SURETY COMPANY POWER OF ATTORNEY MUST BE ATTACHED

7083.2040 TRANSITIONING EXISTING REGISTRATIONS AND LICENSES.

Subpart 1. **Designers**. A business licensed, and an individual registered, as a designer I or designer II on February 4, 2008, are reclassified as basic designers. A business reclassified as a basic designer under this chapter is authorized to design all types and sizes of SSTS until February 4, 2012. After that time, a business designing systems described under part 7083.0740, subpart 1, item B, must meet the requirements of this chapter.

Subp. 2. Inspectors. A business licensed, and an individual registered, as a designer I or inspector on February 4, 2008, are reclassified as basic inspectors. A business or individual reclassified as an inspector under this chapter is authorized to inspect all types of SSTS until February 4, 2012. After that time, the business or government employee inspecting systems described under part 7083.0740, subpart 1, item B, must meet the requirements of this chapter.

Subp. 3. **Maintainers**. A business licensed, and an individual registered, as a pumper on February 4, 2008, is reclassified as a maintainer under this chapter.

Subp. 4. **Service provider**. To gain a service provider license or certification, a business or individual must meet the requirements of this chapter. An ISTS licensed business or a certified individual providing management services before February 4, 2008, is authorized to operate an SSTS until February 4, 2012, without a service provider license. After February 4, 2012, businesses and individuals providing SSTS management services must meet the requirements of this chapter.

Subp. 5. **Basic and continuing education**. Designer I's or designer II's on February 4, 2008, who take training to upgrade to an advanced designer by February 4, 2011, shall have their training hours credited as fulfilling the continuing education hours specified in part 7083.1060. Designer I's or inspectors on February 4, 2008, who take training to upgrade to an advanced inspector by February 4, 2011, shall have their training hours credited as fulfilling the continuing education hours specified in part 7083.1060.

CHAPTER 7083

FROM MINNESOTA POLLUTION CONTROL AGENCY
PRODUCT REGISTRATION

7083.4000 PRODUCT REVIEW AND REGISTRATION PROCESS.
7083.4010 TESTING REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.
7083.4020 TEST RESULTS REPORTING REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.
7083.4030 PRODUCT PERFORMANCE REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.
7083.4040 PROPRIETARY TREATMENT PRODUCTS REGISTRATION; PROCESS AND REQUIREMENTS.
7083.4050 TRANSITION FROM PREVIOUS REQUIREMENTS FOR AEROBIC TANK TREATMENT SYSTEMS AND OTHER TREATMENT SYSTEMS TO NEW REGISTERED LIST.
7083.4060 BACTERIOLOGICAL REDUCTION.
7083.4070 DISTRIBUTION MEDIUM; CERTIFICATION AND REGISTRATION.
7083.4080 PROPRIETARY DISTRIBUTION PRODUCTS; PROCESS AND REQUIREMENTS.
7083.4100 TRANSITION FROM PREVIOUS REQUIREMENTS FOR DISTRIBUTION PRODUCTS TO NEW REGISTERED LIST.
7083.4110 PRODUCT DEVELOPMENT PERMITS.
7083.4120 PRODUCT REGISTRATION CONTESTED CASE HEARING.
7083.6000 ADVISORY COMMITTEE.

7083.4000 PRODUCT REVIEW AND REGISTRATION PROCESS.

Subpart 1. **General**.

A. The commissioner shall develop a product review and registration process and maintain a list of registered sewage treatment and distribution products for SSTS.
B. The commissioner shall develop recommended standards and guidance to assist local units of government in permitting different types of sewage treatment technologies and sewage distribution technologies, including the following five categories:
   (1) public domain treatment technologies, such as sand filters;
   (2) proprietary treatment technologies, such as manufactured aerobic treatment systems;
   (3) public domain distribution technologies, such as drainfield rock or generic drainfield rock substitutes;
   (4) proprietary distribution technologies, such as gravelless distribution products; and
   (5) proprietary drip dispersal systems.
C. Sewage technologies shall have standards described in this chapter or agency recommended standards and guidance before local units of government are allowed to permit them. Recommended standards and guidance must include information and detail, such as application, design, installation, operation, monitoring and maintenance, and performance expectations, and sources of the information.

Subp. 2. **Proprietary treatment products; certification and registration**.

A. To qualify for product registration, manufacturers desiring to sell or distribute proprietary treatment products shall:
   (1) verify product performance through testing using the testing protocol established in Table I in part 7083.4010 and register their product with the commissioner using the process described in parts 7083.4000 to 7083.4120;
   (2) report test results of influent and effluent sampling obtained throughout the testing period, including normal and stress loading phases, for evaluation of constituent reduction according toTable II in part 7083.4020;
   (3) demonstrate product performance according to Table III in part 7083.4030. All 30-day averages and geometric means obtained throughout the test period must meet the identified threshold values to qualify for registration at that threshold level; and
   (4) verify bacteriological reduction according to part 7083.4060, for registration at Levels A and B in Table III in part 7083.4030.
B. Manufacturers verifying product performance through testing according to the following standards or protocols must have product testing conducted by a qualified, third-party testing facility. Product performance testing must be consistent with the following:
   (1) National Sanitation Foundation (NSF) International, Residential Wastewater Treatment Systems, Standard 40 (July 2000). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (2) National Sanitation Foundation (NSF) International, Wastewater Treatment Systems - Nitrogen Reduction, NSF/ANSI 245 (2007). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (3) Environmental Protection Agency (EPA) and National Sanitation Foundation (NSF), Protocol for the Verification of Wastewater Treatment Technologies (April 2001). The protocol is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (4) Environmental Protection Agency (EPA) Environmental Technology Verification (ETV) Program, Protocol for the Verification of Residential Wastewater Treatment Technologies for Nutrient Reduction (November 2000). The protocol is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (5) European Committee for Standardization (CEN), Small Wastewater Treatment Systems for up to 50 PT - Part 3: Packaged and/or Site Assembled Domestic Wastewater Treatment Plants, EN 12566-3 (October 2003). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;
   (6) protocol for bacteriological reduction described in part 7083.4060; and
   (7) other equivalent protocols and standards consistent with the standards and protocols in subitems (1) to (6) to verify product performance as approved by the commissioner.
C. Treatment levels used in part 7083.4030 are not intended to be applied as field compliance standards. Their intended use is to establish treatment product performance in a product testing setting under established protocols by qualified testing entities.

7083.4010 TESTING REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.

The testing protocols in this part are incorporated by reference under part 7083.4000, subpart 2, item B.

TABLE I

Treatment component/sequence category	Required testing protocol
Category A: Designed to treat sewage with strength typical of a residential source when septic tank effluent is anticipated to be equal to or less than treatment Level C (Table III, part 7083.4030)	NSF Residential Wastewater Treatment Systems, Standard 40, or CEN Europeon Standard, EN-12566-3
Category B: Designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than treatment Level C (Table III, part 7083.4030), including restaurants, grocery stores, mini-marts, group homes, medical clinics, residences, etc.	EPA/NSF Protocol for the Verification of Wastewater Treatment Technologies, EPA/ETV Protocol for the Verification of Residential Wastewater Treatment Technologies for Nutrient Reduction, or equivalent
Total nitrogen and phosphorus reduction in Categories A and B	EPA Environmental Technology Verification, Protocol for the Verification of Residential Wastewater Treatment Technologies for Nutrient Reduction,or equivalent or NSF Wastewater Treatment Systems - Nitrogen Reduction, Standard 245

7083.4020 TEST RESULTS REPORTING REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.

TABLE II

Treatment component/sequence category	Testing results reported
Category A: Designed to treat sewage with strength typical of a residential source when septic tank effluent is anticipated to be equal to or less than treatment Level C (Table III, part 7083.4030)	Report test results for influent and effluent sampling obtained throughout the testing period for evaluation of consistent reduction for the parameters CBOD5 and TSS: - Average - Minimum - Median - 30-day average (each month) - Standard deviation - Maximum - Interquartile range. For bacteriological reduction performance, rreport fecal coliform test results of influent aand effluent sampling by geometric mean from samples drawn within 30-day or monthly calendar periods, obtained from a minimum of three samples per week throughout the testing period. See part 7083.4060. Test report must also include the individual results of all samples drawn throughout the test period.
Category B: Designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than treatment Level C (Table III, part 7083.4030), including restaurants, grocery stores, mini-marts, group homes, medical clinics, residences, etc.	Report all individual test results and full test average values of influent and effluent sampling obtained throughout the testing period for CBOD5, TSS, and oil and grease. Report the treatment capacity of the product tested in pounds per day for CBOD5.
Total nitrogen and phosphorus reduction in	Report test results on all required performance

Categories A and B	criteria according to the format prescribed in the test protocol described in Table I, part 7083.4010.

7083.4030 PRODUCT PERFORMANCE REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.

TABLE III

<table>
<tr><th>Treatment component/ sequence category</th><th>Product performance requirements</th></tr>
<tr><td>Category A: Designed to treat sewage with strength typical of a residential source when septic tank effluent is anticipated to be equal to or less than treatment Level C.</td><td>Treatment system performance testing levels

Level Parameters
<table>
<tr><th></th><th>CBOD5 (mg/l)</th><th>TSS (mg/l)</th><th>O&G (mg/l)</th><th>FC (#/100ml)</th><th>Nutrient (mg/l)</th></tr>
<tr><td>A</td><td>15</td><td>15</td><td>–</td><td>1,000</td><td>–</td></tr>
<tr><td>A-2</td><td>15</td><td>15</td><td>–</td><td>–</td><td>–</td></tr>
<tr><td>B</td><td>25</td><td>30</td><td>–</td><td>10,000</td><td>–</td></tr>
<tr><td>B-2</td><td>25</td><td>30</td><td>–</td><td>–</td><td>–</td></tr>
<tr><td>C</td><td>125*</td><td>60</td><td>25</td><td>–</td><td>–</td></tr>
<tr><td>TN</td><td>–</td><td>–</td><td>–</td><td>–</td><td><20, or actual value</td></tr>
<tr><td>TP</td><td>–</td><td>–</td><td>–</td><td>–</td><td><5, or actual value</td></tr>
</table>
* BOD5 = 170 mg/l

Values for levels A, A-2, B, and B-2 are 30-day values (averages for CBOD5, TSS, and geometric mean for FC). All 30-day averages throughout the test period must meet these values in order to be registered at these levels. Values for levels C, TN, and TP are derived from full test averages.</td></tr>
<tr><td>Category B: Designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than treatment level C, including restaurants, grocery stores, mini-marts , group homes, medical clinics, residences, etc.</td><td>All of the following requirements must be met:

(1) all full test averages must meet level C; and
(2) The treatment capacity of the product tested in pounds per day for CBOD5 must be reported</td></tr>
<tr><td>Total nitrogen and phosphorus reduction in Categories A and B</td><td>Test results must establish product performance effluent quality meeting levels TN and TP, when presented as the full test average.</td></tr>
</table>

7083.4040 PROPRIETARY TREATMENT PRODUCTS REGISTRATION; PROCESS AND REQUIREMENTS.

A. Manufacturers shall register their proprietary treatment products with the commissioner by submitting a complete application in the format prescribed by the commissioner, including:
   (1) the manufacturer's name, mailing address, street address, and telephone number;
   (2) the contact individual's name, title, mailing address, street address, and telephone number. The contact individual must be a company official with the authority to represent the manufacturer in this capacity;
   (3) the name, including specific brand and model, of the proprietary treatment product;
   (4) a description of the function of the proprietary treatment product along with any known limitation of the use of the product;
   (5) product description and technical information, including process flow drawings and schematics, materials and characteristics, component design specifications, design capacity, volumes and flow assumptions and calculations,

components, dimensioned drawings, and photos;

(6) for treatment systems in Category B, daily capacity of the model or models provided in pounds per day of CBOD5;

(7) siting and installation requirements;

(8) a detailed description, procedure, and schedule of routine service and system maintenance events;

(9) estimated operational costs for the first five years of the treatment component's life including estimated annual electricity usage and routine maintenance costs, including replacement of parts;

(10) identification of information requested to be protected from disclosure of trade secrets or confidential business information;

(11) copies of product brochures and manuals, such as sales, promotional, design, installation, operation, and maintenance materials and homeowner instructions;

(12) the most recently available product test protocol and results report;

(13) all available product testing results, including a listing of state approvals and denials;

(14) a signed and dated certification by the manufacturer's authorized senior executive or authorized agent specifically including the following statement: "I certify that I represent (INSERT MANUFACTURING COMPANY HERE) and I am authorized to prepare or direct the preparation of this application for registration. I attest, under penalty of law, that this document and all attachments are true, accurate, and complete. I understand and accept that the product testing results reported in this application for registration are the parameters and values to be used for determining conformance with treatment system performance testing levels established in Minnesota Rules, part 7083.4030.";

(15) a signed and dated certification from the testing entity including the statement: "I certify that I represent (INSERT TESTING ENTITY NAME) and I am authorized to report the testing results for this proprietary product. I attest, under penalty of law, that the report about the test protocol and results is true, accurate, and complete."; and

(16) a technology review fee if allowed by law.

B. Manufacturers shall submit each proprietary product for registration to the commissioner. Products within a single series or model line, sharing distinct similarities in design, materials, and capabilities, are allowed to be registered under a single application, consistent with their test protocols for the certification of other products within a product series. Products outside of the series or model line must be registered under separate applications.

C. Upon receipt of the application, the commissioner shall, within 60 days:

(1) review the application and verify the application for compliance with item A;

(2) if the application is not in compliance with item A, return the application for resubmittal with the requested information for full compliance with item A; and

(3) if the application is complete and the commissioner determines that the product meets or exceeds all applicable protocols, the commissioner shall place the product on the list of registered treatment devices. The list of registered treatment devices shall be maintained on the agency Web site.

D. Registrations are valid for up to three years, expiring on December 31 of the third year of registration, unless the product is recalled for any reason, found to be defective, or no longer available.

E. To renew technology registration, a manufacturer shall:

(1) submit a request for renewal of product registration at least 30 days before the current registration expires, using the form or in the format prescribed by the commissioner;

(2) submit the results of retesting if the product has completed retesting according to the protocol required for registration and a report from the testing entity has been issued since initial registration or previous renewal. Renewal must be based on the most recent test results; and

(3) provide an affidavit to the commissioner certifying whether the product has changed over the previous three years. If the product has changed, the affidavit must include a full description of the changes and how the changed product fulfills the requirements for initial registration.

F. As part of the product registration renewal, the commissioner shall:

(1) request field assessment comments from local units of government no later than October 31 for product renewal;

(2) discuss with the Technical Advisory Panel of the advisory committee established under part 7083.6000 any field assessment information that impacts product registration renewal;

(3) notify the manufacturer of any product to be discussed with the Technical Advisory Panel, prior to discussion with the Technical Advisory Panel, regarding the nature of comments received; and

(4) renew, modify, or deny the product registration, based on information received during the renewal process.

G. The commissioner shall maintain a readily available list of proprietary treatment products meeting the registration requirements established in this chapter. The product registration is a condition of approval for use.

H. A manufacturer shall have readily accessible information, specific to a product's registered use in Minnesota, for designers, regulators, system owners, and other interested parties about the product, including but not limited to:

(1) a product manual;

(2) design instructions;
(3) installation instructions;
(4) information regarding operation and maintenance;
(5) homeowner instructions; and
(6) a list of representatives and manufacturer-certified service providers, if any.

7083.4050 TRANSITION FROM PREVIOUS REQUIREMENTS FOR AEROBIC TANK TREATMENT SYSTEMS AND OTHER TREATMENT SYSTEMS TO NEW REGISTERED LIST.

Except for Type V systems designated under part 7080.2400, the following conditions apply:

A. the installation of aerobic tank treatment systems as specified in Minnesota Rules 2005, chapter 7080, and other advanced treatment technologies is allowed for 24 months after January 2, 2008;
B. after 24 months after January 2, 2008, only those products registered under this chapter are allowed to be installed as directed in registration guidance documents;
C. to be registered, manufacturers of aerobic tank treatment systems shall apply for product registration. Aerobic tank treatment systems must meet all other requirements established in this chapter for registration; and
D. manufacturers of aerobic tank treatment system products shall meet all other requirements established in this chapter for product registration.

7083.4060 BACTERIOLOGICAL REDUCTION.

Subpart 1. **Scope**. This part establishes the requirements for registering bacteriological reduction processes.

Subp. 2. **Verification**. Manufacturers shall, for the purpose of product registration as described in parts 7083.4000 to 7083.4040 for meeting treatment Level A or B, verify bacteriological reduction performance by sampling and testing for fecal coliform.

Subp. 3. **Testing process**. All test data submitted for product registration must be produced by a qualified, third-party testing organization. Bacteriological reduction performance requirements must be determined while the treatment product or sequence is tested according to the NSF Standard 40 testing protocol, or other equivalent commissioner-approved testing protocol. The tester must:

A. collect samples from both the influent and effluent streams and identify the treatment performance achieved by the full treatment process, component, or sequence;
B. obtain influent characteristics within the range of 106 - 108 fecal coliform/100 mL calculated as 30-day geometric means during the test;
C. test the influent to any disinfection unit and report flow rate, pH, temperature, and turbidity at each occasion of sampling performed in item D;
D. obtain samples for fecal coliform analysis during both design loading and stress loading periods, as follows:
(1) grab samples shall be collected and analyzed from both the influent and effluent on three separate days of the week; and
(2) each set of influent and effluent grab samples must be taken from a different dosing time frame (morning, afternoon, or evening) so that samples have been taken from each dosing time frame by the end of the week;
E. conduct analyses for fecal coliform according to Standard Methods for the Examination of Water and Wastewater, prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Environment Federation (1998). The standard methods are incorporated by reference, are available through the Minitex interlibrary loan system, and are subject to frequent change;
F. report the geometric mean of fecal coliform test results from all samples taken within 30-day or monthly calendar periods;
G. report the individual results of all samples taken throughout the test period for design loading and stress loading; and
H. report all maintenance and servicing conducted during the testing period, such as instances of cleaning an ultraviolet lamp or replenishment of chlorine chemicals.

Subp. 4. **Disinfection**. Manufacturers are allowed to register products that:

A. meet the bacteriological testing requirements alone, without the need for a separate disinfection device to meet treatment level A or B;

B. meet the bacteriological testing requirements when tested with a compatible secondary disinfection device as a component of the process to meet treatment level A or B; or

C. meet the bacteriological testing requirements when coupled with a compatible secondary disinfection device that meets bacteriological requirements of this part as a component of the process to meet treatment level A or B.

7083.4070 DISTRIBUTION MEDIUM; CERTIFICATION AND REGISTRATION.

A. Drainfield rock distribution media shall meet the requirements in item D and the requirements contained in the recommended standards and guidance for public domain distribution products before local units of government are allowed to permit its use.
B. For nonrock distribution media, manufacturers shall register the distribution media, including gravelless distribution media and subsurface drip dispersal products, with the commissioner before the local unit of government is allowed to permit their use.
C. Manufacturers desiring to sell distribution media shall certify that the media meet the standards established in this part and register the media with the commissioner using the process in part 7083.4080.
D. Distribution media must:
   (1) be constructed or manufactured from materials that are nondecaying and nondeteriorating and do not leach unacceptable chemicals when exposed to sewage and the subsurface soil environment;
   (2) provide void space at least equal to the void space provided within a 12-inch layer of drainfield rock in a drainfield-rock-filled distribution system. The void space must be established by the distribution medium, system design, and installation. The density of the media must be maintained throughout the life of the system. This requirement is allowed to be met either on a lineal foot basis or on an overall system design basis;
   (3) support the distribution pipe and provide suitable effluent distribution and infiltration rate to the absorption area at the soil interface; and
   (4) maintain the integrity of the trench or bed. The material used, by its nature and manufacturer-prescribed installation procedure, must withstand the physical forces of the soil sidewalls, soil backfill, and weight of equipment used in the backfilling.
E. Subsurface drip dispersal products must:
   (1) be warrantied by the manufacturer for use with sewage and for resistance to root intrusion;
   (2) have a means to inhibit the accumulation of slime and bacterial growth within the drip line and plugging of the emitters. Emitter discharge rate must be controlled by the use of either pressure-compensating emitters or a pressure regulator.

7083.4080 PROPRIETARY DISTRIBUTION PRODUCTS; PROCESS AND REQUIREMENTS.

Subpart 1. **Proprietary media**. Manufacturers shall obtain registration of their proprietary media with the commissioner by submitting a complete application in the format prescribed by the commissioner, including:

A. the manufacturer's name, mailing address, street address, and telephone number;
B. the contact individual's name, title, mailing address, street address, and telephone number. The contact individual must be vested with the authority to represent the manufacturer in this capacity;
C. the name, including specific brand and model, of the proprietary distribution product;
D. a description of the function of the distribution medium along with any known limitations on its use;
E. a description of the medium and technical information, including schematics; materials and characteristics; component design specifications; design capacity; volumes and flow assumptions and calculations; components; and dimensioned drawings, photos, application, and use;
F. siting and installation requirements;
G. a detailed description, procedure, and schedule of routine service and system maintenance events;
H. identification of information requested to be protected from disclosure of trade secrets;
I. copies of product brochures and manuals, such as sales, promotional, design, installation, operation, and maintenance materials and homeowner instructions;
J. a quantitative description of the trench-bottom and sidewall absorption area or sizing criteria for drip dispersal systems for each model seeking registration. Manufacturers' quantitative description of the absorption area must be based on the surface area of the product that infiltrates effluent into the soil;
K. all available product testing results, including a listing of state approvals and denials;

L. a statement from a licensed professional engineer that certifies the technology meets the standards established in part 7083.4070;
M. a signed and dated certification by the manufacturer's senior executive or agent, specifically including the following statement: "I certify that I represent (INSERT MANUFACTURING COMPANY HERE) and I am authorized to prepare or direct the preparation of this application for registration. I attest, under penalty of law, that this document and all attachments are true, accurate, and complete.";
N. a signed and dated certification from the licensed professional engineer including the statement: "I certify that I represent (INSERT PROFESSIONAL ENGINEERING FIRM NAME) and that I am authorized to certify the performance for the proprietary distribution product presented in this application. I attest, under penalty of law, that the technology report is true, accurate, and complete."; and
O. a technology review fee if allowed by law.

Subp. 2. **Proprietary media products**. Manufacturers shall submit proprietary media products for registration to the commissioner. Products within a single series or model line sharing distinct similarities in design, materials, and capabilities are allowed to be registered under a single application. Products outside of the series or model line must be registered under separate applications.

Subp. 3. **Commissioner review**. Upon receipt of the application, the commissioner shall:

A. review the application and verify the application for compliance with subpart 1;
B. if the application is not in compliance with subpart 1, return the application for resubmittal with the requested information for full compliance with subpart 1; or
C. if the application is complete and the commissioner determines that the product meets or exceeds all applicable protocols, the commissioner shall place the product on the list of distribution products. The list of registered distribution products will be maintained on the agency Web site.

Subp. 4. **Duration of registration**. Registrations are valid for up to three years, expiring on December 31 of the third year of registration, unless the product is recalled for any reason, found to be defective, or no longer available.

Subp. 5. **Renewal**. To renew a proprietary distribution product registration, a manufacturer shall:

A. submit a request for renewal of product registration at least 30 days before the current registration expires, using the form or in the format prescribed by the commissioner; and
B. provide an affidavit to the commissioner certifying whether the product has changed over the previous three years. If the product has changed, the affidavit must include a full description of the changes and how the changed product fulfills the requirements for initial registration.

Subp. 6. **Commissioner review**. As part of the product registration renewal, the commissioner shall:

A. request field assessment comments from local units of government no later than October 31 for product renewal;
B. discuss with the Technical Advisory Panel of the advisory committee established under part 7083.6000 any field assessment information that affects product registration renewal;
C. notify the manufacturer of any product to be discussed with the Technical Advisory Panel, prior to discussion with the panel, regarding the nature of comments received; and
D. renew, modify, or deny the product registration based on information received during the renewal process.

Subp. 7. **List**. The commissioner shall maintain a list of readily available proprietary distribution products meeting the registration requirements established in this part. The product registration is a condition of approval for use.

Subp. 8. **Manufacturer information**. A manufacturer shall have readily accessible information, specific to a product's registered use in Minnesota, for designers, regulators, system owners, and other interested parties about the product, including but not limited to:
A. a product manual;
B. design instructions;
C. installation instructions;
D. information regarding operation and maintenance;
E. system owner instructions; and
F. a list of representatives and manufacturer-certified service providers, if any.

7083.4100 TRANSITION FROM PREVIOUS REQUIREMENTS FOR DISTRIBUTION PRODUCTS TO NEW REGISTERED LIST.

Except for Type V systems designed under part 7080.2400, the following conditions apply:

A. the distribution products specified in Minnesota Rules 2005, chapter 7080, are allowed to be installed for 24 months after February 4, 2008;
B. after 24 months after February 4, 2008, only those products registered under this chapter are allowed to be installed as directed in registration guidance documents;
C. to be registered, manufacturers of proprietary distribution products shall apply for product registration; and
D. distribution products shall meet all other requirements for registration established in this chapter.

7083.4110 PRODUCT DEVELOPMENT PERMITS.

Subpart 1. **Local government may issue**. A local unit of government is authorized to issue a product development permit (PDP) for any proprietary treatment component or sequence during the development period. A local unit of government is authorized to grant a PDP to a Type I, Type II, or Type III system, as described under parts 7080.2200 to 7080.2300. A local unit of government is also authorized to grant a PDP to a Type IV system, as described under part 7080.2350, if treatment levels of the technologies meet or exceed requirements in the operating permit. The PDP is not an alternative to testing and registration.

Subp. 2. **Application contents**. An application for a PDP must include:

A. proof of an existing conforming system in compliance with all local requirements or a permit for a conforming system. The conforming system must be installed in its entirety before the PDP becomes valid;
B. a description of the product under development, including performance goals and a description of how the system will be used to treat sewage;
C. documentation by the manufacturer that provides for financial assurances to protect the owner, licensed businesses, and local units of government from claims and provides that the manufacturer will cover the correction of any potential public health threats or environmental damage resulting from the use of the product under development. Instruments of financial assurance include: an irrevocable letter of credit in the amount required by the local unit of government issued by an entity authorized to issue letters of credit in Minnesota; cash or a security deposit payable to the local unit of government in the amount required by the local unit of government; or any other financial assurance that satisfies the local unit of government;
D. documentation signed by the owner of the proposed product development site allowing access to the local unit of government and the agency and its employees or agents for inspection of the site;
E. an agreement to obtain all other required permits;
F. a declaration that the applicant meets all state requirements; and
G. other information required by the local unit of government.

Subp. 3.**Additional requirements**.

A. The local unit of government is authorized to stipulate additional requirements for a PDP necessary to ensure the performance of the conforming system, including, but not limited to, providing performance data to the local unit of government.
B. The system owner shall consent in writing to allow the manufacturer access to the system for the duration of the permit.
C. The product tester shall agree in writing to contact utility companies before excavation.
D. The manufacturer and product tester shall agree in writing to hold harmless, indemnify, and defend the agency and local unit of government from any conduct by the manufacturer or product tester that causes harm or injury to the site owner's property and indemnifies the agency and local unit of government from such claims.

Subp. 4. **PDP required for each site**. A PDP is a site-specific permit. Product development at multiple sites requires a PDP for each site.

Subp. 5. **Product developer has control.** During the term of the PDP, product development, testing, and sampling are under the full control of the product developer and all data collected is considered proprietary information.

Subp. 6. **PDP duration**. A PDP is valid for one year unless renewed by the local unit of government.

Subp. 7. **End of PDP period**. The product development period is over when the original PDP or any subsequently renewed permits have expired. At that time, the product developer shall, at the direction of the local unit of government, remove the product under development from the site, restore the real property to its original condition, and reestablish all appropriate plumbing and power connections for the conforming system.

Subp. 8. **Revocation or amendment of PDP**. The local unit of government is authorized to revoke or amend a PDP:

A. if the continued operation or presence of the product under development presents a risk to the public health or the environment, causes adverse effects on the proper function of the conforming system on the site, or leaks or discharges sewage on the surface of the ground;
B. if the product developer fails to comply with any requirement stipulated on the permit by the local unit of government; or
C. upon request of the site owner.

7083.4120 PRODUCT REGISTRATION CONTESTED CASE HEARING.

A person whose application for product registration under part 7083.4040, item A, has been denied in whole or in part may petition the agency to hold a contested case hearing under Minnesota Statutes, chapter 14. To be considered by the agency, the petition must be submitted within 30 days after the person receives written notice of the commissioner's proposed action and must comply with part 7000.1800. The commissioner must grant the petition for a contested case hearing if the commissioner finds that the criteria in part 7000.1900 have been met. Final agency decisions following contested case hearings must be made according to parts 7000.2000 to 7000.2200.

CHAPTER 7083
FROM MINNESOTA POLLUTION CONTROL AGENCY
ADVISORY COMMITTEE

7083.6000 ADVISORY COMMITTEE.

Subpart 1. **Establishment**. An advisory committee on subsurface sewage treatment systems is established.

Subp. 2. **Duties**. The committee shall, subject to the approval of the commissioner, review and advise the agency on:

A. revisions to chapters 7080 to 7083 and legislation relating to SSTS;
B. technical data relating to SSTS;
C. a technical manual on SSTS;
D. educational materials and programs for SSTS;
E. the administration of standards and ordinances pertaining to SSTS at the state and local level;
F. the product registration and renewal process;
G. development of product registration advisory panels; and
H. other SSTS activities considered appropriate by the committee.

Subp. 3. **Membership**. The committee consists of the following voting members of whom:

A. two must be citizens of Minnesota, representative of the public;
B. one must be from the Minnesota Extension Service of the University of Minnesota;
C. six must be county administrators, such as zoning administrators, sanitarians, and environmental health specialists, each of whom administers an SSTS permitting or inspection program. The six administrators must be geographically distributed throughout the state;
D. one must be a municipal inspector who administers an SSTS permitting and inspection program;
E. one must be a township inspector who administers an SSTS permitting and inspection program;
F. seven must be SSTS designated certified individuals as defined in part 7083.0020, subpart 6, six of whom have geographic distribution throughout the state and the seventh representing the state at large, with each certification category represented on the committee;
G. two must be elected public officials with members having geographic distribution throughout the state; and
H. one must be a water well contractor.

Subp. 4. **Nonvoting members**. The following agencies and associations shall each have at least one nonvoting member to assist the advisory committee and to be advised, in turn, on matters relating to chapters 7080 to 7083: the agency, the Minnesota Department of Natural Resources, the Minnesota Department of Health, the Minnesota Department of Labor and Industry, the United States Department of Agriculture Natural Resource Conservation Service, the Minnesota Association of Professional Soil Scientists, the Metropolitan Council, the Association of Minnesota Counties, the Minnesota Association of Townships, the League of Minnesota Cities, the Minnesota Society of Professional Engineers, the Association of Small Cities, the Minnesota Association of Realtors, the Minnesota Environmental Health Association, SSTS supplier, the Minnesota On-Site Wastewater Association, the American Society of Home Inspectors, the Minnesota Small Business Association, Hospitality Minnesota, and Minnesota Waters.

Subp. 5. **Appointment; terms**. All voting members must be appointed by the commissioner from recommendations by the named entities or organizations. All members serve four-year terms, with terms staggered to maintain continuity. Voting members, except for individuals serving under subpart 3, item B, shall serve a maximum of two consecutive terms. If the voting member's attendance falls below 50 percent during the term, the appointed member loses membership status for the remaining term. The commissioner shall then appoint a replacement member for the remainder of the term from the recommendation offered by the affected entity or organization. In the case of a vacancy, the commissioner shall appoint a replacement member for the unexpired balance of the term. Administrators, inspectors, elected officials, and contractors must be bona fide residents of this state for at least three years before being appointed and must have at least three years' experience in their respective businesses or offices.

Subp. 6. **Procedural rules**. Robert's Rules of Order Newly Revised, Henry M. Robert (2000), must prevail at all meetings of the advisory committee. Robert's Rules of Order is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change.

Subp. 7. **Quorum**. A quorum consists of nine voting members
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