Requirements for
On-site Sewage Treatment Systems

Adopted by Resolution on the _____ day of _____, 20____
by the _____

Table of Contents

**Resolution Adopting Requirements for Licensing of Installers,
Permits for Installation, Inspection, Construction Requirements,
Use and Maintenance of On-Site Sewage Treatment Systems**

Section I Purpose

The purpose of this Resolution is to protect the health, safety, and welfare of the public and environment in North Dakota through the establishment of minimum requirements for the regulation of on-site sewage treatment systems with the intent to protect ground water quality and prevent or eliminate the development of public nuisances. The improper design, location, installation, use and maintenance of on-site sewage treatment systems can adversely affect the public health, safety, general welfare, and environment by discharge of inadequately treated sewage to surface and ground waters. This Resolution is intended to protect the county's citizens by protecting its health, safety and general welfare and natural resources.

Section II Authority

This Resolution is adopted in accordance with the authority granted in North Dakota Century Code Chapter 23-35.

Section III Scope and Jurisdiction

This Resolution regulates the siting, design, installation, alteration, operation, maintenance, monitoring and management of all on-site sewage treatment systems within the applicable jurisdiction. This Resolution shall apply in _____. Where a municipality has passed an ordinance to regulate and enforce in an equivalent or more restrictive manner, such requirements established hereunder shall not apply.

Section IV Minimum Standards

The requirements and standards adopted by this Resolution are intended to be minimum standards for the siting, design, installation, alteration, operation, maintenance, monitoring and management of all on-site sewage treatment systems. Nothing contained herein shall be construed to prevent the adopting authority from requiring compliance with greater requirements than those contained herein where such requirements are necessary to maintain safe and sanitary conditions.

Section V Definitions

As used in this Resolution, the following words and terms, unless the context clearly requires otherwise, shall have the following meanings:

"Alternative System" is an on-site sewage treatment system employing such methods as described in the Alternative Systems section, and may include devices not presented in these regulations.

"Adopting Authority" means North Dakota district health units, county, or city health departments, or their designees.

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

"Baffle" is a device installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes vented sanitary tees and submerged pipes in addition to those devices that are normally called baffles.

"Bedroom" is any room within a dwelling that may be reasonably used as a sleeping room and includes, but is not limited to unfinished areas that have potential to become a bedroom(s).

"Capacity" is the liquid volume of a septic tank using inside dimensions below the outlet.

“Centralized System” is an on-site sewage treatment system serving 4 or more dwellings or buildings.

"Cesspool" (Seepage Pit) is an underground pit into which raw sewage and/or other untreated liquid waste is discharged and from which the liquid seeps into the surrounding soil.

"Clean Sand" is a soil texture composed by weight of at least 25% of very coarse, coarse, and medium sand varying in size from 2.0 to 0.25 mm, less than 50% of fine or very fine sand ranging in size between 0.25 and 0.50 mm, and no more than 10% of particles smaller than 0.05 mm. The jar test can be used as a method for testing clean sand. See Appendix A Procedures for Soil Determination and Material Acceptability.

"Distribution Pipes" are perforated pipes that distribute sewage effluent within a medium including drain field rock, chambers, and gravelless pipe.

"Dosing Device" is a commercially manufactured sewage effluent pump, grinder pump, or siphon.

"Drain field Rock" is clean, washed, rock, crushed igneous rock or similar insoluble, durable, and decay-resistant material. The size shall range from ¾ inch minimum diameter to 2 ½ inches effective diameter, with no more than 5% by weight passing a 3/4 inch sieve, and no more than 1% by weight passing a number 200 sieve. Materials greater than 2 ½ inches in diameter shall not exceed 5% by weight. The jar test can be used as a method for testing drain field rock. See Appendix A Procedures for Soil Determination and Material Acceptability.

"Dwelling" is any building or place used or intended to be used by human occupants as a single-family or multiple-family unit.

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

"Holding Tank" is a water-tight tank, with a minimum capacity of 1,000 gallons, meeting the minimum requirements set forth in Appendix B Design Standards, used for the storage of sewage until it can be transported to a point of approved disposal.

"Impermeable" with regard to soils, is a soil horizon or layer having a vertical permeability less than 1 inch in 24 hours and shall be considered impermeable.

“Limiting Factor” means any factor that adversely affects the soils ability to effectively treat sewage effluent. This encompasses actual soil saturation, redoximorphic features, or active fluctuating seasonal soil water table, bedrock, layers/conditions of low permeability or any physically identifiable condition that limits installation of a septic system.

"Malfunctioning or Failing System" is any situation in which the system fails to treat the sewage or exposes it to potential human contact. Failures may involve any component or components of a new or existing system which is improperly designed, installed, is clogged or no longer functions properly or as intended. Examples of failures include, but are not limited to: sewage backing up into a building; sewage surfacing, being pumped to the surface or discharged into a waterway; sewage discharged into any abandoned well, crevice, sink hole, or other natural or manmade opening in the ground including cesspools and dry wells.

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

"On-site Sewage Treatment System" (OSTS) is a sewage treatment system or part thereof, serving a dwelling or building, or group thereof, which utilizes soil treatment and disposal.

"Parallel Distribution" is the distribution of sewage tank effluent by gravity which loads all sections of an on-site sewage treatment system equally at the same time.

"Percolation Rate" is the timed rate of drop of water infiltrating into a test hole. The percolation rate can be determined by the percolation test. See Appendix A Procedures for Soil Determination Material Acceptability.

"Permeability" the rate with which gases or liquids penetrate or pass through a bulk mass of soil or layer of soil.

"Plastic Limit" is 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 or smearing. If a fragment of soil can easily be rolled into a wire 1/8 inch diameter, the moisture content is above the limit and the soil cannot be used. The standard method of determining the plastic limit is specified by the American Association of State Highway Officials (AASHO) Designation: #T 90-61.

"Professional Engineer" shall mean an individual who by reason of special knowledge or use of the mathematical, physical, and engineering sciences and the principles and methods of engineering analysis and design, acquired by engineering education and engineering experience, is qualified to practice engineering, and who has been registered and licensed by the State Board of Registration for Professional Engineers and Land Surveyors.

"Redoximorphic Features" (Active Mottling) reflects alternating reduction and oxidation conditions due to water table fluctuations.

"Registered Professional Soil Classifier" shall mean a person who by reason of their special knowledge of the physical, chemical, and biological sciences applicable to soils as natural bodies and of the methods and principles of soil classification as required by soils education and soil classification experience in the formation, morphology, description, and mapping of soils is qualified to practice soil classifying and who has been duly registered by the State Board of Registration for Professional Soil Classifiers, as per North Dakota Century Code, Chapter 43-36.

"Seepage Bed" means a soil treatment and dispersal system, the absorption width of which is greater than three feet but no greater than 25 feet.

"Serial Distribution" is the distribution of sewage tank effluent by gravity that progressively loads one section of an on-site sewage treatment system to a predetermined level before overflowing to the succeeding section.

"Septic Tank" is a watertight tank, with minimum capacity of 1,000 gallons, meeting the minimum requirements laid out in Appendix B Design Standards. That shall receive the discharge of sewage from a building sewer or preceding tanks, stores liquid for a detention period that provides separation of solids from liquid and digestion of organic matter, and allows the sewage effluent to discharge to a succeeding tank, treatment device or soil treatment area.

"Septic System Servicer" is any person or business, permitted by the North Dakota Department of Health Division of Water Quality, who engages in the business of servicing septic systems, cesspools, privies, chemical toilets, holding tanks, and similar devices that receive sewage, and who deposits such materials at some location approved by the North Dakota Department of Health.

"Setback" is a separation distance measured horizontally, unless otherwise noted.

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

"Sewage Effluent" is that liquid which flows from a septic tank under normal operation.

"Site" is the proposed on-site sewage treatment system area.

"Slope" is the ratio of vertical rise or fall to horizontal distance.

"Soil Boring" is any type of excavating capable of revealing in detail characteristics of soils penetrated.

"Soil Texture Classification" is where soil particle sizes or textures are specified in these regulations; they refer to the Guide for USDA Textural Classification.

"Soil Treatment Area" is an area where sewage effluent is dispersed in to the soil for treatment and absorption and filtration and includes, but is not limited to trenches, seepage beds, at-grade systems and mound systems.

"Soil Type" is the lowest unit in the natural system of soil classification; a subdivision of a soil series and consisting of or describing soils that are alike in all characteristics including the

texture of the A Horizon.

"Standard System" an on-site sewage treatment system employing a septic tank and the soil treatment system commonly known as seepage bed, trenches, at grade, or mound systems.

“Surface Water Body” is any significant accumulation of water, which includes lakes, rivers, streams, reservoirs, bogs, ponds and wetlands.

“Supply Line” are pipes used to distribute sewage effluent to distribution boxes, drop boxes, and valve boxes.

“Trench” means a soil treatment and dispersal system, the absorption width of which is 18-36 inches and having a minimum sidewall absorption of six inches of natural soil.

Section VI Licensing of On-site Sewage Treatment System Installers

1. No person, firm, or corporation shall engage in the business of installing or constructing OSTSs without first obtaining a license from the local adopting authority where the business is located. If there is not a licensing adopting authority where the business is located, then the business shall obtain a license from the nearest licensing adopting authority.
2. Licensure Requirements
    a. Submission of license fee. The fee for the license shall be set by the adopting authority.
    b. Attend approved OSTS training before being licensed and every 3 years thereafter.
3. All new construction and/or alterations/modifications to existing systems shall be done by a licensed OSTS installer or the property owner. Mound systems, at-grade systems, and commercial sites shall only be installed by a licensed OSTS installer.

4. Property owners are not required to be licensed to install systems on their property, but they shall attend an approved training or appropriate alternatives as defined by the adopting authority. It is the property owners’ responsibility to procure appropriate equipment to install the system and any additional requirements as set forth by the adopting authority.

5. Installation, construction, alteration, or repair of an OSTS by licensee in violation of the provisions of these regulations or any refusal to comply herewith on the part of the licensee shall be cause for revocation of, suspension or refusal to renew a license. Before any license issued under the provision of this section may be revoked the licensee shall be provided an opportunity to request a hearing to show cause why such license should

not be revoked. Notice of the time, place, and purpose of such hearing shall be given in writing.

Section VII Permit for Installation of On-site Sewage Treatment Systems

1. No person, firm, or corporation shall install, alter, repair, or extend any individual OSTS without first obtaining a permit from the adopting authority.

2. The permit shall be issued by the adopting authority within the jurisdictional limits where the work is being done. The fee for the permit shall be set by the adopting authority. The application/permit shall be signed by the property owner.

3. Application for permits shall be made upon forms furnished by the adopting authority. A permit to construct is valid for a period of 12 months from date of issuance. If construction is not started on the building or sewage system within 12 months of the date of approval of the application, it will be necessary to resubmit a current application along with all necessary information for the system to insure that the lot, building plan, or location have not changed and that the proposed sewage system continues to meet the requirements set forth herein.

4. The adopting authority shall refuse to grant a permit for the construction of an individual sewage treatment system where a public sewer system is available within 200 feet of the property line, unless the municipality denies hookup in a written document.

5. For any OSTS serving 25 or more individuals, plans and specifications shall be prepared by a North Dakota registered professional engineer and submitted to the North Dakota Department of Health, Division of Municipal Facilities, for review and approval. Construction of such systems may not commence until approval is granted by the Division.

Section VIII Inspection of Newly Constructed On-site Sewage Treatment Systems

1. The adopting authority or its designee may perform inspections on all newly constructed OSTS. No part of the soil treatment area system shall be covered until it has been inspected, unless prior approval has been granted. It shall be the duty of the owner or occupant of the property to give the environmental health practitioner (EHP) free access to the property at reasonable times for the purpose of making an inspection.

2. If, upon inspection, it is discovered that any part of the system is not constructed in accordance with the minimum standards provided in these regulations, the applicant and

or the OSTS installer shall be responsible for the correction or elimination of all defects, and no system shall be placed in service until all defects have been corrected or eliminated.

Section IX General Provisions

1. The owner, building contractor, plumbing contractor, and OSTS installer are jointly responsible for compliance with these regulations.

2. No property shall be improved in excess of its capacity to properly absorb sewage effluent in the quantities and by the means provided herein.

3. The minimum lot size in which a new OSTS can be installed shall be 40,000 square feet.

4. Water carried from bathrooms, kitchens, laundry fixtures, and other household plumbing shall pass through a septic tank prior to its discharge into the soil. Where underground disposal for treatment is not feasible, consideration will be given to special methods of collection and disposal.

5. Floor drains in shops shall not be connected to an OSTS. Building footing water, sump pumps, draintile, backwash from water softener, pool water, treated hot tub water, or pool filter backwash shall not enter the OSTS system.

6. Surface and storm waters shall not be discharged into any soil treatment area.

7. All sewage shall be disposed of by a valid method of collection, treatment, and disposal. Sewage shall not be disposed of in any manner that may create a nuisance or that may create a malfunctioning or failing system.

8. Cesspools shall not be installed and/or utilized and are considered a public nuisance. When a cesspool is abandoned, the pit shall be filled with soil, sand, or gravel. This requirement is binding on all systems.

9. When a septic tank is abandoned, it shall be pumped by a septic system servicer, the tank shall then be crushed and backfilled with soil, sand, or gravel or filled with a flowable fill and capped. Upon a finding of exceptional need, a septic tank may be ordered to be removed and disposed of in compliance with all applicable state and local rules and

regulations.

10. No OSTS shall be installed during wet conditions or other conditions by which the soil would become smeared during construction. No OSTS shall be installed when the ground is frozen. The ground is considered frozen when the frost penetrates the top 6 inches of soil.

11. No OSTS or parts, thereof, shall be located on any parcel of land other than the parcel of land where the dwelling or building serviced by the OSTS is located, except if there is a permanent easement recorded or a centralized treatment system.

12. No provision set forth herein shall be deemed to require a change in any portion of an existing OSTS or any other work regulated by these regulations in or on an existing building or lot when such work was installed and is maintained in accordance with the rules or regulations in effect prior to the effective date of these regulations, except, when it is determined by the adopting authority that a system constitutes a public health nuisance.

13. If any work is done to an OSTS that was not approved under prior rules or regulations, the entire system shall be brought in compliance with the requirements hereof.

Section X Site Conditions

1. All proposed sites for an OSTS soil treatment area shall include at minimum the following information:
    a. Depth of the seasonal high water table and bedrock or other limiting conditions.
    b. Soil conditions - properties and permeability
    c. Slope
    d. The existence of lowlands, depressions, rock outcrops
    e. Surface water drainage patterns
    f. All setbacks, as required in these regulations, shall be described or drawn out.

2. Flood prone areas
    a. No part of a system shall be installed in the floodway, except in the case where a floodplain is part of the floodway and each individual site shall be evaluated for placement of an OSTS
    b. The soil absorption area shall be located on the highest feasible area of the lot and shall have location preferences over all other improvements except the water supply well.
    c. The tank shall be protected against flotation under high water table conditions.

This shall be achieved by weight of tank, earth anchors, or shallow bury depths.

d. If a pumping station is used to move sewage effluent from the septic tank to the soil treatment area, provisions shall be made to prevent the pump from operating when inundated with flood waters.

e. The building sewer shall be designed to prevent back flow of liquid into the building when the system is inundated. If a holding tank is utilized, the building sewer shall be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.

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

Section XI Construction Requirements

1. Every OSTS installed, and every alteration, extension, and/or repair to any system made after the effective date of this Resolution shall conform to the standards herein.

2. The proposed area or an OSTS shall be protected from disturbance, compaction or other damage by an effective method.

3. Approval of a system by the adopting authority does not constitute a guarantee that the system will provide trouble-free service.

4. Proper installation, maintenance, and use, will decrease the possibility of a premature failure.

Section XII Other Systems

Where unusual conditions exist, special systems of treatment and disposal other than those specifically mentioned in these regulations may be provided if:

1. An engineering design providing reasonable assurance of performance of such system is provided to the adopting authority;

2. The engineering design, with the professional engineers stamp affixed, of such system is first approved by the adopting authority;

3. There is no discharge to the ground surface or to surface waters;

4. Treatment and disposal of wastes is in such a manner so as to protect the public health and general welfare;

5. Such systems shall comply with all applicable requirements of this Resolution except as otherwise affected by variance and with all local codes and ordinances.

Section XIII Unsuitable Soils

If the application for an OSTS permit has been denied because of the soil conditions being identified as unsuitable for an OSTS, a professional engineer may present plans for consideration by the adopting authority for a specialized sewage treatment system that overcomes the limitations of the lot and existing soil conditions.

Section XIV Administration

1. The adopting authority or its designee shall administrate and enforce the provisions of these regulations.

2. The adopting authority may appoint an On-site Wastewater Technical Review Board, Appendix C for purposes of establishing approved materials and design standards not otherwise established herein.

Section XV Variance

1. Upon application, the adopting authority may grant a variance from the requirements of this Resolution when, in its opinion, undue hardship may result from strict compliance and that strict application would be unreasonable, impractical, or not feasible.

2. No variance shall be issued unless the adopting authority finds:
   a. that there are special circumstances or conditions affecting the property such that the strict application of the provisions of this Resolution would deprive the applicant of the reasonable use of the land;
   b. that the variances necessary for the preservation and enjoyment of a substantial property right of the petitioner provided, however, any such variance includes conditions for prevention, control, or abatement of pollution consistent with the general purposes of this Resolution and applicable local, state, or federal laws;
   c. that the granting of the variance will not be detrimental to the public health or welfare or injurious to other property in the area in which said property is situated; or
   d. that the need for such variance is not the result of any act, omission or decision of the applicant.

3. The adopting authority shall prepare a written decision, including findings of facts,

supporting any decision it makes with respect to an application for a variance.

Section XVI Appeals

1. Any person directly affected by any order or determination of the adopting authority may within 30 days of such action petition the local Board of Health for a hearing. Such appeal shall be in writing and shall specify in detail the grounds for the appeal. The appeal shall be filed with the local Board of Health.

2. Within 30 days of filing, the local Board of Health shall fix a date for a hearing.

3. Notice in writing shall be given to the petitioner at least 5 days prior to the hearing.

4. Within 30 days after the hearing, the local Board of Health shall take action and shall mail, by registered mail, a copy of its order to the petitioner.

5. If the petitioner is aggrieved by the determination of the adopting authority, the petitioner may pursue an appeal in accordance with N.D.C.C. Section 28-34-01.

Section XVII Suspension and Revocation

Any license or permit issued by the adopting authority pursuant to these regulations shall be subject to action taken by the adopting authority to suspend or revoke any such license or permit upon a finding of noncompliance with these regulations, a material misrepresentation in any application or materials presented in support of any license or permit; any willful noncompliance with these regulations; nonpayment of any fees or costs imposed pursuant to these regulations.

Section XVIII Cease and Desist Orders

Cease and desist orders may be issued when the adopting authority, or its designee, has probable cause to believe that an activity regulated by this Resolution or any other official act is being or has been conducted without a permit or in violation of a permit or in violation of applicable law. When work has been stopped by a cease and desist order, the work shall not resume until the reason for the work stoppage has been completely satisfied, any fees paid, and the cease and desist order lifted.

Section XIX Regulation Enforcement

1. Malfunctioning on-site systems are a risk to the general health and welfare of this state and are hereby declared to be a nuisance.

2. Whenever brought to the attention of the adopting authority that any unsanitary conditions exist in any on-site system or that any construction or work regulated by these regulations is dangerous, unsafe, unsanitary, a nuisance, risk to life, health, property, or otherwise is in violation of these regulations, it is the responsibility of the adopting authority to investigate. The adopting authority may order any person using or maintaining any such condition to repair, alter, change, remove, or demolish the problem area for the proper protection of life, health, and/or property. Every such order shall be in writing, addressed to the person using or maintaining any such conditions and shall specify a reasonable date or timeline for compliance with such order.

3. The property owner or designee shall notify the adopting authority when a property that requires or has an OSTS is planned on being developed.

4. For a new property that has not been built on previously, determination of the feasibility for a new OSTS design and installation shall be determined.

5. When inspecting a property with an existing OSTS when the status and compliance of the existing system shall be determined by the adopting authority, based on information provided by the property owner and visual inspection.

Section XX Penalties

Any person who violates these regulations or any rule or regulation adopted by the adopting authority, or who violates any determination or order of the adopting authority under these regulations, is guilty of a class B misdemeanor for each violation. Each continuing day of a violation is considered a separate offense.

Section XXI Fees

The adopting authority is hereby authorized to establish and impose reasonable fees for inspections, plan reviews, site evaluations, filing of variance requests and filing of appeals.

Section XXII Severability

If any section, subsection, sentence, clause, phrase or portion of these regulations is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Resolution.

Section XXIIIAppendices – Adoption by Reference

The following appendices are hereby adopted and incorporated herein by reference:

Appendix A – Procedures for Soil Determination and Material Acceptability
Appendix B – Design Standards
Appendix C – On-site Wastewater Technical Review Board
Appendix D –Estimated Sewage Flow from Other Establishments *For Reference Only*

Section XXIV Effective Date

This Resolution is hereby adopted by _____ on the _____ day of _____, 20____ and shall be effective on the _____ day of _____, 20____.

_____
Chair

Attest:

_____