Pollution Control Agency

Adopted Permanent Rules Relating to Individual ~~Septic Tank~~ Sewage Treatment Systems Program

Rules as Adopted

7080.0010 PURPOSE AND INTENT.

The improper location, design, installation, use, and maintenance of individual sewage treatment systems adversely affects the public health, safety, and general welfare by discharge of inadequately treated sewage to the ground surface, surface waters, and ground waters. In accordance with the authority granted in Minnesota Statutes, chapters 103F, 103G, 115, and 116, the Minnesota Pollution Control Agency, hereinafter referred to as the agency, does hereby provide the minimum standards and criteria for individual sewage treatment systems, and thus protects the surface and ground waters of the state, and promotes the public health, safety, and general welfare.

This chapter does not address systems treating industrial or animal waste or wastewater that may contain hazardous materials. Industrial wastewater treatment systems receiving nonhazardous wastes ~~or individual sewage treatment systems serving more than 20 persons~~ are regulated by the United States Environmental Protection Agency as Class V injection wells under Code of Federal Regulations, title 40, part 144. These federal regulations along with this chapter also cover individual sewage treatment systems serving more than 20 persons.

It is the intent of this chapter to provide clear, reliable, and cost-effective technical standards and criteria; to provide a framework for permitting and inspection programs to be administered at the local level; and to describe the responsibilities, licensing, and enforcement requirements for individual sewage treatment system professionals. The technical portions of this chapter are based on current research and

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practical field applications to achieve adequate sewage treatment. In conjunction with these minimum standards, the agency encourages the use of advanced treatment methods to further reduce the discharge of contaminants.

In addition to establishing minimum technical standards, this chapter establishes minimum administrative requirements for local units of government that adopt local ordinances to regulate individual sewage treatment systems, establishes requirements for those areas without such ordinances, and establishes programs for licensing businesses and training and registering ISTS professionals.

7080.0020 DEFINITIONS.

[For text of subpart 1, see M.R.]

Subp. 1a. **Absorption area.** "Absorption area" means the area below a mound that is designed to absorb sewage tank effluent. This area is determined by multiplying the rockbed length by the required absorption width. The required absorption width is determined by using part 7080.0170, subpart 5, item B, subitems (4) and (5).

[For text of subp 1b, see M.R.]

Subp. 2. **Aerobic tank.** "Aerobic tank" means any sewage tank which uses the principle of oxidation to decompose sewage by introducing air into the sewage.

Subp. 3. **Agency.** "Agency" means the Minnesota Pollution Control Agency.

Subp. 3a. **Alternative standards.** "Alternative standards" means individual sewage treatment system standards that differ from technical standards and criteria, are not more restrictive, and adequately protect public health and the environment.

Subp. 4. **Alternative system.** "Alternative system" means an individual sewage treatment system employing methods and devices presented in part 7080.0910, subpart 3.

Subp. 4a. **Applicable requirements.** "Applicable requirements" means local individual sewage treatment system ordinances that comply with this chapter or, in areas without an

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ordinance to regulate individual sewage treatment systems, the requirements of this chapter.

Subp. 4b. **Apprentice.** "Apprentice" means an individual who has completed training and passed the examination requirements under parts 7080.0805 and 7080.0810 for the specialty area applicable to the work to be performed and has been designated an apprentice by the commissioner.

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

Subp. 4d. **At-grade system.** "At-grade system" means a pressurized soil treatment system where sewage tank effluent is dosed to a drainfield rock bed which is constructed on original soil at the ground surface and covered by loamy soil materials.

[For text of subp 5, see M.R.]

Subp. 6. **Bedrock.** "Bedrock" means that layer of parent material which is consolidated and unweathered. Bedrock also includes layers of which greater than 50 percent by volume consists of unweathered in-place consolidated bedrock fragments.

Subp. 7. **Bedroom.** "Bedroom" means any room or unfinished area within a dwelling that might reasonably be used as a sleeping room.

Subp. 7a. **Building.** "Building" means all potentially occupied structures and any structure whose foundation could be damaged and structural integrity jeopardized by the seepage of sewage or sewage tank effluent.

[For text of subps 8 and 9, see M.R.]

Subp. 9a. **Business.** "Business" means an individual or organization that conducts site evaluations or designs, installs, maintains, repairs, pumps, or inspects an individual sewage treatment system.

Subp. 10. [See repealer.]

Subp. 10a. **Certificate of compliance.** "Certificate of compliance" means a document written after a compliance

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inspection, certifying that a system is in compliance as specified under part 7080.0060, and signed by a qualified employee or licensee.

Subp. 10b. **Certified statement.** "Certified statement" means a statement signed ~~statement~~ by a licensee or qualified employee certifying that work was completed in accordance with applicable requirements.

Subp. 11. **Cesspool.** "Cesspool" means an underground pit or seepage tank into which raw sewage is discharged and from which the liquid seeps into the surrounding soil, bedrock, or other soil materials.

Subp. 11a. **Chambered system.** "Chambered system" means a soil treatment system where sewage tank effluent is discharged to a buried structure creating an enclosed open space with the original soil surface to act as a surface for the infiltration of sewage tank effluent.

Subp. 11b. **Clean sand.** "Clean sand" means a soil texture composed by weight of at least 25 percent very coarse, coarse, and medium sand varying in size from 2.00 millimeters (sieve size 10) to 0.25 millimeters (sieve size 60), less than 40 percent fine or very fine sand ranging in size between 0.25 millimeters and 0.05 millimeters (sieve size 270), and no more than ten percent smaller than 0.05 millimeters and no larger than 2.00 millimeters. Clean sand also means a soil texture which meets American Society for Testing and Materials (ASTM) specification C-33 (fine aggregate for concrete) or Minnesota Department of Transportation (MnDOT) specification 3126 (fine aggregate for Portland cement concrete). The ASTM specification is found in the 1994 Annual Book of ASTM Standards, volume 4.02, which is incorporated by reference. This document is provided by the American Society for Testing and Materials located at 1916 Race Street, Philadelphia, PA 19103-1187. The MnDOT specification is found in the MnDOT Standard Specifications for Construction, 1988 Edition, and the May 2, 1994, Supplemental Specifications, which are incorporated by reference. These documents are provided by the Minnesota Department of

Transportation located at 395 John Ireland Boulevard, St. Paul, Minnesota 55155. All references can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155, and are not subject to frequent change.

Subp. 11c. **Commissioner.** "Commissioner" means the commissioner of the Minnesota Pollution Control Agency.

Subp. 11d. **Compliance inspection.** "Compliance inspection" means ~~conducting site investigations, gathering and reviewing information, or conducting tests~~ any evaluation, investigation, inspection, or other such process to make conclusions, recommendations, or statements regarding an individual sewage treatment system to reasonably assure an individual sewage treatment system is in compliance as specified under part 7080.0060. Compliance inspections must be conducted by a qualified employee or under a license independent of the owner and the installer.

~~Subp. 11e. Conforming systems. "Conforming systems" means individual sewage treatment systems that were installed according to all applicable local standards adopted and in effect at the time of installation, but does not include systems which are failing as defined in subpart 16a.~~

Subp. 12. **DNR.** "DNR" means the Minnesota Department of Natural Resources.

Subp. 12a. **Designated registered professional.** "Designated registered professional" means an individual who is included on the agency's ISTS professional register with specialty area endorsements that correspond to the license, who has been designated by the individual's employer as its representative for work to be done on an individual sewage treatment system, and who is subject to the obligations of a license. An apprentice may be a designated registered professional if the individual has specialty area endorsements that correspond to the license, has fulfilled the contractual requirement under part 7080.0815, subpart 1, item B or C, and has a restricted license due to the need for experience.

Subp. 12b. **Disclosure.** "Disclosure" means any conclusions

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or statements regarding an ISTS made by the owner of a property with or served by an ISTS to fulfill the requirements of Minnesota Statutes, section 115.55, subdivision 6. ISTS information provided by someone other than the property owner must meet the requirements under part 7080.0300, subpart 6.

Subp. ~~12b.~~ 12c. **Distribution box.** "Distribution box" means a device designed to concurrently and equally distribute sewage tank effluent by gravity to a soil treatment system.

Subp. ~~12c.~~ 12d. **Distribution device.** "Distribution device" means a device used to receive and transfer effluent from a supply pipe to distribution pipes or downslope supply pipes, or both. These devices are commonly known as drop boxes, valve boxes, distribution boxes, or manifolds.

Subp. ~~12d.~~ 12e. **Distribution medium.** "Distribution medium" means the material used to distribute the sewage tank effluent within a soil treatment system. This medium includes drainfield rock, gravelless drainfield pipe in a geotextile wrap, or a chambered system.

Subp. 13. **Distribution pipes.** "Distribution pipes" means perforated pipes that are used to distribute sewage tank effluent into a distribution medium.

[For text of subps 14 and 15, see M.R.]

Subp. 15a. **Drainfield rock.** "Drainfield rock" means igneous rock, or similar insoluble, durable, and decay-resistant material between three-fourths inch and 2-1/2 inches in size with no more than five percent by weight passing a three-fourths inch sieve and no more than one percent by weight passing a number 200 sieve. Materials greater than 2-1/2 inches in size shall not exceed five percent by weight.

Subp. 15b. **Drop box.** "Drop box" means a distribution device used for the serial gravity application of sewage tank effluent to a soil treatment system.

Subp. 16. **Dwelling.** "Dwelling" means any building or place used or intended to be used by human occupants as a single-family or two-family residence.

Subp. 16a. **Failing system.** "Failing system" means any

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system that discharges ~~untreated-or-partially-treated~~ sewage to ~~the-ground-surface,-surface-water,-or-groundwater,~~ a seepage pit, cesspool, drywell, or leaching pit~~,~~ and any system with less than three feet of soil or sand between the ~~system~~ bottom of the distribution medium and the saturated soil level or bedrock~~,-and-any-system-causing-sewage-backup-into-a-dwelling-or other-establishment~~. In addition, any system posing an imminent threat to public health or safety as defined in subpart 19a shall be considered failing. Upgrade requirements for these systems are found under parts 7080.0060, subparts 3 and 4, and 7080.0315 or 7080.0350.

Subp. 17a. **Gas deflecting baffle.** "Gas deflecting baffle" means an obstructing device on the septic tank outlet that limits the escape of solids that are carried by septic tank gases.

Subp. 17b. **Gravelless drainfield pipe.** "Gravelless drainfield pipe" means a distribution medium consisting of a corrugated distribution pipe encased in a geotextile wrap installed in a trench.

Subp. 18. **Greywater.** "Greywater" means ~~liquid-waste-from a-dwelling-or-other-establishment-produced-by-bathing,-laundry, culinary-operations,-and-from-floor-drains-associated-with-these sources,-and-specifically-excluding~~ sewage that does not contain toilet ~~waste~~ wastes.

Subp. 18a. **Hazardous waste.** "Hazardous waste" means any substance which, when discarded, meets the definition of hazardous waste in chapter 7045.

Subp. 19. **Holding tank.** "Holding tank" means a tank for storage of sewage until it can be transported to a point of approved treatment and disposal.

Subp. 19a. **Imminent threat to public health or safety.** "Imminent threat to public health or safety" means situations with the potential to immediately and adversely impact or threaten public health or safety. At a minimum, ground surface or surface water discharges ~~or-adversely-impacted-wells~~ and any system causing sewage backup into a dwelling or other

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establishment shall constitute an imminent threat.

Subp. 19b. **ISTS.** "ISTS" means an individual sewage treatment system as defined under subpart 21.

Subp. 19c. **ISTS professional.** "ISTS professional" means a person who conducts site evaluations or designs, installs, alters, repairs, maintains, pumps, or inspects ~~systems as set forth in this chapter~~ all or part of an individual sewage treatment system and is required to comply with applicable requirements.

Subp. 20. [See repealer.]

Subp. 21. **Individual sewage treatment system.** "Individual sewage treatment system" means a sewage treatment system, or part thereof, serving a dwelling, or other establishment, or group thereof, and using sewage tanks or advanced treatment followed by soil treatment and disposal. Individual sewage treatment system includes holding tanks and privies.

Subp. 21a. **Invert.** "Invert" means the lowest point of a channel inside a pipe.

Subp. 21b. **Landscape position.** "Landscape position" means the identification of the shape of the land or geomorphic setting of the soil. Terms used to describe landscape position include ridge, sideslope, footslope, closed depression or pothole, drainage way or swale, terrace, or floodplain.

Subp. 21c. **Licensee.** "Licensee" means the person to whom a license under part 7080.0705 is issued. The designated registered professional is subject to the same obligations as the licensee. The license must be applicable to the work being performed.

Subp. 22a. [See repealer.]

Subp. 22b. **Liquid capacity.** "Liquid capacity" means the liquid volume of a sewage tank below the invert of the outlet pipe.

Subp. 22c. **Local ordinance.** "Local ordinance" means any ordinance that complies with this chapter enacted by the governing body of a local unit of government to regulate individual sewage treatment systems and/or any ordinance to

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regulate the issuance of permits or variances for the addition of a bedroom or bathroom on property served by an individual sewage treatment system.

Subp. 22d. **Local unit of government.** "Local unit of government" means a township, statutory or home rule charter city, or county.

Subp. 22e. **Lot.** "Lot" means a lot in a plat recorded in the office of the county recorder or registrar of titles or a parcel of land created and conveyed, using a specific legal description, for a building site.

Subp. 22f. **More restrictive standards.** "More restrictive standards" means the modification of ~~this chapter~~ the technical standards and criteria with the intention of providing an additional measure of public health or environmental protection, additional margins of safety, or greater system longevity. More restrictive standards may place additional requirements on standard systems but may not eliminate the use of a standard system.

Subp. 23. **Mottling.** "Mottling," ~~,~~ as applied to soils, means a zone of chemical and reduction activity, appearing as splotchy patches of red, brown, or gray in the soil. In subsoils with a color value of four or more, the term mottling also includes soil having matrix colors with a chroma of two or less as described in "Keys to Soil Taxonomy" 5th Edition, 1992 Soil Management Support Services, technical monograph No. 19, which is incorporated by reference. This document is provided by the Agency for International Development, United States Department of Agriculture Soil Conservation Service, Soil Management Support Services. The document was printed by Pocahontas Press, Inc., P.O. Drawer F, Blacksburg, Virginia 24063-1020. It can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155, and is not subject to frequent change.

Subp. 24. **Mound system.** "Mound system" means a system where the soil treatment area is built above the natural elevation of the soil to overcome limits imposed by proximity to

saturated soil or bedrock, or by rapidly or slowly permeable soils.

Subp. 24a. [See repealer.]

Subp. 24b. **New construction.** "New construction" means installing or constructing a new individual sewage treatment system in its entirety; ~~or a holding tank, curtain drain, privy,~~ artificial drainage or collector system; or altering, extending, or adding capacity to an existing individual sewage treatment system.

~~Subp. 24c. Nonconforming system. "Nonconforming system" means a failing system as defined in subpart 16a or a system not constructed in compliance with all applicable local standards adopted and in effect at the time of installation.~~

Subp. 24d. **Notice of noncompliance.** "Notice of noncompliance" means a document written and signed by a qualified employee or licensee after a compliance inspection which gives notice that an individual sewage treatment system is not in compliance as specified under part 7080.0060.

Subp. 24e. **Ordinary high water level.** "Ordinary high water level" ~~means the boundary of public waters and wetlands, that is an elevation delineating the highest water level maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of a channel. For reservoirs and flowages the ordinary high water level must be the operating elevation of the normal summer pool~~ has the meaning given in Minnesota Statutes, section 103G.005, subdivision 14.

Subp. 24f. **Original soil.** "Original soil" means naturally occurring inorganic soil that has not been moved, smeared, compacted, nor manipulated with construction equipment.

Subp. 25. **Other establishment.** "Other establishment" means any public or private structure other than a dwelling which generates sewage.

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Subp. 25a. **Owner.** "Owner" means any person having possession of, control over, or title to property with an individual sewage treatment system.

Subp. 26. **Percolation rate.** "Percolation rate" means the timed rate of drop of a water surface in a test hole as specified in part 7080.0110, subpart 4.

Subp. 26a. **Permit.** "Permit" means a building, construction, sanitary, planning, zoning, or other such permit issued for new construction, replacement, repair, alteration, or extension of an individual sewage treatment system, including ~~holding tanks, curtain drains, privies,~~ artificial drainage and collector systems. Permit also means a permit issued for the addition of a bedroom or bathroom on property served by an individual sewage treatment system.

Subp. 26b. **Permittee.** "Permittee" means any person who is named on a permit issued pursuant to local ordinance.

Subp. 27. **Permitting authority.** "Permitting authority" means any unit of government, state agency, or any authorized representative who administers or enforces ordinances or laws or rules through permits.

Subp. 28. **Plastic limit.** "Plastic limit" means a soil moisture content below which the soil may be manipulated for purposes of installing a soil treatment system, and above which manipulation will cause compaction and puddling. The soil moisture content at the plastic limit can be measured by American Society for Testing and Materials (ASTM) test number D4318-84.

Subp. 28a. **Privy.** "Privy" means an aboveground structure with an underground cavity meeting the requirements of part 7080.0910, subpart 3, item F, which is used for the storage or treatment and disposal of toilet wastes, specifically excluding water for flushing and greywater.

Subp. 28b. [See repealer.]

Subp. ~~28a.~~ 28c. **Public waters.** "Public waters" means any public waters or wetlands as defined in Minnesota Statutes, section 103G.005, subdivisions 15 and 19, or identified as

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public waters or wetlands by the inventory prepared pursuant to Minnesota Statutes, section 103G.201.

Subp. ~~28b.~~ 28d. **Qualified employee.** "Qualified employee" means an employee of state or local government who conducts site evaluations or designs; installs, maintains, pumps, or inspects individual sewage treatment systems as part of employment duties and is registered on the ISTS professional register with specialty area endorsements applicable to the work being conducted. A qualified employee may be an apprentice if the individual has specialty area endorsements applicable to the work to be completed, has fulfilled the contractual requirement under part 7080.0815, subpart 1, item B or C, and has been issued performance restrictions.

Subp. ~~28c.~~ 28e. **Replacement.** "Replacement" means the replacement of an existing sewage tank, holding tank, dosing chamber, ~~curtain drain~~ artificial drainage, privy, collector system, or soil treatment system.

Subp. ~~28e.~~ 28f. **Restaurants.** "Restaurants" means establishments that prepare and serve meals and at which multiple use dishes and utensils are washed.

Subp. 29. [See repealer.]

Subp. 29a. **Saturated soil.** "Saturated soil" means the highest elevation in the soil where periodically depleted oxygen levels occur because of soil voids being filled with water. Saturated soil is evidenced by presence of soil mottling or other information.

Subp. 29b. **Seepage bed.** "Seepage bed" means an excavated area larger than 36 inches in width which contains drainfield rock and has more than one distribution pipe.

Subp. 30. **Seepage pit, or leaching pit, or dry well.** "Seepage pit, or leaching pit, or dry well" means an underground pit into which a sewage tank discharges effluent and from which the liquid seeps into the surrounding soil at a loading rate greater than 1.20 gallons per day per square foot or with a hydraulic head greater than 30 inches.

Subp. 31. **Septage.** "Septage" means solids and liquids

removed during periodic maintenance of an individual sewage treatment system, or solids and liquids which are removed from toilet waste treatment devices or a holding tank.

Subp. 32. **Setback.** "Setback" means a separation distance measured horizontally.

Subp. 33. **Sewage.** "Sewage" means any water-carried domestic waste, exclusive of footing and roof drainage~~,~~ and ~~-~~ chemically treated hot tub or pool water, from any industrial, agricultural, or commercial establishment, or any dwelling or any other structure. Domestic waste includes liquid waste produced by toilets, bathing, laundry, culinary operations, and the floor drains associated with these sources. Animal waste and commercial or industrial waste are not considered domestic waste.

Subp. 34. [See repealer.]

Subp. 35. **Sewage tank.** "Sewage tank" means a tank meeting the criteria in part 7080.0130 and used in the treatment of sewage and includes septic tanks and aerobic tanks.

[For text of subps 36 to 40, see M.R.]

Subp. 41. [See repealer.]

Subp. 42. **Soil textural classification.** "Soil textural classification" means the soil particle sizes or textural classification as specified in the Soil Survey Manual, Handbook No. 18, United States Department of Agriculture, 1993, incorporated by reference in part 7080.0030.

Subp. 43. **Soil treatment area.** "Soil treatment area" means the area of trench, at-grade rock bed, or seepage bed bottom which is in direct contact with the distribution medium of the soil treatment system.

Subp. 44. **Soil treatment system.** "Soil treatment system" means a system where sewage tank effluent is treated and disposed of into the soil by percolation and filtration, and includes trenches, seepage beds, drainfields, at-grade systems, and mound systems.

Subp. 45. **Standard system.** "Standard system" means an individual sewage treatment system specified in parts 7080.0125

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to 7080.0170.

Subp. 45a. **SDS and NPDES permits.** "SDS and NPDES permits" means State Disposal System and National Pollutant Discharge Elimination System permits issued by the agency to regulate individual sewage treatment systems.

~~Subp. 45b. Standard system. "Standard system" means an individual sewage treatment system built in compliance with parts 7080.0600 to 7080.0910.~~

Subp. ~~45c.~~ 45b. **Supply pipe.** "Supply pipe" means any nonperforated pipe whose purpose is the transport of sewage tank effluent. Supply pipes must meet or exceed the requirements for building sewers in part 7080.0120.

[For text of subp 46, see M.R.]

Subp. 46a. **Technical standards and criteria.** "Technical standards and criteria" means parts 7080.0020, 7080.0060 to 7080.0176, and 7080.0910.

Subp. 47. **Ten-year flood.** "Ten-year flood" means a flood which can be expected to occur, on an average, of once in ten years; or the elevation to which flood waters have a ten percent chance of rising in any given year.

Subp. 48. **Toilet waste.** "Toilet waste" means waste commonly disposed of in toilets including fecal matter, urine, toilet paper, and any water used for flushing and specifically excluding sanitary napkins, tampons, and disposable diapers. Alternative or experimental systems may allow the disposal of sanitary napkins, tampons, and disposable diapers if the technology specifically addresses the treatment and disposal of these types of solid waste.

Subp. 48a. **Toilet waste treatment devices.** "Toilet waste treatment devices" means privies and other devices including incinerating, composting, biological, chemical, recirculating, or holding toilets.

Subp. 48b. **Trench.** "Trench" means an area excavated from 18 to 36 inches in width which contains drainfield rock or other distribution medium.

Subp. 49. **Valve box.** "Valve box" means a watertight

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structure designed for alternate distribution of effluent to a soil treatment system.

Subp 49a. **Voluntary certification program.** "Voluntary certification program" means the program administered by the agency that provided certification of education and experience to individual sewage treatment systems professionals who volunteered to participate in the program. This program ends on the effective date of this chapter.

Subp. 50. [See repealer.]

Subp. 52. **Watertight.** "Watertight" means a device constructed so that no water can get into or out of the device except through designed inlets and outlets.

[For text of subp 53, see M.R.]

7080.0025 ADVISORY COMMITTEE.

Subpart 1. **Creation.** There is created an advisory committee on individual sewage treatment systems (ISTS).

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

A. revisions of standards and legislation relating to ISTS;

B. technical data relating to ISTS;

C. a technical manual on ISTS;

D. educational materials and programs for ISTS;

E. the administration of standards and ordinances pertaining to ISTS at the state and local level; and

F. other ISTS activities considered appropriate by the committee.

Subp. 3. **Membership.** The committee shall consist of the following voting members. Of the voting members:

A. one shall be a citizen of Minnesota, representative of the public;

B. one shall be from the Minnesota Extension Service of the University of Minnesota;

C. six shall be county administrators, such as zoning administrators ~~and~~, sanitarians, and environmental health

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specialists, one from each of the five agency regions and one from the seven-county metropolitan area;

D. one shall be a municipal building inspector;

E. six shall be sewage treatment contractors, one from each of the five agency regions and one from the seven-county metropolitan area;

F. one shall be a water well contractor; and

G. one shall be a township official.

Subp. 4. **Ex officio members.** The following agencies and associations shall each have one nonvoting ex officio member to assist the advisory committee and to be advised, in turn, on matters relating to ISTS: the agency, Department of Natural Resources, Minnesota Department of Health, United States Department of Agriculture Soil Conservation Service, Metropolitan Council, Association of Minnesota Counties, Minnesota Association of Townships, League of Minnesota Cities, Minnesota Society of Engineers, Association of Small Cities, Minnesota Association of Campground Operators, Inc., Minnesota Association of Realtors, Minnesota County Recorders' Association, and Minnesota Environmental Health Association, Minnesota On-site Sewage Treatment Contractor's Association, and the American Society of Home Inspectors.

Subp. 5. **Appointment; terms.** All members shall be appointed by the agency board from recommendations by the affected groups. All members shall serve for four years, with terms staggered so as to maintain continuity. In the case of a vacancy, an appointment shall be made for the unexpired balance of the term. The administrators, inspectors, and contractors shall have been bona fide residents of this state for at least three years before appointment, and shall have had at least three years' experience in their respective businesses.

Subp. 6. **Robert's rules.** Robert's Rules of Order shall prevail at all meetings of the advisory committee.

7080.0030 ADMINISTRATION BY STATE AGENCIES; SDS AND NPDES PERMIT REQUIREMENTS.

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Subpart 1. **SDS and NPDES permits required.** The agency issues State Disposal System (SDS) and National Pollutant Discharge Elimination System (NPDES) permits. Individual sewage treatment systems are required to have an NPDES or SDS permit, or both, as follows:

A. When a single individual sewage treatment system, or group of individual sewage treatment systems, is located on adjacent properties and under single ownership, the owner or owners shall make application for and obtain a state disposal system permit from the agency in accordance with subpart 2 and chapter 7001 if the individual sewage treatment system or group of systems is designed to treat an average design flow of greater than 10,000 gallons per day.

For dwellings such as rental apartments, townhouses, resort units, rental cabins, and condominiums, the sum of the flows from all existing and proposed sources under single management or ownership will be used to determine the need for a state disposal system permit. Individual sewage treatment systems serving establishments or facilities licensed or otherwise regulated by the state of Minnesota shall conform to the requirements of this chapter.

B. All new or existing systems which discharge to surface waters or the ground surface must obtain either an NPDES or an SDS permit from the agency and shall comply with all NPDES or SDS requirements.

Subp. 2. **Application for SDS permit.** For an individual sewage treatment system that is required to have an SDS permit under subpart 1, the owner must submit to the agency a complete set of plans and specifications with the completed SDS permit application which includes the information under items A to I in such detail as appropriate for the complexity of the system:

A. justification of the need for a large system;

B. a site evaluation which includes detailed soil descriptions in accordance with part 7080.0110 and with any additional methods as specified in the Soil Survey Manual, Agricultural Handbook No. 18 (October 1993), which is

incorporated by reference. The manual is issued by the United States Department of Agriculture and is available through the Superintendent of Documents, United States Government Printing Office, Washington, D.C. It can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155, and is not subject to frequent change;

C. a description of methods to meet or exceed permit standards for down gradient groundwater quality;

D. an evaluation of groundwater conditions, groundwater impacts, and development of a groundwater monitoring and mitigation plan;

E. a plan to identify and eliminate discharges of nondomestic wastewater;

F. meter readings of flow;

G. an operation and maintenance plan;

H. a septage disposal plan; and

I. for joint systems, a written statement signed by all owners of dwellings or other establishments planned to be connected to collection systems that they agree to be part of the system, to participate in the construction projects, and to participate in and finance future operation, maintenance, and replacement of the system.

Subp. 3. **Variance procedures.** In certain cases, the owner or other person responsible for an ISTS which requires a variance by the agency may submit a request for a variance from the standards in this chapter. Before granting a requested variance, the agency must find that by reason of exceptional circumstances the strict enforcement of any provision of this chapter would cause undue hardship; that disposal of the sewage is necessary for the public health, safety, or welfare; or that strict conformity with the standards would be unreasonable, impractical, not feasible under the circumstances, or not reasonable due to proximity of systems. The agency may permit a variance under part 7000.7000 upon conditions as it may prescribe for prevention, control, or abatement of pollution in harmony with the general purpose of this chapter and the intent

of applicable state and federal laws. Variances to separation distances from wells and water supply pipes can only be issued by the Minnesota Department of Health.

Subp. 4. **Administration by all state agencies.** Individual sewage treatment systems serving establishments or facilities licensed or otherwise regulated by Minnesota shall conform to the requirements of this chapter. Any individual sewage treatment systems requiring approval by the state shall also comply with ~~all~~ applicable local codes and ordinances. Plans and specifications must receive the appropriate state and local approval before construction is initiated.

MINIMUM TECHNICAL STANDARDS AND CRITERIA FOR INDIVIDUAL SEWAGE TREATMENT SYSTEMS

7080.0060 COMPLIANCE CRITERIA.

Subpart 1. **Treatment required.** Each individual sewage treatment system shall be designed to receive and treat all sewage from the dwelling or other establishment served.

Subp. 2. **Hand carried greywater.** Hand carried greywater shall not be discharged directly to surface waters, drainageways, or in a manner harmful to the environment or to public health.

Subp. 3. **Compliance.** Individual sewage treatment systems shall be considered in compliance if:

A. an existing individual sewage treatment system is not a failing system as defined in part 7080.0020, subpart 16a; or

B. new construction or replacement meets the technical standards and criteria defined in part 7080.0020, subpart 46a.

Subp. 4. **Required upgrade.** Systems not in compliance shall be upgraded, replaced, repaired in compliance with this part, or discontinued. If a compliance inspection indicates that a system presents an imminent threat to public health or safety as defined in part 7080.0020, subpart 19a, the owner must upgrade, replace, or discontinue use of the system within the

time period established by the local unit of government in areas with local ordinances and by the agency in areas without local ordinances. This time period shall not be longer than ten months after the owner receives a notice of noncompliance.

7080.0065 PROHIBITIONS.

A. Sewage, sewage tank effluent, or seepage from a soil treatment system shall not be discharged into any well or boring as defined in chapter 4725 or any other excavation in the ground not in compliance with this chapter.

B. Footing or roof drainage and chemically treated hot tub and pool water shall not enter any part of a system. Products containing hazardous ~~materials~~ waste and hazardous substances 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 solvents, pesticides, flammables, photo finishing chemicals, and dry cleaning chemicals must not be discharged to the system.

C. Unless specifically permitted by the agency, sewage, sewage tank effluent, or seepage from a soil treatment system shall not be discharged to the ground surface or to surface water.

7080.0110 SITE EVALUATION.

Subpart 1. [See repealer.]

Subp. 1a. **Necessity of evaluation.** A preliminary and field evaluation shall be conducted for all proposed sites for individual sewage treatment systems.

Subp. 2. [See repealer.]

Subp. 2a. **Preliminary evaluation.** A preliminary evaluation shall consist of:

A. flow determination for the dwelling or other establishment;

B. the investigation of the proposed or existing location of:

(1) water supply wells within 100 feet of the

proposed individual sewage treatment system;

(2) existing and proposed buildings on the lot;

(3) existing and proposed buried water pipes within 50 feet of the proposed system;

C. easements on the lot;

D. ordinary high water level of public waters;

E. ten-year floodplain designation and flooding elevation from published data as available or from data which is acceptable to and approved by the permitting authority or the DNR;

F. property lines;

G. all required setbacks from the system;

H. the soil map unit, applicable soil characteristics, and soil suitability as determined by the soil survey report, if available;

I. legal description and lot dimensions; and

J. names of property owners.

Subp. 3. [See repealer.]

Subp. 4. **Field evaluation.** A field evaluation consists of:

A. identifying lot lines, lot improvements, required setbacks, and easements;

B. a description of the following surface features:

(1) percent and direction of the slope at the proposed system location;

(2) vegetation type;

(3) any evidence of disturbed or compacted area or flooding or run-on potential; and

(4) landscape position;

C. soil observations. The number of soil observations required is ~~the smallest number necessary to adequately characterize the site~~ based on the professional judgment of the individual conducting the site evaluation or the permitting authority with a minimum of one observation per site. Soil observations shall be performed in an exposed pit, or by hand augering, or probing. Underground utilities must be located before soil observations are undertaken. Required

safety precautions must be taken before entering soil pits. Flite augers which are noncontinuous or disturb extracted soil samples are not allowable for soil observation. Soil observations shall be conducted prior to any required percolation tests to determine whether the soils are suitable to warrant percolation tests and, if suitable, at what depths percolation tests shall be conducted. The depth of the soil boring shall be to the seasonally saturated layer, bedrock, or three feet below the proposed depth of the system, whichever is less;

D. soil description. A soil description shall be written for each soil observation at the proposed site. Soils should only be evaluated under adequate light conditions with the soil in a moist state and include the following:

(1) the depth of each soil horizon measured from the ground surface. Soil horizons are differentiated by changes in soil texture, soil color, mottling, bedrock, or any other characteristic which may affect water percolation or treatment of effluent;

(2) the soil matrix and mottled color described per horizon by the Munsell Soil Color Charts, 1992 Revised Edition, which is incorporated by reference. This document is available from Macbeth Division, Kollmorgen Instruments Corporation, Munsell Color, P.O. Box 230, Newburgh, New York 12551-0230. It can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155 and is not subject to frequent change.

(3) the soil texture described using the United States Department of Agriculture (USDA) soil classification system as modified below:

Minnesota		USDA
Clay	=	Clay, sand clay, silty clay
Clay loam	=	Clay loam, sandy clay loam, silty clay loam
Loam	=	Loam
Sandy loam	=	Sandy loam
Silt loam	=	Silt loam, silt
Loamy sand	=	Loamy sand
Coarse sand	=	Coarse sand
(Medium) sand	=	(Medium) sand

Fine sand = Fine and very fine sand

(4) bedrock determined according to part 7080.0020, subpart 6;

(5) depth of standing water in the hole measured from the soil surface, if observed;

(6) any other soil characteristic to be described, which must be classified in accordance with chapter 3 of the Soil Survey Manual, Agricultural Handbook No. 18, which is incorporated by reference in part 7080.0030.

E. percolation test procedures. Where percolation tests are required, they shall be made as follows:

(1) Each test hole shall be six to eight inches in diameter, have vertical sides, be located in the soil treatment or absorption area and be bored or dug to the depth of the bottom of the proposed soil treatment system.

(2) Soil texture descriptions shall be recorded noting depths from the ground surface where texture changes occur.

(3) The bottom and sides of the hole shall be carefully scratched to remove any smearing and to provide a natural soil surface into which water may penetrate.

(4) All loose material shall be removed from the bottom of the test hole and two inches of one-fourth to three-fourths inch gravel or clean sand shall be added to protect the bottom from scouring.

(5) The hole shall be carefully filled with clear water to a minimum depth of 12 inches over the soil at the bottom of the test hole and maintained for no less than four hours in order for saturation to occur.

The soil shall then be allowed to swell for at least 16, but no more than 30 hours. In sandy soils, the saturation and swelling procedure shall not be required and the test may proceed if one filling of the hole has seeped away in less than ten minutes.

(6) Percolation rate measurement. In sandy soils, adjust the water depth to eight inches over the soil at

the bottom of the test hole. From a fixed reference point, the drop in water level shall be measured in inches to the nearest 1/16 inch at approximately ten minute intervals. A measurement can also be made by determining the time it takes for the water level to drop one inch from an eight-inch reference point. If eight inches of water seeps away in less than ten minutes, a shorter interval between measurements shall be used, but in no case shall the water depth exceed eight inches. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than ten percent.

In other soils, adjust the water depth to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level shall be measured in inches to the nearest 1/16 inch at approximately 30-minute intervals, refilling between measurements to maintain an eight-inch starting head. If water seeps away in less than 30 minutes, a shorter time interval between measurements must be used, but in no case shall the water depth exceed eight inches. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than ten percent. The percolation rate can also be made by observing the time it takes the water level to drop one inch from an eight-inch reference point if a constant water depth of at least eight inches has been maintained for at least four hours prior to the measurement.

(7) Calculating the percolation rate. Divide the time interval in minutes by the drop in water level in inches to obtain the percolation rate in minutes per inch. The percolation rates which are within the ten percent provision determined for each test hole shall be averaged to determine the final percolation rate for that hole. The slowest final percolation rate for all holes within the soil treatment area shall be used for design.

(8) Frost. A percolation test shall not be run where frost exists below the depth of the proposed soil treatment system; and

F. ~~the suitable soil treatment system area and~~

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~~absorption-areas-shall-be-protected~~ the individual conducting the site evaluation shall provide a means of protection from compaction and disturbance for the area proposed for the soil treatment system.

Subp. 5. [See repealer.]

Subp. 5a. **Site evaluation reporting.** A written report on the site evaluation shall be prepared covering at least the following:

A. subparts 2a, items A to J, and 4, items B to E;

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 point of soil observation and percolation tests and distance to all required setbacks, lot improvements, easements, ordinary high water mark of public waters, property lines, direction, and percent slope;

(2) the location of any unsuitable, disturbed/compacted areas; and

(3) the access route for tank maintenance;

D. estimated depth of seasonally saturated layer, bedrock, or flood elevation, if appropriate;

E. proposed elevation of the bottom of the soil treatment system;

F. final soil sizing factor;

G. anticipated construction-related issues; and

H. name, address, telephone number, and signature of the ~~site-evaluator/designer~~ individual conducting the site evaluation.

~~Subp. 6. Additional soil treatment areas. If a suitable additional soil treatment area is available, it must be identified in the site evaluation.~~

7080.0120 BUILDING SEWERS.

Subpart 1. **Plumbing and Well Codes.** The design, construction, and location of, and the materials for use in

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building sewers ~~are governed by~~ shall be in accordance with the Minnesota State Building Code, chapter 1300, which incorporates by reference portions of the Minnesota Plumbing Code, chapter 4715, and specific provisions of the Minnesota rules relating to wells and borings, chapter 4725.

Subp. 2. [See repealer.]

7080.0125 SEWAGE FLOW DETERMINATION FOR DWELLINGS AND OTHER ESTABLISHMENTS.

Subpart 1. **System sizing.** Where the construction of additional bedrooms, the installation of mechanical equipment, or other factors likely to affect the operation of the system can be reasonably anticipated, the installation of a system for the anticipated need shall be required.

Subp. 2. **Dwellings.** Average design flow shall be used to size soil treatment systems for dwellings. The average design flow estimated for any dwelling shall provide for at least two bedrooms. For multiple residential units, the average design flow shall consist of the sum of the average design flows for each individual unit.

Table I

Average Design Flow (gallons per day)

Number of Bedrooms	Classification of Dwelling		
	I	II	III
2 or less	300	225	180
3	450	300	218
4	600	375	256
5	750	450	294
6	900	525	332

Table I is based on the following formulas:

Classification I: The average design flow for classification I dwellings is determined by multiplying 150 by the number of bedrooms. Classification I dwellings are defined as having a total floor area of the dwelling divided by the number of bedrooms of more than 800 square feet per bedroom, or more than two of the following water-use appliances are installed or anticipated: automatic washer, dishwasher, water conditioning unit, whirlpool bath, garbage disposal, or

self-cleaning humidifier in furnace.

Classification II: The average design flow for classification II dwellings is determined by multiplying 75 by the number of bedrooms plus one. Classification II dwellings are defined as having more than 500 square feet of total dwelling floor area per bedroom and no more than two of the water-use appliances listed in Classification I.

Classification III: The average design flow for classification III dwellings is determined by adding 66 to the product of 38 times the number of bedrooms plus one. Classification III dwellings are defined as having less than 500 square feet of total dwelling floor area per bedroom and no more than two of the water-use appliances listed in Classification I.

Subp. 3. **Other establishments.** For other establishments, average design flow shall be used to size soil treatment systems. Maximum design flow shall be used to size sewage tanks. Design flows shall be calculated using estimated or measured values for other establishments according to items A and B.

A. Estimated average and maximum design flows: the best available data as provided by the agency shall be used if estimating the average and maximum design flows.

B. Measured average and maximum design flows:

(1) the average design flow shall be determined by averaging the measured daily flows for a consecutive seven-day period in which the establishment is at maximum capacity or use; and

(2) the maximum design flow shall be the anticipated peak daily flow.

Subp. 4. **Water meter.** An individual sewage treatment system that serves other establishments must not be installed unless a water meter is provided to measure the flow to the treatment system. For metered systems that have sewage tank effluent pumped to a soil treatment system, an electrical event counter or other method of flow measuring must <u>also</u> be employed.

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7080.0130 SEWAGE TANKS.

Subpart 1. **General.** All tanks, regardless of material or method of construction, must:

[For text of items A to C, see M.R.]

D. not be subject to corrosion or decay;

E. have the manufacturer's name, model number, and tank capacity in gallons permanently displayed on the tank above the outlet pipe;

F. not be constructed on site when saturated soil conditions during construction are closer than three inches to the bottom of the excavation;

G. be protected against flotation under high water table conditions; and

H. have a written and graphic label affixed to ~~manhole~~ maintenance hole covers of sewage tanks warning of the hazardous conditions inside the tanks.

Subp. 2. **Design of septic tanks.** All tanks, regardless of material or method of construction, shall conform to the following criteria:

A. The liquid depth of any septic tank or compartment thereof shall not be less than 30 inches.

B. No tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.

C. Baffles shall be installed at each inlet and outlet of the tank and each compartment.

[For text of item D, see M.R.]

E. Inlet and outlet baffles shall be constructed of acid resistant concrete, acid resistant fiberglass, or plastic not subject to corrosion or decay. Inlet baffles not conducive to the movement of solids shall not be used.

[For text of items F and G, see M.R.]

H. The outlet baffle and the baffles between compartments shall 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 shall be 35 percent of the total

liquid depth. They also shall extend above the liquid surface as required in item D. In no case shall they extend less than six inches above the liquid surface. Gas deflecting baffles shall be installed on the outlet of the final septic tank which services ~~another~~ an other establishment.

I. The top of the inlet baffle may extend through the top of the tank or ~~manhole~~ maintenance hole cover. The cap must be easily accessible.

J. In a single compartmented tank, the inlet invert shall be at least two inches above the outlet invert.

K. The inlet and outlet shall be located opposite each other along the axis of maximum dimension. The horizontal distance between the nearest points of the inlet and outlet baffles shall be at least four feet.

L. Inlet baffles, other than sanitary tees, shall be no less than six inches or no more than 12 inches from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles, other than sanitary tees, shall be six inches measured from beginning of the outlet pipe to the nearest point on the baffle. Sanitary tees used as inlet or outlet baffles shall be at least four inches in diameter.

M. Access to the septic tank shall be as follows:

[For text of subitem (1), see M.R.]

(2) There shall be an inspection pipe of at least four inches in diameter over both the inlet and outlet baffles. The inspection pipe shall extend through the tank cover or the ~~manhole~~ maintenance hole cover, be secured, and be capped flush with or above finished grade. A downward projection of the center line of the inspection pipe shall be directly in line with the center line of the inlet or outlet device.

[For text of subitem (3), see M.R.]

N. Compartmentation of single tanks.

(1) A septic tank larger than 3,000 gallons shall be divided into two or more compartments.

(2) When a septic tank is divided into two compartments, the volume of the first compartment shall be

between one-half and two-thirds of the total tank volume.

(3) When a septic tank is divided into three or more compartments, one-half of the total volume shall be in the first compartment and the other half equally divided in the other compartments.

(4) ~~In-compartmented-tanks-a-minimum-two-inch drop-shall-occur-between-the-inlet-and-outlet-of-each compartment.~~ Connections between compartments shall be baffled to obtain effective retention of scum and sludge. The submergence of the inlet and outlet baffles of each compartment shall be as specified in ~~item~~ items G and H.

(5) Adequate venting shall be provided between compartments by baffles or by an opening of at least 50 square inches near the top of the compartment wall.

(6) Adequate access to each compartment shall be provided by one or more ~~manholes~~ maintenance holes, at least 20 inches least dimension, and located within six feet of all walls of the tank. The ~~manhole~~ maintenance hole shall extend through the top of the tank compartment cover to a point between zero and a 12 inch depth below finished grade. If the ~~manhole~~ maintenance hole is between zero and six inches below finished grade, the ~~manhole~~ maintenance hole cover must be secured to prevent unauthorized access.

O. Multiple tanks.

(1) Where more than one tank is used to obtain the required liquid volume, the tanks shall be connected in series.

(2) No more than four tanks in series can be used to obtain the required liquid volume.

(3) The first tank shall be equal to or larger than any subsequent tank in the series.

P. Outlet pipe from septic tank.

[For text of subitems (1) to (3), see M.R.]

(4) The soil around the pipe extending from the septic tank must be compacted to at least original density for a length of three feet beyond the edge of the tank excavation.

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Subp. 3. **Liquid capacity of septic tanks.** Any liquid depth which is greater than 78 inches shall not be used when calculating the tank capacity. Liquid capacity of septic tanks is as described in items A to E.

A. Dwellings. The liquid capacity of a septic tank serving a dwelling shall be based on the number of bedrooms existing and anticipated in the dwelling served and shall be at least as large as the liquid capacities given in Table II (see part 7080.0020, subpart 7).

Table II

Number of Bedrooms	Septic Tank Liquid Capacities (gallons)
2 or less	750
3 or 4	1,000
5 or 6	1,500
7, 8 or 9	2,000

For ten or more bedrooms, the septic tank shall be sized as ~~another~~ an other establishment. See item B.

B. Other establishments. The liquid capacity of septic tanks serving other establishments ~~using~~ shall use the method in subitem (1), (2), or (3).

(1) Sufficient capacity shall provide a sewage detention period of not less than 36 hours in the tank for maximum design flows of less than 1,500 gallons per day, but in no instance shall the liquid capacity be less than 750 gallons.

(2) For maximum design flows greater than 1,500 gallons per day the minimum liquid capacity shall equal 1,125 gallons plus 75 percent of the maximum design flow.

(3) For restaurants and laundromats, sufficient detention time or pretreatment must be provided to produce an effluent quality suitable for discharge to a soil treatment system. For laundromats the outlet baffle of ~~a~~ all septic ~~tank~~ tanks and baffles between compartments must be submerged to a depth of 50 percent of the liquid depth of the tank.

C. Garbage disposals. If a garbage disposal unit is anticipated or installed in a dwelling or other establishment, the septic tank capacity must be at least 50 percent greater than that required in item A or B, subitem (1) or (2), and

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either multiple compartments or multiple tanks must be provided.

D. Pumping of raw sewage. If waste-containing toilet waste is pumped under pressure to a septic tank, either subitem (1) or (2) must be used.

(1) If the liquid capacity is determined by item A or B, subitem (1) or (2), the dosing volume to the tank shall not exceed one percent of the liquid volume capacity of the tank. If multiple tanks or compartments are used, the dose volume shall not exceed one percent of the first compartment or tank.

(2) A dosing volume up to five percent of the liquid capacity of the first tank or compartment is allowed if multiple tanks or compartments are used with the total liquid capacity being twice that of item A or B, subitem (1) or (2).

E. Garbage disposal and pumping of raw sewage. Systems designed for dwellings or other establishments with garbage disposals and pump raw sewage must provide for multiple tanks or compartments, have a liquid capacity of twice of item A or B, subitem (1) or (2), and have a dosing volume of five percent or less of the liquid capacity of the first tank or compartment.

Subp. 4. **Location of sewage tanks.** The sewage tank shall be placed so that it is easily accessible for the removal of liquids and accumulated solids.

The sewage tank shall be placed on firm and settled soil capable of bearing the weight of the tank and its contents.

Sewage tanks shall be set back as specified in part 7080.0170, subpart 2, item A, Table IV.

Sewage tanks shall not be placed in areas subject to flooding or in flood plains delineated by local ordinances adopted in compliance with chapter 6120 or in areas for which regional flood information is available from the DNR, except that in areas where ten-year flood information is available from and/or approved by the DNR, sewage tanks may be installed as an alternative system in accordance with all provisions of part 7080.0910, subpart 3, item D.

Subp. 5. [See repealer.]

Subp. 6. **Aerobic tanks.** Aerobic tank treatment systems shall comply with the general requirements for sewage tanks set forth in subpart 1, and with the following:

A. The treatment system including each individual unit or compartment shall be easily accessible for inspection and maintenance and shall be provided with secured covers.

B. Aerobic tanks shall comply with National Sanitation Foundation Standard (NSF) No. 40 (November 1990), which is incorporated by reference. The publication is available through the National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, Michigan 48106. The publication can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155 and is not subject to frequent change. Effluent quality shall meet or exceed NSF class II standards.

C. No additional reduction in soil treatment or absorption area shall be allowed with the use of an aerobic tank.

D. ~~A~~ An effective maintenance service contract ~~acceptable to the permitting authority~~ shall be maintained at all times. The maintenance service contract must be acceptable to the permitting authority, if applicable.

7080.0150 DISTRIBUTION OF EFFLUENT.

Subpart 1. **General.** Supply pipes must be protected from freezing where the pipe passes under driveways, sidewalks, roadways, or other areas where deep frost penetration is expected.

Subp. 2. **Gravity distribution.**

A. ~~Drop boxes or valve boxes~~ Serial distribution must be used to distribute effluent to individual trenches in a soil treatment system unless the necessary elevation differences between trenches for drop boxes cannot be achieved by natural topography or by varying the excavation depths, in which case ~~a~~ parallel distribution ~~box or a valve box~~ shall be used. If the drop boxes are used, they must meet the ~~following~~ standards in

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subitems (1) to (6).

(1) The drop box shall be watertight and constructed of durable materials not subject to corrosion or decay.

(2) The invert of the inlet pipe shall be at least one inch higher than the invert of the outlet pipe to the next drop box.

(3) The invert of the outlet pipe to the next drop box shall be ~~at least~~ no greater than two inches higher than the crown of the outlet pipe of 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 shall be directed against a wall or side of the box on which there is no outlet.

(5) The drop box shall 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 shall be placed on firm and settled soil.

B. Systems using valve boxes shall comply with the requirements in part 7080.0170, subpart 3. The valve boxes shall meet the standards in subitems (1) to (5).

[For text of subitems (1) and (2), see M.R.]

(3) When sewage tank effluent is pumped to a valve box, either a baffle wall must be installed in the valve box or the pump discharge must be directed against a wall or side of the box on which there is no outlet. The baffle must be secured to the box and extend at least one inch above the crown of the inlet pipe.

(4) The valve box shall 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.

(5) The valve box shall be placed on firm and settled soil.

C. Distribution boxes must meet the following standards:

(1) The box must be watertight and must be constructed of durable materials not subject to corrosion or decay.

(2) The distribution box shall 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 inverts or be sloped such that an equivalent elevation above the outlet invert is obtained within the last eight feet of the inlet pipe.

(5) Each drain field 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, either a baffle wall must be installed in the distribution box or the pump discharge must be directed against a wall or side of the box on which there is no outlet. The baffle must be secured to the box and must extend at least one inch above the crown of the inlet pipe.

D. Distribution pipes.

(1) Distribution pipes used in trenches or beds for gravity distribution must be at least four inches in diameter and must be constructed of sound and durable material not subject to corrosion or decay or to loss of strength under continuously wet conditions. Distribution pipes must have a load bearing capacity of not less than 1,000 pounds per lineal foot.

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

Holes must be spaced to prevent failure due to loads.

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

(4) Gravity distribution pipes 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. 3. **Pressure distribution.**

A. Pressure distribution must be used for the following soil treatment systems:

(1) all mound systems;

(2) all at-grade systems; and

(3) systems where the soil percolation rate is 0.1 to five minutes per inch if the effluent is pumped to a seepage bed or to trenches that are all at the same elevation.

[For text of items B and C, see M.R.]

D. Perforations must be no smaller than 3/16 inch diameter and no larger than one-quarter inch diameter. The number of perforations, perforation spacing, and pipe size for pressure distribution laterals must be as shown in Table III. The friction loss in any individual perforated lateral must not exceed 20 percent of the average pressure head on the perforations.

Table III

Maximum Allowable Number of One-Fourth Inch Diameter, or Smaller, Perforations Per Lateral

	Pipe Diameter, Nominal and Inside			
Perforation Spacing in feet	1" 1.049	1-1/4" 1.380	1-1/2" 1.610	2" 2.067
2.5	8	14	18	28
3	8	13	17	26
3.3	7	12	16	25
4	7	11	15	23
5	6	10	14	22

E. Perforation holes must be drilled straight into the pipe and not at an angle. The perforated pipe laterals must be installed level with the perforations downward. Perforation holes must be free of burrs.

F. Laterals must be spaced no further than 60 inches

apart in seepage beds and mound rock beds and must be spaced no further than a horizontal distance of 30 inches from the outside edge of a drainfield rock layer.

[For text of items G and H, see M.R.]

7080.0160 DOSING OF EFFLUENT.

Subpart 1. **Dosing chamber.** A dosing device is not necessary in all situations but, where used, shall comply with the following requirements:

A. The dosing chamber shall be watertight and constructed of sound and durable materials not subject to excessive corrosion or decay, vented, and must be designed and constructed to withstand lateral pressures when the tank is empty.

B. There shall be one or more ~~manholes~~ maintenance holes, at least 20 inches least dimension and located directly above the dosing device. The ~~manhole~~ maintenance hole shall extend through the dosing chamber cover to final grade and shall be so constructed as to prevent unauthorized entry.

C. The dosing chamber shall either include an alternating two-pump system or have a minimum ~~500-gallon capacity~~ total capacity of 500 gallons or 100 percent of the average design flow, whichever is greater.

D. A dosing device must employ an alarm device to warn of failure.

E. Pumps shall be elevated from the bottom of the dosing chamber to protect the pump from settled solids. The pump, pump controls, and pump discharge line shall be installed so as to be accessible for servicing without entering the dosing chamber.

F. Electrical installations shall comply with applicable laws and ordinances including the latest codes, rules, and regulations of public authorities having jurisdiction and with part 1315.0200, incorporating the National Electrical Code.

Subp. 2. **Dosing devices for gravity distribution.** Dosing

devices for gravity distribution:

A. Where a dosing device is employed, a pump or siphon shall deliver the dose to the soil treatment system for gravity distribution over the soil treatment area.

[For text of items B to F, see M.R.]

Subp. 3. **Dosing devices for pressure distribution.** Dosing devices for pressure distribution:

A. The dosing device shall be a pump which is cast iron or bronze fitted and with stainless steel screws or constructed of sound, durable, and corrosion-resistant materials.

B. The pump discharge capacity shall be based upon the perforation discharges for an average head of 1.0 foot for dwellings and 2.0 feet for other establishments. Perforation discharge will be 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 shall 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 shall be no greater than 25 percent of the average design flow.

E. A siphon will not be allowed as a dosing device to deliver effluent to a pressure distribution system.

7080.0170 FINAL TREATMENT AND DISPOSAL.

Subpart 1. **In general.** Final treatment and disposal of all sewage tank effluent shall be by discharge into the soil <u>treatment system</u>.

A. The required soil treatment area shall be determined by the average design flow and the soil sizing factor <u>in accordance with Table V in subpart 2</u>.

B. Distribution shall be made in accordance with all applicable requirements of part 7080.0150.

Subp. 2. **Trenches and seepage beds.**

A. Location of trenches and seepage beds:

(1) On slopes greater than 12 percent, the soil profile shall be carefully evaluated in the location of the proposed soil treatment system and downslope to identify the presence of layers with different permeabilities that may cause sidehill seepage. In no case shall a trench be located within 15 feet of where such a layer surfaces on the downslope.

(2) Seepage bed construction shall be limited to areas having natural slopes of less than six percent. Beds shall not be placed in soils with percolation rates slower than 60 minutes per inch or in floodplain areas.

(3) Soil treatment systems shall be located as specified in Table IV.

Table IV. Minimum setback distances (feet).

Feature	Sewage Tank or Holding Tank	Soil Treatment or Absorption Area **** or Privy	Building Sewer or Supply Pipes
Water Supply	*	*	*
Wells buried water suction pipe, and	*	*	*
Buried pipe distributing water under pressure	*	*	*
Buildings**	10	20	
Property Lines*****	10	10	
The Ordinary High Water Level of Public Waters	***	***	

*Setbacks from buried water pipes and water supply wells ~~and buried water pipes~~ are governed by chapters 4715 and 4725, respectively.

**For structures other than buildings these setbacks may be reduced if necessary due to site conditions, but in no case shall any part of the individual sewage treatment system be located under or within the structure. Infringement on building setbacks for areas without local ordinance requires submittal of a written notification by the owner indicating the proposed

setback and approval by the commissioner.

***Setbacks from lakes, rivers, and streams are governed by chapters 6105 and 6120.

****Refer to subpart 5, item A, subitem (3).

*****Infringement on property setbacks for areas without local ordinances requires written permission from any potentially affected party, and approval by the commissioner.

[For text of subitem (4), see M.R.]

B. Distribution medium for trenches and seepage beds.

(1) General. Distribution medium shall consist of drainfield rock, gravelless drainfield pipe, or a chambered system.

(2) Drainfield rock.

(a) Drainfield rock shall meet the requirements of part 7080.0020, subpart 15a.

(b) There shall be a layer of at least six but no more than 24 inches of drainfield rock below the distribution pipe. The drainfield rock shall completely encase the top and sides of the distribution pipes to a depth of at least two inches. The total thickness of rock-filled trenches shall not exceed 30 inches.

(3) Gravelless drainfield pipe. Gravelless drainfield pipe including appurtenances shall be:

(a) of commercially fabricated corrugated ~~plastic~~ pipe completely encased by the manufacturer in a geotextile wrap specific to this purpose;

(b) an eight-inch or ten-inch nominal ID pipe that conforms to subunits i and ii and meets the requirements of American Society of Testing Materials (ASTM) F667, which is incorporated by reference. The annual book of ASTM standards F667 "Standard Specification for Large Diameter Corrugated Polyethylene Tubing and Fittings" was issued in 1985 and is available at ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103. The standards can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, Minnesota 55155, and are not subject to frequent change.

i. The pipes must be marked with an alignment stripe visible through the geotextile wrap and installed with this stripe at top center.

ii. The pipes shall contain ~~two~~ a row or rows of cleanly cut three-eighths inch to one-half inch diameter holes located ~~120 degrees apart, with each row 120 degrees to each side of the alignment stripe~~ in such a manner to provide storage of solids. Each row shall contain a hole in every other corrugation valley, staggered such that every corrugation valley contain one hole.

(c) geotextile wraps specifically designed and tested for use with gravelless pipe and for installation and use in individual sewage treatment systems and designed to transmit sewage at a long-term acceptance rate which corresponds to the sizing factor as prescribed in item C, subitem (2); and

(d) protected from heat and ultraviolet rays prior to installation.

(4) Chambered systems. Chamber media including all piping and appurtenances shall be constructed:

(a) of commercially fabricated materials specific to this purpose;

(b) of materials resistant to sewage tank effluent;

(c) with an open bottom;

(d) to support the load of overburden and sidewall soil;

(e) with slotted or perforated sides to allow sewage to move laterally into the soil and prevent soil penetration into the chamber;

(f) no greater than three feet in width; and

(g) with vertical outside dimensions less than 30 inches.

C. Sizing of trenches and seepage beds.

(1) Drainfield rock media. Table V gives the soil sizing factors used to calculate trench bottom area assuming six inches of drainfield rock below the distribution

pipe. The trench bottom area is calculated by multiplying the average design flow by the appropriate soil sizing factor. The bottom area may be reduced, for trenches only, by the following percentages: 20 percent for 12 inches of drainfield rock below the distribution pipe; 34 percent for 18 inches; and 40 percent for 24 inches. Unless pressure distribution is used, all seepage bed bottom areas must be 1.5 times the soil sizing factors required in Table V.

Table V

Soil Sizing Factors

Percolation Rate (Minutes per Inch)	(Square Feet of Trench Bottom per Gallon of Average Design Flow per Day)
Faster than 0.1*	-
0.1 to 5**	0.83****
6 to 15	1.27
16 to 30	1.67
31 to 45	2.00
46 to 60	2.20
61 to 120***	-
Slower than 120*****	

*See part 7080.0910, subpart 3, item B, for special requirements for these soils.

**See subpart 4, or part 7080.0910, subpart 3, item B, for special requirements for these soils.

***See subpart 5 or part 7080.0910, subpart 3, item A, subitem (1), for special requirements for these soils.

****For soils having more than 50 percent of very fine sand by weight, plus fine sand having a particle size range of 0.05 millimeters (sieve size 270) to 0.25 millimeters (sieve size 60), the soil sizing factor is 1.67 square feet per gallon of sewage flow per day.

*****See part 7080.0910, subpart 3, item A, subitem (2), for special requirements for these soils.

(2) Gravelless drainfield pipe media. Sizing shall be based on subitem (1), except no reduction shall be given as specified in subitem (1). An eight-inch ID pipe shall

be equivalent to a two-foot wide rock ~~bed~~ filled trench with six inches of drainfield rock below the distribution pipe and a ten-inch ID pipe shall be equivalent to a three-foot wide rock ~~bed~~ filled trench with six inches of drainfield rock below the distribution pipe.

(3) Chambered media. Sizing shall be based on subitem (1) with the depth of slatted sidewalls being equivalent to the corresponding depth of rock below the distribution pipe.

D. Design and construction of trenches and seepage beds:

(1) The bottom and sides of trenches and beds shall be in original soils at least three feet above saturated soil or bedrock. In no case shall the bottom of the distribution medium be deeper than 48 inches from the final grade.

(2) The trenches shall not be less than 18 inches nor more than 36 inches wide. Any excavation wider than 36 inches shall be considered a bed. No bed may be wider than 25 feet and parallel beds must be at least ten feet apart. The width of the excavation for gravelless drainfield pipe and chambered systems shall be installed per manufacturer's recommendation.

(3) Drainfield rock must be used as the distribution medium in seepage beds.

(4) The bottom and sides of the soil treatment system to the top of the distribution medium shall be excavated in such a manner as to expose the original soil structure in an unsmeared and uncompacted condition. Excavate into the soil treatment area only when the soil moisture content is at or less than the plastic limit ~~at all depths of excavation~~.

(5) Do not drive excavation equipment or other vehicles on the excavated trench or seepage bed bottom. Once the trench or seepage bed is excavated, it shall not be exposed to rainfall prior to placement of the final backfill.

(6) A vertical inspection pipe at least 1-1/2 inches in diameter shall 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. No perforations shall be located above the geotextile cover or wrap. The inspection pipe must extend to the bottom of the distribution medium and must be capped flush with or above finished grade.

(7) The top and bottom of the distribution medium shall be level in all directions.

(8) Drainfield rock must be covered with a durable nonwoven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without allowing the passage of overlying soil material into drainfield rock.

(9) The minimum depth of cover over the distribution medium shall be at least six inches.

(10) The trenches or beds shall be backfilled and crowned above finished grade to allow for settling. The top six inches of soil shall have the same texture as the adjacent soil.

(11) A ~~grass~~ vegetative cover shall be established over the soil treatment system. The soil treatment system shall be protected until a ~~grass~~ vegetative cover is established. The vegetative cover established shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

(12) All joints for gravelless drainfield pipes or chambered systems must be secured as recommended by the manufacturer.

(13) Backfilling for gravelless drainfield pipe and chambered systems shall not crush or damage the medium.

Subp. 3. **Dual field systems.**

A. Dual field systems shall be used only where the

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percolation rate is slower than five minutes per inch, unless a liner or pressure distribution system is employed as specified in part 7080.0150, subpart 3, or 7080.0910, subpart 3, item B.

B. Dual field systems shall be sized, designed, and constructed as set forth above for standard systems except as follows:

(1) The soil treatment area shall be divided into two or more parts.

(2) Alternating soil treatment areas shall each be connected to a valve box outlet.

C. A part of the soil treatment area shall be used no more than one year unless ~~inspection of~~ the effluent level indicates that a longer duration can be used.

Subp. 4. **Rapidly permeable soils.**

A. Soil treatment systems placed in soils with ~~percolation rates between one-tenth and five minutes per inch,~~ a soil sizing factor of 0.83 gallons per day per square foot must provide at least one of the following treatment techniques:

~~A.~~ (1) distribute the sewage tank effluent by pressure flow over the treatment area as specified in part 7080.0150, subpart 3;

~~B.~~ (2) divide the total soil treatment area into at least four parts with no part larger than 25 percent of the area required by subpart 2, item C, and the parts constructed for serial application.

B. Soil treatment systems placed in soils with percolation rates of less than one-tenth minute per inch must provide at least one of the following treatment techniques:

(1) a mound system;

(2) 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 if provisions of item A, subitem (1) or (2), are followed; or

(3) in accordance with part 7080.0910, subpart 3, item B.

Subp. 5. **Mounds.**

A. Location of mounds.

(1) Mounds must be constructed on original soils so that there is at least 36 inches of separation between the bottom of the drainfield rock bed and saturated soil or bedrock.

(2) There must be at least 12 inches of original soil with a percolation rate faster than 120 minutes per inch above saturated soil or bedrock.

(3) Setbacks shall be in accordance with Table IV, subpart 2, item A, subitem (3). ~~For mounds on slopes less than or equal to one percent, the absorption area is the required absorption width by rock bed length plus five feet on each end of the rock bed. For mounds on slopes greater than one percent, the absorption area is the required absorption width plus five feet on the upslope side of the rock bed by rock bed length plus five feet on each end of the rock bed.~~

(4) Absorption areas shall not be placed in areas subject to flooding as described in subpart 2, item A, subitem (4).

(5) On slopes of one percent or greater, and where the percolation rate in the top foot of original soil is in the 61 to 120 minutes per inch range, mounds must not be located where the ground surface contour lines directly below the long axis of the rock 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.

B. Design of mounds. Drainfield rock must be used as the distribution medium in mounds.

(1) The bottom area of the rock bed shall be calculated by multiplying the average design flow by 0.83 square feet per gallon per day.

(2) The width of a single rock bed must not exceed ten feet.

(3) A minimum of ~~six~~ 12 inches of clean sand must be placed where the rock bed is to be located.

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(4) The required absorption width is calculated by multiplying the rock bed width by the absorption ratio. The absorption ratio shall be determined according to Table VI using the percolation rate of the upper 12 inches of soil in the proposed absorption area. For mounds with side-by-side rock beds, the required absorption width shall be increased by four feet.

Table VI

Percolation rate of original soil under sand layer, minutes per inch	Absorption ratio
Faster than 5	1.00
6 to 15	1.50
16 to 30	2.00
31 to 45	2.40
46 to 60	2.67
61 to 120	5.00
120 plus	*See part 7080.0910, subpart 3, item A, subitem (2)

(5) The required absorption width for mounds constructed on slopes from zero to one percent shall be centered under the rock bed width. The required absorption width for mounds constructed on slopes greater than one percent shall be measured downslope from the upslope edge of the rock bed width and measured in the direction of the original land slope and perpendicular to the original contours.

(6) Mounds may be located on natural slopes exceeding 12 percent if the required absorption width is at least 25 percent larger than that required in Table VI.

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

(8) On slopes of one percent or greater, the upslope edge of the level drainfield rock bed must be placed on the contour.

(9) Whenever mounds are located on slopes greater than one percent, a diversion must be constructed immediately upslope from the mound to intercept and direct runoff.

(10) A maximum of two ten-foot wide beds may be

installed side by side in a single mound if the original soil percolation rate is between five and 60 minutes per inch to a depth of at least 24 inches below the sand layer. The beds must be separated by at least four feet of clean sand.

(11) Distribution of effluent over the rock bed must be by level perforated pipe under pressure. A pump must be used as specified in part 7080.0160, subpart 3.

(12) The rock bed shall completely encase the top and sides of the distribution pipes to a depth of at least two inches above the pipe. The rock shall extend nine inches below the pipe.

(13) A vertical inspection pipe at least 1-1/2 inches in diameter shall be installed and secured at each rock bed/sand interface of every mound. 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 rock bed. No perforations shall be located above the permeable synthetic fabric. The inspection pipe must extend to the bottom of the rock bed and must be capped flush with or above finished grade.

(14) The rock bed must be covered with a durable nonwoven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without passage of overlying soil material into the drainfield rock.

(15) Sandy to loamy soil material must be placed on the rock bed to a depth of one foot in the center of the mound and to a depth of six inches at the sides. When two rock beds are installed side by side, the soil material must be 18 inches deep at the center of the mound and six inches deep at the sides.

(16) Six inches of top soil must be placed over the entire mound. Topsoil does not include peat soil textures.

C. Surface preparation <u>for mounds</u>.

(1) The supply pipe from the pump to the mound

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

(2) All vegetation in excess of two inches in length and dead organic debris must be removed from the absorption area. Trees must be cut nearly flush with the ground and stumps should not be removed.

(3) All surface preparation must take place when the upper 12 inches of soil has a moisture content of less than the plastic limit and soil conditions allow field testing of soil properties and these properties are maintained throughout installation.

(4) The absorption area must be roughened by backhoe teeth or moldboard, or chisel plowed 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 absorption area. A rubber-tired tractor may be used 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.

(5) Prior to placement of six inches of clean sand, no vehicle shall be driven on the absorption area after the surface preparation is completed. If rainfall occurs on the prepared surface, the site must be allowed to dry below the plastic limit and roughened as specified in subitem (4).

D. Mound construction.

(1) 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 for mound construction. At least six inches of sand must be kept beneath equipment to minimize compaction of the prepared surface.

(2) The sand layer upon which the rock bed is placed must be level in all directions.

(3) The top of the rock bed must be level in all directions.

(4) Construction vehicles must not be allowed on the rock bed until backfill is placed.

(5) A ~~grass~~ vegetative cover must be established over the entire area of the mound. The soil treatment system mound shall be protected until a ~~grass~~ vegetative cover is established. The vegetative cover established shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

(6) Shrubs must not be planted on the top of the mound. Shrubs may be placed at the foot and side slopes of the mound.

Subp. 6. **At-grade systems.**

A. Location of at-grade systems.

(1) At-grade systems must be constructed on original soils so that there is at least 36 inches of separation between the bottom of the rock bed and saturated soil or bedrock.

(2) Where required, percolation tests shall be conducted in the upper 12 inches of original soil in accordance with part 7080.0110, subpart 4, item E. At-grade systems are considered standard if constructed on soils with percolation rates faster than 61 minutes per inch.

(3) At-grade systems shall not be installed in areas with slopes greater than 25 percent.

(4) Setbacks must be in accordance with subpart 2, item A, subitem (3), Table IV. Setbacks shall be measured from the edge of the rock bed.

B. Design of at-grade systems.

(1) Rock bed absorption width shall be calculated by multiplying the linear loading rate by the soil sizing factor as identified in subpart 2, item C, Table V, using the percolation rate of the upper 12 inches of soil in the proposed absorption area. The linear loading rate shall be between two and eight gpd/ft as determined by the relationship between vertical and horizontal water movement in the soil. Total rock

bed width for sloping ground shall consist of the rock bed absorption width plus enough rock on the upslope side to provide stability.

(2) Rock bed length shall be calculated by multiplying the soil sizing factor by the average design flow and dividing by the rock bed width.

(3) At-grade systems shall be pressurized in accordance with parts 7080.0150, subpart 3, and 7080.0160, subparts 1 and 3. Distribution pipe shall be installed in the center of the rock bed on slopes less than one percent and on the upslope edge at the rock bed absorption width on slopes one percent or greater.

C. Construction of at-grade systems.

(1) Surface preparation for at-grade systems shall be in accordance with subpart 5, item C.

(2) Drainfield rock must be used as the distribution medium in at-grade systems.

(3) The upslope edge of an at-grade system shall be installed along the natural contour ~~with no more than a 12 inch difference in elevation from the upslope corners of the rock bed~~.

(4) The rock bed shall completely encase the top and sides of the distribution pipe to a depth of at least two inches above the pipe. There shall be at least nine inches of rock below the distribution pipe.

(5) The entire rock bed shall be covered with a durable nonwoven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without allowing the passage of overlying soil material into the drainfield rock.

(6) One foot of loamy or sandy cover material shall be installed over the rock bed. Cover shall extend at least five feet from the ends of the rock bed and be sloped to divert surface water. Side slopes shall not be steeper than four horizontal units to one vertical unit. The upper six

inches of the loamy soil cover must be topsoil. Topsoil must be of a quality that provides a good vegetative cover on the at-grade system and must exclude peaty material.

(7) Three vertical inspection pipes of at least 1.5 inches in diameter shall be installed and secured along the downslope portion of the rock bed. These pipes shall be located within three feet of the downslope edge of the rock bed at the middle and one-sixth of the total rock bed length and placed as measured from the ends of the rock bed. The inspection pipes shall have three-eighths inch or larger perforations spaced vertically no more than six inches apart. No perforations shall exist above the permeable synthetic fabric. The inspection pipes must extend to the rock bed/soil interface and must be stabilized and capped flush with or above finished grade.

(8) A ~~grass~~ vegetative cover must be established over the entire area of the at-grade system. The soil treatment at-grade system shall be protected until a vegetative cover is established. The vegetative cover established shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

7080.0175 MAINTENANCE.

A. The individual sewage treatment system and all components must be maintained in compliance with this chapter and other manufacturer requirements.

B. The owner of an individual sewage treatment system or the owner's agent shall regularly, but in no case less frequently than every three years, ~~inspect the septic tank, drop boxes, distribution boxes, soil treatment system, and other related appurtenances for signs of corrosion, leakage, accumulation of liquids and solids, and any other related items that may indicate the need for maintenance.~~

~~C. At each inspection,~~ measure or remove the accumulations of scum, which includes grease and other floating materials at the top of ~~the~~ each septic tank and compartment along with the sludge, which includes the solids denser than

water~~,--must-be-measured-or-the-contents-removed~~. The owner of a septic tank or tanks or the owner's agent must arrange for the removal and proper disposal of septage from ~~the-tank whenever~~ all tanks or compartments in which the top of the sludge layer is less than 12 inches below the bottom of the outlet baffle or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle. ~~Maintenance-shall-take-place~~ All accumulations of sludge, scum, and liquids must be removed through the ~~manhole.--If-the-sewage tank,-other-than-a-holding,-has-a-manhole,-all-accumulations-of sludge,-scum,-and-liquids-must-be-removed-from-the tank~~ maintenance hole. The owner or the owner's agent shall install maintenance holes in sewage tanks in accordance with part 7080.0130, subpart 2, to allow for maintenance to take place through the maintenance hole.

~~D.~~ C. Individual sewage additives must not be used as a means to reduce the frequency of proper maintenance and removal of septage from the septic tank as specified in item B.

~~E.--Whenever-inspections-of-pump-stations, distribution-devices,-valve-boxes,-or-drop-boxes-indicate-the accumulation-of-solids,-the-accumulation-shall-be-considered septage.~~

~~F.~~ D. Individual sewage treatment system additives which contain hazardous ~~materials~~ substances must not be used in individual sewage treatment systems.

E. Any accumulation of solids in pump stations, distribution devices, valve boxes, or drop boxes shall be considered septage.

~~G.~~ F. Septage shall be disposed in accordance with state, federal, or local requirements.

~~H.~~ G. If septage is disposed into a municipal sewage treatment facility, a written agreement must be provided between the accepting facility and the septage disposal firm.

~~I.~~ H. Activities on the soil treatment area or the ~~replacement~~ additional soil treatment area which may impair the treatment abilities or hydraulic performance of the soil

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treatment system are prohibited.

I. Any maintenance activity used to increase the acceptance of effluent to a soil treatment system must:

(1) not be used on failing systems;

(2) not decrease the separation to the saturated soil or bedrock;

(3) not cause preferential flow from the system bottom to the saturated soil or bedrock; and

(4) be conducted by a qualified employee or under an installer license.

7080.0176 SYSTEM ABANDONMENT.

A. Tank abandonment procedures for sewage tanks, cesspools, leaching pits, dry wells, seepage pits, privies, and distribution devices are as follows: all solids and liquids shall be removed and disposed of in accordance with part 7080.0175 and abandoned chambers shall be removed or be filled with ~~granular~~ soil material.

B. Access for future discharge to the system shall be permanently denied.

C. If soil treatment systems are removed, contaminated materials shall be properly handled to prevent human contact ~~prior to disposal~~ and shall be disposed of in a manner assuring that public health and the environment are protected.

7080.0300 GENERAL.

Subpart 1. **ISTS professionals.** A person who conducts site evaluations or designs, installs, alters, repairs, maintains, pumps, or inspects all or part of an individual sewage treatment system~~,~~ shall comply with applicable requirements.

ISTS professionals shall comply with parts 7080.0020, 7080.0060 to 7080.0176, and 7080.0910. In areas with local ordinances, ISTS professionals shall also comply with parts 7080.0305 to 7080.0315. In areas without local ordinances, ISTS professionals shall also comply with part 7080.0350.

Subp. 2. **Additional soil treatment area.** Lots created

after the effective date of this chapter shall have a minimum of one additional soil treatment area which can support a standard soil treatment system. If a suitable additional soil treatment area is available on lots created before the effective date of this chapter, it must be identified in the site evaluation.

Subp. 3. **Local unit of government with a local ordinance.** Local units of government with local ordinances shall comply with parts 7080.0305 to 7080.0315.

Pursuant to Minnesota Statutes, sections 103F.121; 103F.335, subdivision 1; and 103F.221, certain counties and cities must enact ordinances which comply with the appropriate rules of the Minnesota Department of Natural Resources, some of which in turn require compliance with the rules of the Minnesota Pollution Control Agency.

Subp. 4. **Areas without a local ordinance.** In areas without a local ordinance, the requirements of part 7080.0350 apply.

Subp. 5. **Other jurisdictions.** Outside of the jurisdictions covered by subpart 3, this chapter provides technical and administrative standards for the adoption of local ordinances for the location, design, construction, use, and maintenance of individual sewage treatment systems.

If other jurisdictions issue construction permits for individual sewage treatment systems, compliance inspections must be conducted ~~to approve systems according to~~ in accordance with this chapter. At a minimum, the ~~system must meet the~~ requirements of part 7080.0350 must be met. The other ~~area~~ jurisdiction must maintain records of the location and design of ~~the~~ individual sewage treatment systems for the life of the systems.

Subp. 6. **Disclosure.** Any evaluation, investigation, inspection, recommendation, or other such process used to prepare a disclosure and conducted by a party who is not the property owner shall constitute a compliance inspection and must be conducted in accordance with part 7080.0315 or 7080.0350.

REQUIREMENTS FOR LOCAL UNITS OF GOVERNMENT

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WITH A LOCAL ORDINANCE

7080.0305 GENERAL REQUIREMENTS FOR LOCAL ORDINANCES.

Subpart 1. **Deadline for compliance with this chapter.** Any local ordinance adopted by a local unit of government to regulate individual sewage treatment systems must be in compliance with this chapter by January 1, 1998.

Subp. 2. **Adoption of technical standards and criteria.** If a local unit of government adopts an ordinance to regulate individual sewage treatment systems, the ordinance shall incorporate provisions of parts 7080.0020 and 7080.0060 to 7080.0176. Incorporation of part 7080.0910 is discretionary. More restrictive or alternative standards can be adopted in the ordinance if the procedures under subparts ~~3 to 9~~ 6 to 8 are fulfilled.

Subp. 3. **Variances.** After December 31, 1995, a local unit of government shall not issue a variance for replacement, or for the addition of a bedroom or bathroom on property served by a system unless the individual sewage treatment system is in compliance with local ordinance, as evidenced by a certificate of compliance. A variance shall not be issued for new construction unless a permit for new construction has received preliminary approval and includes a construction schedule. Only the governing state agency may issue variances to chapters 4725, 6105, and 6120. Variances to decrease the three feet of vertical separation required beneath the distribution medium and the saturated soil or bedrock must be approved by the commissioner in accordance with part 7080.0030, subpart 3. The variance request shall be accompanied by items described in subpart 6 as appropriate to the request~~.~~ and must contain:

A. the specific language in the rule or rules from which the variance is requested;

B. the reasons why the rule cannot be met;

C. the alternative measures that will be taken to ensure a comparable degree of protection to public health or the environment if the variance is granted;

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D. the length of time for which the variance is requested;

E. a statement that the party applying for the variance will comply with the terms of the variance, if granted; and

F. other relevant information the commissioner determines necessary to properly evaluate the request for the variance.

Subp. 4. **Requirements for local ordinances.** Local ordinances shall include:

A. a provision that requires failing systems to be upgraded, replaced, or repaired in compliance with part 7080.0060, as applicable, within a reasonable time period;

B. a provision to adopt the requirements under subpart 2; and

C. a provision that requires all design, installation, alteration, repair, maintenance, pumping, and inspection activities for an individual sewage treatment system to be completed under a license or by a qualified employee, or as exempted under part 7080.0700, subpart 1. A local unit of government may not require additional local licenses for ISTS professionals; and

D. a provision that requires all lots created after the effective date of this chapter shall have a minimum of one additional soil treatment area which can support a standard soil treatment system.

Subp. 5. **Submittal of ordinance to commissioner.** A copy of all local ordinances regulating ISTS adopted to meet the deadline under subpart 1, and future ordinances or amendments must be submitted to the commissioner within 30 days after adoption. Local ordinances with alternative standards under this subpart and subpart 6 must be submitted for approval before being adopted by the local unit of government.

Subp. 6. **Requirements for alternative standards.** Local units of government may adopt and enforce alternative standards if the standards receive the commissioner's approval before they

are adopted as an ordinance. The commissioner shall maintain records of approved alternative standards. The local unit of government must submit a written request for review to the commissioner with the following:

A. the draft ordinance containing the alternative standards under the heading "for existing systems" and clearly labeled as alternative standards;

B. a description of the area within the jurisdiction of the local unit of government where the alternative standards would be implemented. This description includes:

(1) soil types;

(2) density of systems and wells including projected population growth;

(3) zoning designation;

(4) type and number of facilities served by ISTS; and

(5) groundwater conditions including:

(a) relationship between the shallow water table and the aquifers used for potable water;

(b) well depths and construction;

(c) potential use of the shallow water table or aquifer;

(d) travel times of contaminants; and

(e) discharge point of the shallow water table;

C. an explanation of the need for the alternative standards;

D. an explanation of why the variance process or the allowance of experimental or alternative systems on a case-by-case basis will not accomplish the same goal or is inappropriate; and

E. an explanation of how each alternative standard will protect public health and the environment with the supporting information under subitems (1) to (5), as appropriate to the request:

(1) replicated research by independent and

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qualified professionals, including research results, recommendations, and methodologies, demonstrating that the alternative standards meet the treatment capabilities of individual sewage treatment systems constructed in accordance with technical standards and criteria;

(2) a summary of literature searches on published papers applicable to the alternative standards requested. The summary must include research paper title, author, year, and publication source;

(3) research results or recommendations found while conducting the literature search for subitem (2) that conflict with those submitted under subitem (1), and an explanation of why the conflicting research does not apply;

(4) a summary of the credentials of the person or persons who conducted the submitted research demonstrating that the person is knowledgeable about individual sewage treatment systems and the application of research methodology; and

(5) monitoring data from the area that will be impacted by the alternative standards.

Subp. 7. **Review process for alternative standards.** After the request for review and the supporting items required under subpart 5 are submitted to the commissioner and determined to be complete. The commissioner must evaluate the proposed alternative standards in consultation with specialists qualified to evaluate submitted research to determine if the proposed alternative standards will protect public health and the environment. After this determination is complete, the consultants must recommend whether to certify the alternative standards. The specialists must state reasons for their recommendation.

Subp. 8. **Requirements for more restrictive standards.** Local units of government may adopt and enforce more restrictive standards for a designated area provided each more restrictive standard is clearly labeled, identified as meeting at least one of the three criteria in the definition, and submitted to the commissioner under subpart 5. Local units of government must

submit local ordinances with more restrictive standards to the commissioner with an explanation of each provision that is more restrictive than technical standards and criteria.

Subp. 9. **Enforcement of local ordinances.** Local units of government shall enforce local ordinances that regulate individual sewage treatment systems through permitting programs that meet the requirements under part 7080.0310 and inspection programs that meet the requirements under part 7080.0315. Local units of government may also enforce local ordinances that are applicable requirements under Minnesota Statutes, section 115.071, subdivisions 3 and 4.

7080.0310 PERMIT PROGRAM FOR INDIVIDUAL SEWAGE TREATMENT SYSTEMS.

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

A. A local unit of government with a local ordinance to regulate individual sewage treatment systems must have a corresponding permit program that specifically addresses the following:

(1) permit application requirements;

(2) permit review and approval requirements and procedures;

(3) recordkeeping; and

(4) reporting.

These program elements must contain the minimum requirements under subparts 2 to 5. Permits are required for all new construction and replacement.

B. A local unit of government with a local ordinance to regulate bedroom or bathroom additions must comply with subparts 3, item B, and 4.

Subp. 2. **ISTS permit application requirements.** ISTS permit applications must include exhibits described under subpart 4 ~~indicating~~, items A and B, and include general requirements to adequately identify the property and owners, a site evaluation report, a design summary and drawings, applicable construction information, and any other information requested by the permitting authority pertinent to this

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process. Exhibits for site evaluation, design, and applicable construction information must be complete and include a certified statement from the person who conducted the work. In the event of a change in the application information which served as the basis for issuing a permit, the permittee must file an amended application for reapproval prior to initiating construction, detailing the changed conditions for approval or denial by the permitting authority.

Subp. 3. **Permit approval requirements and procedures.** The permit program must include the following requirements:

A. A qualified employee or licensee authorized by the local unit of government must review the permit application and exhibits to determine whether the proposed system will meet applicable requirements. The local unit of government will either grant preliminary approval or denial. Construction shall not be initiated until preliminary approval is granted. Final approval shall be evidenced by issuance of a ~~notice~~ certificate of compliance.

B. After December 31, 1995, a local unit of government shall not issue a permit for a bedroom or bathroom addition on property served by a system unless the individual sewage treatment system is in compliance with applicable requirements, as evidenced by a certificate of compliance.

Subp. 4. **Recordkeeping requirements.** Local units of government must maintain copies 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 records including items identified in part 7080.0110;

B. design records including calculations and summaries for all system component sizings; and

C. ~~construction-records-including-plastic-limit-test results,-sand-and-rock-cleanliness-comments-or-test-results, dates-of-construction,-weather-conditions,-plan-changes,-any~~

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~~problems encountered and their resolution, and~~ as-builts.

Subp. 5. **Reporting requirements.** Local units of government must submit annual reports to the commissioner to demonstrate enforcement of the local ordinance. At a minimum, the reports must include a copy of the standard permit and inspection forms used if they are different than agency forms, the name and address of the program administrator, all qualified employees and contracted licensees authorized by the local unit of government, the number of permits issued, the number and methods of inspections conducted, the number and type of variances issued, ~~and~~ the number and type of alternative ~~or~~ and experimental systems, and the monitoring results for experimental systems as specified in part 7080.0910, subpart 3a. The reports shall contain information from the calendar year and shall be received by the commissioner no later than March 1 of the following year.

7080.0315 INSPECTION PROGRAM FOR INDIVIDUAL SEWAGE TREATMENT SYSTEMS.

Subpart 1. **Inspection requirements.** The inspection program conducted by the local unit of government to fulfill the enforcement requirement under part 7080.0305, subpart ~~8~~ 9, must specify the frequency and times of inspections, the requirements of an inspection, an inspection protocol if an inspection cannot be completed within a timely manner, and, at a minimum, the requirements for a compliance inspection under subpart 2.

Subp. 2. **Compliance inspection.** A compliance inspection shall be conducted:

A. to ensure compliance with ~~local ordinance~~ applicable requirements. Persons conducting compliance inspections for disclosures shall also meet the requirements of part 7080.0300, subpart 6;

B. for an existing system if a local unit of government issues permits or variances for the addition of a bedroom or bathroom on property served by the system;

C. for all new construction or replacement; ~~and~~

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D. by a qualified employee or under a license authorized by the local unit of government who is independent of the owner and the installer;

E. to reasonably ensure an individual sewage treatment system is in compliance as specified under part 7080.0060; and

F. for disclosures as described under part 7080.0300, subpart 6.

Subp. 3. **Certificate of compliance; notice of noncompliance.** A certificate of compliance or notice of noncompliance must be submitted to the local unit of government and the owner within 30 days after any compliance inspection. A certificate of compliance or notice of noncompliance must include a certified statement from the licensee or qualified employee who conducted the compliance inspection, identify the type of system inspected, and ~~a copy must be submitted to the local unit of government and owner within 30 days after the inspection~~ indicate whether the individual sewage treatment system is in compliance with part 7080.0060. At a minimum, a notice of noncompliance must be issued for systems not in compliance as described under part 7080.0060. If a compliance inspection indicates that the system presents an imminent threat to public health or safety as defined in part 7080.0020, subpart 19a, the notice must also contain a statement to this effect and state that the owner must upgrade, replace, or discontinue use of the system within the time period established by the local unit of government. This time period cannot exceed ten months after the owner receives a notice of noncompliance.

REQUIREMENTS IN AREAS WITHOUT A LOCAL ORDINANCE

7080.0350 GENERAL REQUIREMENTS.

Subpart 1. **Requirements for work done on individual sewage treatment systems.** In areas that do not have a local ordinance, any person who conducts site evaluations or designs, installs, alters, repairs, maintains, pumps, or inspects all or part of an individual sewage treatment system must complete work according

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to this chapter. All ISTS work activities must be completed under a license or by a qualified employee, or as exempted under part 7080.0700, subpart 1. Local units of government may not require additional local licenses for ISTS professionals.

Subp. 2. **Compliance inspections.**

A. Compliance inspections are required for all new construction or replacement and must be completed according to ~~items A and B~~ subitems (1) and (2).

~~A.~~ (1) Compliance inspections must be conducted by a qualified employee or under a license independent of the owner and the installer to ~~ensure compliance with the requirements of this chapter~~ reasonably ensure an individual sewage treatment system is in compliance as specified under part 7080.0060.

~~B.~~ (2) A certificate of compliance or notice of noncompliance must be submitted to the owner within 30 days of any compliance inspection. All notices of noncompliance must also be submitted to the commissioner. A certificate of compliance or notice of noncompliance must include a certified statement from the licensee or qualified employee who conducted the compliance inspection, identify the type of system inspected, and ~~a copy must be submitted to the commissioner and owner within 30 days after the inspection~~ must indicate whether the individual sewage treatment system is in compliance with part 7080.0060. At a minimum, a notice of noncompliance must be issued for systems not in compliance under part 7080.0060. If a compliance inspection indicates that the system presents an imminent threat to public health or safety as defined in part 7080.0020, subpart 19a, the notice must also contain a statement to this effect and state that the owner must upgrade, replace, or discontinue use of the system within the time period established by the commissioner. This time period may not exceed ten months after the owner receives a notice of noncompliance. The owner must submit to the commissioner a copy of the certificate of compliance after the system upgrade or replacement has occurred or a written notification indicating

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discontinued use of the individual sewage treatment system.

B. Compliance inspections meeting the requirements under item A must be conducted for disclosures as described under part 7080.0300, subpart 6.

Subp. 3. **Variances.** Variances to chapters 4725, 6105, 6120, and 7080 may only be approved by the governing state agency. Variances to chapter 7080 must be approved by the commissioner in accordance with part 7080.0030, subpart 3. The variance request shall be accompanied by items described in part 7080.0305, subpart 6, as appropriate to the request and must contain:

A. the specific language in the rule or rules from which the variance is requested;

B. the reasons why the rule cannot be met;

C. the alternative measures that will be taken to ensure a comparable degree of protection to public health or the environment if the variance is granted;

D. the length of time for which the variance is requested;

E. a statement that the party applying for the variance will comply with the terms of the variance, if granted; and

F. other relevant information the commissioner determines necessary to properly evaluate the request for the variance.

Subp. 4. **Additional soil treatment area.** Lots created after the effective date of this chapter shall have a minimum of one additional soil treatment area which can support a standard soil treatment system.

INDIVIDUAL SEWAGE TREATMENT SYSTEM LICENSE PROGRAM

7080.0700 LICENSES.

Subpart 1. **State license required.** A state license applicable to the type of work being performed is required for any business that conducts work to site evaluate, design, install, maintain, pump, or inspect all or part of an ISTS. A

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license is not required for:

A. an individual who is a qualified employee performing work as directed by the state or local government employer;

B. an individual who is constructing a system on land that is owned or leased by the individual and functions solely as a dwelling or seasonal dwelling for that individual after consulting with a designer I or II. The system must be inspected before being covered and a ~~compliance report~~ certificate of compliance or notice of noncompliance must be provided to the local unit of government after the inspection;

C. an individual who performs labor or services under a licensee; ~~or~~

D. a farmer who pumps ~~and disposes of~~ sewage waste from individual sewage treatment systems from dwellings or other establishments that are owned or leased by the farmer and disposes of those wastes on land that is owned or leased by the farmer; or

E. a property owner who personally gathers information, evaluates, or investigates the ISTS on or serving the property to provide a disclosure as defined under part 7080.0020, subpart 12b.

Subp. 2. **State license categories.** The commissioner may issue the following licenses:

A. designer I license for conducting site evaluations and compliance inspections, designing ISTS, issuing written certificates of compliance and notices of noncompliance, and issuing and maintaining inspection reports;

B. designer II license for conducting site evaluations and designing ISTS;

C. installer license for constructing, installing, altering, extending, maintaining, and repairing ISTS; ensuring all work is done according to a written site evaluation and design report; ensuring inspections are conducted for new construction or replacement in areas without ordinances; ensuring site conditions allow for construction; providing

evidence to verify compliance with applicable requirements; maintaining quality control/quality assurance records; and maintaining as-builts of all work;

D. pumper license for measuring scum and sludge depths for the accumulation of solids and removing these deposits~~,~~; maintaining portable toilets; storing and hauling septage; disposing of septage; identifying problems related to sewage tanks, dosing chambers, baffles, ~~manhole~~ maintenance hole covers and extensions, and pumps, and making repairs~~, and~~; inspecting and evaluating water tightness of sewage tanks, dosing chambers, distribution devices, valve boxes, or drop boxes; and cleaning supply pipes and distribution pipes; and

E. inspector license for evaluating site evaluations and designs; conducting compliance inspections and permitting and inspection activities; issuing written certificates of compliance and notices of noncompliance; and issuing and maintaining inspection reports.

Subp. 3. **Applicable license category.** In the case of ISTS work not described under subpart 2, the commissioner shall determine which license category is applicable.

Subp. 4. **Restricted licenses.** The commissioner may add restrictions to a license for the following reasons:

A. as an enforcement action under part 7080.0900;

B. as a method to gain experience as described under part 7080.0815, subpart 1, item B or C; or

C. as a method to limit the ~~amount of responsibility for specialty area endorsements under~~ scope of the work to be conducted under the license to coincide with restrictions placed on the designated registered professional in accordance with part ~~7080.0850~~ 7080.0860, subpart 5 6.

7080.0705 APPLICATION FOR LICENSE; FEES; RENEWAL.

Subpart 1. **Eligibility.** A business is eligible to apply for a license when it meets the following requirements:

A. the business has one or more designated registered professionals with specialty area endorsement matching the

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requested license to meet the responsibilities under part 7080.0715, subpart 2;

B. the business has acquired general liability insurance as required under part 7080.0710; and

C. the business has acquired a corporate surety bond as required under part 7080.0710.

Subp. 2. **Requirements for obtaining or renewing licenses.** A business that meets the eligibility requirements under subpart 1 may apply for or renew a license on forms provided by the commissioner. The application must be submitted no later than 60 days prior to the expiration/renewal date. Issuance of new licenses will also require a 60-day review and approval period. To be licensed by March 31, 1996, an application must be submitted to the commissioner by February 1, 1996.

Subp. 3. **Fees.** The annual license fee is $100 for each license ~~specialty-area~~ category under part 7080.0700, subpart 2.

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

Subp. 5. **Term.** The license is valid for one year after the date of issuance.

Subp. 6. **Denial.** The commissioner shall deny the issuance or renewal of a license if the applicant is determined to be ineligible under subpart 1. A license may also be denied as an enforcement action according to part 7080.0900.

7080.0710 BONDING AND INSURANCE FOR LICENSES.

Subpart 1. **Submittal.** At the time an initial or renewal application for a license is submitted to the commissioner, the applicant must show proof of holding a corporate surety bond in the amount of at least $10,000, and proof of general liability insurance meeting the following requirements:

A. the bond must be submitted to the commissioner on

the bond forms provided in part 7080.0920, and must name the applicant as the principal;

B. the bond must be signed by an official of the business who is legally authorized to represent the business;

C. the bond must be written to cover work to be done under all licenses to be held by the business; and

D. proof of general liability insurance must be evidenced by a notarized certificate of insurance form and must be in effect, at a minimum, for the term of the license.

Subp. 2. **Multiple licenses.** If a business holds more than one license, one bond and one general liability insurance policy will fulfill the bond requirement for all the licenses.

Subp. 3. **Bond use.** The bond must be conditioned on the principal faithfully performing the duties and in all things complying with all laws, ordinances, and rules pertaining to the license applied for and all contracts entered into.

Subp. 4. **Term of bond.** The term of the bond must be continuous with the term of the license. The penal sum of the bond is noncumulative and is not to be aggregated every year that the bond is in force.

Subp. 5. **Bond components.** The bond must be written by a corporate surety licensed to do business in Minnesota. The corporate surety shall be responsible for providing 30 days' written notice to the commissioner of cancellation of a licensee's bond. If a bond is canceled, a licensee must not perform work requiring the bond as a condition of ISTS license ~~registration~~ until the licensee obtains another bond meeting the requirements in this part.

7080.0715 LICENSE CONDITIONS.

Subpart 1. **General license conditions.** All ISTS licenses shall include the following conditions. The licensee must:

A. ensure that all work to site evaluate, design, install, maintain, repair, pump, or inspect an ISTS is done according to applicable requirements;

B. ensure that the designated registered

professionals fulfill the conditions under subpart 2;

C. designate an adequate number of registered professionals to meet the requirements under subpart 2;

D. notify the commissioner within 30 days after any change in the registered professional designations; and

E. maintain the bond and insurance required under part 7080.0710~~;--and~~.

~~F.---provide-an-apprentice-with-a-pumping-endorsement on-the-worksite-in-the-absence-of-the-designated-registered professional.~~

Subp. 2. **Conditions for designated registered professional.** The designated registered professional is subject to the obligations of a license and must:

A. provide direction and personal supervision to other employees working on an individual sewage treatment system;

B. ensure the work completed meets applicable requirements;

C. ensure a compliance inspection is conducted prior to completion and covering work and to be present during inspections under an installation license;

D. be on the worksite:

(1) to meet supervision needs as determined by the training and experience level of the crew; and

(2) to make determinations about material quality, work methods, and problem detection when activities are being performed that are critical to the evaluation of the site, design, installation, pumping, or inspection of the system and any other time that is appropriate to ensure compliance with applicable requirements; ~~and~~

E. complete a certified statement for site evaluations, designs, as-builts, pumping records, inspection reports, and other formal work products; and

F. make repairs and evaluate watertightness of sewage tanks, dosing chambers, distribution devices, valve boxes, or drop boxes under a pumper license.

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7080.0720 QUALIFIED EMPLOYEE.

A qualified employee must fulfill the conditions under part 7080.0715, subpart 2, items A, B, and D to F, that are applicable to the work being performed.

INDIVIDUAL SEWAGE TREATMENT SYSTEM PROFESSIONAL TRAINING PROGRAM

7080.0800 ISTS PROFESSIONALS TRAINING PROGRAM REVIEW.

Subpart 1. **Purpose.** Parts 7080.0800 to 7080.0820 establish the ISTS professional training program. This program establishes training, experience, and examination requirements. Individuals may receive endorsement in the following specialty areas:

A. designer I;

B. designer II;

C. installer;

D. pumper; and

E. inspector.

Subp. 2. **Program components.** The training program has four components:

A. training, described under part 7080.0805;

B. examination, described under part 7080.0810;

C. experience, described under part 7080.0815; and

D. continuing education, described under part 7080.0820.

Subp. 3. **Recordkeeping.** Individuals that complete subpart 2, items A to C, for a specialty area can apply to be registered by the commissioner as a professional and to have their progress recorded by the commissioner according to part 7080.0850. Individuals that complete subpart 2, items A and B, for a specialty area can apply to receive an apprentice designation and to have their progress recorded by the commissioner according to part 7080.0855.

Subp. 4. **Registration period.** Registrations issued by the commissioner shall be issued for a three-year period.

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7080.0805 TRAINING.

Subpart 1. **Required training.** To fulfill the training requirement for one or more specialty areas under the training program, an individual must successfully complete:

A. course work that covers basic knowledge regarding individual sewage treatment system and soil treatment theory; design and construction fundamentals; and state licensing requirements, standards, and criteria for systems under this chapter; and

B. course work that provides the knowledge necessary to fulfill the responsibilities under part 7080.0850, subpart 5, and includes skills appropriate for each specialty area.

Subp. 2. **Accreditation of training.** Training used to fulfill the requirements under subpart 1 and part 7080.0820 must be accredited by the commissioner as provided under part 7080.0830.

7080.0810 EXAMINATION.

Subpart 1. **Examinations.** An examination for basic information regarding individual sewage treatment systems and each of the specialty areas under part 7080.0800, subpart 1, will be offered by the commissioner at least annually. The examinations will be based on the skill, knowledge, experience, and education that a person must have to perform the duties and responsibilities under part 7080.0850, subpart 5, for each specialty area. Both examinations are required for registration and apprentice designation.

Subp. 2. **Expiration of test score validity.** The validity of the examination score for a specialty area expires if the continuing education requirements under part 7080.0820, subpart 1, are not fulfilled. An individual with an expired ~~test~~ examination score must ~~retest~~ retake the examination.

Subp. 3. **Retesting Failure on examination.** A person who fails an examination is ineligible to retake the same examination for six months unless the person has completed 12 hours of ISTS training in the subject matter covered by the

failed examination in addition to those required under part 7080.0805, subpart 1. Official documentation of this training must be provided at the time the ~~test~~ examination is retaken. Training hours used to fulfill this ~~retesting~~ reexamination requirement may not be used to fulfill continuing education requirements. Failure to pass the examination in one specialty area does not prevent the person from taking an examination for a different specialty area endorsement.

7080.0815 EXPERIENCE.

Subpart 1. **Options to gain experience.** The experience needed to qualify for one of the specialty areas listed under part 7080.0800, subpart 1, can be acquired by ~~either~~ one of the following methods:

A. experience completed at the direction of and under the personal supervision of the designated registered professional who has a specialty area endorsement and works under a license that is the same as the specialty area sought by the individual acquiring the experience; or

B. experience completed under a signed agreement for direction and personal supervision with a qualified employee ~~for direction and personal supervision when the individual seeking the experience has~~ who has a specialty area registration endorsement that is the same as the specialty area sought by the individual acquiring the experience, a designer I, or an inspector and under a restricted license ~~because a lack of~~ held by the individual seeking the experience ~~that corresponds to the specialty area endorsement sought~~.

The agreement must be approved by the commissioner before an application for a restricted license or for a qualified employee apprentice will be accepted by the commissioner. The commissioner may monitor progress under the agreement. If the objectives for acquiring experience are not being fulfilled, the commissioner may require that the agreement be discontinued or modified to correct problems. A final evaluation shall be made to determine if the agreement successfully fulfilled the

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experience requirement.

C. Experience completed under a plan ~~where the individual seeking the experience has a restricted license because of the lack of experience corresponding to the specialty area endorsement sought~~ approved by the commissioner. A restricted license must be issued if a designated registered professional will be working under an approved experience plan.

The experience plan must be approved by the commissioner before an application for a restricted license or for a qualified employee apprentice will be accepted by the commissioner. The commissioner may monitor progress under the experience plan. If the objectives for acquiring experience are not being fulfilled, the commissioner may require that the plan be discontinued or modified to correct problems. A final evaluation shall be made to determine if the plan successfully fulfilled the experience requirement.

Subp. 2. **Basic experience requirements.** The following basic requirements must be met for experience to be used to qualify to be registered as a professional. The applicant must:

A. complete the experience requirement in accordance with one of the methods under subpart 1;

B. complete the amount of experience required under subparts 3 to 7 for the specialty area endorsement sought;

C. complete the documentation requirements under subpart 9;

D. provide certification by a designated registered professional or qualified employee with an endorsement for inspection that work submitted under subparts 3 to 7 is in compliance with applicable requirements; and

E. have acquired the experience within six years preceding the submittal date of the completed application for professional registration.

Subp. 3. **Designer I.** An individual seeking the endorsement for the site designer I specialty area must have completed the experience required under subparts 4 and 7.

Subp. 4. **Designer II.** An individual seeking the

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endorsement for the site designer II specialty area must have completed a minimum of 15 site evaluations and 15 individual sewage treatment system designs.

Subp. 5. **Installer.** An individual seeking the endorsement for the installation specialty area must have completed a minimum of 15 individual sewage treatment system installations.

Subp. 6. **Pumper.** An individual seeking the endorsement for the pumper specialty area must have pumped out and have proper disposal for a minimum of 15 individual sewage treatment system components.

Subp. 7. **Inspector.** An individual seeking the endorsement for the inspector specialty area must have completed a minimum of 15 individual sewage treatment system inspections to determine whether new or existing systems comply with applicable requirements.

Subp. 8. **Reduction of required experience.** The experience requirements under subparts 3 to 7 may be reduced from 15 to ten work products if 12 hours of ~~continuing education~~ accredited or authorized training are taken in addition to the training required under parts 7080.0805, subpart 1; 7080.0810, subpart 2; and 7080.0820.

Subp. 9. **Experience documentation.** Documentation of experience must include:

A. a summary of the work performed that includes dates and locations;

B. the signature and registration number of the designated registered professional or, if under an agreement or experience plan required under subpart 1, item B or C, a qualified employee that supervised the performed work; and

C. a statement from the designated registered professional or qualified employee authorized as an inspector that the work was completed in accordance with applicable standards.

7080.0820 CONTINUING EDUCATION.

Subpart 1. **Renewal requirements.** Individuals registered

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as professionals and apprentices must complete the applicable hours of continuing education under ~~items~~ item A ~~and~~ or B that meet the criteria under subpart 2 for each three-year period. The continued education requirement is not increased for multiple specialty area endorsements. Continuing education hours earned in excess of those required under this subpart cannot be carried over to meet the requirements for future three-year periods. The three-year period begins after an individual has received a passing score on the examination under part 7080.0810 for one specialty area endorsement.

A. An individual with a designer I, designer II, installer, or inspector endorsement must complete 12 hours of continuing education training related to individual sewage treatment systems.

B. An individual with a pumper endorsement must complete 12 hours of continuing education related in general to individual sewage treatment systems or nine hours of continuing education specifically related to pumping individual sewage treatment systems or land application of septage.

Subp. 2. **Criteria for continuing education.** A continuing education activity must be taken through a program accredited or otherwise authorized by the commissioner for credit to be eligible toward maintaining a professional registration or apprentice designation.

Subp. 3. **Voluntary certification program participants.** Individuals who were qualified under part 7080.0850, subpart 1, item B, are not exempt from the continuing education requirements.

7080.0830 ACCREDITATION OF TRAINING PROGRAMS AND AUTHORIZATION OF TRAINING FOR CONTINUING EDUCATION CREDITS.

Subpart 1. **Requirements.** To receive ISTS professional training program accreditation, a program must submit to the commissioner the following:

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

B. a summary of the credentials of the persons conducting the training demonstrating the trainers' knowledge about individual sewage treatment systems and specifying the specific subject area that the trainers will be responsible for;

C. a training plan that demonstrates how the course will meet the requirements under parts 7080.0805, subpart 1 and 7080.0820, including a method for evaluating successful completion and a form for providing documentation of course participation and successful completion;

D. a description of how much time will be spent on training during the hours the course is conducted; and

E. 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 training meets the training objectives for a specific specialty area under part 7080.0805, subpart 1, or for continued education under part 7080.0820. The commissioner shall evaluate the submitted information to determine how many continuing education credits will be awarded. The accreditation may be reevaluated by the commissioner at any time. The commissioner may require that the training program be updated to ensure recent industry developments are included. Accreditation may be canceled by the commissioner if the program sponsor does not respond to the commissioner's written request for program information or training course revisions.

Subp. 3. **Authorization of training for continuing education credits.** Nonaccredited training may qualify for continuing education credits only if authorized by the commissioner. The person requesting the credits must provide the information requirements of subpart 1, items A, B, and D, for any nonaccredited training attended, and document in written format how the course will meet the requirements under parts

~~7080.0525 and~~ 7080.0805, subpart 1, and 7080.0820, including a proof of successful completion of the training. The commissioner may prorate the credit hours granted based on the amount of the training which pertains to the ISTS specialty area for which it is requested.

INDIVIDUAL SEWAGE TREATMENT SYSTEM REGISTRATION

7080.0850 ISTS PROFESSIONAL REGISTRATION.

Subpart 1. **Qualifications.** The commissioner shall register individuals in the appropriate specialty area who meet either of the following requirements as an ISTS professional:

A. an individual who successfully completes the requirements under parts 7080.0805 to 7080.0820 as applicable to a specialty area under part 7080.0800, subpart 1, and submits a complete application as required under part 7080.0860, subpart 1, that is approved by the commissioner; or

B. an individual who is fully certified under the voluntary certification program on the effective date of this part, meets the requirements of part 7080.0820, and submits a complete application as required under part 7080.0860, subpart 1, by March 31, 1996.

Subp. 2. **Multiple endorsements.** An endorsement for each specialty area successfully completed shall be added to an individual's registration.

Subp. 3. **Registration required.** Except as provided under part 7080.0855, subpart 2, and beginning March 31, 1996, the following individuals must be registered under this part:

A. designated registered professionals under part 7080.0705, subpart 1, item A; and

B. qualified employees.

Subp. 4. **Maintaining registration.** To maintain a professional registration, an individual must fulfill the continuing education requirements under part 7080.0820, complete the renewal requirements under part 7080.0860, subpart 4, and fulfill the responsibilities under subpart 5 that are applicable

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to earned specialty area endorsements.

Subp. 5. **Specific responsibilities.** The following requirements provide the minimum basis of professional responsibility:

A. Individuals who have inspector endorsements must have the knowledge and ability to assess site evaluations, evaluate designs, evaluate installations, pumping and septage disposal activities, conduct compliance inspections, conduct permitting activities, issue written certificates of compliance and notices of noncompliance, and issue and maintain inspection reports.

B. Individuals who have designer I endorsements must have the knowledge and ability to conduct site evaluations, design ISTS, evaluate installations, pumping and septage disposal activities, conduct compliance inspections, issue written certificates of compliance and notices of noncompliance, and issue and maintain inspection reports.

C. Individuals who have designer II endorsements must have the knowledge and ability to conduct site evaluations and design ISTS.

D. Individuals who have installer endorsements must have the knowledge and ability to construct, install, alter, extend, maintain, and repair ISTS; ensure all work is done in accordance to a written site evaluation and design report; ensure inspections are conducted for new construction or replacement in areas without ordinances; ensure site conditions allow for construction; provide evidence to verify compliance with applicable requirements; maintain quality control/quality assurance records; and maintain as-builts of all work.

E. Individuals who have pumper endorsements must have the knowledge and ability to measure scum and sludge depths for the accumulation of solids and, as needed, completely remove, store, and haul septage; properly dispose of septage; identify problems related to sewage tanks, baffles, ~~manhole~~ maintenance hole covers, and extensions, and make repairs as necessary; and ~~inspect,~~ evaluate watertightness of sewage tanks, dosing

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chambers, distribution devices, valve boxes or drop boxes, and properly dispose of septage.

Subp. 6. **Register maintenance.** The commissioner shall assign registration numbers, maintain a statewide register, record training, and monitor performance.

7080.0855 APPRENTICE.

Subpart 1. **Qualifications.** An individual shall be designated as an apprentice if the individual successfully completes the requirements under parts 7080.0805 and 7080.0810, for the specialty areas listed under part 7080.0800, subpart 1, and submits a complete application as required under part 7080.0860, subpart 1, that is approved by the commissioner.

Subp. 2. **Apprentice required.** Individuals and qualified employees who will acquire their experience according to the methods under part 7080.0815, subpart 1, item B or C~~,~~:

A. must be designated by the commissioner as ~~an apprentice~~ apprentices; and

B. are eligible to be designated registered professionals under a license if the individuals have a specialty area endorsement that corresponds to the license, fulfill the contractual requirements for acquiring experience, and operate under a restricted license that corresponds to the specialty area endorsement sought.

Subp. 3. **Maintaining apprentice designation.** To maintain an apprentice designation, an individual must fulfill the continuing education requirements under part 7080.0820; complete the renewal requirements under part 7080.0860, subpart 4; and fulfill the responsibilities under part 7080.0850, subpart 5, that are applicable to earned specialty area endorsements. An endorsement for each specialty area successfully completed shall be added to an individual's registration and apprentice designation.

7080.0860 ADMINISTRATION OF PROFESSIONAL REGISTER AND APPRENTICE PROGRAM.

Subpart 1. **Application; issuance.** An individual meeting

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the qualifications under part 7080.0850, subpart 1, or 7080.0855, subpart 1, is eligible to apply for registration or apprentice designation on a form provided by the commissioner. The commissioner requires 60 days for review of applications. To be registered by the statutory effective date of March 31, 1996, an application must be submitted to the commissioner by February 1, 1996. A complete application consists of documentation of training and experience or the experience agreement or plan meeting the requirements under part 7080.0815, subpart ~~10~~ 1.

Subp. 2. **Approval of registration or apprentice designation.** Upon the commissioner's approval of the registration or apprentice application, a number and verification of an individual's status shall be issued to the applicant.

Subp. 3. **Registration period.** The commissioner shall issue registrations for a three-year period.

Subp. 4. **Renewal.** Every three years, the registrant 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 7080.0820.

Subp. 5. **Denial of application.** The commissioner may deny an application or renewal application for a professional registration or apprentice based on written evidence documenting actions listed under part 7080.0900. Notice of the denial shall be served on the applicant by mail.

Subp. 6. **Restrictions; conditions.** The commissioner may add performance restrictions and training conditions to a professional registration ~~of~~ or apprentice designation at any time to address unusual work situations, or experience requirements, ~~or~~ to take enforcement action under part 7080.0900, or to limit the scope of responsibilities under subpart 5 for an individual.

ENFORCEMENT

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7080.0900 ENFORCEMENT ACTION.

Subpart 1. **Business licenses.** The commissioner may deny, suspend, restrict, or revoke a business license issued under part 7080.0705 for any of the following reasons:

A. failure to meet the requirements of a license;

B. failure to comply with applicable requirements; or

C. submission of false or misleading information or credentials in order to obtain or renew a license.

Subp. 2. **Professional registration; apprentice.** The commissioner may deny, suspend, restrict, or revoke an individual professional registration issued under part 7080.0850 or apprentice designation made under part 7080.0855 for any of the following reasons:

A. failure to meet the registration requirements;

B. incompetence, negligence, or inappropriate conduct in the performance of the duties on an ISTS professional;

C. failure to comply with applicable requirements; or

D. submission of false or misleading information or credentials in order to obtain or renew professional registration.

Subp. 3. **License complaints.** Upon receiving a signed written complaint that alleges the existence of grounds for potential enforcement action against a business or an individual under subpart 1, the commissioner shall initiate an investigation.

A. The complaint must contain the name, address, and telephone number of the complainant, the name of the alleged violators, the alleged violations, dates, locations, and any other pertinent information to demonstrate the validity of the complaint.

B. The commissioner shall evaluate the results of the investigation and determine whether enforcement actions are necessary.

C. Enforcement actions may 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 shall be taken.

A. A written notice shall be mailed to the licensee, registered individual, or apprentice. The written notice shall contain, as applicable, the effective date of the enforcement action, the nature of the violation or violations constituting the basis for the enforcement action, the facts which support the conclusion that a violation or violations have occurred, specific actions necessary to fulfill the terms of the notice, and a statement that a licensee or registered individual 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 shall be stayed pending the outcome of the hearing. If the licensee or registered individual does not request a hearing, the individual shall forfeit any opportunity for a hearing.

C. A licensee or registered individual whose license or registration has been revoked shall not be entitled to apply for a license or registration until at least one year following the effective date of revocation or for any longer period of time specified in the revocation notice. A licensee or registered individual with a revoked or suspended license or registration shall return the license or registration identification card to the commissioner.

Subp. 5. **Enforcement; general.** General agency enforcement authority under Minnesota Statutes, sections 115.071, 115.56, 116.071, and 116.072, is available for enforcement actions under this program.

ALTERNATIVE AND EXPERIMENTAL SYSTEMS

7080.0910 ALTERNATIVE AND EXPERIMENTAL SYSTEMS.

Subpart 1. **General.** The intent of this part is to provide standards for the location, design, installation, use, and

maintenance of alternative and experimental sewage treatment systems. Alternative systems must meet the requirements of subpart 3 and experimental systems must meet the requirements of subpart 3a. They may be employed provided:

A. reasonable assurance of performance of the system is presented to the permitting authority;

B. the engineering design of the system is first approved by the permitting authority;

C. there is no discharge to the ground surface or to surface waters. Systems designed with a ground surface or surface water discharge are not covered under this chapter and must obtain a National Pollutant Discharge Elimination System permit or state disposal system permit from the agency;

D. a three-foot minimum separation is provided between the bottom of the distribution medium and the saturated soil or bedrock. Proposed experimental systems which do not provide this minimum separation must follow the variance procedure in part 7080.0305, subpart 3;

E. treatment and disposal of wastes is completed in a manner that protects the public health and general welfare;

F. the system complies with all local codes and ordinances and is subject to periodic inspections by the permitting authority to assure adherence to specifications; and

G. provide a mitigative plan to the permitting authority, indicating what will be done if the system fails to provide treatment and disposal.

Subp. 2. **Adoption and use.** Where parts 7080.0010 to 7080.0200 are administered by a municipality, those municipalities may adopt this part, in whole or in part, as part of a local code or ordinance. Nothing in parts 7080.0010 to 7080.0200 or this part, however, shall require the adoption of any part of this part as local ordinance or code. Further, nothing in parts 7080.0010 to 7080.0200 or this part shall require municipalities to allow the installation of any system in this part.

This part defines the minimum requirements for alternative

systems serving establishments or facilities licensed or otherwise regulated by the state of Minnesota or this agency pursuant to part 7080.0030.

Subp. 3. **Alternative systems.** Use of alternative systems in items A to K is allowed only in areas where a standard system cannot be installed or is not the most suitable treatment.

A. Slowly permeable soils. The methods in subitems (1) and (2) may be used for slowly permeable soils.

(1) Soil treatment systems placed in soils with percolation rates between 61 and 120 minutes per inch shall comply with units (a)~~,~~ ~~(c),~~ and to (d) and part 7080.0170.

(a) Drainfield rock for trench systems must not be placed in contact with original soil having a percolation rate slower than 61 minutes per inch.

(b) Where the percolation rate of the original soil is slower than 61 minutes per inch, at least 12 inches of clean sand must be placed between the drainfield rock for trench systems and the original soil.

(c) If a mound system is necessary to overcome limitations to consolidated impermeable bedrock and the mound is placed on a slope of one percent or greater, the mound must be designed with a linear loading rate of four gallons per day per square foot or less as described in part 7080.0170, subpart 6, item B.

(d) The size of the soil treatment system must be based on a soil sizing factor of 4.2 square feet per gallon per day.

(2) Soils with percolation rates slower than 120 minutes per inch are subject to the requirements under units (a) and (b).

(a) Excavation for the purpose of constructing a soil treatment system must not be made in a soil layer having a percolation rate slower than 120 minutes per inch.

(b) Mounds may be allowed on original soils with percolation rates slower than 120 minutes per inch if the following special design requirements, in addition to those

listed in part 7080.0170, subpart 5, are used:

i. the width of the drainfield rock bed is determined by using a linear loading rate of four gallons per day per ~~square~~ lineal foot or less as described in part 7080.0170, subpart 6, item B;

ii. beds are not to be installed side by side; and

iii. the absorption ratio used to calculate the required absorption width is 6.0.

B. Rapidly permeable soils. Distribution medium for a soil treatment system must not be placed in contact with original soil having a percolation rate faster than one-tenth minute per inch. For coarse soils having a percolation rate faster than one-tenth minute per inch, at least 12 inches of loamy sand material having a percolation rate between six and 15 minutes per inch at the original site must be placed between the distribution medium and the coarse soil along the excavation bottom and sidewalls. The size of the soil treatment system must be based on the required treatment area for a soil having a percolation rate of 16 to 30 minutes per inch as specified in part 7080.0170, subpart 2, item C, subitem (1), Table V. This criterion may be used as an alternative design for soils with percolation rates between 0.1 and five minutes per inch.

C. Artificial drainage.

(1) Where natural drainage will not provide three feet of separation between the bottom of the distribution medium and the highest known level of saturated soil, artificial drainage may be used to intercept or lower the seasonal high water table, except within shorelands of public waters. There shall be at least ten feet of undisturbed soil between the sidewall of the soil treatment unit and the artificial drainage. Designs to lower the seasonal high water table must be supported by ~~engineering~~ calculations and monitoring after installation. Water table measuring piezometers shall be strategically placed, capped, and extend at least three feet lower than the bottom of the soil distribution medium.

Monitoring shall occur by measuring water table depths prior to installation and over time, including during wet periods. Monitoring records must be maintained. If the artificial drain includes a dedicated surface discharge, periodic sampling as approved by the permitting authority must occur.

(2) Within shorelands of public waters, artificial drainage may be used to intercept the high water table provided the water table has a slope of at least two feet per hundred feet toward the public water and that drainage exists upslope of the soil treatment system. There shall be at least 20 feet of undisturbed soil between the sidewall of the soil treatment unit and the artificial drainage.

(3) In all cases the greatest practicable vertical separation distance from the system bottom to saturated soil shall be provided with a minimum of three feet.

D. Floodplain areas.

(1) There shall be no pipe or other installed opening between the distribution medium and the soil surface.

(2) Trench systems shall be located on the highest feasible area of the lot and shall have location preference over all other improvements except the water supply well. The bottom of the distribution medium shall be at least as high as the elevation of the ten-year flood. The sewage tank may be located so as to provide gravity flow to the trenches.

(3) If a dosing chamber is used to move effluent from the sewage tank to the trenches, provisions shall be made to prevent the pump from operating when inundated with flood waters.

(4) When it is necessary to raise the elevation of the soil treatment area, a mound system as specified in part 7080.0170, subpart 5, may be used with the following additional requirement: The elevation of the mound shall be such that the elevation of the bottom of the rock bed shall be at least one-half foot above the ten-year flood elevation. Inspection pipes shall not be installed unless the top of the mound is above the elevation of the regional flood.

(5) When the top of a sewage tank is inundated, the dwelling must cease discharging sewage into it. This may be accomplished by either temporarily evacuating the structure until the system again becomes functional, or by diverting the sewage into a holding tank sized and installed according to item K.

(6) The building sewer shall be designed to prevent backflow of liquid into the building when the system is inundated. If a holding tank is used, the building sewer shall be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.

(7) If a holding tank is used for a dwelling, its liquid capacity shall equal 100 gallons times the number of bedrooms times the number of days between the ten-year stage on the rising limb of the regional flood hydrograph and the ten-year stage on the falling limb of the hydrograph, or 1,000 gallons, whichever is greater. For other establishments, storage equal to at least five times the average design flow must be provided. The holding tank must be accessible for removal of tank contents under flooded conditions.

(8) Whenever the water level has reached a stage above the top of a sewage tank, the tank shall be pumped to remove all solids and liquids after the flood has receded before use of the system is resumed.

E. Greywater system. A toilet waste treatment device shall be used in conjunction with a greywater system. In all cases, only toilet wastes shall be discharged to toilet waste treatment devices. Greywater or garbage shall not be discharged to the device except as specifically recommended by a manufacturer.

(1) Plumbing. The drainage system in new dwellings or other establishments shall be based on a pipe diameter of two inches to prevent installation of a water flush toilet. There shall be no openings or connections to the drainage system, including floor drains, larger than two inches in diameter. For repair or replacement of an existing system,

the existing drainage system may be used.

Toilets or urinals of any kind shall not be connected to the drainage system. Toilet waste or garbage shall not be discharged to the drainage system.

Garbage grinders shall not be connected to the drainage system.

(2) Building sewer. The building sewer shall meet all requirements of part 7080.0120 except that the building sewer for a greywater system shall be no greater than two inches in diameter.

(3) Sewage tank. Greywater septic tanks shall meet all requirements of part 7080.0130, subpart 1, except that the liquid capacity of a greywater septic tank serving a dwelling shall 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 A-1. See parts 7080.0020, subparts 7 and 18, and 7080.0125.

(4) Soil treatment area sizing. The soil treatment area shall be 60 percent of the amount calculated in part 7080.0170, subpart 2, item C.

(5) Septic tank sizing. The septic tank for a greywater system shall be based on Table A-1.

Table A-1

Number of Bedrooms	Tank Liquid Capacity (gallons)
2 or less or hand pump	300
3 or 4	500
5 or 6	750
7, 8, or 9	1,000

For ten or more bedrooms or other establishments, the greywater septic tank shall be sized as for any other establishment (see part 7080.0130, subpart 3, item B) except that the minimum liquid capacity shall be at least 300 gallons.

Greywater aerobic tanks shall meet all requirements of part 7080.0130, subpart 6.

(6) Distribution and dosing. Distribution and dosing of greywater shall meet all requirements of parts 7080.0150 and 7080.0160.

(7) Final treatment and disposal. A standard greywater system shall meet all requirements of part 7080.0170.

F. Privies. Pit privies shall not be installed where the bottom of the pit is less than three feet above saturated soil or bedrock. A vault privy shall be used in areas not meeting the three-foot separation. The vault of a vault privy shall be constructed in the same manner as a sewage tank. See part 7080.0130, subpart 1.

Privies shall be set back from surface waters, buildings, property lines, and water supply wells as prescribed in Table IV.

Pits or vaults shall be of sufficient capacity for the dwelling they serve, but shall have at least 50 cubic feet of capacity.

The sides of the pit shall be curbed to prevent cave-in.

The privy shall be constructed so as to be easily maintained, and it shall be insect proof. The door and seat shall be self-closing. All exterior openings including vent openings, shall be screened.

Privies shall be adequately vented.

When the privy is filled to within one foot of the top of the pit, the solids shall be removed. Abandoned pits shall have the solids removed and be filled with clean earth and slightly mounded to allow for settling. Removed solids shall be disposed of according to part 7080.0175.

G. Other toilet waste treatment devices. Other toilet waste treatment devices may be used where reasonable assurance of performance is provided.

All devices shall be vented.

All electric, gas, and water connections shall conform to all local ordinances and codes.

Operation and maintenance shall follow the manufacturer's recommendations.

~~H. All materials removed, including ashes, compost, and all solids and liquids shall be disposed of according to state, federal, or local requirements.~~

~~I.~~ Existing dwellings on small lots. If a system

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meeting the size requirements of part 7080.0170, subpart 2, item C, cannot be constructed to serve an existing dwelling or other establishment, a downsized soil treatment system may be constructed provided that adequate capacity to hold excess sewage is constructed. Adequate holding capacity for gravity systems shall consist of a holding tank. Adequate holding capacity for pressure systems shall be provided by timed dosing of the effluent. The timing of the dosing must not exceed the average design flow. All applicable portions of item J and parts 7080.0110 to 7080.0170 shall be employed.

~~J.~~ I. Collector systems.

(1) In general. Where site or soil conditions do not allow for final treatment and disposal on an individual lot, a system where a soil treatment system is located on another lot or lots may be employed, where approved by the municipality.

Plans and specifications shall comply with local ordinances on such issues as zoning, joint ownership of land, joint maintenance responsibilities, easements, and other considerations and shall be approved by the municipality.

(2) Design.

(a) Sewer systems shall be designed on the sum of all flows for dwellings and other establishments as indicated in part 7080.0125. Flows shall be increased to allow for 200 gallons of infiltration per inch of pipe diameter per mile per day.

(b) The system shall be designed with each dwelling or other establishment having a sewage tank or with a common sewage tank. In the case of a common tank, the capacity of the tank shall be the sum of the tanks sized according to part 7080.0130, subpart 3, item A, and shall meet all applicable requirements under part 7080.0130.

(c) The sewer for systems with common sewage tanks shall be so constructed to give mean velocities, when flowing full, of not less than two feet per second. The sewer for systems with individual sewage tanks shall be so constructed and designed to hydraulically conduct the flow for which they

were designed. In no case shall a gravity sewer be less than four inches in diameter. The diameter and grade line should be based on a flow equal to 50 percent of the average design flow occurring in a one-hour period.

(d) Infiltration or exfiltration shall not exceed 200 gallons per inch of pipe diameter per mile per day.

(e) Cleanouts, brought flush with or above finished grade, shall be provided wherever a common sewer joins an individual building sewer or piping from an individual sewer tank, or every 100 feet, whichever is less, unless ~~manhole~~ maintenance hole access is provided.

(f) There shall be no physical connection between sewers and water supply systems. Sewers shall be set back from water supply systems and piping as required for building sewers. Where it is not possible to obtain proper separation distances, the sewer connections shall be watertight and pressure tested.

(g) Pipes, and pipe joints shall be watertight.

(h) Dosing chambers shall meet all requirements in part 7080.0160, subpart 1.

(i) Pumps and dosing chambers shall be sized to handle 50 percent of the average design flow in a one-hour period. Common pump tanks shall have a pumpout capacity of ten percent of average design flow ~~plus a reserve capacity of 25 percent of the average design flow or~~ and two alternating pumps.

(j) ~~An~~ A separate alarm system for each pump shall be provided for all pumping stations to warn of pump failure, overflow, or other malfunction.

(k) For systems with individual septic tanks, a stilling tank of at least 1,500 gallons liquid capacity or ten percent of the average design flow, whichever is greater, should be provided before the soil treatment system.

(3) Maintenance. All persons using a common individual sewage system shall assure, by contract with maintenance personnel or other equivalent means, that the system

will be maintained throughout its useful life. The system so maintained includes common soil treatment systems, common sewage tanks, common pumps, common pump stations, common sewers, and all individual tanks connected to the common system.

~~K.~~ J. Holding tanks.

(1) Holding tanks may be allowed only as replacements for existing ~~nonconforming~~ failing systems, systems which pose an imminent threat to public health or safety, or on existing lots as of the date of the enactment of this chapter and only where it can conclusively be shown that a standard, or alternative system as described in this subpart, cannot be feasibly installed.

(2) A holding tank shall be constructed of the same materials and by the same procedures as those specified under part 7080.0130, subpart 1.

(3) A cleanout pipe of at least six inches diameter shall extend to the ground surface and be provided with seals to prevent odor and to exclude insects and vermin. A ~~manhole~~ maintenance hole of at least 20 inches least dimension shall extend through the cover to a point within 12 inches, but no closer than six inches below finished grade. The ~~manhole~~ maintenance hole cover shall be backfilled with at least six inches of earth.

(4) For a dwelling, the minimum size shall be 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 average design flow. Tank sizing for floodplain areas shall be in accordance with item E, subitem (7). Tank sizing for reduced sized systems as described in item F shall be upon discretion of the permitting authority.

(5) Holding tanks shall be located: in an area readily accessible to the pump truck under all weather conditions; as specified for septic tanks in Table IV, part 7080.0170, subpart 2; where accidental spillage during pumping will not create a nuisance.

(6) A contract for disposal and treatment of the septage shall be maintained by the owner with a pumper, municipality, agency, or firm established for that purpose.

(7) Holding tanks shall be monitored to minimize the chance of accidental sewage overflows. Techniques such as visual observation, warning lights, or audible alarms, or regularly scheduled pumping shall be used. For other establishments, a positive warning system shall be installed which allows 25 percent reserve capacity after actuation.

Subp. 3a. **Experimental systems.** Experimental systems may be used in areas where a standard system cannot be installed or if a system is considered new technology with limited data on reliability.

In addition to the requirements under subparts 1 and 2, experimental systems must also:

A. include an installed water meter;

B. be designed with no single portion of ~~the soil treatment~~ a trench system taking over 25 percent of the average design flow in part 7080.0125;

C. provide a loading rate calculation to the permitting authority;

D. provide a monitoring plan to the permitting authority, indicating what type of monitoring will take place and who is responsible for monitoring and timelines;

E. provide results of monitoring to the permitting authority and the commissioner;

F. experimental systems will not be allowed in areas where a new system or modifications to the experimental system are not feasible if failure occurs;

G. comply with all conditions established by the permitting authority necessary for the protection of the environment and public health; and

H. in areas without ordinances, the ISTS professional must maintain records subject to commissioner review.

FORMS

7080.0920 MINNESOTA POLLUTION CONTROL AGENCY SURETY BOND FORM.

Bond No. _____

MINNESOTA POLLUTION CONTROL AGENCY

INDIVIDUAL SEWAGE TREATMENT SYSTEM (ISTS) PROFESSIONAL

SURETY BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT _____ ~~of~~
(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 TEN THOUSAND DOLLARS ($10,000.00). 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, an ISTS Professional:

.....

(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

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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 registered mail, whereupon, except as to any liabilities or indebtedness incurred prior to the termination of this said 30 days notice, the liability of the Surety under this bond shall cease.

By their signatures below, the parties certify that the wording of this surety bond is identical to the wording specified in Minnesota Rules, part 7080.0920, as the rules were constituted on the date the parties executed the bond.

Signed this _____ day of _____, 19__.

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 _____, 19/20 _____, 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.

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_____

Notary Public, _____

County, _____

My Commission Expires _____

(Notarial Seal)

CORPORATE ACKNOWLEDGMENT

STATE OF _____)
COUNTY OF _____)

On the _____ day of _____, 19/20 _____, before me personally appeared, _____ to me, who being duly sworn, did depose and say: that s/he resides in _____ the s/he is the _____ President of the _____ the corporation described in and which executed the foregoing instrument; that 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 _____, 19/20 _____ before me personally appeared, _____ to me known, who being duly sworn, did say: that s/he resides in _____ the 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

REPEALER. Minnesota Rules, parts 7080.0020, subparts 10, 11e,

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20, 22a, 24a, 28b, 29, 34, 41, and 50; 7080.0040; 7080.0050; 7080.0070; 7080.0080; 7080.0090; 7080.0100; 7080.0110, subparts 1, 2, 3, and 5; 7080.0120, subpart 2; 7080.0130, subpart 5; 7080.0180; 7080.0200; and 7080.0210, are repealed.

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